



From Insight to Entry: A Strategic Plan for Cordys Analytics' AI Solutions in Healthcare

Business Internship Report

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Plain Language Summary

Company Background

The business internship was conducted at Cordys Analytics, an emerging health-tech company based in the Netherlands. Founded in 2023 in collaboration with the University Medical Center Utrecht (UMCU), it leverages artificial intelligence (AI)-powered algorithms to enhance electrocardiogram (ECG) diagnostics. Its first product, an AI-driven platform for 12-lead ECGs, focuses on improving diagnostic accuracy for structural heart disease, arrhythmias, and other abnormalities. With strong partnerships and a multidisciplinary team, Cordys aims to navigate the competitive AI-healthcare market by combining clinical expertise, technical innovation, and strategic planning (1).

Industry Context

The global AI-healthcare market, valued at \$19.54 billion in 2023, is projected to grow at a 43.2% compounded annual growth rate (CAGR) by 2032 (2). Cardiovascular diagnostics and monitoring are key segments due to rising cardiovascular disease rates. AI solutions promise earlier detection, workflow optimization, and increased clinician efficiency but face hurdles like regulatory complexities, fragmented data, and slow adoption in risk-averse healthcare settings. Cordys applies the Lean Startup Framework to overcome these challenges and build its market presence.

Research Contribution

Cordys Analytics, in its formative stage, must identify a viable market entry point to ensure sustainable growth. With limited resources, the company needs a strategy to target the most promising customer segments while balancing short-term traction and long-term scalability. This research was initiated to validate Cordys' hypothesis that general practitioners (GPs) are an ideal entry market or to identify a more suitable alternative. The primary research question sought to identify a strategic market entry point for Cordys, with secondary research questions focusing on devising Cordys' short-term strategy, and long-term pursuits. The company hired me to serve as an interning business analyst, focusing my efforts to answer these research questions and conclude my experience at Cordys with evidence-based recommendations for the company's path forward.

Methodology

A dual-method research approach was adopted, combining secondary and primary research. Secondary research analyzed industry trends, competitive positioning, and market dynamics, while primary research involved semi-structured interviews with stakeholders such as GPs, cardiologists, hospital procurement teams, ECG device manufacturers, and investors. Thematic analysis with deductive coding structured insights into five categories: market attractiveness, customer segmentation, operational barriers, facilitators, and strategic alignment. Competitive

benchmarking complemented the qualitative analysis by identifying gaps and opportunities in the market.

Key Findings

The research revealed significant insights into the AI-driven ECG market. General practitioners (GPs) were found to represent a fragmented and conservative segment with limited infrastructure for ECG diagnostics. This group displayed low adoption potential and a lack of demand, making it an unsuitable market entry point for Cordys. In contrast, cardiologists demonstrated significant interest in AI tools, particularly for high-volume workflows and early detection of conditions such as atrial fibrillation and ischemia. This alignment with Cordys' product capabilities and strategic goals suggests cardiologists as a promising target segment.

Hospitals emerged as a scalable opportunity due to their high diagnostic volumes and interest in innovative solutions. However, operational barriers, including slow procurement cycles and regulatory hurdles, present significant challenges. US hospitals offer faster adoption timelines compared to their European counterparts, but stricter compliance requirements increase complexity. A natural extension of the cardiologist market was identified within non-cardiology departments in hospitals, where Cordys' solution could streamline ECG workflows and provide value across specialties. However, the overall slow adoption rates in hospitals make this a longer-term opportunity.

The research identified small-to-medium enterprises (SMEs) in the ECG device manufacturing sector as the most attractive initial market. These manufacturers face intense competition from larger players and low-cost producers, making AI integration a critical differentiator. Partnering with these SMEs would allow Cordys to indirectly access clinicians while addressing a key market need. Additionally, the US remote cardiac monitoring (RCM) segment was highlighted as a lucrative long-term target due to its scalability and strong alignment with Cordys' capabilities, but its feasibility is contingent on achieving FDA approval and internal product extension.

Conclusions & Recommendations

The analysis suggests pivoting away from GPs due to limited alignment with Cordys' strategic goals. Cardiologists emerge as a suitable initial target, offering a cohesive and high-demand market. However, access to cardiologists often requires hospital integration, which poses short-term challenges. SMEs in the ECG device manufacturing sector provide the optimal entry point for Cordys, enabling collaboration to address competitive pressures while indirectly accessing end-users. This strategy minimizes regulatory barriers and operational risks, ensuring faster market entry.

In the long term, Cordys should target hospital systems, focusing initially on general hospitals with streamlined procurement processes. Expansion into RCM in the US should follow FDA approval, leveraging the scalability and reimbursement frameworks unique to that market. This

phased approach balances immediate traction with strategic scalability, positioning Cordys for sustainable growth in the AI-healthcare industry.

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Business Background

Introduction to Cordys Analytics

Founding

Cordys Analytics (Cordys), a spin-out company originating from the University Medical Center Utrecht (UMCU) in the Netherlands, leverages Artificial Intelligence (AI) to enhance heart disease detection from electrocardiograms (ECGs). The research activities began in 2018 at the UMCU in the cardiology department led by René van Es (associate professor) and Rutger van de Leur (cardiologist and PhD candidate). The research aimed to develop AI-powered algorithms for the detection of heart disease using 12-lead ECGs. The lab's endeavors led to the development of tools which outperformed existing software in ECG devices. With the inspiration to translate academic research into practical solutions with the potential to improve healthcare outcomes, René and Rutger teamed up with John van den Berg (business expert) to officially establish Cordys Analytics as a spin-out company in 2023 (1).

Cordys is dedicated to revolutionizing cardiac diagnostics by providing AI-driven tools that improve patient outcomes and streamline clinical workflows. Its mission is to bridge cutting-edge technology with real-world healthcare needs, delivering precise and accessible cardiac monitoring solutions to meet the rising demand for advanced heart health tools.

Company Structure

Cordys operates with a multidisciplinary team of clinicians, engineers, data scientists, regulatory experts, and business strategists. This diverse expertise ensures the development of high-quality, clinically viable algorithms for the healthcare industry.

The company adopts a flat organizational structure due to its small size, avoiding multiple levels of middle management (3). The organization constitutes three cofounders and a series of organizational teams. This structure enables collaborative interactions between its co-founders and various teams, leveraging employees' diverse skills across projects. Short communication lines promote quick decision-making and allow team members to contribute significantly to strategic directions (3).

Cordys' youth is offset by its long-term collaboration agreement with the UMCU, providing the company with resources further enhancing its internal competencies and reputation within the healthcare industry. It also partners with medical institutions such as Hospital Clínic de Barcelona to advance its research and development initiatives.

Products

Cordys specializes in AI-driven diagnostic tools for heart monitoring and analysis. Its flagship product, currently undergoing Class II-b CE certification in the European Union (EU), is a platform for advanced analysis of 12-lead resting ECGs. Designed for clinical settings, the platform enables the detection of structural heart diseases, equipping healthcare providers with predictive analytics and actionable insights to improve care efficiency.

Funding

Cordys Analytics is a venture-backed company, securing substantial early funding for its growth. The initial seed round raised €900,000 from LUMO Labs, ROM Utrecht Region, and Utrecht Health Seed Fund. Additionally, Cordys has obtained €800,000 from Eurostars and €650,000 from Health Holland TKI and EU IHI grants (4).

The company plans to launch a second fundraising round to support its upcoming market entry, further product development, and broader market expansion.

Introduction to Industry

Industry Definition

Cordys Analytics operates within the emerging AI-Healthcare market, specifically focusing on AI-based solutions for cardiovascular diagnostics. This segment represents a specialized subset of the broader AI-Healthcare industry, emphasizing diagnostic applications in cardiovascular healthcare.

Industry Description

The recent acceleration in advancements in AI have created unprecedented opportunities for its integration into clinical settings (5). The effect has driven disruption in the mainstream healthcare industry, giving rise to the emergence of the AI-Healthcare industry (6).

The global AI-Healthcare market was valued at \$19.54 billion in 2023 and is expected to grow at a compounded annual growth rate (CAGR) of 43.2% from 2024-2032 (2). Within this expansive market, cardiology accounted for \$743.7 million in 2022 with an anticipated CAGR of approximately 34% between 2023-2030 (7).

Cardiology is regarded as one of the most promising areas for AI applications within healthcare (8). This stems from the growing global burden of cardiovascular diseases, which has fueled

demand for innovative diagnostic solutions capable of improving patient outcomes and optimizing clinical workflows.

Competitive Landscape

Despite the relative youth of the AI-Healthcare industry, several companies have already established themselves in the market, paving the way for its development. This report focuses on companies identified as direct competitors to Cordys Analytics based on their overlapping product offerings and target markets. The methodology for selecting these competitors will be further detailed in the results section. Cordys' primary competitors include:

1. Powerful Medical
2. Cardiologs
3. Cardiomatics
4. Idovent
5. Anumana

These companies operate in European and US markets, having obtained the necessary regulatory approvals to commercialize their products in their respective markets. These companies offer AI-based solutions for cardiovascular diagnostics and monitoring, focusing primarily on two areas: 12-lead resting ECGs, considered the gold standard for ECG diagnostics, and long-term ECG analysis aimed at detecting rhythm disorders. Assessing their financial success is challenging, as these private startups do not publicly disclose revenue figures. However, their competitive positioning is evident through substantial funding and partnerships with reputable hospitals and healthcare organizations. These factors underscore their competitive market presence and influence within the evolving AI-Healthcare sector.

Porter's 5 Forces Analysis

Applying Porter's 5 Forces to the AI-Healthcare industry provides valuable insights into the external pressures shaping this evolving industry and its competitive dynamics (9). The conclusions in this analysis are drawn from competitive and industry assessments as well as a comprehensive literature review. When applicable, this analysis will focus specifically on the AI-driven diagnostic and monitoring cardiology market segments to provide a more targeted perspective.

1. Competitive Rivals: Moderate - High

The AI diagnostic cardiology market is becoming increasingly competitive, driven by rapid advancements in AI technologies and a growing number of health-tech startups entering the space. Although startups currently dominate, the potential entry of large, established firms through acquisitions, such as Philips acquiring Cardiologs, adds a layer

of complexity. Cardiovascular AI tools represent a significant portion of FDA-approved algorithms in the US and cleared healthcare software in the EU (10,11). Although competitors offer similar solutions, there are numerous differentiation opportunities, such as tailoring ECG interpretations to specific cardiovascular diseases and integrating with various types of ECG devices. These areas present significant potential to innovate and compete effectively within the market. This dynamic creates a moderately high level of rivalry, highlighting the importance of scalability and product distinction.

2. *Threat of New Entrants – Moderate*

The threat of new entrants is moderate, influenced by a combination of barriers and opportunities. While low economies of scale and limited product differentiation reduce entry barriers, significant challenges such as high capital requirements, access to large datasets, regulatory compliance, and the need for healthcare workflow integration make entry difficult. Distribution channels vary in complexity, ranging from simplified options such as mobile health apps to complex direct sales to healthcare providers. Although the industry's nascency offers opportunities for new entrants, substantial initial investments and operational expertise serve as deterrents.

3. *Supplier Power - High*

Hospitals and healthcare institutions, as the primary suppliers of high-quality datasets, hold significant power in this industry. These datasets are critical for AI model development, but regulatory and institutional barriers make data acquisition challenging. Additionally, the unique nature of collaborations and contracts results in high switching costs. While there is potential for suppliers to transition into customers as the industry evolves, potentially balancing the power dynamic, supplier power remains high for now. This underscores the importance of forging strategic partnerships to secure these essential resources.

4. *Customer Power - Moderate*

Customer power in this emerging market is moderate. Early adopters, including innovative clinicians and institutions, are influential in shaping pricing and product quality. Larger customers, such as hospitals, possess greater negotiating power due to their scale, while smaller institutions may be more agile in adopting new technologies. Price sensitivity and switching costs vary across segments, influenced by public versus private funding constraints. To succeed, firms must strategically target early adopters and address broader market needs to drive widespread adoption.

5. *Threat of Substitutes - Low*

The threat of substitutes is relatively low, with the primary alternative being the expertise of senior cardiologists. Interestingly, these specialists could also be end-users of AI tools, positioning the technology as a complement rather than a competitor. To drive adoption, AI must demonstrate diagnostic accuracy comparable to or better than cardiologists, coupled with cost and efficiency benefits. Traditional diagnostic methods remain embedded in workflows, but the lack of direct substitutes underscores the unique value proposition of AI in cardiology.

In conclusion, the AI-driven diagnostic and monitoring cardiovascular industry segments present significant growth potential but operate within a challenging landscape. High competitive pressures, supplier dependencies, and entry barriers require firms to differentiate their offerings, navigate regulatory hurdles, and establish strategic partnerships. Success will depend on targeting key customer segments, delivering measurable value, and positioning AI as an essential complement to existing care methods.

SWOT Analysis

The SWOT analysis builds on a detailed understanding of the external and internal factors influencing Cordys Analytics. Identifying the company's internal strengths and weaknesses is essential for leveraging external opportunities and effectively mitigating threats.

Strengths

Cordys Analytics has a strong financial foundation, bolstered by grants and investor funding. Its partnership with the UMCU grants access to large, high-quality ECG datasets and invaluable medical expertise, which are critical for developing advanced algorithms. The team is composed of experts in key areas, including experienced regulatory professional's adept at navigating complex healthcare compliance processes, lead software developers, cardiologists with programming expertise, and business strategists. This diverse combination of skills gives Cordys a competitive edge in successfully developing and commercializing products within the AI-Healthcare industry.

Weaknesses

The company's dependency on the UMCU for data and expertise creates potential operational limitations, restricting scalability and flexibility. The manual labeling of ECG data by cardiologists is resource-intensive, adding to operational inefficiencies. Cordys also faces challenges in identifying its initial target customer segment, which could delay its market entry. Additionally, some board members have external work responsibilities, leading to inconsistent availability and accessibility within the organization. These gaps in coordination exacerbate operational challenges.

Opportunities

The expanding adoption of AI in healthcare provides an ideal opportunity for Cordys to position itself as a leader within the cardiovascular landscape. Strategic partnerships with hospitals, research institutions, and healthcare companies could significantly extend its reach and capabilities. The increasing demand for technologies that improve patient outcomes and streamline clinical efficiency is well aligned with Cordys' offerings. Furthermore, rapid advancements in AI technology open avenues for innovation and differentiation in this rapidly growing market.

Threats

Stringent regulatory requirements pose a significant threat, potentially delaying product approvals and market entry. Resistance from risk-averse clinicians and healthcare providers presents adoption challenges in an industry hesitant to embrace new technologies. Additionally, the fast pace of AI advancements raises the risk of product obsolescence. Limited knowledge of the most promising target segments creates market uncertainty, complicating the company's strategic planning process.

These insights are crucial for shaping Cordys' market entry strategy and ensuring the success of its short-term plans.

Problem Statement & Research Question

Problem Statement

The adoption of AI in healthcare remains in its early stages, marked by rapid development and substantial uncertainty. Recent advancements have spurred the emergence of numerous companies, creating a competitive and complex market landscape. As an early-stage startup, Cordys Analytics faces the challenge of navigating this evolving industry while devising a strategy for its initial market entry and product launch. To maximize its chances of success, the company must thoroughly analyze the market environment, identify opportunities, and select the most viable path to establish a strong presence in this expanding sector.

Research Question

To address these challenges, the core research question is:

What strategic approach should Cordys Analytics adopt to successfully enter and establish a strong presence in the AI-Healthcare market, focusing on identifying the most attractive target market segment, achieving initial market penetration, and laying a foundation for sustainable growth in the near future?

This question is further divided into the following sub-questions:

- *Which market segment should be targeted for initial market entry?*
- *What short-term strategy, in terms of products and markets, should Cordys prioritize?*
- *What long-term strategy, in terms of products and markets, should Cordys work towards?*

By answering these questions, the study aims to deliver actionable insights and recommendations to help Cordys Analytics effectively position itself within the competitive AI-Healthcare industry while laying the groundwork for long-term growth.

Initial Hypothesis

At the beginning of the internship, Cordys Analytics had identified a list of potential customer segments and developed an initial hypothesis regarding the optimal market entry point. Notably, the fifth segment, Remote Cardiac Monitoring Providers in the US, was not part of the original list but emerged later in the research process as a viable opportunity. It has been included in the below list to provide a comprehensive overview of all potential segments considered by Cordys.

Potential Customer Segments:

1. General Practitioners (GPs)
2. Cardiologists
3. Hospitals
4. ECG Device Manufacturers
5. Remote Cardiac Monitoring Providers in the US

The board hypothesized that GPs would serve as the most logical market entry point due to the anticipated clinical and economic benefit for this group. This hypothesis formed the starting point for the research. The goal was to validate or refute this assumption and, if necessary, identify a more suitable market entry point for Cordys Analytics.

Literature Review

Approach

The literature review aims to provide a theoretical foundation for the key topics relevant to the research question. Four core topics essential to understanding the research's significance were selected for investigation:

1. AI's Impact on the Healthcare Market
2. Market Potential for AI-based Solutions in Healthcare
3. Business Models for AI-Healthcare Startups
4. Lean Startup Framework

Given the absence of an existing academic model tailored to this specific context, a logical approach was employed to identify the most relevant topics. Four topics were chosen to provide a balanced and thorough understanding of the key factors influencing the research. These topics were selected to ensure a holistic perspective, covering the broader market dynamics, the strategic opportunities for startups, and practical frameworks for addressing uncertainties.

The selection of these four topics, rather than three or five, was driven by the need to strike a balance between depth and breadth. Together, they cover the essential areas required to contextualize the challenges faced by Cordys Analytics, while remaining focused enough to ensure a detailed exploration of each subject. This approach ensures that the literature review provides the necessary background to support informed analyses and actionable recommendations.

To explore these topics effectively, the research progressed from general, foundational themes to those more directly aligned with the research question. A combination of academic sources and industry reports was used to ensure both theoretical rigor and practical relevance. Search engines such as Google Scholar and PubMed were used across all four topics to access peer-reviewed articles and high-quality academic publications. Additionally, reports and publications from reputable consulting firms and legislative bodies, such as McKinsey, PwC, and the EU Parliament, were reviewed to gather insights specific to topics one, two, and three. For the fourth topic, known academic literature from prior coursework was consulted to ensure a well-rounded understanding of the Lean Startup Framework.

This structured and methodical process ensures the selected topics offer a comprehensive and focused framework for the subsequent analysis.

Review

Topic 1: AI's Impact on the Healthcare Market

This topic examines recent developments in AI-based solutions for healthcare applications. Since the research question focuses on identifying a strategic approach for Cordys Analytics to enter this market, understanding the industry's intricacies and nuances is essential. Starting with a clear definition of the AI-Healthcare industry sets the foundation for exploring subsequent topics.

Defining the AI-Healthcare Industry

Machine Learning (ML) is a branch of AI that enables systems to learn and make predictions by analyzing large amounts of data without explicit programming. ML algorithms identify patterns in historical data, synthesized data, or even human inputs to make informed decisions. Over time, these systems can improve their accuracy as they adapt to new information and experiences. Deep Learning (DL) is an advanced branch of ML that processes a broader range of data types with minimal human input. It is particularly effective at analyzing complex datasets and often delivers more precise results than traditional ML methods (12).

AI's integration into healthcare makes a paradigm shift, leveraging advanced technologies such as ML and DL to improve diagnostic accuracy, treatment efficacy, and operational efficiency. Applications of AI span diagnostics, patient monitoring, predictive analytics, and personalized medicine. For instance, DL models are increasingly used to analyze complex medical images, such as ECGs, detecting patterns indicative of health conditions with a precision that surpasses traditional methods (5,8). This transformation positions AI as a cornerstone of modern healthcare, addressing challenges such as resource shortages, inefficiencies, and rising costs (8).

Revolutionizing Mainstream Healthcare

AI has the potential to revolutionize healthcare by enhancing diagnostic and treatment processes while optimizing clinical decision-making. In diagnostics, AI has demonstrated its ability to outperform human specialists in identifying anomalies in medical imaging and other data-intensive applications (5). In ECG analysis, for example, AI helps identify cardiovascular abnormalities, enabling earlier and more accurate intervention (8). Predictive analytics further enhances healthcare delivery by forecasting patient needs and optimizing resource allocation (5,8).

Beyond clinical applications, AI has the potential to improve operational efficiency, including scheduling, patient flow management, and fraud detection. By automating routine tasks, healthcare providers can reduce costs and focus more on patient care. AI-powered decision support systems also play a pivotal role, enabling clinicians to make informed, timely decisions (5).

AI-based solutions in healthcare scale at different rates depending on their application, with Cordys Analytics' product aligning with the second and third phases: transitioning care away from the hospital settings and providing clinical decision support. These phases, however, scale more slowly due to the need for deep integration into clinical workflows and reliance on evidence from clinical trials to build trust among practitioners and patients. According to the EIT Health and McKinsey report, addressing challenges such as data integration, governance, and clinician confidence is critical for success in these phases (13). Recognizing the slower scalability of these phases is crucial for devising a market entry strategy tailored to the unique challenges and opportunities in AI-Healthcare.

Key Industry Areas: Barriers and Facilitators

To unlock AI's full potential in healthcare, several critical areas must be addressed:

1. **Regulatory Frameworks and Ethical Considerations:** Current regulations, such as the EU Medical Devices Regulation (MDR), are insufficient for addressing AI's unique challenges, including algorithm transparency, accountability, and data privacy (5,8). Developing tailored frameworks is essential.
2. **Data Access and Quality:** The effectiveness of AI relies on high-quality, diverse datasets. Fragmented data systems and interoperability issues hinder AI's progress, necessitating standardization and data-sharing initiatives (5,8,13).
3. **Human-AI Collaboration:** Successfully integrating AI into clinical workflows requires training healthcare professionals to effectively use these tools. Lack of awareness and understanding of AI's capabilities can impede adoption and trust (5,13).
4. **Focus on Specialized Applications:** Cardiology, especially ECG diagnostics and patient monitoring, is a promising application area due to its reliance on precise pattern recognition and the prevalence of cardiovascular diseases (5,8).

Understanding these barriers and facilitators is critical for navigating the AI-Healthcare industry. Insights identified in the literature will guide discussions with customers and stakeholders while shaping strategic recommendations that address the unique challenges and opportunities within this market.

Topic 2: Market Potential for AI-based Solutions in Healthcare

The second topic explores the market potential of AI-based healthcare solutions, emphasizing the importance of identifying high-growth, revenue-generating segments. Understanding the market potential justifies Cordys Analytics' entry into this domain and informs strategic decisions for short-term success. Focusing on market segments with substantial growth prospects and alignment with Cordys' capabilities increases the likelihood of achieving a competitive advantage and lasting impact. Literature related to this topic highlights key opportunities within

the AI-Healthcare field, particularly in diagnostic and monitoring cardiovascular solutions, where AI holds transformative potential to address critical healthcare challenges.

Market Potential

The global AI-Healthcare market, valued at \$19.54 billion in 2023, is projected to grow at a CAGR of 43.2% from 2024 to 2032 (2). Within this industry sector, cardiology stands out as one of the most promising fields for AI applications. The diagnostic cardiology segment, valued at \$3.8 billion in 2023, is projected to grow at a CAGR of approximately 7% through 2028 to a value of \$5.4 billion (14). This growth is driven by the rising burden of cardiovascular diseases worldwide and the central role of ECGs in cardiac diagnosis.

Another rapidly expanding sector within the global AI-Healthcare market for cardiology is remote cardiac monitoring (RCM). RCM encompasses devices that enable continuous monitoring of heart activity outside traditional hospital settings. In 2020, the RCM market segment was valued at \$4.98 billion, with projections indicating a CAGR of 30.3% from 2021 to 2028, reaching a value of 31.67 billion (15). This robust growth is largely attributed to the broader shift in healthcare towards outpatient care models.

The Role of AI in Diagnostic and Monitoring Cardiovascular Solutions

The integration of AI into cardiovascular diagnostic and monitoring solutions is transforming the field by addressing critical challenges such as labor-intensive manual analyses, diagnostic inaccuracies, and the rising demand for cardiac care amidst a global shortage of cardiologists. AI-powered technologies have demonstrated significant advantages, including improved detection of arrhythmias, such as atrial fibrillation, and enhanced diagnostic accuracy, particularly in ambulatory care settings (16).

Recent regulatory approvals of AI-ECG algorithms for conditions like low ejection fraction and hypertrophic cardiomyopathy further underscore AI's transformative potential in cardiology (16). These innovations not only enhance diagnostic precision but also alleviate clinician workload and enhance patient outcomes.

Geographic Market Opportunities

The US offers a particularly attractive market for AI-based healthcare solutions, with strong venture capital funding, the highest number of AI-related clinical trials, and advanced infrastructure for AI adoption. Ongoing developments in reimbursement frameworks for AI-driven ECG solutions further enhance the US's appeal as a hub for innovation and market penetration (13,16). The US market's focus on early adoption, combined with strong academic and clinical partnerships, creates an environment conducive to rapidly scaling AI-Healthcare innovations.

The EU presents significant market potential through regulatory alignment and structured healthcare systems. Supported by funding initiatives like Horizon Europe, the EU fosters healthcare AI research and adoption. While the MDR presents stringent requirements, these frameworks ensure safe and effective deployment of AI technologies in healthcare (13,17). Additionally, the European market benefits from a unified approach to data privacy under the General Data Protection Regulation (GDPR), which, although complex, provides a predictable environment for data privacy, essential for AI development (17).

Cardiology, particularly ECG diagnostics and cardiac monitoring, are promising segments in the EU market. The region's high prevalence of cardiovascular diseases and demand for advanced tools create opportunities for AI solutions. Moreover, initiatives aimed at fostering interoperability and integrating AI with electronic health records (EHRs) highlight the EU's readiness to adopt AI-driven healthcare solutions. Countries like Germany, France, and the Netherlands, with robust healthcare infrastructure investment, offer fertile ground for scaling ECG AI technologies (16,17).

The US offers a high-risk, high-reward environment characterized by rapid innovation cycles and higher adoption rates, while the EU provides a more stable, regulation-focused market. Together, these regions present complementary opportunities for Cordys Analytics, balancing dynamic growth potential with long-term stability. The potential risks and rewards of each market should be carefully evaluated to inform Cordys' strategic positioning for global success in the AI-Healthcare sector.

Barriers and Facilitators

In line with the barriers and facilitators identified in correspondence to the first topic, several elements have significant impact on a firm's ability to tap into the full market potential of the AI-Healthcare industry. Despite the immense potential, barriers remain. Regulatory hurdles in both the US and EU can delay product approvals (16). Integration into existing healthcare workflows and alignment with reimbursement policies are also critical adoption factors (13). However, partnerships with academic institutions, healthcare systems, and MedTech companies have proven to be effective in advancing AI-based cardiology solutions (16).

Implications

Understanding market potential will guide this research in identifying the most promising opportunities, informing future product offerings, and developing strategies to overcome industry challenges. These insights will shape stakeholder discussions and ensure the recommendations align with market needs and expectations, enabling Cordys Analytics to achieve a strong market position.

Topic 3: Business Models for AI-Healthcare Startups

Exploring business models tailored for AI-Healthcare startups highlights the specific complexities and opportunities within this emerging industry. Rather than addressing the AI-Healthcare market broadly, a focused examination provides insights into critical frameworks that guide the research methodology, specifically the strategic discussions with stakeholders such as customers, experts, and investors. These findings will support the development of actionable recommendations for Cordys Analytics, ensuring a targeted and well-informed approach to market entry and growth.

Defining Models for AI-Healthcare Startups

Business models in the AI-Healthcare sector must address the unique challenges of integrating cutting-edge AI technology with the complex regulatory, ethical, and operational landscape of the healthcare industry. For startups, business models not only act as frameworks for delivering value but also as a mechanism to differentiate themselves in a competitive, resource-intensive market. Key design elements include the creation and delivery of unique value propositions tailored to healthcare stakeholders such as clinicians, patients, and payers. These models must navigate fragmented customer bases, ensure data security, and build trust in AI's capabilities (18).

Business Model Typologies for AI-Healthcare Startups

AI-Healthcare startups can adopt various business model frameworks tailored to their capabilities and market strategies. Key typologies include:

1. **AI SaaS Product Vendor:** These companies offer standardized, scalable solutions addressing common customer problems. While less specialized, their focus is on broad market penetration and maximizing customer base size.
2. **AI Product Vendor:** These startups invest in customized solutions, leveraging pilot projects and client-specific data to deliver personalized offerings. This approach fosters higher customer retention and revenue growth over time.
3. **AI Platform Vendor:** Companies in this category prioritize long-term client relationships, offering comprehensive training and integration support. This model emphasizes deep collaboration and sustained value delivery.
4. **AI Technical and Management Consulting:** These firms partner with clients on multiple projects, focusing on technical implementation and operational optimization. Their approach fosters trust and ensures repeat engagements.
5. **AI Management Consulting:** This model involves providing tailored short-, medium-, and long-term AI solutions, focusing on strategy and efficiency improvements across healthcare workflows.

The chosen typology should be carefully aligned with the startup's existing resources and objectives, as selecting the right approach can play a critical role in ensuring the company's success.

Revolutionizing Value Creation with AI

AI startups revolutionize value creation through capabilities like predictive analytics, real-time data processing, and automation of clinical workflows. For example, in cardiology, AI can improve ECG analysis by delivering faster and more accurate diagnostics. Niche-focused startups targeting specific problems, often outperform generalists in achieving market traction (19).

Moreover, the growing adoption of cloud-based infrastructures and digitalized healthcare records provides startups with unprecedented opportunities to access and analyze high-quality data. Successful models emphasize iterative improvement, scalability, and cost-effectiveness, which are critical for sustaining innovation in a competitive market (18).

Operational Challenges and Facilitators

Operationally, AI-Healthcare startups face significant barriers, including high R&D costs, long sales cycles due to healthcare's conservative nature, and stringent regulatory environments (18). Data acquisition is another critical obstacle as fragmented, inaccessible, or unstructured data can hinder AI model development. However, facilitating factors include advancements in cloud infrastructure, increasing healthcare digitalization, and growing acceptance of AI tools among healthcare providers. Partnerships with hospitals and academic institutions are essential for startups to gain access to quality data and accelerate credibility (19).

Strategic Implications for Startups entering the AI-Healthcare Industry

1. **Customer-Centric Models:** Startups should develop business models focusing on a specific segment, offering customized AI solutions that seamlessly integrate into existing workflows (18).
2. **Partnership Ecosystems:** Building collaborations with hospitals and research institutions will not only enable data access but also enhance product validation (19).
3. **Focus on Specialized Niches:** Prioritizing identified niches ensures startups compete in less saturated but high-demand spaces, positioning themselves as leaders in their field (18).
4. **Regulatory Readiness:** Early investment in regulatory expertise will help navigate compliance hurdles efficiently (19).

Aligning Business Models with Healthcare Needs

AI-Healthcare startups must align their business strategies with the unique needs and dynamics of the healthcare industry. By integrating lessons from successful case studies, they can design

models that balance innovation with practical considerations such as data security, regulatory compliance, and operational feasibility. For Cordys Analytics, adopting a nuanced, customer-centric approach will help establish a strong market position and lay the groundwork for sustainable growth. The insights gleaned here will guide the discussions with industry experts, investors, and potential customers.

Topic 4: Lean Startup Framework

The final topic focuses on the Lean Startup Framework. The framework offers a structured methodology that is especially relevant for Cordys as it seeks to establish itself in the AI-Healthcare market. This research leverages key insights from the Lean Startup approach, particularly Building Block 1, which focuses on finding and prioritizing market opportunities, and Building Block 5, which emphasizes deciding whether to persevere or pivot from the current trajectory (20). These principles provide guidance for answering the research question as it aims to identify a strategic entry point and ensure adaptability in the competitive and uncertain market environment of the AI-Healthcare industry.

Finding and Prioritizing Market Opportunities

A core element of the Lean Startup framework is the ability to identify and evaluate multiple market opportunities. Marc Gruber and Sharon Tal's "Market Opportunity Navigator," an extension of the Lean methodology, enables entrepreneurs to take a wide-lens view of potential market domains before zeroing in on a specific target. This approach emphasizes exploring a portfolio of opportunities before committing, as doing so enhances the likelihood of long-term success (20). For this research, this means assessing the relative attractiveness of various segments within the AI-Healthcare domain, particularly for cardiology in both diagnostic ECG and cardiac monitoring applications. Existing research underscores that systematically evaluating these opportunities allows startups to determine the most promising and viable starting position for their innovation (20).

Persevere or Pivot

Once a market opportunity is identified, the Lean Startup framework emphasizes the importance of maintaining a continuous feedback loop to assess the effectiveness of the chosen strategy. Entrepreneurs must remain flexible and open to significant changes, termed "pivots", if initial assumptions about market fit or customer needs prove inaccurate (21). Research shows that over 70% of startups pivot to alternative market segments during their development phase (20). This insight directly aligns with Cordys' current need to reevaluate its initial focus on GPs as a market entry point. By employing iterative testing and gathering direct customer feedback, this research aims to refine Cordys' strategy or pivot toward an approach that better aligns with market demands and available resources (20).

Practical Implications

The Lean Startup framework provides practical methods for hypothesis testing and decision-making, enabling Cordys to allocate resources effectively while minimizing risks. It emphasizes the importance of developing a clear understanding of market demand and using customer feedback to refine initial assumptions. This approach ensures that Cordys remains adaptable, allowing for strategic adjustments as new information becomes available (21). By applying these principles, this research aims to address uncertainties within the AI-Healthcare industry, identify the optimal market entry point, and establish a foundation for sustainable growth. These practices will help Cordys target the most strategic market segment while aligning its long-term objectives with evolving market conditions (20).

Methods

Research Design

To develop a strategic market entry and growth plan for Cordys' Analytics in the AI-Healthcare market, a dual method research approach was implemented. This involved primary market research through semi-structured interviews with key stakeholders and secondary market research based on publicly available company information and industry reports. The complimentary methods allowed for a holistic understanding of the landscape and a data-driven evaluation of potential market segments.

The design of the research process was influenced by the Lean Startup Framework, prioritizing iterative hypothesis testing and refinement based on stakeholder insights. Primary research formed the backbone of the study, while secondary research provided a foundation for understanding broader industry trends and competitor positioning. Together, these approaches ensured the conclusions and recommendations were grounded in both theoretical and practical insights.

Data Collection

Secondary Market Research

Given the nascent nature of the AI-Healthcare industry, obtaining comprehensive data required innovative sourcing strategies. Secondary research focused on building an initial understanding of the AI-Healthcare industry and provided a basis for the competitive benchmarking analysis.

This phase involved reviewing:

- **Academic Literature:** Focused on AI adoption trends, regulatory considerations, and industry frameworks.
- **Industry Reports:** Published by respected consulting firms, healthcare organizations, and governing bodies to explore market size, growth forecasts, and emerging trends.
- **Competitor Activity:** Information was gathered from press releases, product announcements, and corporate websites of both established players and startups in the field.

The secondary research phase offered several key benefits:

1. **Competitor Insights:** Since many AI-Healthcare companies are early-stage startups with limited public disclosures, monitoring press releases and milestone announcements allowed the identification of active competitors and their strategic priorities.
2. **Strategic Benchmarking:** Competitive data was organized into three key categories: product offerings, target markets, and resources and competencies. This categorization formed the foundation for a benchmarking analysis, enabling a clear comparison between

Cordys and its competitors. The analysis highlighted existing gaps and potential opportunities for Cordys to differentiate itself and strengthen its market position.

3. **Foundation for Primary Research:** The findings shaped the semi-structured interview guides, ensuring that primary data collection was relevant and focused.

This iterative approach ensured that the competitive analysis remained current as new information surfaced throughout the internship. By incorporating insights from secondary research into the broader analysis, the study ensured that its recommendations were well-aligned with the realities of the AI-Healthcare industry.

Primary Market Research

Qualitative data was collected through semi-structured interviews and business meetings conducted with stakeholders across the healthcare ecosystem. Participants included:

- **End-users:** GPs and cardiologists,
- **Industry Experts:** Hospital procurement personnel, a hospital director, and a Chief Commercial Officer (CCO),
- **Potential Collaborators:** Small and medium-sized ECG device manufacturers (SMEs),
- **Investors:** Advisors providing insights into market dynamics and funding opportunities.

Interview Guides and Iterative Refinement

The interviews were conducted using five tailored semi-structured templates, detailed in [Appendix A](#). While these templates provided a general framework, they were customized for each participant based on their role and expertise. The interview objectives were aligned with the insights each participant could offer, focusing on identifying needs, pain points, barriers, and facilitators relevant to their segment.

The initial interviews targeted GPs to test the hypothesis that they represented a viable market entry point for Cordys. Sub-hypotheses were developed for each segment to structure the questions and support clear conclusions. As new insights emerged, the interview guides were iteratively refined to address specific knowledge gaps and validate new hypotheses.

Notably, interview guides were not used for business meetings with ECG device manufacturers or Cordys' investors, as these meetings were led directly by board members.

Participant Selection

Interview participants were identified through Cordys' professional network and direct outreach efforts. The selection process prioritized individuals with expertise or direct involvement in the target segments of interest.

A total of 15 interviews were conducted, supplemented by reoccurring business meetings with two ECG Device Manufacturers and three investors throughout the research process. Table 1 provides details on the role and relevance of each participant.

Participant Identifier	Role/Company	Domain/Relevance	Notes
1	GP	End-user	
2	GP	End-user	Regional Director
3	GP	End-user	
4	GP	End-user	
5	GP	End-user	
6	GP	End-user	
7	GP	End-user	Entrepreneur
8	GP	End-user	
9	Cardiologist	End-user	
10	Cardiologist	End-user	
11	Cardiologist	End-user	
12	Cardiologist	End-user	
13	Consultant & Buyer	Industry Expert	
14	Chief Commercial Officer (CCO)	Industry Expert	AI-Healthcare Startup
15	Director of Cardiovascular Services at UCSD	Industry Expert	Large academic hospital in the US
16	MESI	Potential Collaborator	ECG Device MfG*
17	MedicalCSE	Potential Collaborator	ECG Device MfG*
19	ROM Utrecht	Investor	Cordys Investor
20	LUMO Labs	Investor	Cordys Investor
21	Utrecht Health Seed	Investor	Cordys Investor

Table 1. Interview and meeting participants detailed by role and relevance.

*MfG = manufacturer

Each participant was carefully selected based on their expertise and its relevance to Cordys' strategic development.

- **GPs and Cardiologists:** These participants provided insights into their workflows, needs, and openness to AI-based solutions. Their input allowed for the evaluation of product-market fit, thereby assessing whether Cordys' solution addresses their pain points and is feasible to implement. As clinicians are the intended end-users of Cordys' solution, their feedback was crucial for refining the product. Engaging end-users early to guide product development aligns with the Lean Startup methodology, reinforcing its importance within the research approach.
- **Hospital-based Participants:** Two hospital representatives, one based in the EU and one in the US, provided information on procurement processes and requirements in their respective regions. This comparison yielded valuable insights into the potential compatibility of Cordys' solution with hospitals and helped evaluate the hospital segment as a potential market entry point.

- **CCO of an AI-based Healthcare Startup:** This participant represented a more mature AI-healthcare company marketing its solution to Dutch hospitals. The CCO shared valuable experiences regarding product development, regulatory approval, and sales strategy refinement. Learning from this company's successes and challenges highlighted the potential of the hospital market for Cordys and demonstrated the advantages of a second-mover strategy, allowing Cordys to avoid pitfalls and conserve limited resources as a young startup.
- **ECG Device Manufacturers:** Discussions with manufacturers explored their needs, challenges, and openness to integrating AI-based solutions. Given the competitiveness of this market, these meetings helped identify sub-segments that could benefit from Cordys' offering, supporting market segmentation and potential entry strategies. These meetings were exploratory rather than formal interviews, focusing on evaluating the potential for commercial collaboration.
- **Investors:** Ongoing discussions with investors provided valuable advice that guided the research process. Their feedback was instrumental in refining hypotheses and shaping the overall research direction.

Interview Process

Interviews were conducted in person and virtually via Microsoft Teams to accommodate participant availability. Each session lasted between 30 and 60 minutes in length and was guided by semi-structured interview guides tailored to the expertise of each participant. Participants provided verbal consent for recordings, enabling detailed descriptions for subsequent analysis. Each interview guide was customized to explore the participant's perspective on barriers, facilitators, and unmet needs within their segment. After each interview, a transcript was generated, reviewed for clarity, and summarized in a management report shared with Cordys' board.

Internal discussions with the board shaped the evolving interview strategy. Feedback informed adjustments to the interview guides and selection of participants to ensure the study comprehensively addressed the research objectives. This iterative process aligned with Lean Startup principles, particularly in navigating market opportunities and deciding whether to persevere or pivot based on evidence.

The business meetings did not adhere to the formal interview process; instead, meeting notes were used in place of transcripts.

Objectives and Iterative Refinement

The interviews were conducted iteratively, with insights from earlier sessions shaping and refining subsequent discussions. Initial interviews focused on GPs to test the hypothesis that they represented the most logical entry point for Cordys. As early findings emerged, the scope of

interviews expanded to include cardiologists, hospitals, ECG Device Manufacturers, and US RCM to explore alternative market opportunities. This iterative approach enabled Cordys to adjust its strategy as needed while systematically addressing knowledge gaps.

Timeline and Alignment with Deliverables

The data collection period was synchronized with both academic and company deadlines. Notably, Cordys' upcoming funding round was set to occur shortly after the conclusion of the internship. This timing ensured that the results of this research could directly inform Cordys' strategic pitch to investors, while allowing sufficient time for analysis and report writing.

Data Analysis

Thematic Analysis with Deductive Coding

To analyze the interview data, a thematic analysis was performed, supported by a deductive coding framework. This method allowed for the systematic identification of patterns and insights within the qualitative data, ensuring that findings were directly aligned with the research question.

A deductive coding approach was used wherein pre-defined codes guided the analysis. The use of deductive coding ensured that findings were tightly linked to the research question, creating a logical pathway from data to recommendations.

Coding Framework Development

The pre-defined codes were based on:

1. **The Research Question:** To identify the optimal entry point for Cordys in the AI-Healthcare market.
2. **Emergent Themes:** Derived from the literature review and secondary research, including barriers, facilitators, and market opportunities in the AI-Healthcare industry.
3. **Industry-relevant Frameworks:** Established business frameworks such as the Lean Startup principles, Porter's Five Forces, and the AI scaling phases.

The following codes were used:

1. **Market Attractiveness:** Growth potential, market size, and competition levels.
2. **Customer Segmentation:** Needs, behaviors, and infrastructure of target segments.
3. **Operational Barriers:** Regulatory challenges, integration complexity, and resource constraints.
4. **Facilitators:** Enabling factors such as partnerships and reimbursement models.
5. **Strategic Alignment:** Feasibility of aligning with Cordys' resources, competencies, and business needs.

6. **Pivot Indicators:** Evidence supporting shifts from one market segment to another.

To ensure consistency and objectivity in the analysis, the following process was employed:

1. **Re-familiarization:** Transcripts and meeting notes were reviewed to ensure familiarity with the data before coding.
2. **Manual Coding:** Using NVivo software, the pre-defined codes were applied to relevant sections of text. Patterns and recurring themes were identified within each coding category.
3. **Theme Extraction:** Coded data were grouped into higher-order themes, allowing for a comparison of segments and their viability as entry points. For instance, under "Market Attractiveness," feedback about market size and unmet needs was consolidated to assess the potential of each segment.

A core approach to the overall analysis was to use the emergent themes to compare the segments by evaluating differences in feedback from the relevant stakeholders. The themes extracted from interviews directly reflect stakeholder opinions, providing real-world validation for recommendations. This method ensured that the data analysis was both systematic and flexible, allowing for emergent insights while remaining aligned with the research objectives.

Competitive Benchmarking

The secondary research findings were synthesized into a competitive benchmarking exercise. The competitive benchmarking analysis provided a quantitative complement to the qualitative interview data. By comparing competitors' products, markets, and resources, it clarified gaps and opportunities for differentiation. This process compared key players in the AI-Healthcare market across three core dimensions:

1. **Product Offerings and Features:** Diagnostic and monitoring capabilities, product pipelines, and technological differentiation.
2. **Target Markets:** Focus on specific regions (e.g., EU vs. US) and customer segments (e.g., hospitals, SMEs).
3. **Resources and Competencies:** Partnerships, funding, and scalability.

These three information categories sought to inform the concluding recommendation for Cordys' strategic positioning. The information collected was reviewed and the identification of gaps in the market were noted.

To provide a more quantitative dimension to the competitive analysis and complement the qualitative interview findings, a bubble quadrant chart was developed. The chart visually represents competitor positioning by assessing key dimensions such as market presence, product focus, and innovation level. The chart was created based on the table detailing the critical

characteristics for each competitor, ensuring a comprehensive and structured comparison. The matrix was created using the below metrics:

- **X-axis:** Market Presence (EU vs. US)
- **Y-axis:** Product Focus (Diagnostics vs. Monitoring)
- **Bubble Size:** Innovation Level (Low, Medium, High)

The bubble quadrant chart facilitated the analysis of competitor's and clarified opportunities for Cordys to position itself effectively.

Presentation of Results

Interviews

The insights gathered from the interviews were systematically organized using a structured format aligned with the coding framework. The summary of each code followed a logical progression from data collection to conclusions. The summaries begin by identifying enabling factors and challenges identified with each code. This is followed by an evaluation of the feasibility of the various market segments as potential entry points, supported by quotes and excerpts from the coded data to substantiate the findings. Evidence justifying the strategic shift away from the initial focus on GPs to other market segments is highlighted, providing a clear rationale for the shift. The section concludes with a presentation of emergent themes and detailed descriptions, offering key takeaways to inform decision-making.

Benchmarking

The competitive analysis findings were organized into three main categories: product offerings and features, target markets, and resources and competencies. Each category concluded with a discussion of identified market gaps, offering actionable insights to inform Cordys' strategic positioning.

The analysis was further enhanced using tables that outlined key characteristics for each competitor, providing a concise yet comprehensive comparison. A bubble quadrant chart was created to visualize competitor positioning along three dimensions: market presence (e.g., EU vs. US), product focus (e.g., diagnostics vs. monitoring), and innovation level (represented by bubble size).

These visualizations and summaries were contextualized by highlighting strategic differentiation opportunities and key insights from the benchmarking exercise. The findings reinforced the thematic findings from the interviews, ensuring a cohesive narrative that bridges qualitative and quantitative research outcomes. By integrating these findings, the presentation of results established a clear foundation for the strategic recommendations presented later in the report.

Results

Primary Market Research

Emergent Themes

Using the pre-determined coding framework and employing a deductive methodology, insights were derived from the semi-structured interview transcripts.

Table 2 provides a concise summary of the core insights derived from the deductive coding and analysis of the interview transcripts and business meeting notes. This summary serves as an overview before the detailed exploration of findings. To ground the insights in real-world evidence, participant quotations from interviews and paraphrased discussions from business meetings are included. Quotations are labeled with the participant's identifier and role (e.g., P1; GP).

Code	Insights
Market Attractiveness	GPs: Limited demand due to reliance on referrals and established workflows. Absence of need for AI-driven tools diminishes market potential.
	Cardiologists: Significant interest in AI-driven tools, particularly for early detection of conditions like AF and ischemia. High diagnostic volume presents a clear product-market fit.
	Hospitals: Substantial potential for use due to high diagnostic volumes, but slow procurement and complex decision-making hinder short-term attractiveness.
	ECG Device Manufacturers: High potential in SMEs due to competitive pressures and need for product differentiation.
	US RCM: High growth opportunity, aligning with investor recommendations. To be considered as a long-term opportunity, requiring further evaluation.
Customer Segmentation	GPs: Fragmented market with diverse workflows and limited infrastructure. Difficult to scale standardized solutions.
	Cardiologists: Unified segment with clear value for AI tools across experience levels. Identified potential for use in non-cardiology departments within hospitals.
	Hospitals: Complex segment divided by type (academic vs. general) and size. General hospitals are often more agile while academic hospitals focus on innovation but experience adoption delays.
	ECG Device Manufacturers: SMEs motivated to collaborate on AI integration to counteract competitive pressures.

Operational Barriers	GPs: Time and cost constraints; reluctance to adopt new technologies. Limited economic incentives for adoption.
	Cardiologists: Fragmented data and integration challenges increase barriers to adoption.
	Hospitals: Lengthy procurement processes and regulatory complexities make the hospital segment less viable for short-term entry.
	ECG Device Manufacturers: SMEs face resource constraints that complicate large-scale AI integration.
Facilitators	GPs: Adoption facilitated by integration into NHG guidelines and cardiologist endorsement, both of which require significant investment.
	Cardiologists: Increasing patient volumes and time-saving potential create a strong use case for AI tools.
	Hospitals: Young innovation advocates and reimbursement frameworks in the US facilitate adoption. RCM further drives market interest.
	ECG Device Manufacturers: High diagnostic volumes and the existing openness of SMEs to innovation make collaboration feasible.
Strategic Alignment	GPs: Low alignment with Cordys' short-term need for market traction due to fragmentation and low readiness for adoption.
	Cardiologists: Strong alignment with a top-down rollout approach, starting with specialists to establish credibility.
	Hospitals: High potential but misaligned with short-term goals due to long implementation timelines. Better suited for long-term strategy.
	ECG Device Manufacturers: High alignment with Cordys' goals, offering an accessible entry point and the opportunity to scale.
Pivot Indicators	GPs: Insights support pivoting away from GPs due to limited demand and lack of alignment with Cordys' strategic needs.
	Cardiologists: Indicates starting with cardiologists for initial traction before expanding to GPs or hospitals.
	Hospitals: Suggests focusing on general hospitals and leveraging existing AI implementations for gradual entry.
	ECG Device Manufacturers: Validates SMEs as the optimal entry point for Cordys, with opportunities for long-term expansion into hospitals and RCM.

Table 2. Emergent interview insights organized by associated deductive code.

Emergent Themes by Code

Market Attractiveness

The market potential for AI-driven ECG solutions varies significantly across segments, with differing levels of demand, scalability, and operational challenges.

GPs

GPs rely heavily on referrals and pre-existing diagnostic workflows, which reduces their need for in-practice ECG solutions. While ECGs are fundamental tools for cardiovascular diagnostics, their application within GP practices, particularly in the Netherlands, appears limited. Not all GPs perform ECGs in-house, and those who do often outsource the analysis to cardiologists. GPs expressed satisfaction with their current systems, citing no compelling need to introduce advanced ECG tools. For example, one GP highlighted:

“The threshold for referrals to labs or cardiologists is quite low, so the need for doing ECGs on-site is minimal.” -P7; GP, Entrepreneur.

This sentiment was echoed by other GPs, who noted that the low referral threshold to cardiologists diminishes the utility of advanced AI ECG tools in their practices. Another recurring issue raised by GPs was their limited training in ECG interpretation. While they acknowledged this gap, they did not perceive it as a significant pain point, as the current referral-based system adequately addresses their diagnostic needs. As one participant explained:

“So every GP has some training and if you keep up with that, usually for the most part you can judge your EKGs yourself. We're pretty bad at it actually, but yeah, we'll pretend to be good enough.” -P1; GP

Despite recognizing a lack of confidence in ECG analysis, GPs did not view this as a critical issue because their current workflows, which rely on cardiologist referrals, effectively meet their diagnostic requirements. This suggests that the integration of AI-driven ECG solutions into GP practices would offer limited value.

GPs represent a small and fragmented market with varying degrees of need for ECG integration and analysis. The lack of a pressing demand, combined with their reliance on referrals, and satisfaction with existing workflows, underscores the limited growth potential of targeting GPs compared to other segments.

Cardiologists

It is important to note that the cardiologists interviewed may represent innovators and early adopters, making them more receptive to innovation than the average cardiologist. While the insights from this group are valuable, the overall positive outlook on AI's potential in clinical practice observed in this sample may not be fully generalizable to the broader cardiologist population. This aligns with findings from the literature review, which highlight cardiology as a leading field for AI adoption in healthcare, yet also reveal ongoing skepticism and reluctance among physicians regarding its implementation.

The cardiologist sample demonstrates a significant interest in AI-driven ECG tools, particularly for improving diagnostic accuracy and efficiency. ECGs are integral to cardiology workflows, as they are widely used across outpatient, inpatient, and emergency settings, underscoring the market's size and importance. One cardiologist emphasized this by stating:

“The EKG is the cornerstone of the diagnostics for cardiologists. You always do one if there’s a new patient.” – P9; Cardiologist

This highlights a consistent and high-volume use case for Cordys’ solution within the cardiologist segment.

Additionally, cardiologists expressed interest in tools that aid in the early detection of conditions like atrial fibrillation (AF) and ischemia, areas where traditional methods may have limitations. For example, one cardiologist remarked:

“If AI could detect AF with a high probability based on a sinus rhythm EKG, it could save us many unnecessary diagnostic steps and costs.” – P9; Cardiologist

These insights suggest that Cordys’ solution could provide significant value to cardiologists by streamlining diagnostic workflows, reducing costs, and enhancing the accuracy of early detection. The combination of high ECG usage and expressed interest in advanced diagnostic tools indicates a strong potential product-market fit for this segment.

The cardiologist market offers a compelling opportunity for Cordys, with high demand for innovative solutions that address existing gaps in diagnostic accuracy and efficiency. By meeting these needs, Cordys has the potential to achieve a strong foothold in this segment.

Hospitals

Hospitals were evaluated as a segment of interest, building on the cardiologist market, as they provide access to multiple end-user segments, including but not limited to cardiologists.

Hospitals represent a sizable opportunity, particularly larger institutions where high diagnostic volumes create substantial potential for use. Insights from cardiologist interviews highlighted that ECGs are not only foundational for cardiovascular cases but are also frequently used to support clinical decisions in other non-cardiology hospital departments. This broader use base presents a significant opportunity for Cordys’ solution in hospital settings.

Hospital interest in integrating AI solutions is evident in the establishment of innovation departments and roles specifically focused on digital transformation and AI initiatives. For instance, one US-based participant emphasized:

"From the hospital's point of view, we've taken this very seriously... And a lot of (other) big hospitals have here. So we actually have a chief digital officer. We have all sorts of, you know, new positions and things whereby people are looking at it (AI)." – P15; Director of Cardiovascular Services at UCSD

Such developments indicate a readiness for AI adoption, particularly in large academic hospitals. While EU hospitals also feature roles like Chief Medical Information Officer (CMIO) and Information and Communication Technology (ICT) positions (as noted by P13 and P14), US hospitals appear to be further along in implementing and accepting AI solutions.

However, challenges such as slow procurement processes and complex decision-making structures reduce the attractiveness of the hospital segment as a market entry point. These barriers, complicating market entry, are discussed in more detail under the operational barriers coding section.

Cordys' investors echoed these concerns, expressing doubts about the hospital market's overall attractiveness due to lengthy lead times, which could delay Cordys from securing its first commercial sale. Their feedback aligned with emergent insights suggesting greater market potential in the US hospital sector compared to the EU. Investors also recommended that Cordys explore the RCM segment, emphasizing its rapid adoption cycles and scalability as key advantages.

The interview with P15 further confirmed the significant value RCM offers to both patients and hospitals. This observation aligns with trends identified in the literature review, which highlight a shift in the healthcare landscape toward transitioning care away from hospital settings. Despite its promise, the US RCM segment presents its own challenges, requiring FDA approval, a process Cordys plans to pursue following its MDR certification. This regulatory requirement currently reduces the immediate market attractiveness of RCM for Cordys, though it remains a valuable long-term opportunity.

Additionally, to become a competitive player in the RCM market, product enhancements and extensions would be necessary, particularly to interpret data from patches and wearables. This required diversification of product lines further decreases short-term market attractiveness and confirms that RCM is a long-term strategic focus rather than a short-term opportunity for Cordys.

While hospitals offer a promising use case for Cordys' solution, particularly in the US, operational barriers like slow procurement and long lead times temper their immediate

attractiveness as a market entry point. RCM represents an alternative opportunity with significant growth potential but requires regulatory readiness before Cordys can fully capitalize on it.

ECG Device Manufacturers

As a potential entry point into the EU market, the integration of Cordys' software solution with the hardware of ECG device manufacturers was explored through business meetings. SMEs within this segment emerged as a particularly attractive initial market due to their competitive challenges. These companies face intense pressure from larger, premium players like GE and Philips, as well as low-cost manufacturers from China producing high-value ECG devices.

Discussions revealed a clear pain point that Cordys could address as SMEs see integrating AI into their devices as an opportunity to enhance their product value proposition, allowing them to stand out in a crowded and competitive market. By offering AI-driven capabilities, these manufacturers could differentiate their devices and potentially capture a larger share of the market.

Clinician interviews underscored the importance of ECGs as the cornerstone of cardiovascular diagnostics, further supporting the potential within the device market. However, the scalability of this strategy may be limited by the number of ECG device manufacturers active in the EU. This factor makes the segment attractive as an initial entry point, granting Cordys access to clinicians as end users. However, the segment's long-term value could diminish due to the risk of market consolidation, which may reduce the number of viable collaborators over time.

The ECG device manufacturer segment presents an appealing short-term opportunity for Cordys to enter the EU market, leveraging partnerships with SMEs to differentiate their devices with AI capabilities. However, potential market consolidation may limit the scalability of this approach, making it essential to complement this strategy with longer-term plans to diversify Cordys' market reach.

Customer Segmentation

GPs

GPs are characterized by fragmented needs and varied infrastructure, which differ significantly based on practice size, resources, and specialization. Smaller practices often lack the infrastructure for on-site ECG diagnostics and instead rely on referrals to cardiologists or external labs. As one GP explained:

"Space limitations and low demand in smaller practices mean there's no real push to introduce on-site ECG capabilities." – P7; GP Entrepreneur

Larger practices are more likely to perform ECGs in-house and sometimes require additional analysis support. They either rely on their own competencies or consult with cardiologists when in doubt. Interviews revealed that GPs are a fragmented segment, with workflows and resources differing substantially from one practice to another. This lack of standardization poses challenges for rolling out and scaling a unified solution within the GP market.

The GP customer segment may differ in the US; however, this has yet to be confirmed, as interviews were conducted solely with GPs in the Netherlands. Nevertheless, the US segment is not a viable short-term opportunity, as FDA approval is required before entering the market.

Cardiologists

Cardiologists represent a more cohesive segment for the application of Cordys' solution. While cardiologists generally trust their expertise, they acknowledge the potential value of AI tools in supporting less experienced physicians or managing high-volume workflows. As one cardiologist remarked:

“Younger doctors in emergency departments could use this tool to make quicker and safer decisions, but it could also support experienced cardiologists by flagging conditions that are easy to miss.” – P9; Cardiologist

This segment's consistency, particularly due to its concentrated employment within hospital settings, contrasts with the organizational fragmentation of the GP sector. Cardiologists also identified opportunities for Cordys' solution to be implemented in non-cardiology hospital departments, where ECG consultations are frequent but often result in normal findings. One cardiologist explained:

“If it is clear that it (ECG support) is the most common request, and we could have a good automation of those requests, then we could actually spare a lot of time with unnecessary checking of some of the ECGs.” – P11; Cardiologist

These insights highlight the potential value of Cordys' solution across multiple clinical settings within hospitals, prompting exploration of the hospital segment as a broader entry point.

Hospitals

Hospitals are a complex and diverse segment that can be sub-segmented by traits such as type (academic vs. general) and size. In the EU, academic hospitals face stringent procurement regulations due to public funding, requiring extensive tendering processes. This can lengthen implementation timelines and put new startups like Cordys at a disadvantage, as these tenders often favor suppliers with established experience.

"The academic hospitals have procurement obligations because it's funded by money from all people. So they have to perform European tenders and there are a lot of laws they have to abide by. And then you have the general hospitals, and they don't have to do all the procurement things according to the European rules." – P13; Consultant, Procurement Officer

In contrast, general hospitals have fewer regulatory hurdles, potentially increasing Cordys' chances of successful market entry. Smaller hospitals were also noted for their agility, with shorter communication lines and stronger relationships enabling faster decision-making. While large academic hospitals prioritize innovation, they often focus on pilot projects rather than full adoption, as one participant noted:

"For academic hospitals, they want to explore the technology through pilot projects rather than full adoption. So they seem to be much more interested in the research side of it." – P14; CCO

Segmenting the vast hospital sector yields insights for Cordys to identify niche targets which may be suitable for the roll out of its product. However, industry experts expressed skepticism about quickly securing commercial sales in the hospital sector, particularly in the EU, and suggested exploring the RCM segment in the US as an alternative.

ECG Device Manufacturers

Segmenting the ECG device manufacturer market revealed significant potential for Cordys to integrate its solution with 12-lead resting ECG devices. The market excludes manufacturers producing stress ECGs, Holters, or devices with fewer than 12 leads. While this narrow product focus aligns with the current strategy, it may evolve in the future if Cordys chooses to diversify its product offerings.

Segmentation by company size identified SMEs as a viable starting point, as larger manufacturers often have the internal resources to develop or acquire AI-based analytics independently. Meetings with SMEs highlighted their interest in collaborating with AI providers to enhance product differentiation and address competitive pressures. This alignment positions SMEs in the ECG manufacturing space as an attractive initial market entry point for Cordys.

Operational Barriers

GPs

Limited time and financial resources emerged as the primary barriers for GPs. High staff workloads make any changes to existing workflows undesirable. Additionally, GPs expressed a low willingness to pay for new solutions, citing concerns about reimbursement models. Some even suggested that such tools should be free to use until proven effective. These economic and time constraints foster a risk-averse mindset, limiting the adoption of innovative technologies in

GP settings. When asked about the frequency of implementing new technology, one GP explained:

"Not very often. I think in general, GPs are quite conservative. And I mean, maybe I'm even a little bit progressive. So no, not very often." – P1; GP

This conservatism, combined with financial and operational barriers, suggests that GPs represent a market with low readiness for new technology adoption, making them an unsuitable entry point for Cordys.

Cardiologists

Cardiologists identified several barriers to adopting new technologies, including the need for robust clinical validation, fragmented data sharing between departments, and challenges in integrating AI tools into established workflows.

The emphasis on clinical validation as a key factor to reassure cardiologists of the technology's value aligns with findings from the literature review. Since cardiologists are a primary target end-user group, providing such validation is critical, regardless of the selected market entry point.

Regarding the difficulties of AI integration in hospital settings, one cardiologist observed:

"Data is fragmented across departments, and without integration, new tools add to the workload rather than reducing it." – P9; Cardiologist

These barriers underscore the complexities of implementing new technologies in hospitals. Effective integration requires hospital-wide coordination across multiple departments, suggesting that reaching cardiologists will likely involve direct entry into the hospital market.

Hospitals

Hospitals face additional operational challenges, including fragmented procurement processes, lengthy sales cycles, and strict regulatory compliance. These factors significantly increase the time and effort required to secure contracts. For example, P14 described the lengthy sales cycle in the Netherlands:

"It (the procurement process) can take over a year for completion, especially when multiple departments are involved." – P13; Consultant, Procurement Officer

In contrast, P15 noted shorter timelines in the US:

“Typically, that process can take up to one to two months, depending on things. We are a part of UC California, so we have pretty arduous strict processes in terms of terms and conditions.” – P15; Director of Cardiovascular Services at UCSD

While the US hospital sector offers faster implementation times compared to the EU, strict contractual requirements, such as insurance coverage and international usage standards, pose challenges for smaller companies like Cordys.

The ability to scale Cordys' solution from one hospital to another presents as an operational challenge, particularly in the Netherlands, where hospitals typically operate independently and autonomously. The significant time and effort required to convert a single hospital into a Cordys customer must be repeated for each hospital, making large-scale adoption inefficient. In the US, however, this barrier is less pronounced, as hospitals are often organized into chains under a single overarching owner. To better assess the scalability of Cordys' solution in the US market, further research is needed to understand the balance between standardization and autonomy within these hospital networks.

Investors also voiced concerns about the hurdles of entering the hospital market, highlighting long approval processes and high entry costs as significant obstacles. They recommended focusing on the US RCM market, which features faster adoption cycles. However, the FDA regulatory process remains a short-term barrier for this segment until Cordys secures approval.

ECG Device Manufacturers

Small- to medium-sized ECG device manufacturers often face resource constraints that limit their ability to integrate AI-driven technologies. These companies may lack the funding and expertise required for seamless AI implementation. As a result, Cordys must carefully identify manufacturers with sufficient resources and a genuine interest in collaborating on AI-based solutions. However, the challenge lies more with Cordys' ability to identify suitable partners rather than with the manufacturers themselves, making this a key barrier for Cordys to overcome.

Each market segment presents unique operational barriers that influence its suitability as an entry point for Cordys. While GPs and hospitals pose significant challenges due to risk aversion, long procurement cycles, and regulatory requirements, the cardiologist and SME ECG device manufacturer segments offer more accessible opportunities if operational barriers are effectively navigated.

Facilitators

GPs

GPs identified several factors that could facilitate the adoption of Cordys' solution, including its incorporation into established guidelines, cardiologist endorsement, and robust clinical evidence.

Integration with guidelines such as the National Health Guidelines (NHG) was emphasized as a key driver for adoption:

“If the NHG says that we can use it, then I’m comfortable with it.” – P7; GP

“Guidelines from the NHG or something supporting it would make a big difference. But they also require evidence.” – P5; GP

Guidelines play a central role in shaping GP workflows and building trust among this risk-averse group. However, influencing guideline modifications requires substantial clinical evidence and is not feasible for a startup like Cordys in the short term.

Cardiologist acceptance emerged as another facilitator, as GPs rely on cardiologists to validate new tools:

“Basically, I would like to know that the cardiologist accepts this, because that is meaningful.” – P7; GP

These factors suggest that GPs look to both guidelines and cardiologists to guide their decision-making. Meeting these facilitating requirements would require significant investment from Cordys, further reducing the feasibility of targeting GPs as an entry point.

Cardiologists

For cardiologists, the increasing workload caused by growing patient volumes acts as a natural facilitator for adopting efficiency-enhancing tools. This aligns with literature on the healthcare burden of cardiac disease and was reiterated in interviews:

“We’re seeing more patients than ever, and anything that saves time without compromising accuracy is welcome.” – P11; Cardiologist

While this workload pressure encourages the use of AI tools, cardiologists also emphasized the need for strong clinical evidence and endorsements from respected practitioners:

“If leading institutions and key opinion leaders approve the technology, it’s much easier for the rest of us to trust it.” – P12; Cardiologist

These requirements, while validating the value of Cordys’ solution, present challenges for a startup. Clinical validation and securing endorsements from opinion leaders are resource-intensive processes that require time and extensive real-world application. Cordys must factor these barriers into its strategy for achieving adoption among cardiologists.

Hospitals

The increasing workload among cardiologists translates into broader hospital inefficiencies, creating a demand for AI tools that enhance clinical workflows and improve patient outcomes. P15 highlighted the appeal of such solutions:

“Anything that saves clinicians time and allows them to focus on better patient care is of interest.” – P15; Director of Cardiovascular Services at UCSD

Additionally, younger staff and innovation-focused roles, such as digital care managers, often serve as champions for new technologies:

“The younger staff—digital care managers and innovation officers—are often the most enthusiastic and willing to explore AI tools.” – P14; CCO

This aligns with literature on the importance of “local champions” in driving AI adoption in clinical settings. Furthermore, reimbursement frameworks and billing codes in the US serve as strong facilitators. For example, P15 noted:

“Home monitoring has been a thing for like 15 years. So we have over three and a half thousand patients who are home monitored, meaning they transmit a report to us every 90 days, which is billable... Anything that's working in the US has to be billable. Otherwise, no one cares.” – P15; Director of Cardiovascular Services at UCSD

The US healthcare system’s fee-for-service structure incentivizes the adoption of tools with clear economic value, enhancing the attractiveness of the RCM segment. Investors also highlighted this as a strategic opportunity for Cordys, supported by the sector’s billable nature and scalability.

ECG Device Manufacturers

The high volume of ECGs performed globally creates a significant market of end users, which Cordys can access through integration with existing devices. SMEs in the ECG device manufacturing segment demonstrated a readiness to collaborate on AI integration, driven by their need to differentiate in a competitive market.

This existing interest and alignment reduce the effort required to explain and justify the value of Cordys’ solution, streamlining the sales process. The inherent need for differentiation among SMEs positions them as a receptive and accessible entry point for Cordys’ market strategy.

Each segment presents unique facilitators that support adoption. For hospitals and cardiologists, workload pressures and efficiency needs create natural alignment with Cordys’ solution, while

SMEs in the ECG device manufacturing space show a clear interest in collaboration. However, GPs' reliance on external endorsements and guidelines highlights the need for significant investment, further validating their unsuitability as an initial target market.

Strategic Alignment

GPs

The insights gathered from GP interviews reveal a lack of strategic alignment between this segment and Cordys' immediate goals. P2 highlighted the varying degrees of innovation adoption within the GP community:

"You can simply divide them in three groups. One group is innovative that is eager to adapt and experiment with new changes. It's about 10-15%, it is quite small. Then there is a group that follows, so they just follow if there are some others that made a decision. That group is about 40%. I think and then 50% is quite conservative and does not easily accept change. So it's about half of the GPs are not quite eager to change." – P2; GP

With only 10-15% of GPs identified as early adopters and a significant 50% resistant to change, the segment's low innovation readiness poses as a barrier to adoption. This misalignment with Cordys' need for an entry point with likely and consistent adoption makes GPs an unsuitable target for initial market traction.

Cardiologists

Cardiologists emerged as a strategically aligned segment for Cordys' product rollout. Their feedback emphasized the importance of targeting specialists first to establish credibility and ensure product acceptance. P10 highlighted this approach:

"It has to work for cardiologists first. If you start with GPs, there's a risk of skepticism from specialists like us." – P10; Cardiologist

This "top-down" rollout strategy is critical for Cordys. By initially targeting cardiologists, Cordys can build credibility and streamline adoption among other clinicians, such as GPs and non-cardiologist hospital staff. Cardiologist adoption would not only validate the product but also pave the way for broader integration across the healthcare system.

However, hospitals may act as intermediaries between Cordys and cardiologists. Accessing cardiologists may require navigating hospital procurement processes and building institutional relationships, adding a layer of complexity to direct engagement with this segment.

Hospitals

Hospitals represent a substantial market opportunity that aligns with Cordys' long-term strategy. Leveraging second-mover advantage by targeting hospitals already familiar with AI tools could ease entry. As P14 noted:

"If a hospital has already implemented an AI radiology solution, they're more likely to be open to another AI tool." – P14; CCO

However, lengthy lead times associated with hospital procurement and decision-making processes reduce their viability as a short-term entry point. These challenges are at odds with Cordys' immediate need for a faster route to market.

Geographically, the US hospital sector and remote cardiac monitoring markets were identified as high-growth opportunities. Investors underscored the scalability of these segments, particularly the US RCM market, which aligns with Cordys' technological capabilities. However, due to regulatory hurdles and procurement complexities, these segments are more appropriate for Cordys' long-term strategy rather than immediate market entry. This approach would be viable provided that a scalable implementation and sales model can be developed.

ECG Device Manufacturers

The ECG device manufacturer segment offers the most strategic alignment with Cordys' immediate goals. SMEs in this space present an attractive entry point due to their need for product differentiation and openness to innovation. This segment provides a direct path for Cordys to integrate its AI solutions while leveraging the existing customer base of device manufacturers.

By targeting SMEs, Cordys can establish a stable foundation for growth and gain critical market experience. This alignment positions ECG device manufacturers as the optimal entry point for Cordys, enabling the company to refine its product, generate revenue, and build credibility before pursuing more complex markets like hospitals or the US RCM sector.

Pivot Indicators

GPs

The analysis strongly suggests that GPs are not an optimal initial target for Cordys. Their reliance on referrals and their low perceived need for advanced AI tools significantly reduce the potential for adoption. Key findings from the five previously discussed codes consistently highlight pivot indicators pointing away from the GP segment.

The primary pivot indicator is the limited market attractiveness, as most GPs do not experience a pressing need for Cordys' solution. Additionally, market segmentation revealed a highly fragmented sector, making it challenging to scale a standardized solution. Facilitators for GP

adoption, such as NHG guideline incorporation and cardiologist endorsement, would require substantial investment and are not feasible within Cordys' short-term timeline.

These barriers highlight a lack of strategic alignment between the GP segment and Cordys' objective of identifying an accessible entry point to gain initial traction.

Cardiologists

Insights from cardiologists confirm that while AI tools could benefit GPs and other users in the long term, the initial focus should prioritize cardiologists. As one cardiologist explained:

"We are the ones who set the standard for cardiac care. Start with us, and the technology can trickle down to others," - P11; Cardiologist

This perspective supports a pivot away from GPs and emphasizes cardiologists as a more suitable entry point. However, emergent findings regarding the broader applicability of Cordys' solution in non-cardiology departments within hospitals suggest a need to explore market entry at the hospital level. This approach could provide access to a wider base of users, amplifying Cordys' impact and reach.

Hospitals

Hospitals present significant potential for Cordys, given their large diagnostic workloads and demand for innovative solutions. However, accessing and securing contracts within this sector involves substantial time and effort, with lengthy procurement processes and extensive requirements.

These operational challenges make hospitals less viable for Cordys' short-term market entry strategy. Investors echoed this sentiment, emphasizing the urgency of securing a commercial sale in the near term to establish Cordys' presence in the AI-healthcare market. While hospitals remain a crucial component of Cordys' long-term strategy, the immediate focus should shift toward more accessible alternatives.

ECG Device Manufacturers

The evaluation of the ECG device manufacturer market revealed clear opportunities for Cordys. SMEs in this sector, facing intense competition, demonstrated a strong willingness to collaborate and integrate AI solutions into their devices. This openness, combined with the high diagnostic workloads associated with ECGs, positions device manufacturers as an ideal short-term entry point for Cordys.

Investor and SME feedback further validated this shift, supporting a phased approach in which Cordys first targets ECG device manufacturers, then expands to hospitals and the US RCM

market. This strategy allows Cordys to establish a solid foundation, refine its solution, and build momentum before tackling more complex markets.

Key Emergent Themes

The thematic analysis of this portion of the data revealed commonalities across the various discussions. The commonalities can be best summed up as five key themes, imperative to guiding the formulation of Cordys' strategy.

Key Themes

1. **Device Manufacturers as the Primary Entry Point:** SMEs in the ECG manufacturing sector represent the most accessible and motivated market for AI solutions, providing a low-risk entry strategy.
2. **Hospitals as a Long-Term Target:** Hospitals offer significant scale but require a phased approach due to slow adoption and integration challenges.
3. **RCM as the Next Step:** The growing US RCM market aligns with investors' recommendations for scalable, high-growth opportunities.
4. **Strategic Regional Approach:** Leveraging the EU's structured frameworks for initial entry and expanding to the US for rapid growth ensures balanced market penetration.
5. **Trust and Validation as Adoption Drivers:** Across segments, robust clinical evidence, seamless integration, and partnerships are essential for adoption.

Competitive Benchmarking

This analysis evaluates key competitors of Cordys Analytics through secondary research, focusing on their products, features, target markets, and strategic approaches. The objective is to identify gaps in the market and opportunities for differentiation that can guide Cordys' market entry and growth strategies. The benchmarking begins with brief profiles of key competitors, followed by a comparative analysis of the competitive landscape, and concludes with a visual summary in table format.

Secondary research initially generated an extensive list of companies identified as direct competitors due to their overlapping product offerings or targeted markets. This preliminary list was presented to the board for review and subsequently narrowed down to those competitors deemed most relevant to Cordys' strategic focus. The finalized list of key competitors includes:

1. Powerful Medical
2. Cardiologs
3. Cardiomatics
4. Idoven
5. Anumana

This refined selection enables a focused analysis that aligns with Cordys' priorities and strategic goals.

Company Profiles

Powerful Medical

Products: Powerful Medical offers PMcardio, an AI-powered clinical assistant available as a mobile application. It enhances cardiovascular diagnostics and patient management in various settings, including medical practices, hospitals, and emergency services. Key offerings include:

- PMcardio for Organizations: Provides acute diagnosis at first patient contact, enabling rapid referrals to specialists.
- PMcardio for Individuals: Diagnoses 39 cardiovascular diseases within 5 seconds from a 12-lead ECG.
- PMcardio OMI: Focuses on Occlusion Myocardial Infarction diagnosis for STEMI and NSTEMI patients.
- PMcardio Digitize: Transforms ECG records into digital formats for improved readability and sharing.

Markets: Powerful Medical operates in the EU under a Class II(b) CE certification and is seeking FDA approval for the US market. Its operations span 16 European markets, serving over 300,000 patients annually.

Target Segments:

- Organizations: AI solutions for accurate diagnosis at initial patient contact.
- Individuals: Mobile AI-driven ECG diagnostics for clinicians.

Funding and Partners: Powerful Medical has raised \$15.69M through grants and investors such as the European Innovation Council and Google for Startups. Partnerships include research institutions like the Cardiovascular Research Center Aalst.

Marketing Strategy: Initially leveraging an Early Access Program for healthcare professionals, Powerful Medical now focuses on clinical trials and certifications to demonstrate efficacy. The company emphasizes scalability, integration, and trust through partnerships and validation as it markets its platform to hospitals.

Cardiologs

Products: Cardiologs specializes in streamlining arrhythmia diagnostics with AI. Key products include:

- Cardiologs Holter: Extends monitoring time while reducing patient waiting lists.

- Cardiologs RPM: Integrates smartwatch ECGs into clinical workflows for scalable personalized decisions.

Markets: Cardiologs operates in both the EU and US with CE certification and FDA approval.

Target Segments:

- Clinicians: Focused on saving time and increasing efficiency in diagnostics.
- Service Providers: Aids in providing high-quality cardiac monitoring services while optimizing profitability.

Funding and Partners: Acquired by Philips in 2021, Cardiologs collaborates with iRhythm, Boston Scientific, and MicroPort CRM. Funding sources include Alven and Idinvest Partners.

Marketing Strategy: Cardiologs highlights its solution's accuracy and scalability through certifications, partnerships, and industry conferences. It emphasizes ease of integration and clinical validation to engage healthcare providers. However, following the acquisition that made Cardiologs a Philips company, it is hypothesized that a strategic shift has occurred. The integration of the Cardiologs algorithm into the Philips ePatch seems intended to drive patch sales rather than emphasizing Cardiologs' independent provision of ECG services.

Cardiomatics

Products: Cardiomatics provides an AI-driven ECG analysis platform that supports clinicians in interpreting data from holters and ECG patches with speed and accuracy.

Markets: Operating under EU CE certification, Cardiomatics targets cardiac clinics and service providers.

Target Segments:

- Cardiac Clinics: Enables comprehensive diagnostics for more patients.
- Service Providers: Scales cardiology service lines through automated analysis.

Funding and Partners: Cardiomatics collaborates with BIOTRONIK and other academic partners. Funding sources include Innovation Nest and the National Centre for Research and Development.

Marketing Strategy: The company focuses on clinical studies to validate its solutions, complemented by educational initiatives such as the Cardiomatics Academy. These efforts aim to build credibility and trust with healthcare professionals as they market their solution to hospitals and clinics.

Idoven

Products: Idovent AI analyzes ECG data to detect and predict heart conditions, with a focus on arrhythmias. Its platform integrates with wearable devices and supports clinical trials through ECG-based biomarkers.

Markets: Idovent operates in the EU under a Class IIa CE certification and collaborates with life sciences companies and sports organizations.

Target Segments:

- MedTech: Integrates tools for earlier disease detection.
- Life Sciences: Develops ECG-based biomarkers for patient identification and risk stratification.

Funding and Partners: Idovent has raised €15M from equity investors, such as EIC Accelerator and Insight Partners, and €10M in EU grants. Partnerships include AstraZeneca, Abbott, and GE Healthcare.

Marketing Strategy: Idovent builds credibility through collaborations with pharmaceutical firms and sports organizations. Its athlete endorsements and clinical evidence emphasize accessibility and scalability. The partnership between Idovent and Abbott, which integrates Idovent's AI platform into Abbott's implantable cardiac monitors (ICMs), serves as a strategic move to increase the usage and visibility of its solution in clinical settings.

Anumana

Products: Anumana focuses on developing AI algorithms for detecting conditions like low ejection fraction and cardiac amyloidosis. Its diagnostic pipeline covers pulmonary hypertension, atrial fibrillation, and hypertrophic cardiomyopathy.

Markets: Anumana has acquired FDA approvals and operates in the US

Target Segments:

- Healthcare Providers: AI tools to enhance workflows and early detection.
- Pharmaceutical Companies: Solutions for cardiovascular risk prediction.

Funding and Partners: Anumana has raised a total of \$89.9M in funding with investments from MedTech Innovator, Mayo Clinic Ventures, Matrix Capital Management, and NTT Venture Capital. Partnerships with organizations like Novartis and Pfizer aim to facilitate the development of solutions for early intervention. In November 2022, Anumana acquired NeuTrace, a company specializing in AI-based cardiac health diagnostics.

Marketing Strategy: Anumana leverages partnerships to validate its technology, emphasizing clinical studies to build trust and market access. Its collaborations with pharmaceutical companies support its expansion into healthcare innovation.

Comparative Analysis of the Competitive Landscape

Product Offerings and Features

Competitors like Cardiologs, Powerful Medical, Anumana, and Idovent provide AI-driven solutions specifically designed for diagnostic cardiology. Cardiologs, Cardiomatics, and Idovent focus heavily on arrhythmia detection, leveraging AI to improve ECG analysis accuracy. Anumana differentiates itself by offering algorithms tailored to specialized conditions, such as low ejection fraction and cardiac amyloidosis, positioning itself in niche diagnostic markets. Idovent broadens its scope beyond clinical applications, addressing corporate wellness and pharmaceutical needs with predictive AI tools.

While these competitors emphasize diagnostic accuracy, only one, Idovent, is directly engaging with device manufacturers to integrate AI solutions at the hardware level. This presents an opportunity for Cordys to leverage a distinct niche by collaborating with ECG device manufacturers, enhancing their products with AI-driven functionalities. The literature review underscored the importance of targeting specialized niches as a strategic imperative for startups in the AI-healthcare industry, offering strong academic support for this approach.

Target Markets

Competitors primarily cater to healthcare providers, including cardiologists, hospitals, and outpatient clinics. Anumana and Idovent diversify their target markets by serving corporate wellness programs and research institutions, creating additional revenue streams. In geographic terms, the ECG-AI diagnostics market in the US is dominated by companies like Anumana, which leverage partnerships with pharmaceutical and healthcare entities to expedite adoption. Meanwhile, Cardiologs has established a robust presence in the EU, supported by a significant body of clinical evidence that appeals to hospitals and cardiologists. Since the acquisition of Cardiologs by Philips, the company now operates within the US market under the Philips brand name.

However, smaller ECG device manufacturers face significant challenges competing with industry giants like GE and Philips. These SMEs remain an underserved market segment. By offering tailored AI solutions, Cordys can help these manufacturers differentiate their offerings and gain a competitive edge.

Resources and Competencies

Established players like Cardiologs and Anumana benefit from partnerships with major






companies such as Philips and Johnson & Johnson, providing them with extensive resources for scaling and market penetration. Idovent's adaptability in addressing non-clinical markets, such as corporate wellness, demonstrates its ability to diversify its competencies. Conversely, smaller competitors like Powerful Medical and Cardiomatics, while resource-constrained, rely on cost-effective solutions and streamlined offerings to compete.

Cordys' Comparative Strength

As a startup, Cordys' agility and ability to partner with underserved SMEs in the ECG device manufacturing space stand out as key strengths. By focusing on co-developing tailored solutions with these manufacturers, Cordys can bypass the intense competition in direct clinical diagnostics while addressing a clear market gap.

This benchmarking analysis provides a comprehensive understanding of the competitive landscape, offering strategic insights for Cordys' market positioning. A bubble quadrant chart was created to visualize the competitive landscape and clarify Cordys' positioning within it.

Table 3 summarizes critical characteristics for each competitor relative to Cordys, providing a structured foundation for this analysis.

Company	Market Presence	Product Focus	Innovation Level	Competitor Strengths	Gaps Identified
Cordys Analytics 	EU (phase 1) US (phase 2)	Diagnostics (phase 1) Monitoring (phase 2)	High	Agility; focus on underserved SMEs.	Limited resources and partnerships compared to larger players.
Cardiologs 	EU, US	Diagnostics, Monitoring	High	Philips partnership; CE & FDA approvals	No direct focus on SMEs or device integration.
Powerful Medical 	EU	Diagnostics, Monitoring	Medium	Accessible pricing; broad disease coverage.	Focused on clinical institutions; not on SMEs or device integration.
Anumana 	US	Diagnostics	High	FDA Breakthrough Designations; specialized AI algorithms.	Limited presence in the EU; no integration with hardware.
Idoven 	EU	Diagnostics, Corporate Wellness	High	Strong pharma partnerships; predictive analytics.	Focused more on corporate and pharma sectors, less on healthcare providers.


Cardiomatics 	EU	Diagnostics	Medium	Cost-effective solutions for scaling cardiology services.	Limited innovation in product scope; smaller scale compared to others.
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Table 3. Competitive analysis summary of key characteristics for benchmarking exercise.

Bubble Quadrant Chart – depicting the competitive landscape

The largest bubble size indicates a high innovation level, while the smaller bubble size indicates medium innovation levels. Cordys appears twice on the chart: the gray circle represents its current market entry position, and the red circle signifies the recommended target position to strive for over the next three years within the competitive market landscape.

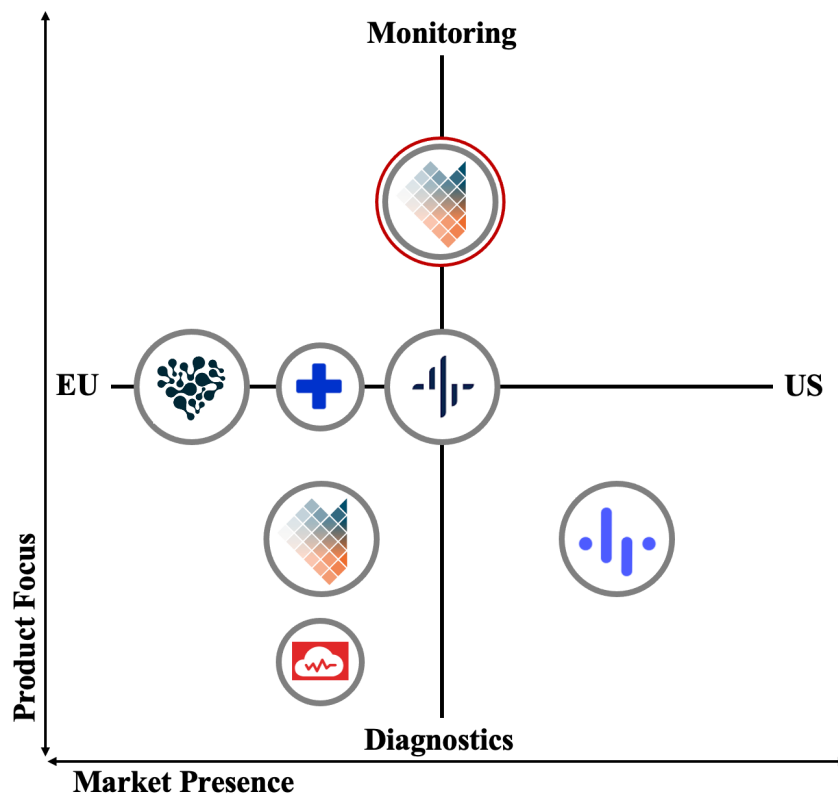


Chart 1. Bubble quadrant chart visualizing competitive landscape and Cordys suggested market positioning.

Strategic Differentiation Opportunities

The insights derived from the comparative analysis of the competitive landscape and benchmarking of Cordys relative to key competitors have revealed three strategic opportunities for differentiation:

1. **Integration with SMEs:** Cordys can address the unmet needs of small and medium-sized ECG device manufacturers by enabling them to differentiate their products from larger competitors like GE and Philips through advanced AI capabilities. Cordys' agility as a small company allows it to deliver tailored solutions that meet the specific requirements of these SMEs.
2. **Geographic Focus:** Unlike competitors that split their focus between the US and EU, Cordys can strategically target the EU market first. The EU offers structured regulatory frameworks like MDR, which provide a clear pathway for market entry. By focusing on SMEs underserved by larger competitors, Cordys can establish a stable market presence. Once EU market success is achieved, the company can shift its strategic focus to the US market, leveraging learnings from the EU entry to refine its approach.
3. **Expansion into Monitoring:** RCM is a growing trend in the US market. Cordys can strategically incorporate monitoring features into its solutions, positioning itself for geographic expansion after achieving integration success in the EU.

Key Emergent Insights

The combination of benchmarking and the competitive bubble quadrant chart development yielded five critical insights:

1. **Market Gaps for SMEs:** Smaller ECG device manufacturers are largely underserved by AI-focused competitors, presenting a unique entry opportunity for Cordys.
2. **Resource Leveraging:** Strategic partnerships with SMEs and academic institutions can help Cordys overcome resource limitations compared to competitors backed by major MedTech firms. Cordys' agility positions it to effectively address niche needs and underserved segments.
3. **RCM as a Growth Pathway:** Expanding into RCM aligns with US market trends and offers scalability and diversification opportunities post-EU success.
4. **Strategic Market Entry:** The EU regulatory environment offers a structured, lower risk starting point, providing a foundation for later US market expansion.
5. **Differentiation via Integration:** Integrating AI directly into ECG hardware creates a unique value proposition, setting Cordys apart from software-centric competitors.

Integration of Themes and Insights

The benchmarking findings validate and expand upon the insights from the interviews, culminating in a cohesive strategy for Cordys. This integrated approach ensures sustainable market entry and growth while addressing unmet needs across multiple segments.

Theme 1: Device Manufacturers as the Primary Entry Point

Insight 1: Market Gaps for SMEs

The benchmarking analysis highlights that SMEs in the ECG device market are underserved, presenting a significant opportunity for Cordys to differentiate itself by meeting the specific needs of these companies. This aligns with interview findings that device manufacturers are the most accessible and motivated entry point for Cordys, as they seek differentiation and are ready to adopt AI solutions.

Theme 2: Hospitals as a Long-Term Target

Insight 2: Resource Leveraging

While hospitals present significant opportunities, their slow adoption and complex procurement processes make them less viable as an initial target. Both analyses suggest leveraging partnerships and academic collaborations to build trust and establish the necessary resources for hospital market entry in the long term.

Theme 3: RCM as the Next Step

Insight 3: RCM as a Growth Pathway

RCM is identified as a lucrative growth area in both the interviews and benchmarking. The alignment of this segment with US market trends highlights its potential for scalability and diversification once Cordys establishes itself in the EU.

Theme 4: Strategic Regional Approach

Insight 4: Strategic Market Entry

The EU's structured regulatory environment, emphasized in the benchmarking analysis, aligns with interview findings suggesting it as the optimal initial market. This phased, region-specific approach allows Cordys to balance the EU's methodical entry process with the dynamic growth potential of the US. This incremental strategy ensures Cordys remains focused, reducing the risk of overextending its resources during growth and expansion.

Theme 5: Trust and Validation as Adoption Drivers

Insight 5: Differentiation via Integration

The benchmarking insight on integrating AI directly into hardware to create a unique value proposition aligns with the interview theme of trust and validation. Both analyses stress the importance of trust and validation. Integrating AI directly into hardware, combined with clinical

validation and trusted partnerships, reinforces Cordys' positioning as a reliable innovator in the AI-healthcare space.

By integrating the five themes from the interviews with the insights from the competitive analysis, this section lays the foundation for a competitive strategy. It guides Cordys in its market entry, ensuring short-term traction and long-term growth potential. The following discussion section will further refine these findings into actionable recommendations for Cordys' strategic positioning.

Discussion - Integrated Findings

The combined findings from the thematic analysis and competitive benchmarking provide a cohesive understanding of the strategic opportunities and challenges facing Cordys Analytics. Together, these analyses answer the research question by highlighting the most viable entry points and pathways for sustainable growth in the competitive landscape of AI-driven healthcare solutions.

The thematic analysis identified ECG device manufacturers, particularly SMEs, as the optimal initial market segment for Cordys. These manufacturers face significant competition from established players like GE and Philips and low-cost manufacturers from China. By integrating AI into their hardware, SMEs have an opportunity to differentiate their products, offering Cordys a clear entry point to provide value. In contrast, GPs exhibit limited demand for AI-driven ECG solutions due to their reliance on referrals and established workflows. Thus, the board's initial hypothesis was rejected in favor of pursuing ECG device manufacturers as Cordys' market entry point. Cardiologists and hospitals, while promising, face adoption barriers such as integration complexity, lengthy procurement cycles, and resource constraints, positioning them as longer-term opportunities.

The competitive benchmarking reinforced these conclusions by highlighting gaps in the current market. While competitors such as Cardiologs and Anumana focus on diagnostics for healthcare providers, few directly target device manufacturers with integrated AI solutions. This presents a unique differentiation opportunity for Cordys to address an underserved market. Furthermore, the benchmarking revealed that competitors tend to concentrate on either the EU or US market, allowing Cordys to strategically position itself by first targeting the structured EU regulatory environment, leveraging its partnerships with SMEs, and later expanding into the high-growth US RCM market.

By combining these analyses, a phased strategy emerges: Cordys should begin by partnering with SMEs in the ECG manufacturing sector in the EU, leveraging its agility to provide AI solutions that enhance competitiveness in this fragmented market. Once firmly established, the company can expand to the US, aligning with investor recommendations to tap into the growing RCM market. In the meantime, Cordys will monitor the development of RCM in Europe, as several countries including Belgium, France, Spain, and the UK are expected to implement reimbursement frameworks. Should these markets prove attractive, Cordys will pursue opportunities to establish a presence there as well. Hospitals remain a long-term target, requiring a strategic approach through pilot programs and partnerships to overcome procurement and integration challenges. The recommended strategy aligns closely with the AI Product Vendor Business Model typology outlined in the literature review, providing a strong theoretical foundation for the approach.

Together, the findings from the thematic analysis and competitive benchmarking validate a data-driven, phased market entry strategy. This approach not only aligns with Cordys' strengths but also positions the company to fill key market gaps while navigating a competitive and evolving AI-Healthcare landscape. This cohesive strategy lays the groundwork for Cordys to establish itself as a leader in AI-driven ECG solutions and scale sustainably in the years ahead.

Conclusions & Recommendations

Content Reflection

The findings presented in this report are pivotal for Cordys Analytics as it navigates the challenges of market entry and builds the foundation for sustainable growth. With the MDR certification process nearing completion, the company will soon be ready for product launch and market entry, making a well-defined plan of action essential. Additionally, as Cordys prepares for its next round of fundraising, a clear and compelling strategic narrative will be vital for engaging current and prospective investors.

The timing of this report's completion is highly advantageous, offering the board valuable insights into the industry and competitive landscape to guide final decisions on the company's strategic direction. The thematic analysis and competitive benchmarking together provide a comprehensive roadmap for Cordys' initial market entry, short-term success, and long-term positioning within the competitive AI healthcare sector. These insights will also serve as a foundation for communicating a cohesive strategy to attract investors in the upcoming funding round.

Key Findings and Recommendations

1. Short-Term Focus on SMEs in the ECG Manufacturing Sector:
 - **Value Contribution:** SMEs present a significant opportunity for Cordys to introduce its AI solutions, as they seek differentiation in a competitive market dominated by larger players like GE and Philips.
 - **Recommendation:** Cordys should actively pursue partnerships with SMEs, tailoring its solutions to integrate seamlessly into existing hardware. This approach ensures rapid adoption and positions Cordys as a key enabler of innovation in this underserved segment.

2. Phased Expansion Strategy:
 - **Value Contribution:** Leveraging the structured regulatory environment of the EU provides Cordys with a low-risk entry point while establishing credibility through partnerships and pilot programs.
 - **Recommendation:** Cordys should prioritize the EU market in the next 1-2 years, focusing on securing CE certification and building partnerships with early adopters. Subsequently, the company should prepare for US market entry, targeting the RCM segment, which offers scalability and alignment with investor interests. To support a successful and strategic market entry, additional market research on the US specifically should be conducted to deepen understanding and refine the approach.

3. Long-Term Opportunities in Hospitals:

- **Value Contribution:** While hospitals offer significant scale and potential, they also require robust validation, seamless integration, and long procurement cycles.
- **Recommendation:** Cordys should gradually approach the hospital sector by initiating pilot programs and leveraging existing relationships with SMEs and cardiologists to validate its solutions. These efforts should align with Cordys' long-term vision of becoming a leader in AI-driven ECG solutions.

4. Differentiation Through Integration:

- **Value Contribution:** Directly integrating AI into ECG hardware sets Cordys apart from software-centric competitors, addressing a critical market gap.
- **Recommendation:** Cordys should invest in co-developing hardware-integrated AI solutions with its SME partners, showcasing this unique value proposition through case studies and clinical validations to build trust and credibility.

5. Strategic Partnerships and Resource Leveraging:

- **Value Contribution:** Partnering with academic institutions and MedTech companies mitigates resource limitations and accelerates innovation.
- **Recommendation:** Cordys should actively seek collaborations with research institutions and leverage grant opportunities to strengthen its technological capabilities while maintaining agility to address niche market needs.

Cordys' strategic journey should begin with a focus on SME sized ECG device manufacturers, as they were identified as the most accessible and motivated market segment. These manufacturers, striving to differentiate themselves in a landscape dominated by major players like GE and Philips, represent a unique opportunity for Cordys. By offering AI solutions that can be seamlessly integrated into existing hardware, Cordys can fill a significant market gap while creating value for these underserved businesses. Prioritizing SMEs not only ensures a low-risk market entry but also enables Cordys to establish credibility and generate early success stories.

In the short term, Cordys should concentrate on the EU market. The structured regulatory environment and clear pathways for obtaining CE certification make the EU a favorable starting point. Partnering with SMEs in this region will allow Cordys to refine its solutions and build trust within a fragmented but promising market. As the company solidifies its foothold in the EU, preparations should begin for expansion into the US, where the RCM market offers significant scalability and aligns with investor recommendations for high-growth opportunities. This phased approach balances the predictability of the EU market with the dynamic potential of the US.

Hospitals, though presenting substantial long-term potential, require a phased strategy due to their complex procurement processes and high validation demands. While hospitals offer scale

and access to a broad patient base, the challenges of integration and decision-making mean that they are better suited as a secondary target. Cordys should approach this segment through pilot programs and partnerships that build credibility over time, leveraging relationships established with SMEs and cardiologists.

Differentiation will be a cornerstone of Cordys' strategy. Unlike competitors focused primarily on software solutions, Cordys' ability to integrate AI directly into ECG hardware positions the company as a unique and valuable partner for SMEs. This hardware-first approach not only sets Cordys apart but also addresses the specific needs of its target market. Strategic partnerships with academic institutions and MedTech companies will further enhance Cordys' ability to innovate, compensating for resource constraints while maintaining agility in addressing niche needs. The recommended approach aligns with the AI Product Vendor Business Model Typology, which emphasizes customized solutions and a nuanced client focus. This strategy is expected to drive higher customer retention and sustained revenue growth over time for Cordys.

To operationalize these insights, Cordys should adopt a phased implementation strategy. Over the next two years, the company should focus on the EU, partnering with SMEs and obtaining CE certification. This will lay the groundwork for a strong market presence and provide valuable learnings for future endeavors. In years two to three, Cordys should expand to the US, prioritizing the RCM market while continuing to validate its solutions in structured healthcare settings. Beyond year three, hospitals should become a key target, with Cordys leveraging its established credibility and market presence to overcome procurement and integration challenges.

In sum, Cordys is uniquely positioned to seize opportunities in the evolving AI-Healthcare market. By aligning its strengths with market needs and adopting a phased, data-driven strategy, the company can secure early wins, scale sustainably, and position itself for long-term success in a competitive and dynamic industry.

Implementation Roadmap

To operationalize these recommendations, Cordys should adopt the following phased strategic plan over the next three years:

1. **Year 1-2:** Establish a strong presence in the EU by focusing on SMEs, obtaining CE certification, and initiating pilot programs.
2. **Year 2-3:** Begin expansion into the US market, targeting RCM as the primary growth driver, while continuing to validate solutions in structured healthcare environments. Expansion plan should be grounded in extensive US market research.
3. **Year 3+:** Pursue hospitals as a long-term target by scaling validated solutions and building robust partnerships to overcome procurement barriers.

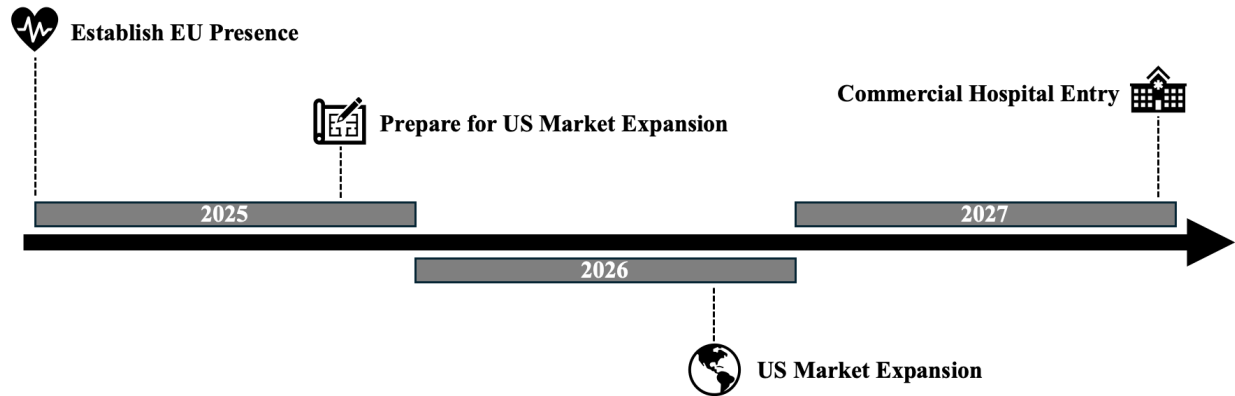


Chart 2. Implementation roadmap of report recommendations for Cordys Analytics.

Personal Reflection

At the outset of the internship, my primary expectation was to gain hands-on experience in the operations and culture of an innovative startup, while simultaneously applying the theoretical knowledge from the Science and Business Management (SBM) program in a real-world business setting. This internship at Cordys Analytics not only met those expectations but exceeded them. I was given responsibilities akin to those of an external consultant, tasked with providing strategic guidance to an emerging AI-driven healthcare company.

The education provided by the SBM program proved instrumental in preparing me for this role. The Science-Based Entrepreneurship course equipped me with a structured approach to navigate the challenges of a nascent business environment. The lean framework introduced during the course served as a guiding principle throughout the internship, offering a methodological and hypothesis-driven approach to research and strategy development.

Additionally, courses such as Business Research and Operations played a critical role in shaping the qualitative and quantitative research processes. The semi-structured interviews conducted, paired with thematic and deductive coding, mirrored the methodologies taught during the program. Furthermore, Strategic Management of Innovation and International Business informed the strategic decisions, particularly in evaluating Cordys' positioning in a competitive and rapidly evolving market. Even unexpectedly, the Public Procurement course contributed significantly to my understanding of the intricate procurement processes within hospitals, a key aspect of my research.

My role at Cordys required me to act as a bridge between business insights and actionable strategies. Engaging with potential end-users and conducting market analyses allowed me to synthesize information from diverse sources and propose data-driven recommendations. The dual

focus on market research and stakeholder interviews was challenging yet rewarding, as both tasks were deeply interconnected and mutually informed each step of the process.

While my prior work experience in pharmaceutical and medical device marketing helped me approach market analysis with a business-oriented lens, this internship required a higher level of adaptability and creativity. The limited publicly available data on the AI-Healthcare industry challenged me to think critically about sourcing reliable information. One of the most valuable lessons I learned was the importance of making decisions based on incomplete data, a necessity in many real-world business scenarios. I became more confident in identifying the point at which further research would yield diminishing returns and in drawing actionable conclusions from available information.

Another key takeaway was the realization that no universal "right" answer exists in business strategy. The recommendations I developed had to be tailored specifically to Cordys' competencies, resources, and the competitive environment. While I initially sought validation through external benchmarks, I came to understand that Cordys' unique context demanded original, evidence-based solutions. This shift in perspective not only strengthened my strategic thinking but also helped build confidence in my ability to defend my recommendations.

In terms of areas for improvement, I recognize the need to act more proactively and assertively. There were moments when self-doubt led me to delay decisions or seek unnecessary validation. Moving forward, I aim to trust my analytical abilities and take initiative without hesitation. Developing greater confidence in my professional judgment will also enhance my ability to voice my opinions clearly and persuasively in high-stakes discussions, such as those with Cordys' board.

Reflecting on the overall experience, this internship has been instrumental in my professional growth. Acting as a consultant exposed me to the expectations and demands of such a role, offering invaluable insight into the tasks and responsibilities I may encounter in future consulting roles. The skills I honed, synthesizing large volumes of data, constructing evidence-based strategies, and navigating complex stakeholder dynamics, have prepared me to transition smoothly into a full-time consulting career.

The connection between the SBM program and this internship has been profound. The integration of academic knowledge and practical application demonstrated the value of the program in preparing graduates for dynamic business environments. Additionally, the internship bridged my prior experience during my research internship which focused on the clinical implementation of AI-based technologies with a deeper understanding of business implementation and commercialization. Looking ahead, I feel equipped not only with the skills

to thrive in my first job but also with a clearer understanding of the areas in which I can continue to grow.

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Appendix

Semi-structured Interview Guides

GP Interview Guide

Request to record and transcribe meeting! Begin transcription!!

Objectives

- Part 1: Confirm specific aspects of the current GP workflow/protocol for patients presenting with suspected cardiac disease, as outlined in previous GP interviews.
 - Hypothesis 1: GPs anticipate the implementation of the product to reduce the number of referrals they make and alter the manner in which they communicate with cardiologists.
- Part 2: Gauge GP openness to automated analysis for ECGs.
 - a. Hypothesis: GPs are open to implementing the product for the detection of specific conditions.
- Part 3: Demo product (Figma wireframe) and request feedback on key product features of interest.
 - Hypothesis: GPs require clearly defined outcomes that correlate with actionable steps.
- Concluding question about perspective as a director.

Verifying current practices. (~10 minutes)

1. Could you walk me through the various routes in which a patient who presents with suspected cardiac related complaints interacts with your GP practice?
 - a. Request high level answers: phone calls with complaints, make an appointment, etc.
 - b. Goal of this question: verify whether/frequency in which patients call the GP's assistant or secretary with cardiac complaints resulting in an ambulance being dispatched directly to the patient.
2. Could you describe the current extent of communication between GPs and cardiologists when making referrals?
 - a. What information would you as a GP include or share?
 - b. What information would you typically receive back from the cardiologist?
 - c. Do you use Xsyos for ECG interpretation?
3. Is there anything in particular that you would like to note as a pain point in current practice as a GP for treatment of patients presenting with cardiac related complaints and ECG analysis?
4. Which problems do GPs encounter in their current way of working with patients that are suspected of heart problems and what is known about the details?
5. For which problem are you actively looking for solutions?

Openness to automated analysis for ECGs. (~20 minutes)

Background: Cordys Analytics has developed an ECG assessment tool with automated analysis capabilities, which originated from collaboration with the cardiology department of the UMCU. The primary aim of the product is to assist users by analyzing ECGs, providing outputs that can detect abnormalities, including structural heart disease. Additionally, the tool features Triage functionality, which is designed to assess the patient's required level and urgency of care.

1. Awareness & knowledge
 - a. How familiar are you with the concept of using automated analysis for ECG interpretation?
 - i. What is your current understanding of the capabilities and limitations of automated analysis in this context?
 - b. How open are you to integrating automated analysis into your current workflow for ECG interpretation?
2. Current practices
 - a. What aspects of current practice for ECG analysis do you believe could be automated?
3. Collaboration with specialists
 - a. How do you foresee collaboration with cardiologists or other specialists when utilizing automated analysis for ECG interpretation?
 - b. How does this differ from your current method of collaboration?
 - c. In what situations would you seek specialist consultation despite the recommendations of automated analysis?
4. Integration of technology
 - a. How often do you implement new technology?
 - b. Could you tell me about your most recent experience implementing new technology?
 - c. How often does new technology come with user training?
 - d. Are you satisfied with the level of integration support received?
5. Accuracy & reliability
 - a. What level of accuracy and reliability do you expect from automated analysis of ECGs prior to considering implementation?
 - i. Would this be dependent on the diagnostic question (ex: SHD vs. Triage)?
 - b. How would you handle cases in which the output of the automated analysis and your assessment differ?
 - c. If the algorithm is unsure, would you like to know why?
6. Feedback & improvement
 - a. How often do you provide feedback on devices/equipment that you currently use?
 - b. What triggers you to provide feedback?
 - i. Ex. request by manufacturer, personal motivation, etc.

Product features – walk through with demo open. (~25 minutes)

1. What sort of capabilities and features would you want for automated analysis of ECGs to add value to current practice?
2. SHD algorithm
 - a. Detect structural heart disease based on ECG?
 - i. Level of detail, wording, design.
 - b. Regarding potential output options of the SHD algorithm, are you in favor of the categories displayed in this mockup (likely/unlikely) or would you prefer a diagnostic output statement such as:
 - i. “Consider an echo to look for hypertrophy.”
 - ii. “ECG is suspicious of atrial fibrillation.”
 - iii. “Start treatment for xxx.”
3. Triage
 - a. Given an algorithm that could triage patients into categories indicating their required level of care, what would your preference be for the presentation of outcomes?
 - b. Mockup demonstrates detection whether ECG is normal, subacute, or acute.
 - c. Would binary outcomes reduce ambiguity in correlating outcome to actionable steps?
4. Segmentation
 - a. Given an algorithm that segmented the ECG into complexes with a visualized overlay, could you see yourself utilizing such a feature?
 - b. Mockup demonstrates detection and display of waves as overlay on ECG.
 - c. Detect conduction intervals with high accuracy?
5. Specific abnormality detection
 - a. Do you believe that the detection of specific structural abnormalities such as a leaky valve based on the ECG would be helpful?
 - b. Could you see yourself using such a feature?
6. Diagnostic statements
 - a. Would the ability to detect common diagnostic statements such as Sinus rhythm be of interest to you?
7. Explanations
 - a. For all potential algorithms, what would be your preference for the level of explanation provided?
 - i. Would you be satisfied by algorithm outcomes alone (general diagnostic statements) or would you want more specific outcomes (ex. specific part of structural heart disease) supported by detailed explanations with clearly outlined next steps?
8. Historical analysis

- a. Could you see added value in the ability to perform a historical analysis comparing ECGs of the same patient to detect changes over time?
9. Recommendations
- a. Provide recommendations, possibly based on existing guidelines (for any detection and the summary)?
10. Interactivity
- a. Would interactive features enhance your ability to analyze ECGs and improve current practice for ECG analysis?
 - b. Zoom in, make measurements, perform analyses on specific areas?
11. Sharing
- a. How would you envision data sharing of such reports with cardiologists for consultations?
 - i. image, PDF, link to website, email, etc.
 - b. Would you want the option to share entire report or specific parts; option to anonymize/redact information?
12. Product rollout – package options
- a. Would a packaged service option combining Cordys Analytics’ services with the rental of an ECG device, which could be in collaboration with Ksyos and/or MESI, be more attractive or more feasible for the GP setting than solely investing in the services of Cordys?

Cardiologist Interview Guide

****Begin meeting recording****

Objectives

- Part 1: Outline current cardiologist workflow/protocols for patients presenting with suspected cardiac disease.
- Part 2: Gauge cardiologist openness to automated analysis for ECGs.
- Part 3: Demo product and request feedback on key product features of interest.
 - Cardiologists as primary user of product.
 - Cardiologists as receivers of referral/report from GPs using product.

Understanding current practices. (~10 minutes)

6. Patient routes

- a. Could you walk me through the various routes in which a patient with suspected cardiac disease ends up before you?
 - i. Referrals, from other departments, emergency situations, etc.

7. Initial assessment

- a. Could you walk me through how you initially assess a patient who presents with suspected cardiac disease?
 - i. If their answer is not given in actionable steps → Could you describe the typical diagnostic steps?
- b. What are the key questions you ask to gather relevant information?

8. Collaboration with other departments

- a. To what extent do you work collaboratively with other departments within the hospital?
- b. Could you describe the typical workflows?
- c. How is communication handled between departments?
- d. Are you satisfied by the current state of collaboration and communication with other departments?

9. Collaboration with GPs

- a. How do you collaborate with GPs when managing patients with suspected cardiac disease?
- b. When receiving a patient referred by a GP, what information do you require from the GP?
 - i. Is the current level of data provided sufficient?
- c. What information do you provide in return to the GP about a specific patient case?
- d. What platforms are used to facilitate communication?

- i. Are you satisfied by the current state of collaboration and communication with GPs?

10. Data Sharing

- a. How do you currently share data, and communicate with consultants on a patient case?
 - i. Internal consultations such as fellow Cardiologists.
- b. How do you currently share data, and communicate with external consultants on a patient case?
 - i. Referrals from GPs.
- c. Do you share ECGs?
 - i. If so, how and in what format?
- d. Does this system work well?

11. Technology & testing

- a. What are the indications (clinical situations) in which an ECG is made?
 - i. What are the suitable patient populations for ECGs to be made?
 - ii. What are the use environments in which ECGs are made?
 - iii. In which cases is making an ECG most helpful?
 - iv. How often are ECGs made?
- b. What are the contraindications for ECG use?
- c. What are the intended clinical conditions for which the ECG is made?
 - i. Intended conditions/disease/disorders and grade/stage/level?
 - ii. What do you hope to see or exclude based on the ECG?
- d. How much time do you spend analyzing ECGs?

12. Pain points

- a. Is there anything in particular that you would like to note as a pain point in current practice for treatment of patients presenting with cardiac related complaints and ECG analysis?
- b. For which problem are you actively looking for solutions?

13. Is there anything else I should have asked?

Openness to automated analysis for ECGs. (~10 minutes)

Background: Cordys Analytics has developed an ECG assessment tool with automated analysis capabilities, which originated from collaboration with the cardiology department of the UMCU. The primary aim of the product is to assist users by analyzing ECGs, providing outputs that can detect abnormalities, including structural heart disease. Additionally, the tool features Triage functionality, which is designed to assess the patient's required level and urgency of care.

7. Awareness & knowledge
 - a. How familiar are you with the concept of using automated analysis for ECG interpretation?
 - i. What is your current understanding of the capabilities and limitations of automated analysis in this context?
 - b. How open are you to integrating automated analysis into your current workflow for ECG interpretation?
8. Current practices
 - a. What aspects of current practice for ECG analysis do you believe could be automated?
9. Collaboration with other hospital departments
 - a. How do you foresee collaboration with other departments of the hospital when utilizing automated analysis for ECG interpretation?
 - b. How does this differ from your current method of collaboration?
10. Collaboration with GPs
 - a. How do you foresee collaboration with GPs when utilizing automated analysis for ECG interpretation?
 - b. How does this differ from your current method of collaboration?
11. Integration of technology
 - a. How often do you implement new technology?
 - b. Could you tell me about your most recent experience implementing new technology?
 - c. If they have a specific example – ask questions to understand how they came to “purchase” this technology. Did a company approach them, did they advocate for it, etc. What was the sales approach?
 - d. How often does new technology come with user training?
 - e. Are you satisfied with the level of integration support received?
12. Accuracy & reliability
 - a. What level of accuracy and reliability do you expect from automated analysis of ECGs prior to considering implementation?
 - i. Would this be dependent on the diagnostic question (ex: SHD vs. Triage)?
 - b. How would you handle cases in which the output of the automated analysis and your assessment differ?
 - c. If the algorithm is unsure, would you like to know why?

13. Training & familiarity

- a. Do you feel adequately trained or informed to apply automated analysis to tools for medical decision-making?
- b. What kind of training or information would you prefer to facilitate the integration of automated analysis into your practice?

14. Feedback & improvement

- a. How often do you provide feedback on devices/equipment that you currently use?
- b. What triggers you to provide feedback?
 - i. Ex. request by manufacturer, personal motivation, etc.

15. Sales approach

- a. What is required to effectively sell a product to cardiologists?
 - i. Key features or aspects of the product?
 - ii. Technical elements as well as logistics.
- b. How can we best approach the sales process?
 - i. Who is the decision maker in the hospital setting?
 - ii. Who has influence over the technology implemented?

Product features – walk through with demo open. (~10 minutes)

1. Open ended interest

- a. What sort of capabilities and features would you want for automated analysis of ECGs to add value to current practice?
 - i. Could be yourself as a user or other people within the healthcare system.

2. Hypothetical practices

- a. What are the indications (clinical situations) in which Cordy's product could be applied for ECG analysis?
- b. What are the contraindications for use of the product?
- c. What are the intended clinical conditions for which the product could be relevant?
 - i. Intended conditions/disease/disorders and grade/stage/level?
- d. Where do you believe this product will add the most value?
 - i. GP setting, other hospital departments, for cardiologists?
 - ii. Impact on echocardiograms?
- e. From the above answers, why or why not would there be indications and intended conditions in which an ECG is appropriate, but the automated analysis is not, or vice versa?

Cardiologists as primary users of tool

3. SHD algorithm
 - a. Detect structural heart disease based on ECG?
 - i. Level of detail, wording, design.
 - b. Regarding potential output options of the SHD algorithm, are you in favor of the categories displayed in this mockup (likely/unlikely) or would you prefer a diagnostic output statement such as:
 - i. “Consider an echo to look for hypertrophy.”
 - ii. “ECG is suspicious of atrial fibrillation.”
 - iii. “Start treatment for xxx.”
4. Triage
 - b. Given an algorithm that could triage patients into categories indicating their required level of care, what would your preference be for the presentation of outcomes?
 - i. Mockup demonstrates detection whether ECG is normal, subacute, or acute. Would binary outcomes reduce ambiguity in correlating outcome to actionable steps?
 - i. Would you require additional details or explanations beyond triage categories?
5. Segmentation
 - a. Given an algorithm that segmented the ECG into complexes with a visualized overlay, could you see yourself utilizing such a feature?
 - b. Mockup demonstrates detection and display of waves as an overlay on ECG.
6. Specific abnormality detection
 - a. Do you believe that the detection of specific structural abnormalities such as a leaky valve based on the ECG would be helpful?
 - b. Could you see yourself using such a feature?
7. Explanations
 - a. For all potential algorithms, what would be your preference for the level of explanation provided?
 - i. Would you be satisfied by algorithm outcomes alone (general diagnostic statements) or would you want more specific outcomes (ex. specific part of structural heart disease) supported by detailed explanations with clearly outlined next steps?
8. Historical analysis

- a. Could you see added value in the ability to perform a historical analysis comparing ECGs of the same patient to detect changes over time?

9. Algorithm reporting

- a. Example: Hypothetical values for SHD with the options being “likely” or “unlikely”.

Positive predictive value	30%
Negative predictive value	93%
Sensitivity	90
Specificity	40
Prevalence	22%

*Confidence Interval (CI) is in the range of 3% for all above values.

- b. Is it of value to have these numbers reported?
- c. Why? How does it add value in the clinical setting?
- d. How could this data be presented so that it is easily comprehensible and of value when making clinical judgements? How could the data be optimized?

10. Sharing

- a. Which portions of the report would you be interested in sharing?
 - i. With other cardiologists/specialists? Back to GPs?
- b. How would you envision data sharing of such reports?
 - i. image, PDF, link to website, email, etc.

Cardiologists receiving referral/report from GPs using the product.

Envisioning a GP using the product to support themselves in clinical practice assessing patients with suspected cardiac disease.

11. GP referral

- a. What information would be of interest to you if a GP were to refer a patient based on the outcome of the algorithm’s analysis?
 - i. Identify specific elements of the report page.
 - ii. What added value would this information provide for your analysis?
 - iii. How would you interpret and make sense of this information?
- b. Could you accept a patient referral based on the algorithm’s suggestion, or would you require an explanation?
 - i. Example: “Algorithm is suspicious of xxx, please consult with a specialist.”

Public Procurement in Hospitals – Interview Guide

****Ask to record****

Introductory Context

I am currently pursuing a master's degree in Science and Business Management at Utrecht University. As part of my program, I am required to complete a full-time business internship. This led me to join Cordys Analytics, a startup focused on developing software for ECG analysis. In my role and for my thesis, I am responsible for creating a high-level business model for the initial product launch and market entry of Cordys' software. One critical aspect of this business model is identifying key customer segments, including hospitals. To assess the market potential within this sector, I am particularly interested in understanding the procurement process hospitals follow when purchasing and integrating new technologies.

Objectives

Primary objective:

- Outline the public procurement process in hospitals including the steps, involved departments, involved personnel, and the associated timelines.

Secondary objective:

- Identify the requirements for becoming a hospital vendor.

Tertiary objectives:

- Gain insights into the current status of AI software that has been purchased by hospitals so far.
- Inquire about how she envisions these “point solutions” being integrated into the workflows of healthcare professionals.

Guiding Meeting Questions

1. Could you walk me through the public procurement process in hospitals?
 - a. What are the steps?
 - i. Procurement process van Waalen – these are the steps for the specific procurement process used.
 - ii. Differs between academic hospitals and general hospitals. Academic hospitals are “public” and must follow specific procurement requirements based on European rules. She works on behalf of the general hospitals.
 - b. Who are the involved departments?
 - i. Depends on what is being procured.
 - c. Who are the involved personnel? Who has decision making power and/or serves as a gate keeper in the process?
 - i. End user of the product to be procured from the hospital usually approaches the consulting firm about what they want to purchase.

- ii. Usually a project group of 4-6: end user, someone from asset management, hygiene, etc.
 - d. What are the associated timelines?
 - i. Depends on if end user knows which supplier they want to use.
 - ii. Normal way with procurement process: 3 months to 1 year.
- 2. Could you list the requirements for becoming a hospital vendor?
 - a. Are there specific objective requirements?
 - i. Typically look at the company as a whole.
 - ii. Certificates.
 - iii. She will follow up on this.
 - b. Are there unspoken requirements that are not documented, but well understood. For example, there may not be a documented requirement that excludes startups, but it is understood that a startup would not be chosen as a vendor.
 - i. Ask for references, have they worked at other hospitals.
 - ii. Follow up with references on their experience.
- 3. Could you describe the current status of AI software that has been purchased by hospitals to date?
 - a. Is the AI categorized as predominantly administrative, diagnostic, etc.
 - b. Is the rate of AI acquisition and integration increasing?
 - c. Are there any obstacles or setbacks that have been observed in the procurement process of AI relative to other procurement categories?
- 4. How do you envision these “point solutions” being integrated into the workflows of healthcare professionals?
- 5. Would you be able to recommend a contact who could share insights on public procurement more specific to AI solutions?

Hospital Sales – Interview Guide

Background

Meeting with Kim van den Wijngaard of Health Plus AI.

Health Plus AI: uses existing data, validated, and locally recalibrated machine learning algorithms to integrate with existing workflows, aiding clinical staff to deliver proactive and individualized care to support clinical work, hospitals and patients.

****Ask to record****

Introductory Context

Cordys Analytics is a startup developing AI-based solutions for ECG analysis. As Cordys approaches its market entry, the team seeks to identify which customer segments to focus on for its initial product roll out. The hospital sector is a potential segment of interest.

Objectives

- Gain a better understanding of hospitals as customers for AI-based clinical solutions.
- Use shared insights and experiences to help Cordys to get smart about approaching hospitals.

Guiding Meeting Questions

General Process

1. Could you talk me through the process of securing hospitals as a customer?
 - a. Is there a general, routine process or does it differ from one hospital to the next?
 - b. Does the process differ for academic versus general hospitals? How so?
 - c. Is success more likely with one versus the other?

Key Personnel

2. Who are the key personnel from the hospitals that must be involved in the process?
 - a. Who typically facilitates the procurement process within the hospital (end users, department heads, etc.)?
 - b. Who has decision making power?
 - c. Who serves as a gate keeper in the process?
 - d. Who has influence?

Timeline

3. What is the typical timeline from first contract to contact?
 - a. Which steps or phases of the process tend to take the longest or cause frequent delays?
 - b. Are there any elements that commonly delay or accelerate the process?

Obstacles

4. What are some of the prominent obstacles when it comes to securing hospitals as customers?
 - a. Have you identified any strategies to overcome such obstacles.

Learnings

5. Do you have any overall learnings or insights to share for a startup approaching hospitals with an AI-based solution?

Next Steps

6. Are there any colleagues or contacts you recommend I speak with for additional insights into approaching hospitals with AI solutions?

US Hospital Segment – Interview Guide

Background

Meeting with Dr. Ramesh Sivagnanam, Director of Cardiovascular Services for the Cardiovascular Institute at the University of California San Diego Health.

Ask to record

Context

As the final portion of my master's education at Utrecht University in the program of Science and Business Management, I am required to complete a fulltime business internship. I am completing my internship at Cordys Analytics, a startup developing AI-based software for ECG analysis. At the company, my role is focused on developing Cordys' business plan for its initial market entry. At the moment the company is undergoing the process of obtaining class IIb European CE mark. Once certification is complete, the company will immediately focus on obtaining FDA approval and entering the US market. To shape our strategy, we need insights into existing workflows for ECGs in US hospitals and the adoption potential for AI-based solutions in cardiology.

Objectives

1. Understand the current workflows and systems for ECGs in US hospitals, including key pain points.
2. Explore the adoption and status of AI-based ECG analysis solutions.
3. Learn about the decision-making and procurement process for implementing new AI-based technologies in the hospital setting.
4. Discuss the broader role for AI in cardiology, focusing on private clinics and home monitoring.

Guiding Questions

1. ECG Workflow Overview
 - a. How are ECGs currently requested, performed, and analyzed within your hospital?
 - i. In which departments are ECGs requested?
 - ii. Where are the ECGs performed?
 - iii. Who performs the ECGs?
 - iv. Who analyzes the ECGs?
 - b. What are the main challenges in the current workflow that AI could help address?
2. AI Solutions in ECG Analysis
 - a. What AI-based ECG analysis solutions are currently in use or under consideration at your hospital?

- b. What is the level of interest or openness among clinicians and upper management toward adopting AI-based tools?
- 3. Procurement Process for AI Technologies
 - a. Can you outline the procurement process for new technology?
 - i. Would it differ for AI solutions?
 - b. Do cardiologists have the authority to independently purchase smaller orders, such as a subscription to AI software?
- 4. Broader AI Applications in Cardiology
 - a. Beyond ECG analysis, what AI AI-based technologies are making an impact in cardiology?
 - b. What is the role and scale of private heart clinics?
 - c. What is the status of home monitoring for heart patients?
 - d. How could AI-based ECG software help improve patient care in private heart clinics or through home monitoring?
- 5. Next Steps:
 - a. Are there any colleagues to contacts you recommend I speak with for additional insights into AI in clinical settings?