Prepared by group 3

Pitch

Cancer Research Hospital's Case

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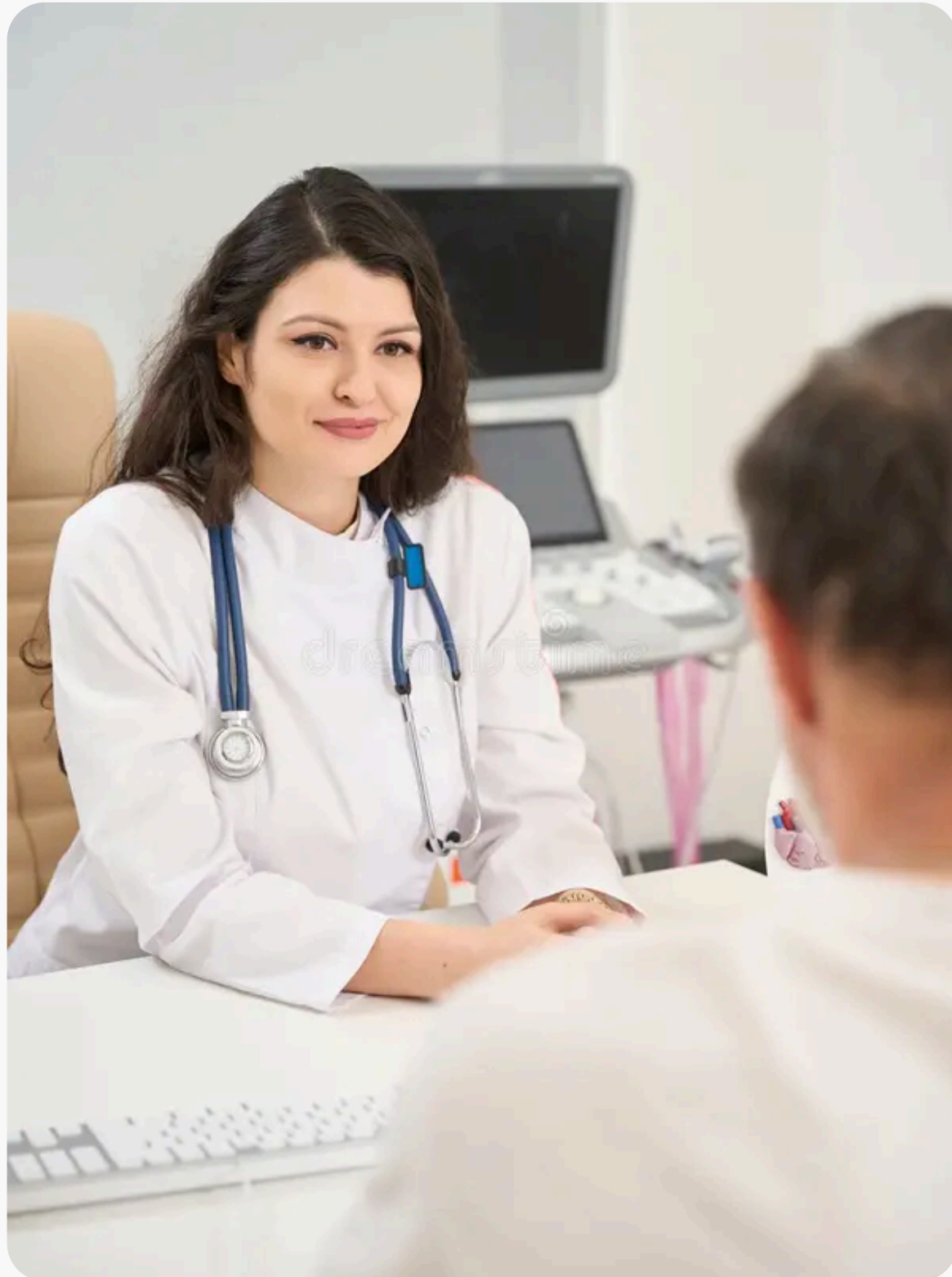
The Team:

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Data & Analysis Lead

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Client Relations & Strategy Specialist

Context of our Company

An overview of our company

- a leading cancer center in Europe
- vision: innovation at the service of the fight against cancer

Strategy of our company

- make advancements to cure post-diagnosis diseases
- ... **focus more on preventing and improving the delay** to diagnose cancers

Goal & program setlled by our company

- a patient-centric approach to implement tools able to match people at increased risk with empiric clinic cases
- offer a personalized screening and prevention pathway to decrease development of cancers
- reduce the risk of malignant tumors of stage 2 in patients by 30% over 5 years

Main Issues:

The project focuses on early cancer detection and prevention, aiming to reduce stage 2 malignant tumors by 30% in five years. The goal is to shift from post-diagnosis treatment to proactive, personalized prevention for high-risk individuals.

Lack of Early Detection:

- There is a gap in the ability to detect cancer early, especially at stage 2, where treatment outcomes could be significantly better.
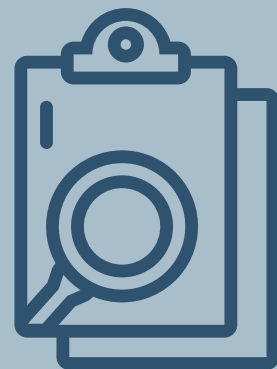
Post-Diagnosis Focus:

- The current healthcare system primarily focuses on treatment after diagnosis, rather than on prevention and early intervention, which limits the potential to reduce cancer risk.

Personalization of Care:

- There is a challenge in providing tailored prevention and screening pathways based on an individual's risk profile, which could be a crucial factor in early cancer detection.
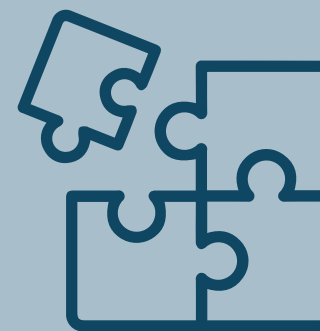
Data Integration:

- The integration of vast amounts of patient data with clinical case data presents challenges in creating accurate risk assessments and personalized recommendations.

Collaboration Complexity:

- With the tool being co-owned by the publisher and the cancer center, there are issues regarding intellectual property, data sharing, and profit-sharing models that need to be addressed.

3. Analysis

3.1 Understanding the Impact of the Problem

The lack of personalized cancer screening and data-driven prevention has multi-dimensional consequences for the hospital, patients, and the healthcare system.

IMPACT BREAKDOWN

Dimension	Negative Impact
Medical	Late-stage cancer detection, lower survival rates, and more invasive treatments required.
Financial	High treatment costs for advanced cancer cases => Less funding available for early detection research.
Operational	Inefficiencies in patient data management => Delayed decision-making in preventive care.
Patient Experience	Low patient trust in AI-based diagnostics => Reduced willingness to adopt preventive measures.

3. Analysis

3.2 Analytical Tools Application

SWOT Analysis

Strengths	Weaknesses
Leading research institution with expertise in oncology and AI applications.	Fragmented and non-interoperable medical data across systems.
Access to a large patient database for AI-driven risk prediction models.	Slow adoption of digital health solutions by healthcare professionals.
Opportunities	**Threats**
AI-driven risk assessments could improve early detection and reduce cancer rates.	GDPR and other regulatory risks that could delay implementation.
Potential partnerships with governments, insurers, and tech companies to fund AI-driven cancer prevention.	Resistance to AI-based diagnostics from patients and physicians due to trust issues.

3. Analysis

3.3 Patient Journey Mapping: Current vs. Target Model

Current Situation (Traditional Screening Pathway)

1. Patient Visits Doctor → Only after experiencing symptoms.
2. Basic Tests Ordered → Cancer detection occurs at later stages.
3. Diagnosis & Treatment → Higher mortality rates, costly interventions.

Target Model (AI-Powered Personalized Screening)

1. Risk Assessment → AI evaluates risk based on patient history and genetic markers.
2. Tailored Screening Plan → Personalized recommendations based on risk profile.
3. Continuous Monitoring & Engagement → Automated reminders, lifestyle recommendations, and predictive insights.

Recommendations for the Cancer Prevention Tool Implementation

Enhancing Patient-Centricity
- **Personalized Screening Plans** – AI-driven tailored prevention pathways based on individual risk profiles.
- **Digital Patient Engagement** – Mobile app integration for real-time updates, reminders, and virtual consultations.
- **Accessibility & Inclusion** – Multilingual and user-friendly interface for diverse populations.

Ensuring Technological Feasibility
- **Robust Data Integration** – Secure APIs connecting EHRs, genetic databases, and lifestyle trackers.
- **AI Model Optimization** – Continuous refinement of predictive algorithms with real-world patient data.
- **Scalability & Cloud Adoption** – Cloud-based infrastructure for seamless deployment across multiple hospitals.

Strengthening Data Security & Compliance
- **GDPR & HIPAA Compliance** – Strict adherence to data governance policies to protect patient information.
- **Anonymization & Encryption** – Advanced encryption techniques to prevent unauthorized data access.
- **Ethical AI Use** – Transparency in AI-driven recommendations to build patient trust.

Recommendations for the Cancer Prevention Tool Implementation

Contingencies & Risk Mitigation
 Regulatory Delays – Establish compliance teams to proactively address evolving data protection laws.
 Data Security Breaches – Implement multi-layered cybersecurity frameworks and rapid-response protocols.
Technology Adoption Barriers – Conduct extensive user training for healthcare professionals and patients.
 Financial Risk – Develop a phased rollout strategy to minimize upfront financial exposure.

Initial Investment & ROI –
 Operational Costs – Factor in cloud hosting, maintenance, and periodic AI model updates.
 **Cost Sharing Strategies –** Explore partnerships with insurers, pharmaceutical companies, and research grants to offset financial burdens.
 Control & Ownership – Clearly define co-ownership agreements between the hospital and publisher regarding data rights, software updates, and decision-making authority.
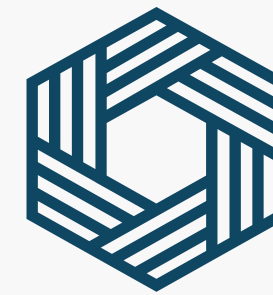
Driving Long-Term Sustainability
- **Hybrid Business Model** – Subscription-based approach for hospitals with a pay-per-use model for advanced diagnostics.
- **Public-Private Partnerships** – Collaborations with government health agencies for broader adoption.
- **Impact Measurement –** Tracking key success metrics (tumor stage reduction, early detection rates) to assess program effectiveness.
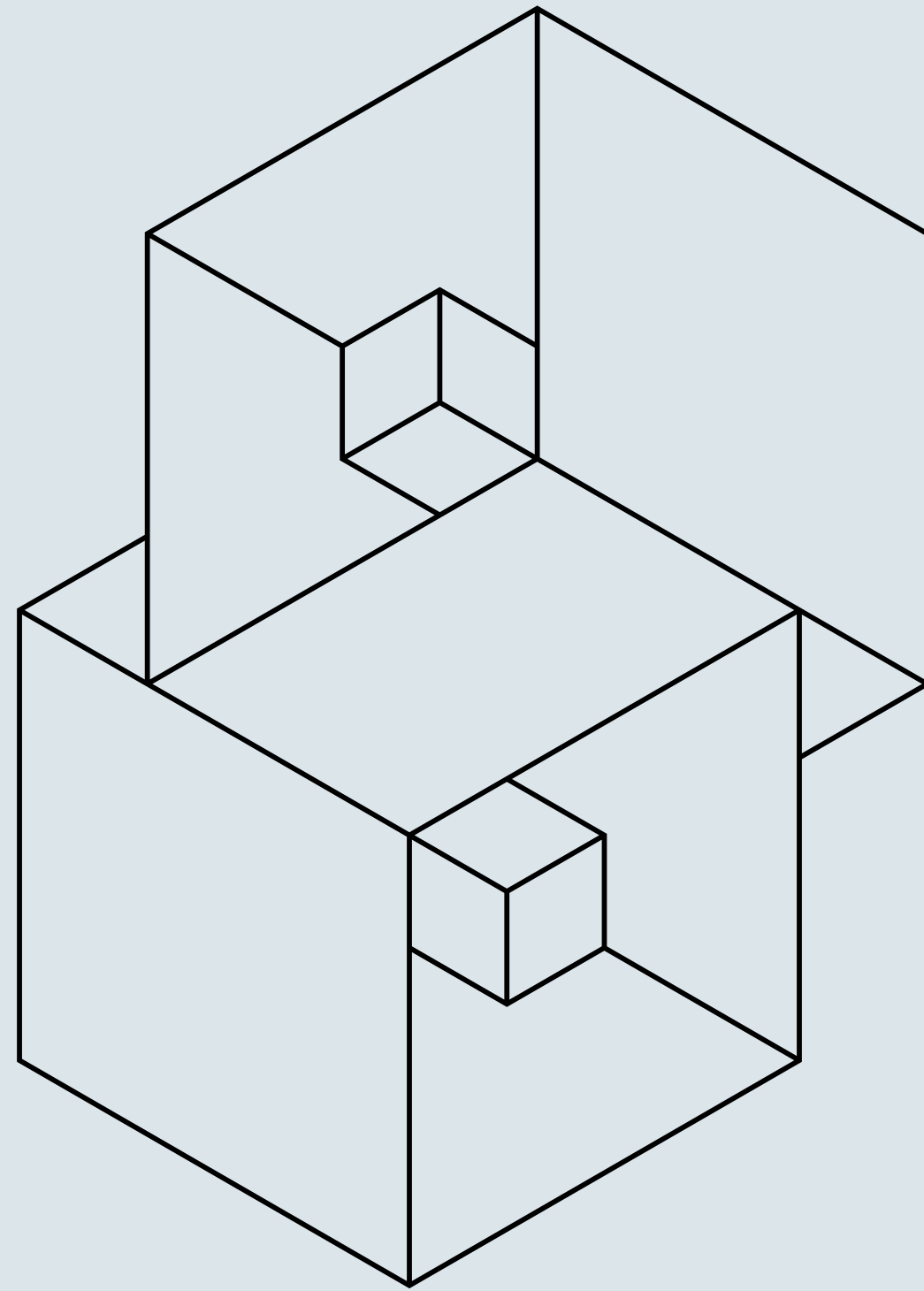
CONCLUSION

- **Early detection enhances survival rates** – AI-driven screening enables proactive cancer prevention, reducing late-stage diagnoses.
- **Technology-driven precision** – Secure data integration and AI models optimize personalized risk assessments.
- **Ensuring security & compliance –** Strong data protection and regulatory adherence build trust in AI-powered healthcare.
- **Sustainable and scalable model –** A hybrid business approach ensures financial feasibility and long-term adoption.
- **Proactive risk management** – Addressing regulatory, security, and adoption challenges ensures smooth implementation.

Thank you