MediXAI

XAI-empowered Breast Cancer Diagnosis System

Problems

High Risk of Misdiagnosis

Patients can expect low accuracy in their diagnosis test due to complexity and hardness of the task for practitioners

Limited Healthcare Accessibility and Patient Engagement

Patients have to choose between high costs of speedy diagnosis in private hospitals and waiting for months to get in the line in public ones
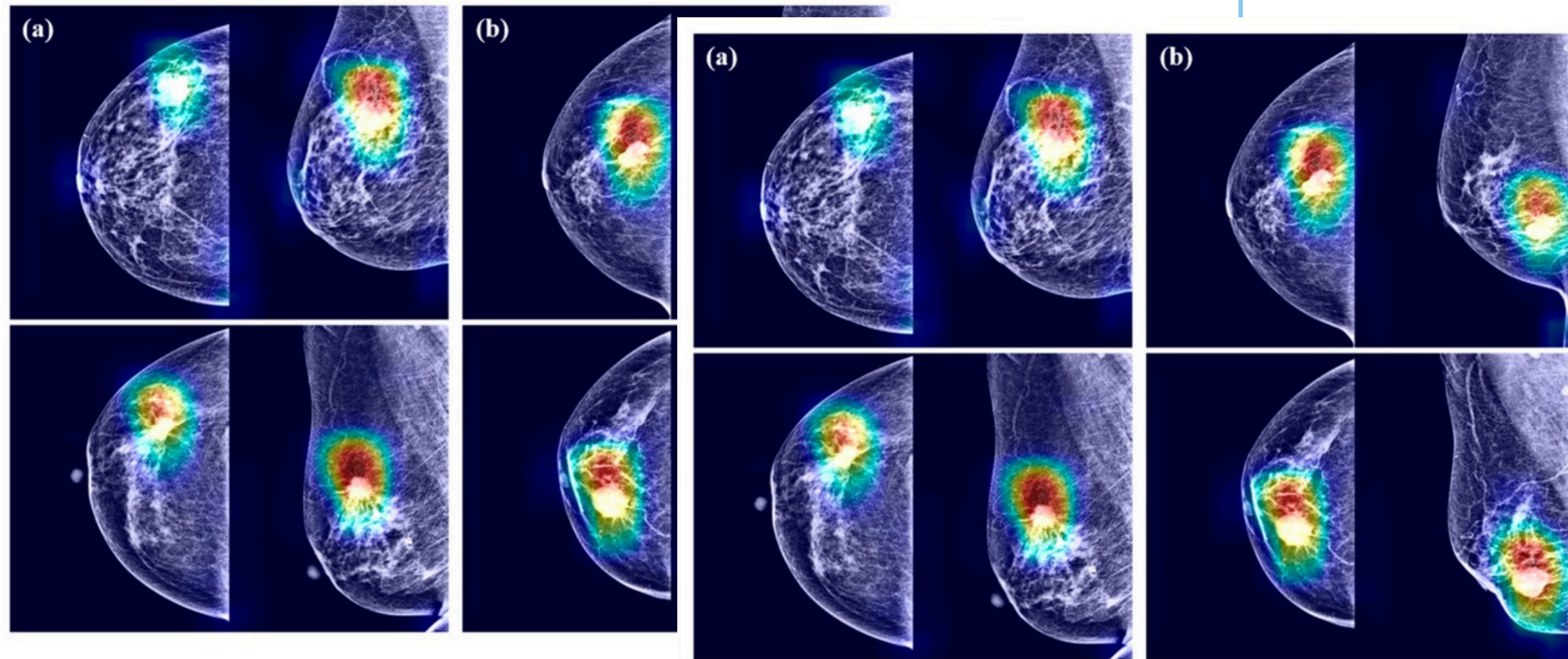
Costs of Analysis Operations

Institutions might face the need to handle quick increase in the number of patients by employing more experts and paying them high salaries
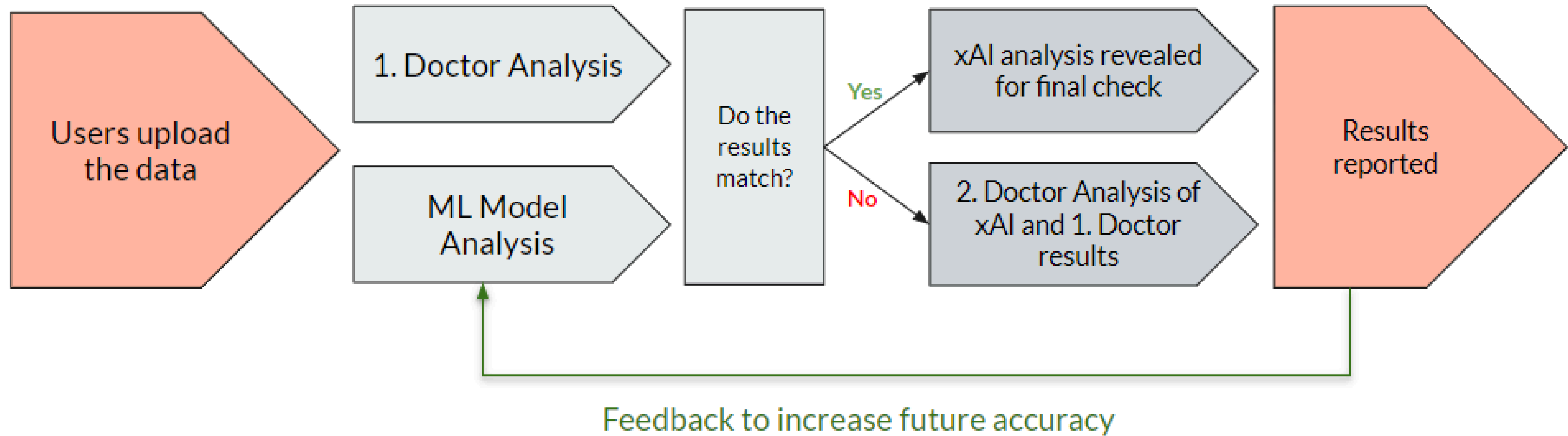
Solutions

Using XAI Models

Optimum Collaboration of Doctors and AI

Solutions
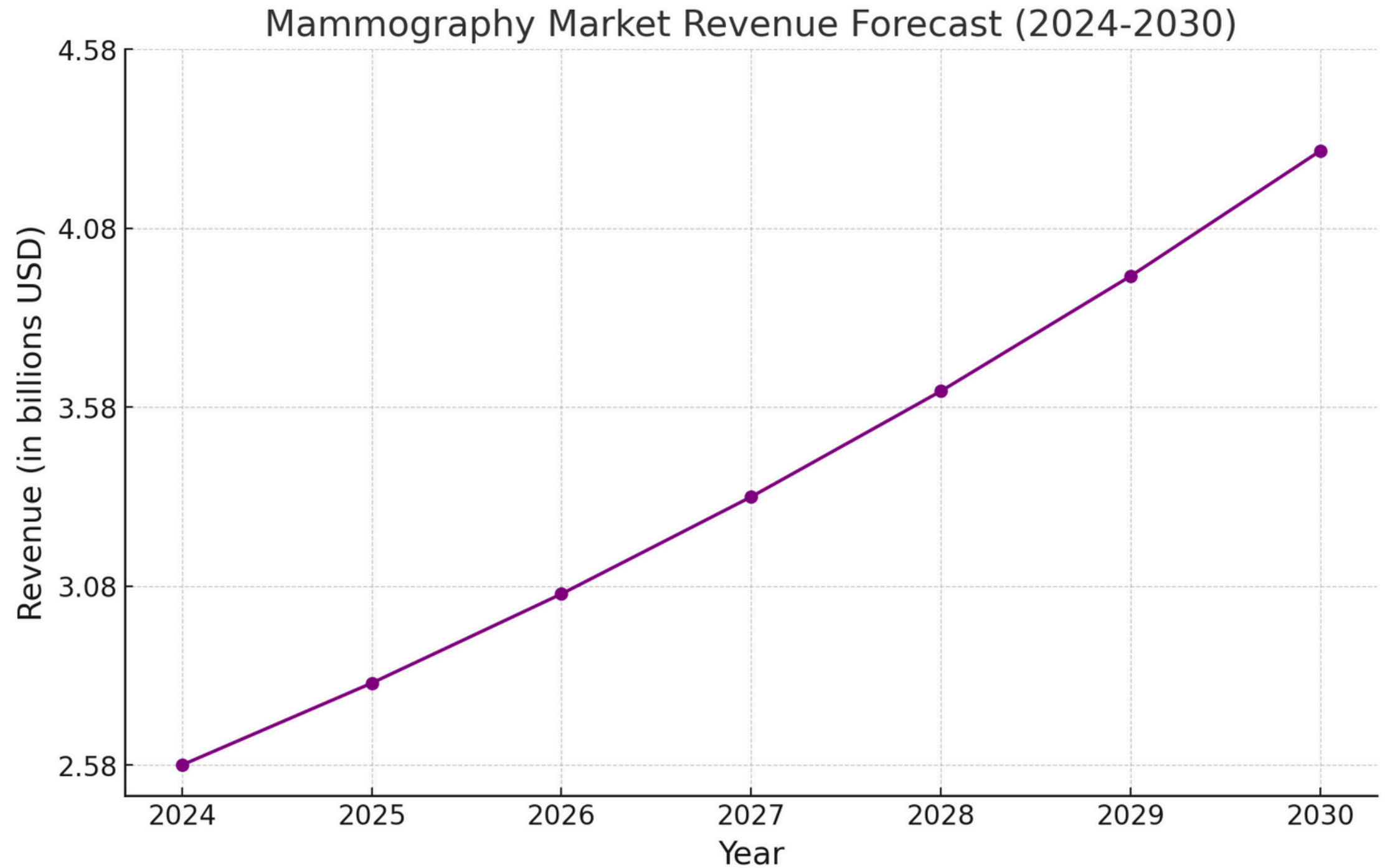
Target Market

Breast Cancer Analysis

Women

14.3 million women (age 40-69), which is approximately 33.5% of the total female population in Turkey [2].

Instutitions

Ministry of health lodges tender for 660.000 analysis per year. 500 private hospital provides mammography analysis in Turkey.

Size of the Market

Mammography Market Revenue Forecast (2024-2030)

[1] Female population by age group Our World in Data. Available at: https://ourworldindata.org/grapher/female-population-by-age-group (Accessed: 28 October 2023).

[2] Toplumsal CİNSİYET istatistikleri gender statistics 2022. Available at: https://www.tuik.gov.tr/media/announcements/toplumsal_cinsiyet_istatistikleri.pdf (Accessed: 28 October 2023).

Indirect Competitors

Second Medical Opinion Market

- Hastalar Soruyor

- Medicopin.com

Doctor Assistance Market

- ICTerra

- Screen Point Transpara

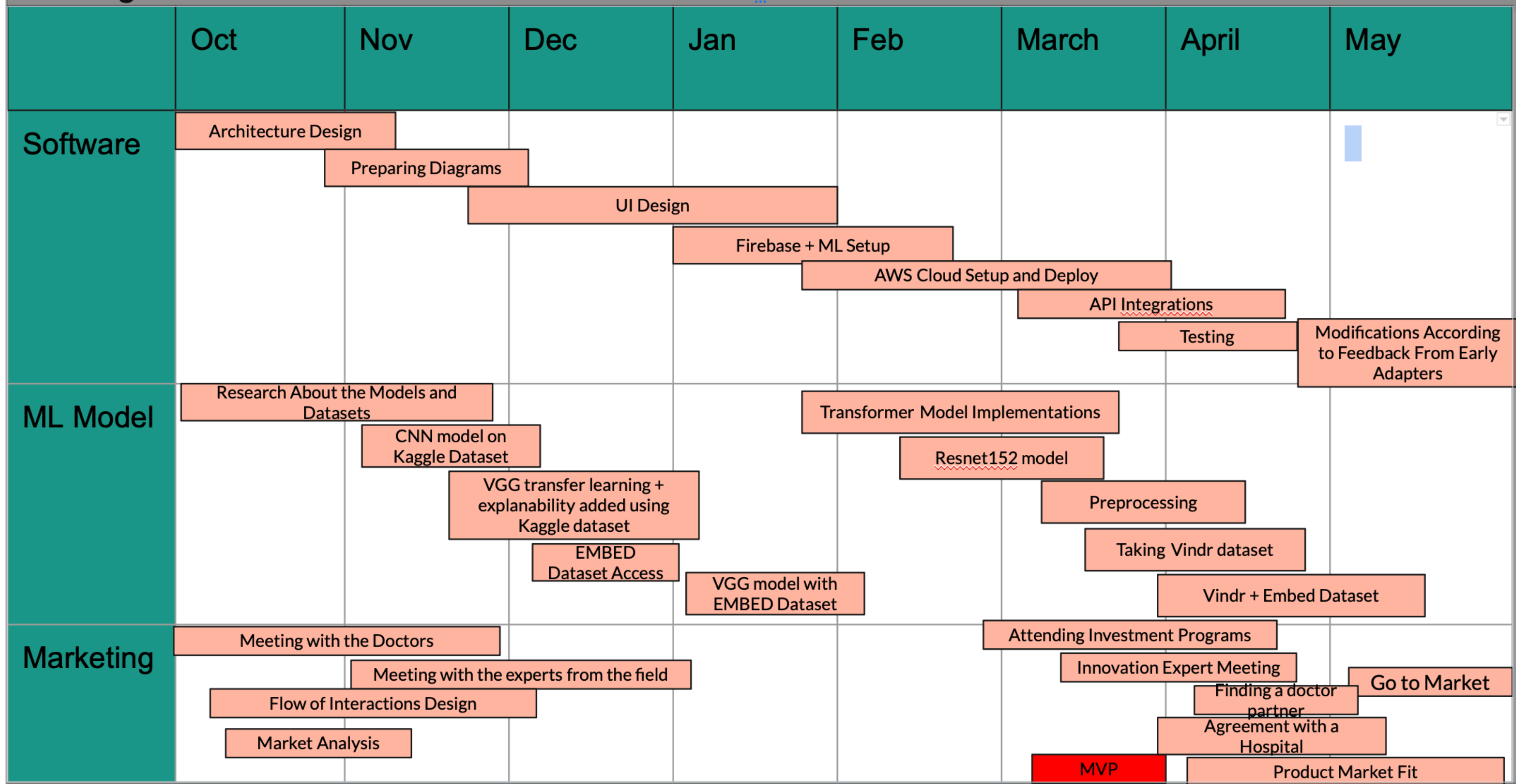- Siemens Syngo Breast Care

Business Model

Fee-for-service (FFS)

- Patients will be charged based on the services they receive, specifically for each check-up and consultation session. The fees can vary depending on factors such as the number of mammograms analyzed and the level of interaction with the doctor.

Project Plan

	Oct	Nov	Dec	Jan	Feb	March	April	May

Software
- Architecture Design (Oct)
- Preparing Diagrams (Nov)
- UI Design (Dec–Jan)
- Firebase + ML Setup (Jan–Feb)
- AWS Cloud Setup and Deploy (Feb–March)
- API Integrations (March–April)
- Testing (March–April)
- Modifications According to Feedback From Early Adapters (April–May)

ML Model
- Research About the Models and Datasets (Oct–Nov)
- CNN model on Kaggle Dataset (Nov)
- VGG transfer learning + explanability added using Kaggle dataset (Dec)
- EMBED Dataset Access (Dec)
- VGG model with EMBED Dataset (Jan)
- Transformer Model Implementations (Feb–March)
- Resnet152 model (Feb–March)
- Preprocessing (March)
- Taking Vindr dataset (March–April)
- Vindr + Embed Dataset (April)

Marketing
- Meeting with the Doctors (Oct)
- Meeting with the experts from the field (Nov)
- Flow of Interactions Design (Oct–Nov)
- Market Analysis (Oct–Nov)
- Attending Investment Programs (March)
- Innovation Expert Meeting (March–April)
- Finding a doctor partner (April)
- Go to Market (May)
- Agreement with a Hospital (April–May)
- MVP (March)
- Product Market Fit (April–May)

Future Roadmap

July 2024

Deployement of doctor
asisstance tool

August 2024

Deployment of the
whole system

September2024

Marketing and
Advistasement

OUR TEAM

Omar Hamdache
Full-Stack Developer

Mahmut Furkan Gön
Full-Stack Developer

Ahmet Arda Ceylan
Marketing & ML Engineer

Mustafa Yetgin
ML Engineer

Ömer Kağan Danacı
Software Engineer

Doç. Dr.Mehmet Ali Can
Radiology Expert

THANK YOU

Project Website:

medixai.netlify.app