



Upper Respiratory Infection
/Cough & Cold Industry
Ecosystem & Technology
Roadmap

How
COVID-19
Reshaped Global
Respiratory Health

Global Impact (2020–2022):
Mask mandates and social distancing led to a drop in cough & cold remedy sales, but sparked R&D in rapid diagnostics, AI monitoring, and telemedicine.

India's Outbreak:
The severe Delta wave in 2021 strained healthcare systems and accelerated the adoption of herbal remedies, self-care, and digital consultations.

Market Shift:
OTC cough & cold sales fell 13.6% globally in 2021, while demand for wellness apps and remote care surged.

Current Ecosystem
Snapshot

- Growing Demand for Natural & Herbal medicines
- Opioid derivatives like codeine are used as antitussives
- Rise in digital & AI-based cough detection solutions
- Precision Medicine Approaches - *Microbiome-Based Therapies, Phenotyping of Cough, Biomarker-Driven Treatment*

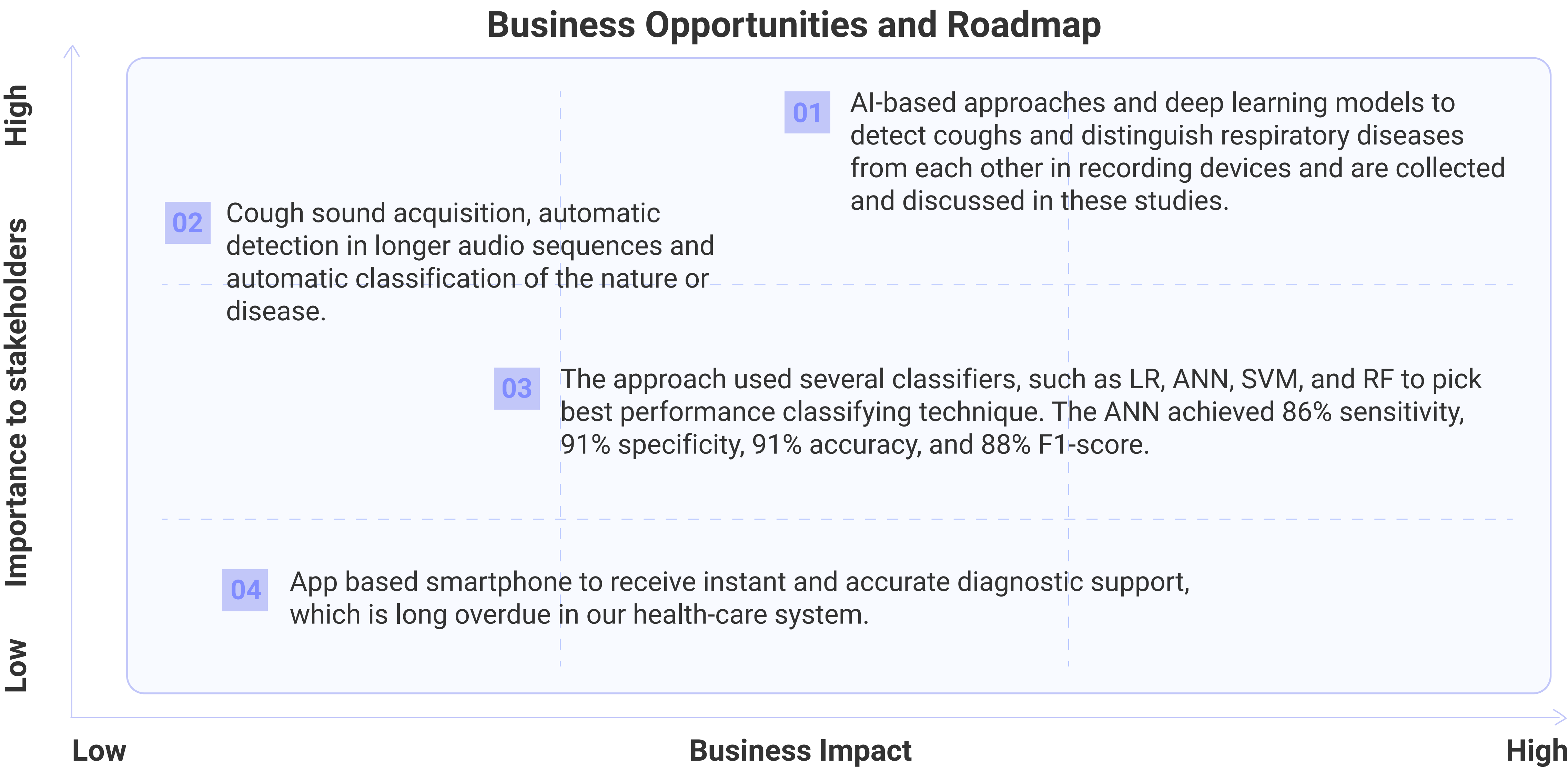
Emerging Technology Trends

Cough Detection	Imaging Innovations	Remote Monitoring
PCA-based sound extraction	CT imaging	Smartphones with embedded sensors
TensorFlow + Deep Learning	Respiratory scanners	Automated patient tracking

Key Technological Shifts

- AI cough classifiers achieving >80% accuracy at 5 dB SNR.
- HMM models differentiate cough from other sounds.
- Deep learning + PCA + TensorFlow used for sound detection.
- Apps enabling instant, accurate respiratory diagnostics.

Top Business Opportunities



As technology reshapes the respiratory health landscape, we're entering an era of smarter, more accessible cough and cold care - **Stay informed with Ingenious e-Brain**