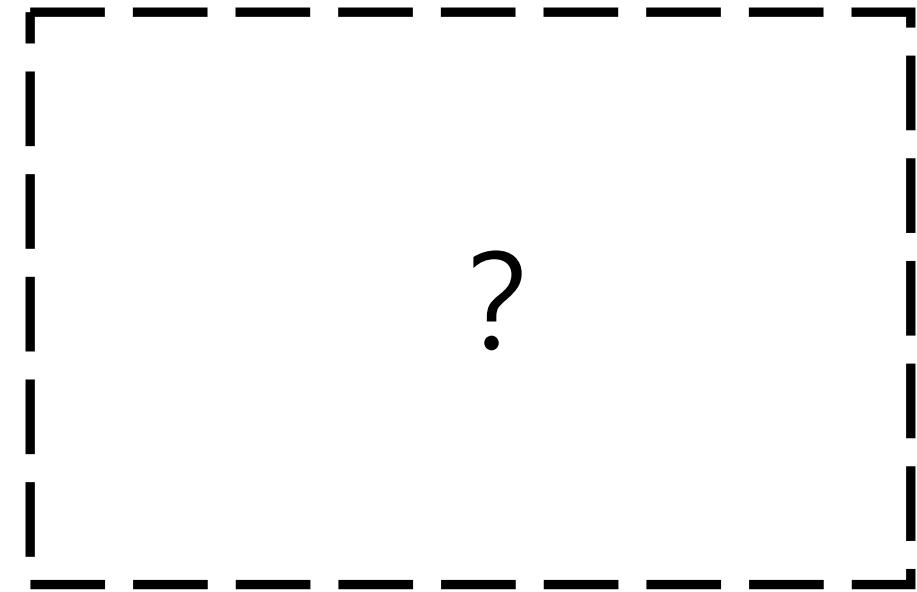




MobioSense



Diabetes



Other disease

HERO- NEXT-Gen Point-of-care testing Platform



Y

Antibody based

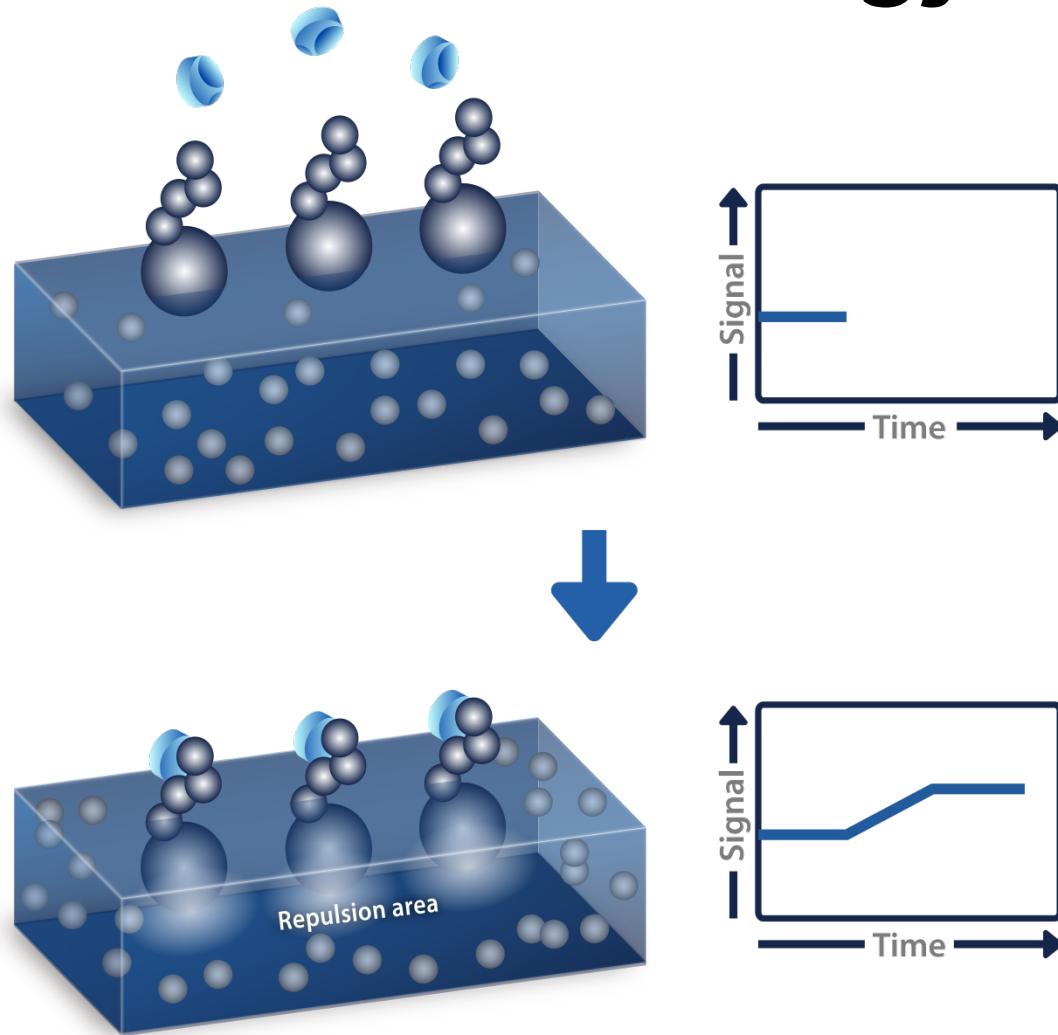


A drop of Blood

10^{min}

10 min to get data

Technology: Nanowire FET



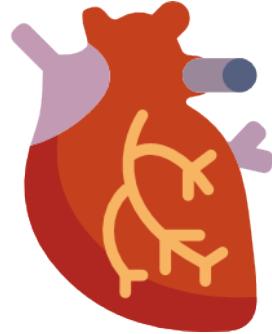
1. Electrons pass easily when there's no Ab-Ag interaction
2. Ab-Ag interaction create Repulsion area
3. Repulsion area influence electron passing, and signal can be detected

Patents: 1 grant, 2 pending and 2 provisional

Ab: antibody, Ag: Antigen

	Nanowire FET	Optical-wave guide	SPR	Optical + Microfluidics
BOM cost/Chip	2 USD	5 USD	15 USD	10 USD
Instrument cost	100 USD	4,000 USD	10,000 USD	4,000 USD
Manufacturing	Validated by TSMC process, Mass production capable	Not been verified by mass production foundry yet	Not been verified by mass production foundry yet	In the market
Sensitivity	5 pg /mL	20-50 pg /mL	50-100 pg/ mL	100-200 pg/mL
Operated by trained person	NOT required	Not required	required	Not required
Companies or research team	MobioSense	iNDx Lifecare	GE Biacore system NTU BME group	Abbott i-STAT system Roche Cobas system

Troponin I home-care package



Target: prevent CAD → AMI

About 40M patients in US+EU

Feature: Ultra-sensitive: 50pg/mL or lower

Monitoring frequency: 1/ 3months



Heart-attack rate

50%↓

95%↓

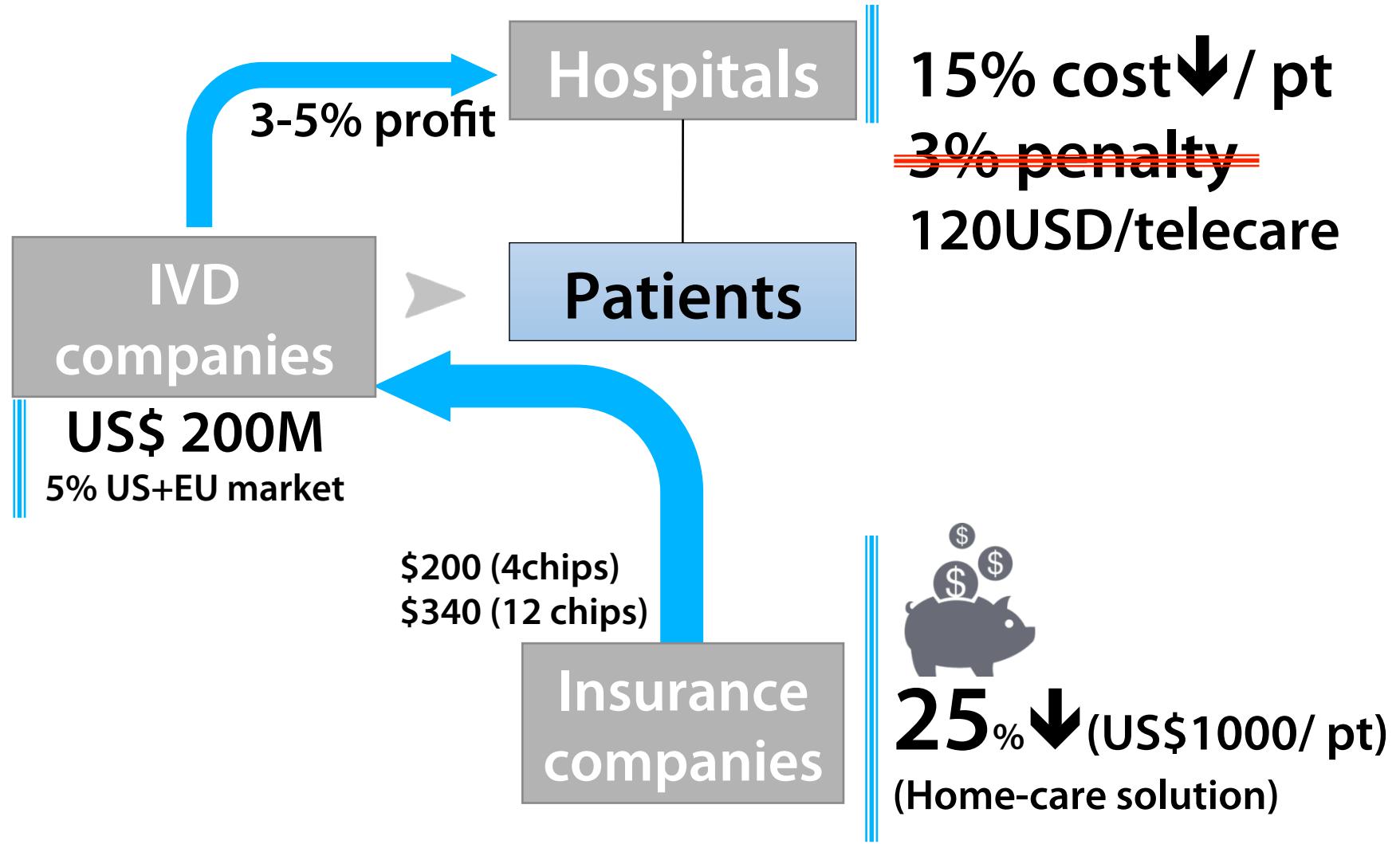
20%↓

Stakeholders in AMI Value Chain



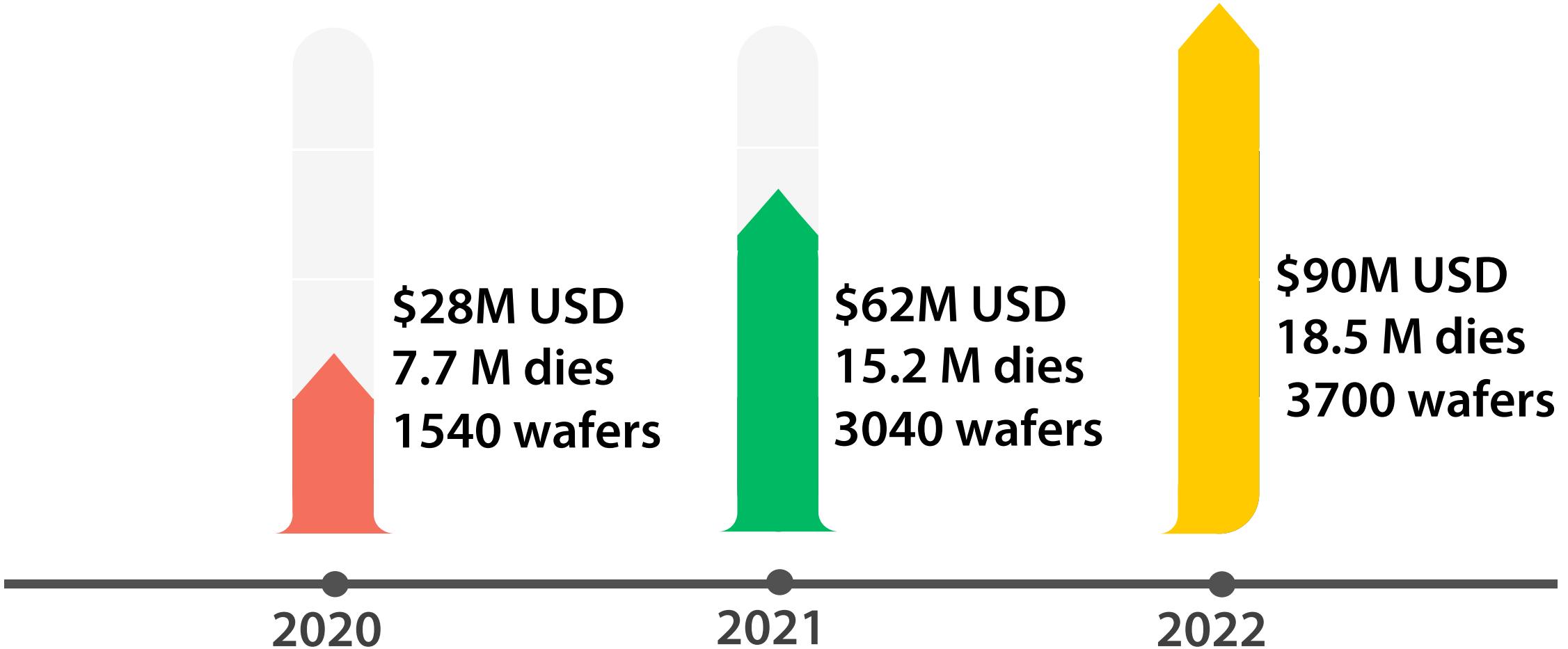
MobioSense

\$125 (4chips)
\$175 (12 chips)

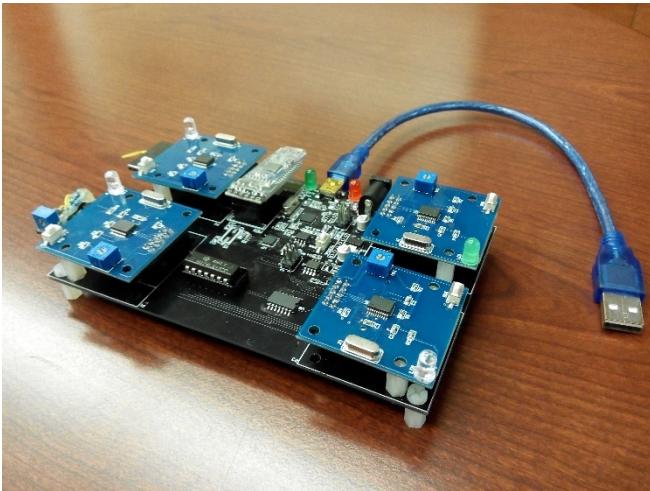


Sales Forecast

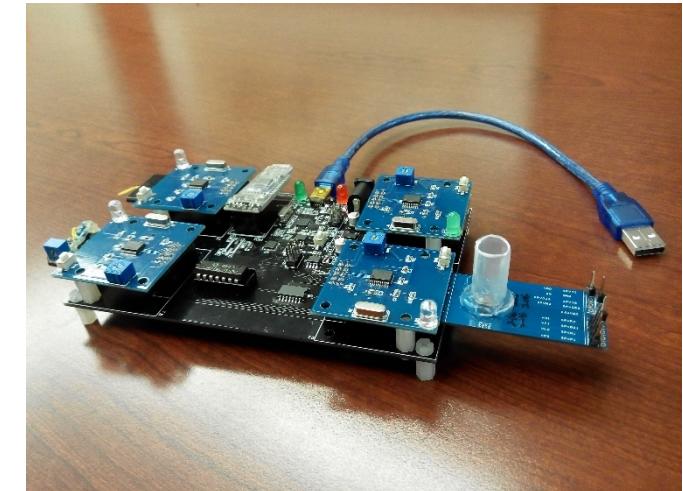
FDA approval by 2019



Now- Prototype



Chip size 4.5x2.5 cm
SD card compatible

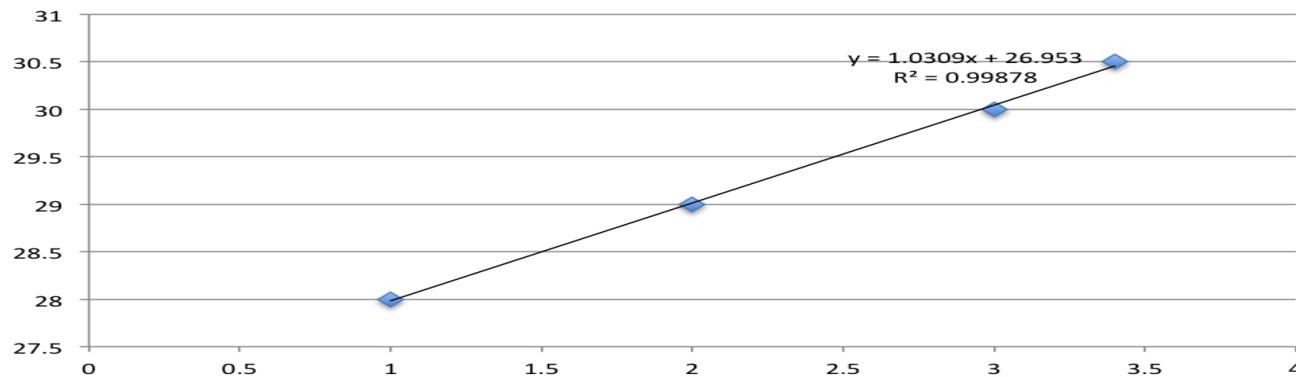


4 channels
Bluetooth transmission



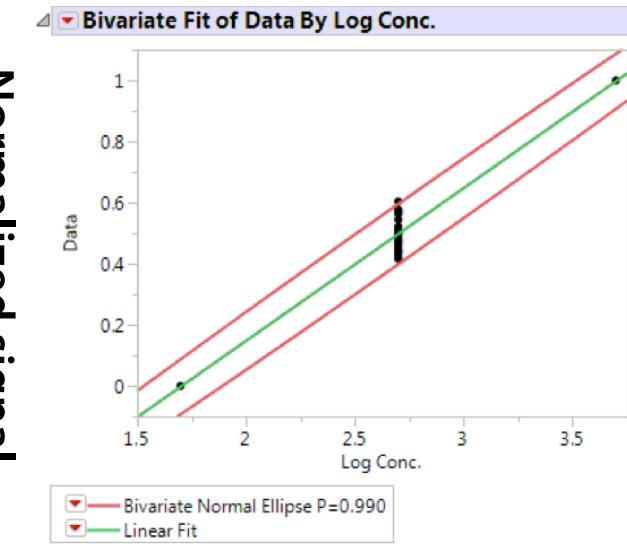
Measurement
through connecting
w/ tablet

Now- Data



Troponin I standard sample
25 pcs
Conc.= 50, 500, 5000 pg /mL

Normalized value for 500 pg/mL



Concentration in log scale

$R^2 = 0.99$
 $CV=11.3\%$

1st Year- Design-fixed and pre-clinical test

Budget: \$1.3 M

Reader Manufacturing



Design



Hardware/ App

Chip Manufacturing



IC



Biomolecules



Microfluidics

R&D, clinical validation



Distributor



CN Gov.
(Troponin Qualitative kit)

IVD companies
(product-market fit)

2nd Year- Clinical test for FDA/CE

Budget: \$2 M

Reader

Getac

Hardware/ App

Chip Manufacturing



IC



Biomolecules



Microfluidics

Clinical validation



**HARVARD
MEDICAL SCHOOL**

Clinical test

Stakeholders



Distributor



**HARVARD
MEDICAL SCHOOL**

Hospital

**ThermoFisher
SCIENTIFIC**

IVD companies



UnitedHealth Group

Insurance companies

Team Introduction



Engineering



Wayne

Qualcomm R&D and
product engineer
NTU EE MS
NTU Life Science BS



Charles

TSMC R&D engineer
NTU EE MS
NTU Life Science/
Material Science BS



Medicine



Sam

Clinical laboratory
scientist
NTU Biochemistry MS



Julie

NCKU Medical
Laboratory Science
and Biotechnology MS



Justin

Harvard MPH
Cardiologist in Boston
Medical consultant



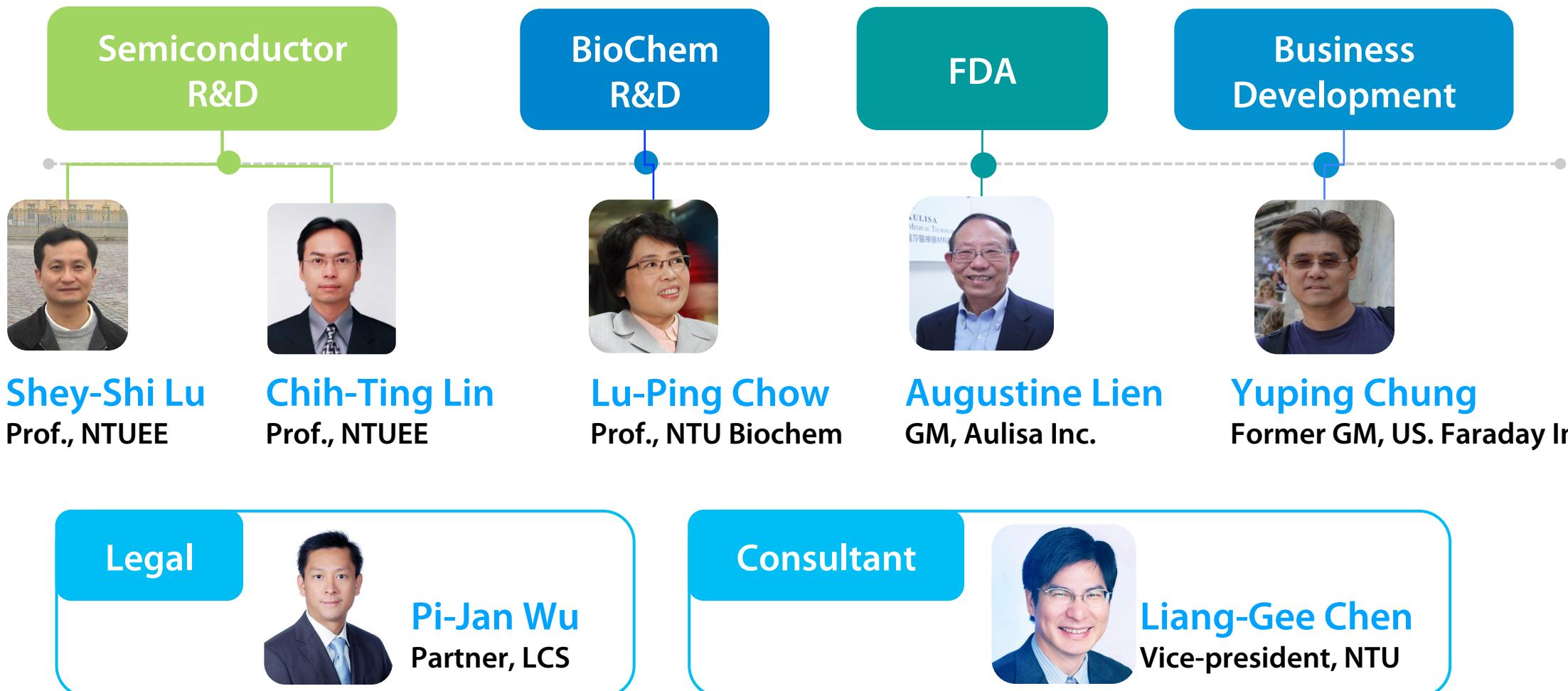
Heidi

HP Strategic Business
Manager
NTU Finance/
Life science BS



**Medicine
Business**

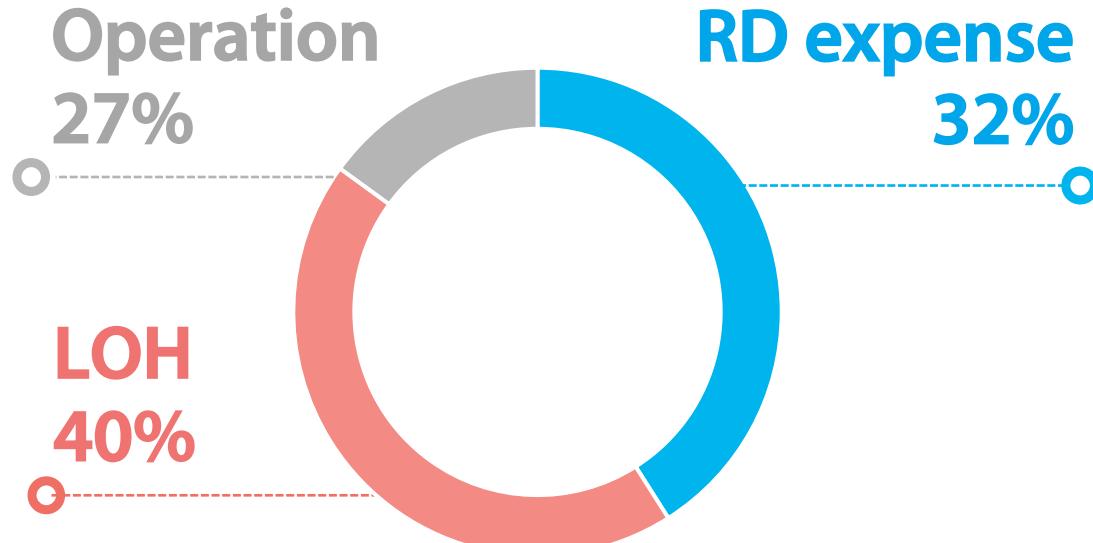
Advisory Board



Budget for 2 years

Total cost:

\$3.3 M USD/2 years



RD expense

- IC tape-out
- Microfluidics
- Data reading system
- Packaging
- Biomolecules
- Electronic tools
- FDA regulations
- Clinical validation
- Licensing

Manpower plan

- Executive *1
- Engineer *6
- Biochem *2
- Business development *1
- FDA/regulation *2
- QC*3
- Admin *1

Milestone: 2 years

- Ready for FDA/CE submission



MobioSense