

Sabio Innovative Solutions

Innovate. Impact.

BacTFast: A Platform for Rapid Infection Screening, Diagnosis and Management



Executive Summary

Sabio Innovative Solutions Pvt Ltd				
Sector	Health Care/Life Science		Year of Inception	2011
Business Brief	Building novel, rapid diagnostic devices for the detection and management of infections. Reducing time for diagnosis from 3 days to less than 6 hours			
Revenue (Rs Lakhs)	FY14: -	FY15: 82	FY16: 422	FY17: 1078
Why would an investor want to invest in Sabio?	Sabio is an experienced, diverse team solving a critical, clinician-identified unmet diagnostic need. Our platform will provide unmatched speed and value to hospitals and diagnostic labs with a domestic revenue opportunity of more than Rs 3000 Cr and delivering an IRR of 40%			
Initial Investment Size (Rs Cr)	5 Cr			
Exit Strategy	To build a sustainable global diagnostics business with acquisition potential by a diagnostics major or leading to a public offering			

What Drives Us and How We Solve Problems

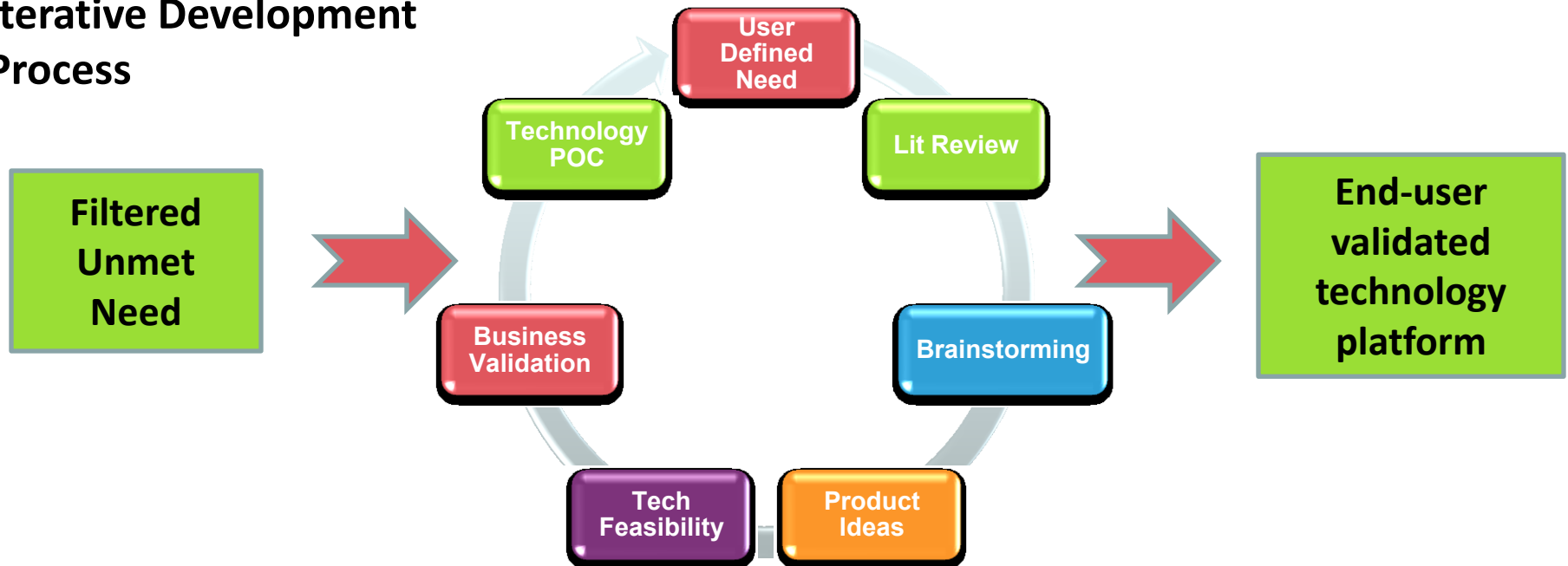
Vision

Be the leader in developing next-generation healthcare technologies by combining innovations in basic sciences, engineering and design

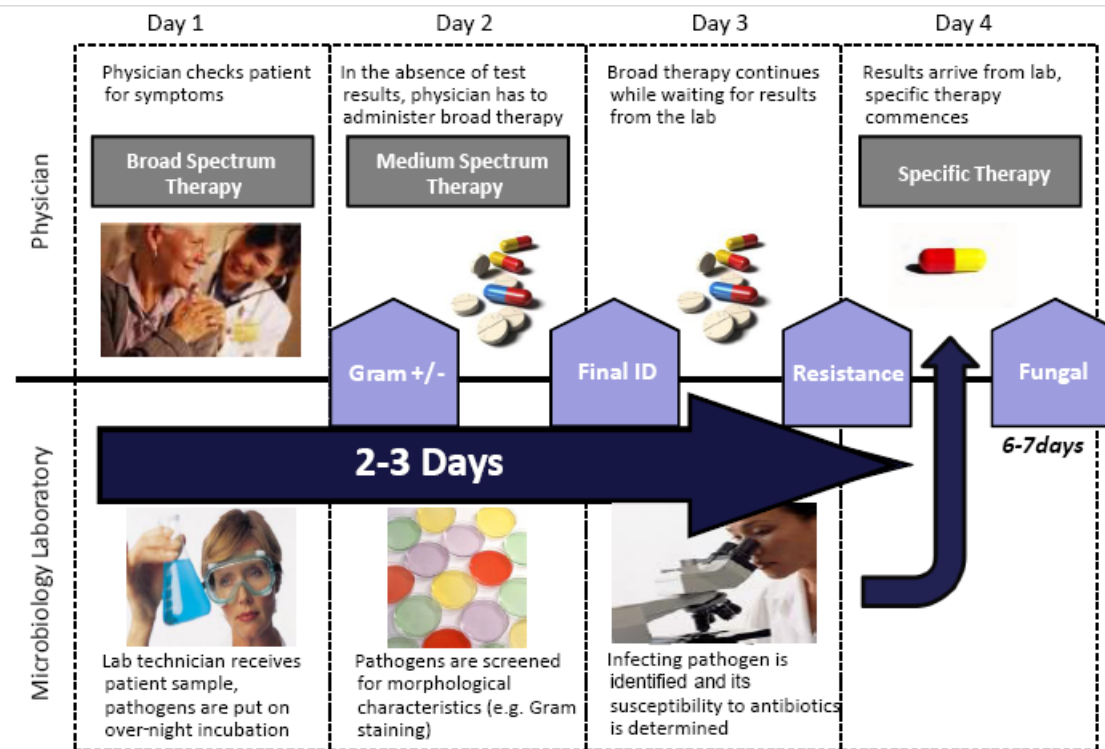
Mission

To build the fastest, simplest, and most valuable tools in the detection, screening and management of infections

Iterative Development Process



Rapid Infection Testing: The Need



**Need for
Clinically
Relevant
Rapid
Diagnostic
Platforms**

- Slower testing significantly increases cost of patient management for hospitals (average of 6 additional days of hospital stay at a cost >Rs 10,000 per day for infected patients)
- Significant impact on mortality (>2X higher mortality rate for infected patients)
- Increased empirical antibiotic prescription is associated with the growth of antibiotic resistance (>50% resistance in certain cases)

The Market for Infection Diagnosis

Need

- Clinical inputs indicate that greatest need is for rapid **blood based infection** diagnosis

Domestic Market

- **15K+ hospitals** in India performing **1-5 antibiotic sensitivity tests** per day and **10-30 screening tests** per day for patients with bloodstream infections
- About **1K diagnostic labs** performing blood culture tests

Customer Segment	Number	Culture Tests (Annual)	ID/Sensitivity (Annual)	Revenue Opportunity (Rs)
Private Hospitals	12000	90 million	9 million	2700 Cr
Public Hospitals	4000	30 million	3 million	900 Cr
Diagnostic Labs	1000	7 million	700K	210 Cr
Total	17000	127 million	12.7 million	3800 Cr

Global Market

- The global diagnostic market is at least **10 times** as large as the domestic sector, suggesting a ~Rs 30,000 Cr global revenue opportunity



Market Segmentation

Private Tier I Hospital Chains

- High-end chain hospitals present in Tier I cities



Private Tier II Hospital Chains

- Newer market entrants for Tier II cities



Individual Private Hospitals

- Large and mid-size urban hospitals



Public Sector Hospitals

- Urban government hospitals
- District Hospitals
- Services hospitals e.g. Railway, Armed Forces

Diagnostic Labs

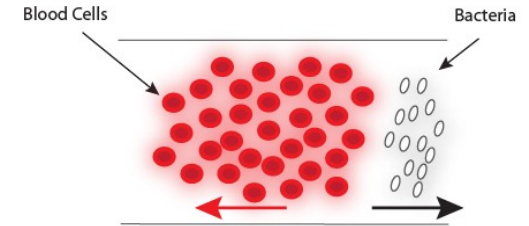
- Regional and National Diagnostic Lab Chains



BacTFast: 6 Hours to Result!

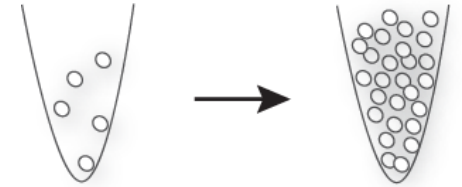
Separation

- Blood components removed
- Bacteria concentrated



Enrichment

- Minimal enrichment to screen infections and increase bacterial density (2-4 hours)



Antibiotic Sensitivity

- Rapid results within 2 hours after enrichment



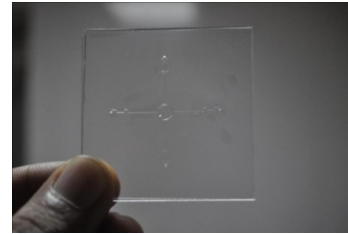
Identification

- Molecular techniques to identify bacterial species

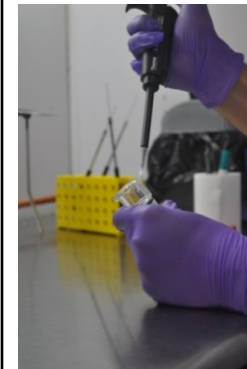


Platform: Features and Advantages

- ❑ **Unprecedented rapidity: <6 hrs to result** compared to 48+ hours for traditional methods
- ❑ **Automated** analysis
- ❑ **Simple workflow**
- ❑ **Compact** reader with intuitive interface
- ❑ Wi-Fi enabled, **telemedicine** ready – *reports available for remote review*



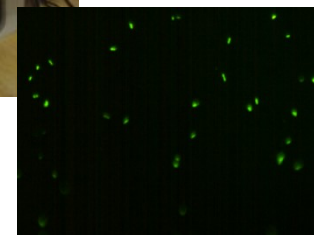
Easy to use
cartridges for
screening, ID and
antibiotic sensitivity



Proprietary
reagents to label
individual cells



Proprietary **detection**
system and **analysis**
software



Technology & Product Development : MGPP

Year 1

**Rapid Antibiotic
Sensitivity Test**

**Rapid Bacterial
Identification**

- Supported by Department of Biotechnology through a Biotechnology Ignition Grant
- Direct from blood culture without waiting for plate culture
- 24+ hr time saving

- Multiplexed molecular test with disease specific cartridges
- Direct from blood culture without waiting for plate culture
- 24+ hr time saving

Year 2

**Rapid Infection
Screening and Blood
Culture**

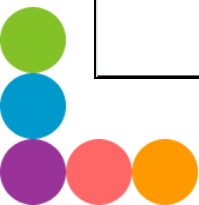
- Minimal incubation time of 2-4 hours
- Integration with identification and sensitivity test to give complete turn-around time of <6 hours
- 48+ hr time saving

Multi-generational product plan ensures ability to generate revenues early while also expanding product offerings

IP: PCT application filed for novel microbial isolation and concentration device

Competitive Landscape

	Sabio	Manual Method	Current Automated Systems	Future Systems
Turn-around: <6 Hrs	✓	✗	✗	✓
Low Amortisation/Recurring Cost	✓	✓	✗	✗
Automation	✓	✗	✓	✓
Generalisable (All Bacteria, All Antibiotics)	✓	✓	✓	✗
Phenotypic and Genotypic Information	✓	✗	✗	✗
Example		Kirby-Bauer disc diffusion	BioMerieux Vitek, Siemens Microscan	PCR-based assays



Market Entry and Scale-up

Early Adopters

- Tier II hospital chains
- Individual Private Hospitals

- Tier I hospital chains
- Individual Private Hospitals
- Diagnostic Labs

- Public sector hospitals
- International Expansion

- Currently partnered with large Bangalore hospital for validation and to be an early adopter
- Targeting mix of segments for additional early adopters with a revenue target of >1 Cr

Expand into Tier II hospital chains and individual private hospitals in Tier II cities

- These hospitals face higher infection loads and lower technology access
- Direct sales by in-house business development team with a revenue target of >5 Cr

Sales expansion through appropriate distribution partnerships

- Expand further into individual private hospitals
- Expand into top tier hospital chains and diagnostic labs
- Revenue target of >16 Cr

- Participate in tenders for public hospitals: High volume market
- Set up distribution partnerships for international sales and begin early international sales
- Revenue target of >20 Cr

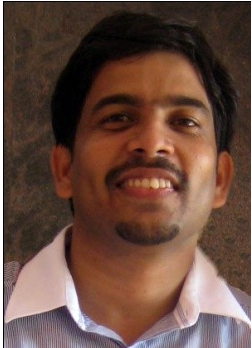


Udit Parekh

Director: Engineering R&D, Sales & Marketing

B. Tech, Eng. Physics (IIT, Bombay); MS, Elec. Eng. (Rice University)

- 4+ years of experience in micro-fabrication, translating fabrication processes from research to manufacturing at Intel
- Research on a novel MEMS-based non-volatile memory system at Intel
- Optoelectronic materials research at Rice and IIT Bombay



Wilson D'Souza

Director: Biology R&D, Operations

BSc, MSc, Biotechnology (Mangalore University)

- 8+ years of experience in biotechnology and diagnostics
- Molecular biology and protein chemistry research at Bangalore Genei-Merck and research manager for regulatory-ready assays at ReaMetrix
- Business development experience in setting up a distributorship for ReaMetrix' products in SE Asia



Current Organisational Structure

Udit Parekh
Director: Engineering,
Sales & Marketing

Wilson D'Souza
Director: Biology,
Operations

Strategy and Instrumentation R&D

Anand Sivaraman

- B. Tech (IIT, Kharagpur); MS, PhD (MIT)
- 8+ years product development, business development experience in diagnostics
- Co-founded a company which has successfully launched a novel retinal imager

Product Design

Venkatachalapathy V.

- BE (VTU), ME (NTTF)
- 3+ years mechanical design and product design and development experience

Microbiology

Sowmya Ramaiah

- BSc, MSc (Bangalore University)
- 5+ years life science R&D experience including diverse assay development, molecular biology and microbiology



Support and Achievements



INNOVATION
KNOWLEDGE
PROGRESS

IKP Knowledge Park, Hyderabad, India

- Associate Incubatees
- Seed funding by IKP Knowledge Park



Biotechnology Industry Research Assistance Council (BIRAC), Department of Biotechnology

- Awarded Biotechnology Ignition Grant



Grand Challenges Canada™
Grands Défis Canada™

Grand Challenges Canada

- Awarded a Stars in Global Health Phase I Grant



Financial Projections

Financial Projections

	FY14-15	FY15-16	FY16-17	FY17-18	FY18-19
# of Centers Added	0	6	25	40	60
Revenue (Sales)	0	84	422	1,078	2,266
Total Expenses	298	194	245	339	524
PBT	-298	-147	6	359	1,006
EBITDA Margin	NA	-175%	1%	33%	44%

Centers: Hospitals and Diagnostic Labs

Over 5 years we anticipate accessing <2% of domestic market

Operational Projections

	FY14-15	FY15-16	FY16-17	FY17-18	FY18-19
Team Size	10	12	14	34	60
Executive	3	3	4	4	4
General	7	11	11	23	56

What We Are Looking For

- Funding: We are seeking initial seed funding of Rs 5 Cr
- To be spent over 3 years, till breakeven, for:
 - Capital and operational expenses for R&D till market-ready product
 - Safety and Regulatory clearances
 - Manufacturing setup
 - Business development expenses for early customer acquisitions
- Exit:
 - Grow a global diagnostics business with potential for acquisition by larger diagnostics player or leading to a public offering



Contact Details

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Thank You

