DESIGNING, DEVELOPING & MANUFACTURING DIAGNOSTICS IN LMICS

6th Advanced TB Diagnostic Research Course

June 22, 2016
THE BEST WAY TO PREDICT THE FUTURE IS TO INVENT IT.

~ALAN KAY
BUSINESS MODELS – MAKING A FUNDAMENTAL SHIFT

Techno-Centric View

Holistic Ecosystem View

BoP 1.0
More innovation, more collaboration

BoP 2.0
Open innovation, wider value proposition

BoP 3.0

“Finding a Fortune”
BoP as consumers, producers and entrepreneurs

“Co-Creating a Fortune”
BoP as partners, colleagues and advisors

“Purpose-driven ventures embedded in an ecosystem”
Drawing on the ‘wisdom of crowd’, wider value ecosystems
GETTING TO SUSTAINABILITY: CREATING A “BASE OF THE PYRAMID” INNOVATION ECOSYSTEM*

* Source: Priya Dasgupta, Enterprise for a Sustainable World

BoP Protocol: The Co-Creation Process

Co-Generate Business Concept

“Opening Up”
- Immerse in the community
- Attract community partners
- Create a wide value proposition
- Synergize resources

Co-Develop Business Prototype

“Building the Ecosystem”
- Establish partnerships
- Teach and learn
- Fail small, learn big
- Create market base

“Enterprise Creation”
- Formalize the business model
- Build systems and processes
- Propagate the sprout
- Transplant and spread

Launch and Scale Business Model

Saturation of current markets
Cost barriers: Environmental tipping points
New technologies, products & business models
Purchasing Power
Per Capita in U.S. dollars
>$20,000
$2,000-20,000
<$2,000
800
1,700
4,500
Population in millions
Wealthy
Emerging Middle Class (MoP)
Base of the Pyramid (BoP)

DETERMINANTS OF SUCCESS
ONGOING EXPERIMENTS…

- Innovation in the distribution chain – Faith based networks for distribution, entrepreneur network, diabetes support centers
- Leveraging local infrastructure and partnerships –eg. PHC, ASHA workers
- Key industry partners include Roche, Pall Pharmaceuticals
- Technology based awareness, access, and treatment options
ONGOING EXPERIMENTS…

- Vertically integrated business model to address food, energy, livelihood challenges in Mozambique
- $20M raised in commercial equity and debt from global partners including Novozymes, ICM, Bank of America Merrill Lynch, Soros Economic Development Fund, and IFU
LESSONS LEARNED FROM THE NEW CONSORTIUM GAVI - SIMILARITY TO DIAGNOSTICS

In the year 2000, despite the promising progress of the previous two decades by the Expanded Program on Immunization (EPI), there were still **30 million children living in poor countries who were not fully immunized**. Coverage was stagnating and in some places even declining. And even though new life-saving vaccines were becoming available beyond the original six EPI vaccines, virtually **none were reaching children** in developing countries, those who needed them most, because they were too expensive.
A SUCCESS STORY - INSTITUTIONAL GOVERNANCE

Gavi's mission

Saving children's lives and protecting people's health by increasing access to immunisation.

Market-shaping

Increased demand for Gavi-funded vaccines helps bring prices down for developing countries.

Sustainable

Co-financing policy requires countries to contribute to the cost of vaccines they receive.

Facts and figures

Regularly updated statistics in five categories from results to disease burden.

By the end of 2010, Gavi had supported the immunisation of 256 million additional children in 77 countries.

Target increase: +243 million

Cumulative number of children immunised (million)

This indicator tracks the extent to which Gavi's mission to increase access to immunisation in poor countries is being realised.

By the end of 2010, Gavi had contributed to preventing 4 million future deaths.

Target increase: +3.9 million

Cumulative number of future deaths averted (million)
ANOTHER PROMISING CONSORTIUM– THE INDIAN TB RESEARCH FOUNDATION

ABSTRACT
India suffers from a plethora of unmet needs for new tools to diagnose, treat, and prevent the spread of tuberculosis. India’s research infrastructure has the potential to lead the world in developing new tools, but has not been effectively harnessed. We propose an autonomous "Indian TB Research Foundation", to catalyze, coordinate and channel funding for research and product development against this national public health emergency.

Indian Council for Medical Research
27 May, 2016
A PROMISING CONSORTIUM – THE INDIAN TB RESEARCH FOUNDATION

*Diagnostics:* Development of Indian point of care accurate diagnostics suitable to Indian conditions…The consortium could also help validate and approve the entry of TB diagnostics controlling the use of sub-optimal diagnostics ensuring patients receive effective and accurate diagnostic technologies.

- **Focus on development & commercialization of point of care diagnostics** for the Programme
- **Beta testing' in multi centric investigations.**
- …deliver new, cost effective, diagnostic kit(s) for TB/MDR TB
- …development of rapid non-sputum point of care diagnostic test for TB …especially in rural areas.
- …development of specialized centers with online informatics service for drug susceptibility testing combined with next-gen sequencing platforms, would replace current imported, expensive MDR TB detection tests….
NOW FOR OUR PANEL

WHAT ARE CHALLENGES/OPPORTUNITIES FOR LOCAL PARTICIPATION IN THE DIAGNOSTIC VALUE CHAIN – FROM R&D THROUGH TO DISTRIBUTION, SERVICE & SUPPORT?
DETERMINANTS OF SUCCESS

Value Proposition
Product Development
Sourcing
Logistics
Distribution
Packaging
Financing
Pricing
Partnerships

"BoP Initiative"