

An assessment of and vision for D-tree International

Prepared for the Board of Directors

October, 10, 2013



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Where **every person** has the **information** they need to keep themselves and their family **healthy no matter** who they are or **where they live**



That's ~~IM~~POSSIBLE

Where **every health worker** has the **tools** she needs to provide **consistent and excellent care**



Where the **health system** supports **continuity of care** through better information, logistics and management

Mission

Provide health workers who live in rural areas with the tools they need to effectively diagnose and treat their patients.

Focus-specific projects

Developing countries

Medical areas:

- Emergency triage
- Maternal health
- Family planning
- HIV/AIDS care
- Malnutrition care
- Intestinal worms

Key focus areas

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Acquire
clinical protocols

Train and equip
healthcare workers
with
electronic protocols

Customize and prepare
protocols for **mobile**
platforms

Does the child have a cough?

yes

no

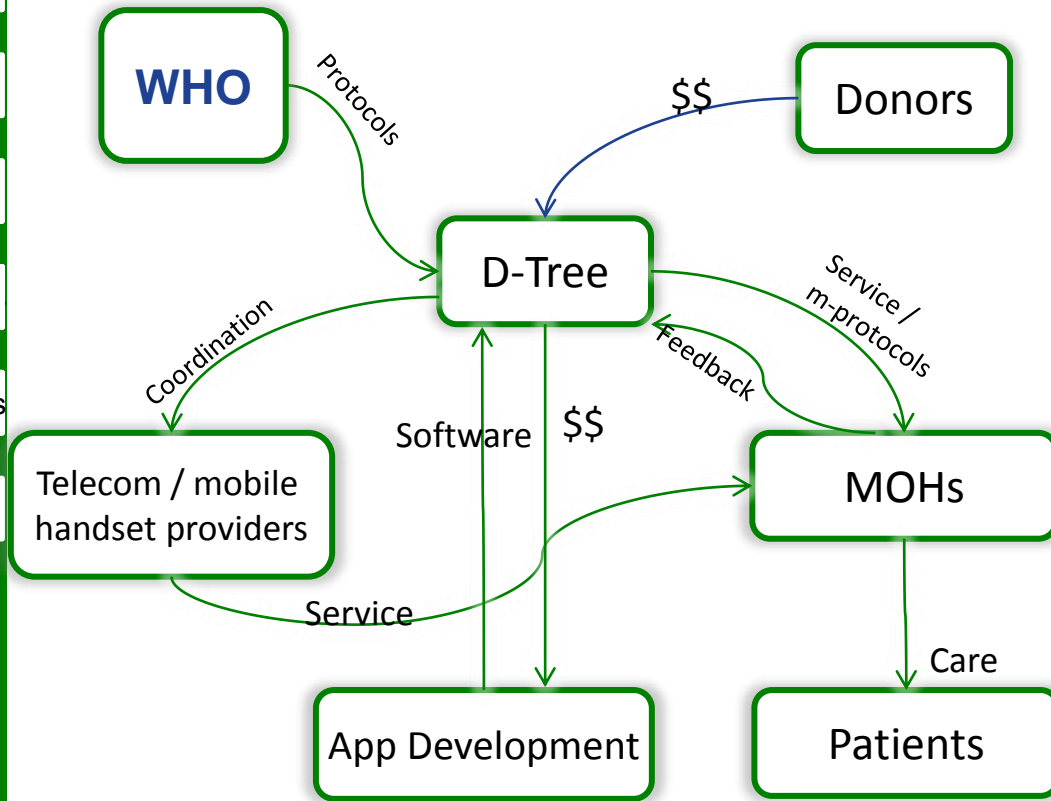
Is there chest indrawing?

yes

no

This child should be referred
to PHCC/hospital for
treatment **IMMEDIATELY**

Acknowledge



- Donor- and foundation-funded
 - ✓ ~\$1.2M annual budget (2012)*
 - ✓ Not-for-profit

- Organizational model
 - ✓ Work with existing programs
 - Government health services
 - NGO and for-profit partners
 - ✓ Country-level director and team

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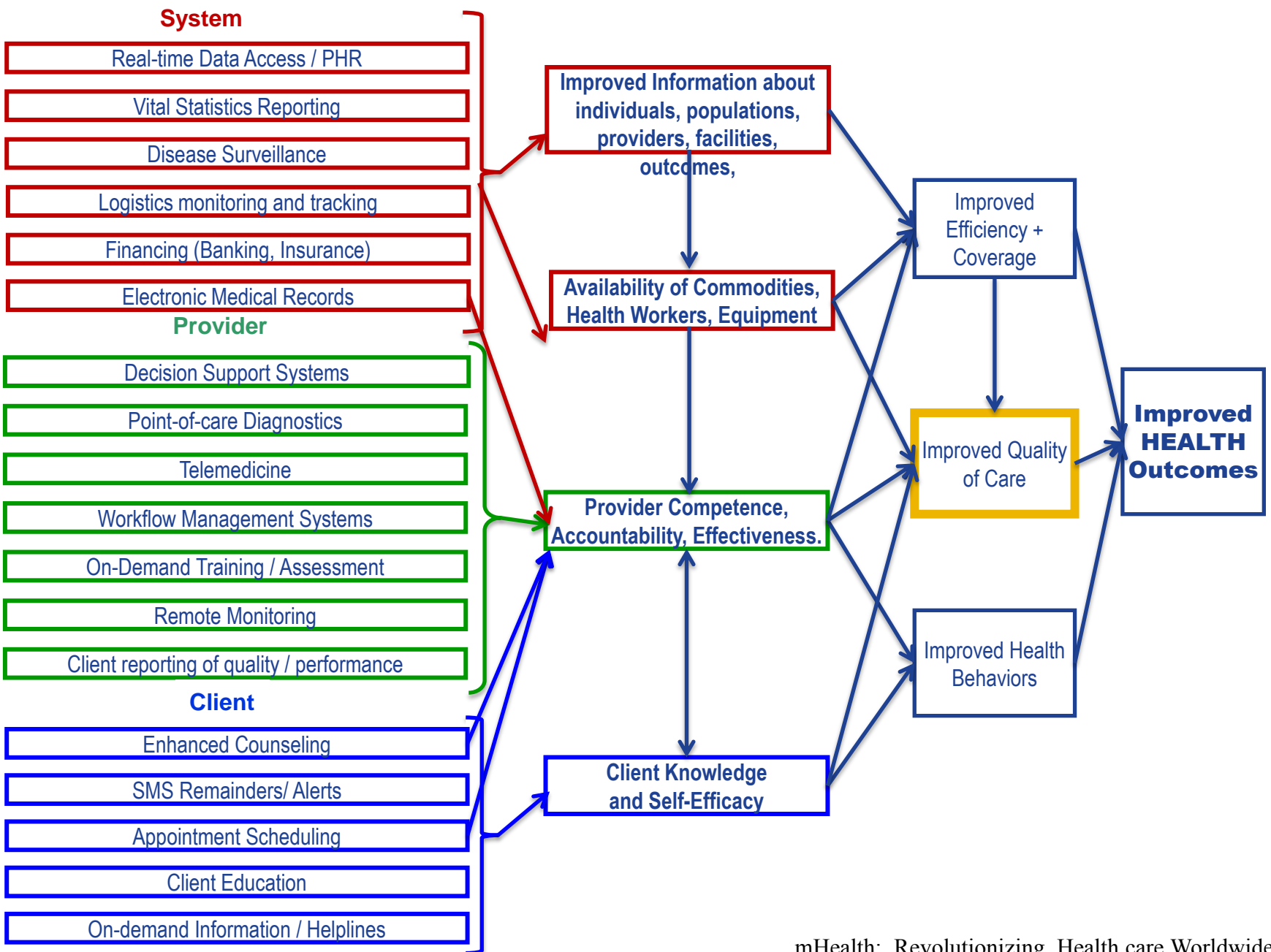
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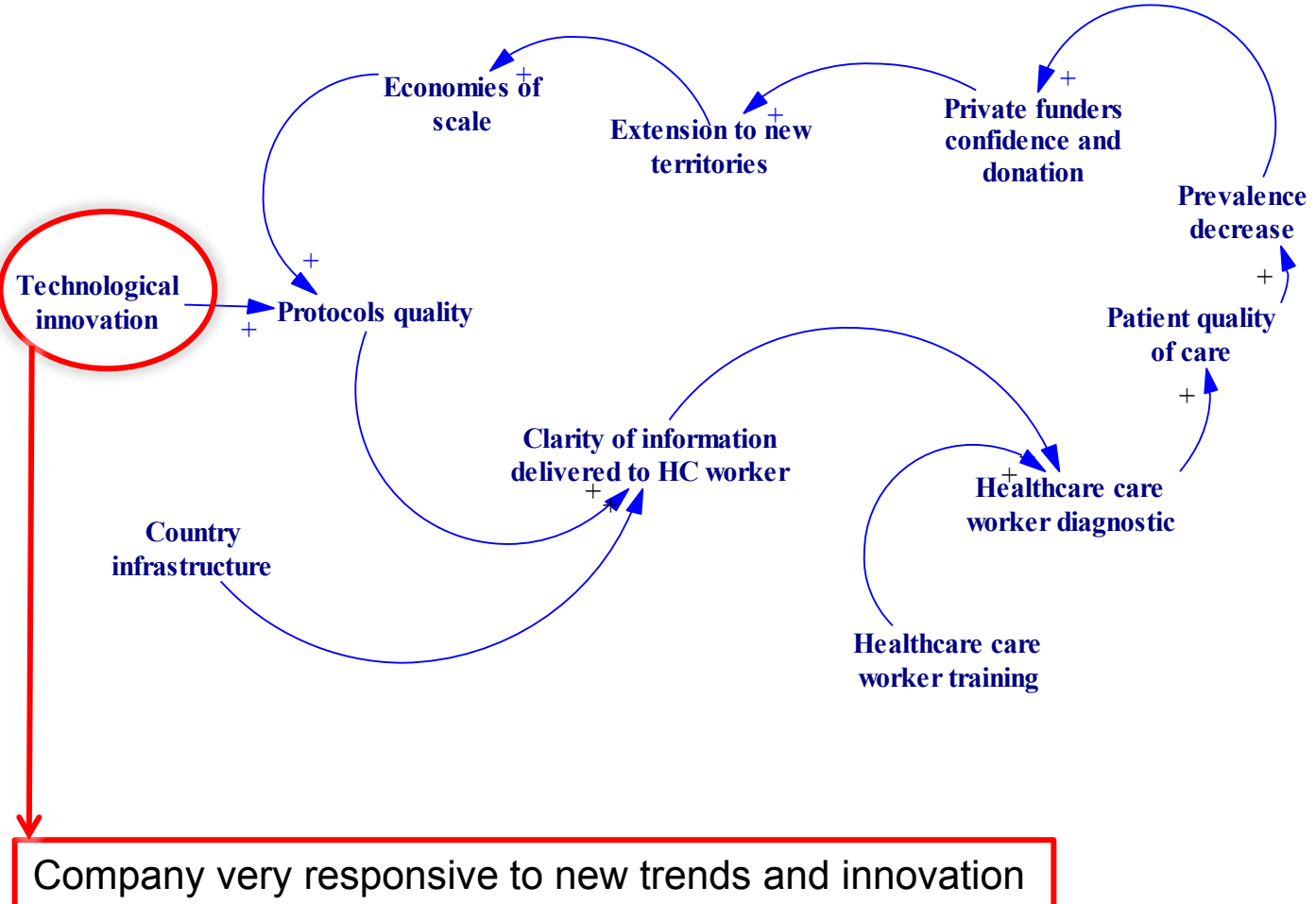
proposal

- **Improve healthcare delivery** by making appropriate **clinical protocols** accessible to **health workers** in **rural settings**
- Leverage the expanding wireless and mobile phone infrastructure in rural areas to enable the **delivery of protocols** to **healthcare workers**
- Create **electronic patient records** for **integrated and continuous healthcare management**



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- Improved patient outcome through integration of technology and healthcare



Adherence to protocols

Symptom or observation	paper IMCI	electronic IMCI	p-value
Dairrhea	87.6%	99.8%	<0.001
Vomiting	77.2%	95.6%	0.033
Fever	97.8%	99.6%	0.022
Cough	89.7%	99.6%	<0.001
Ear Problem	60.8%	99.1%	<0.001
Ability to drink	70.3%	95.8%	0.002
Convulsion	77.7%	99.1%	<0.001
Visibly awake	80.6%	96.2%	<0.001
Ability to breastfeed	83.3%	97.8%	<0.001
Ability to eat foods	64.1%	92.4%	<0.001

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Correct Diagnosis	paper	eIMCI
pneumonia	90.6 %	93.3 %
malaria	93.4 %	97.5 %
diarrhea	98.5 %	99.8 %
dehydration	98.8 %	100 %
severe pneumonia	22 % (2/9)	64 % (7/11)
severe malaria	100 % (16/16)	91 % (10/11)
severe diarrhea	67 % (10/15)	91 % (10/11)
severe dehydration	50 % (1/2)	100 % (2/2)

Improvement in Integrated Management of Childhood Illness (IMCI)
 Implementation through use of Mobile Technology:
 Evidence from a Pilot Study in Tanzania Authors: Marc Mitchell, Bethany Hedt, Daniel Msellemu, Oscar Mukasa, Melania Mkaka, Neal Lesh

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Strengths

Extendable platform
Robust paperless system
Leverage carriers' infrastructure

Weaknesses

Vulnerable business model
Patient care in hands of health workers, not in D-Tree control

Opportunities

Expand to more countries
Add protocols / disease states
Expand to other fields
(manufacturing /quality control/ services)

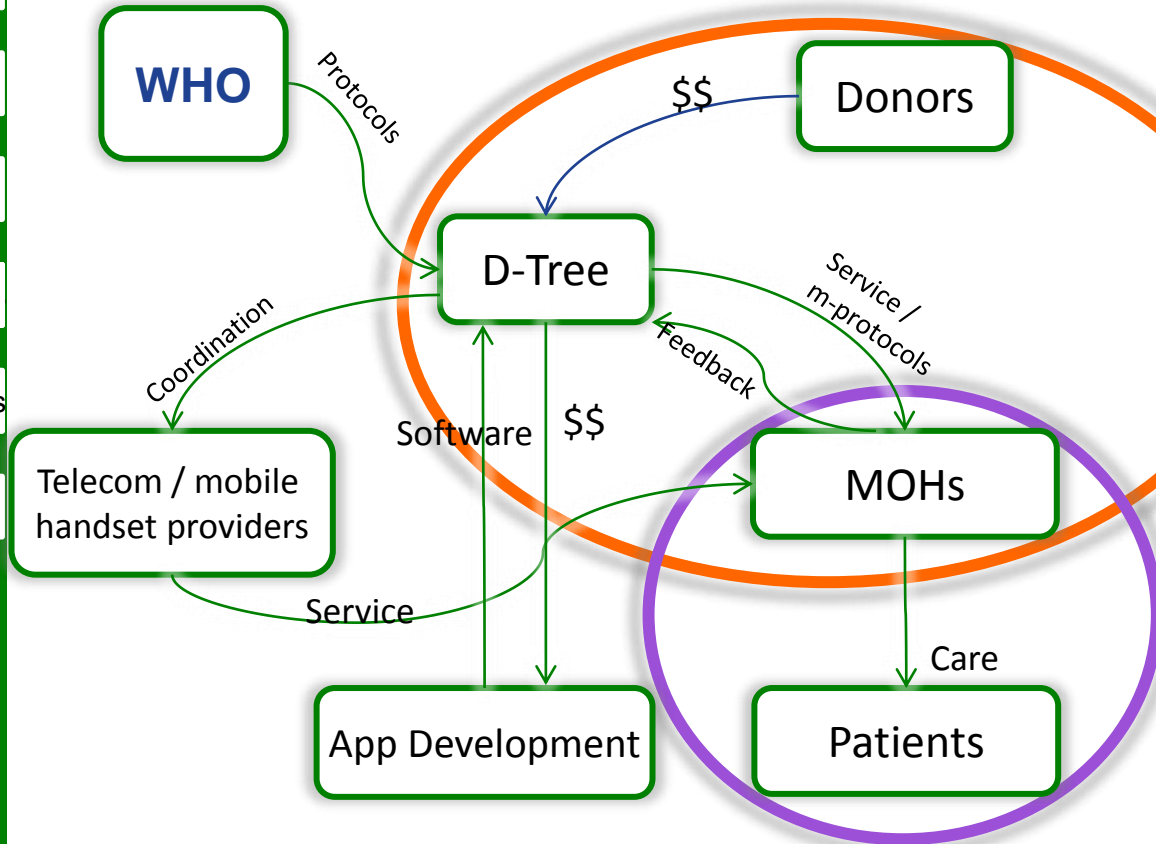
Threats

SANA (@ MIT)
SMS-for-Life & similar platforms

Main challenges

Funding model

Quality of care



Priority

Short-term challenges

Long-term challenges

1

Sustainability

- Vulnerable business / revenue model

2

Service quality

- Deterioration of patient care quality due to lack of expertise/training of healthcare workers
- Finding and training healthcare workers gets harder at scale

3

Scalability

- Ensure model adoption at the local level (how to measure?)
- Balance between growth and D-tree's capacity / capability

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Priority

1

Sustainability

- Use tangible results to obtain funding from MOHs
- Bring income from insurance companies/private sector
- Transfer business to Governments at the end of the program
- Maintain innovation

Opportunities

- Collaborate with external bodies, insurance companies

2

Service quality

- Implement training/certification process for healthcare workers to ensure high-quality providers
- Implement feedback loops between healthcare workers and GPs/specialists
- Set KPIs on patient outcomes vs. protocol usage

- Leverage electronic patient records for more connected care model

3

Scalability

- Gather more data for strategic decisions
- Incentives for healthcare workers
- Establish relationships with new MOHs

- Expand to new regions (India & China)
- Expand into other medical areas

MIT OpenCourseWare
<http://ocw.mit.edu>

15.232 Business Model Innovation: Global Health in Frontier Markets
Fall 2013

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