Global Health

ADE Progress Review 1 - Feb. 28th 2017
Development Phase

Introduction

Context | Theory of Change

Product Venture

Partners | Ecosystems

Plan

Assumptions | Vietnam Insights | Semester Overview

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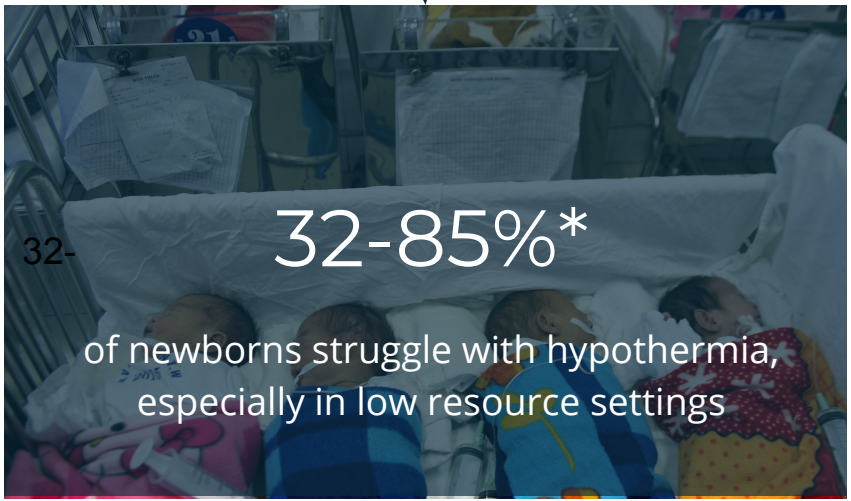
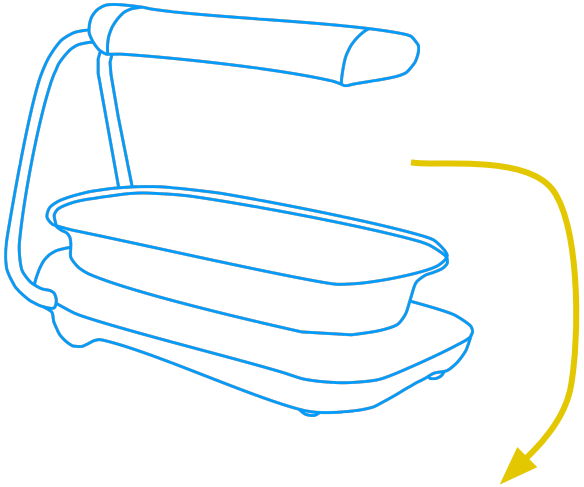
ADE Global Health is further developing the **Otter prototype,** a **warmth-providing bassinet**.

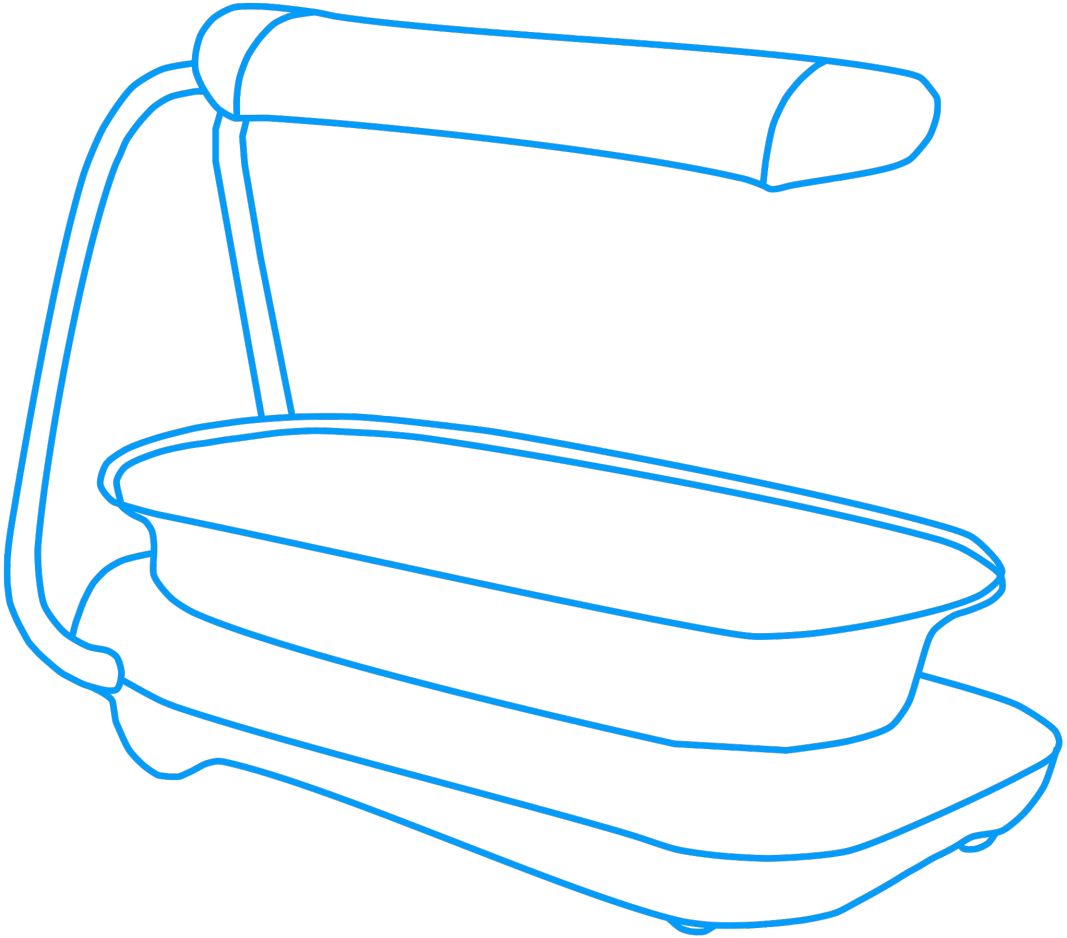




Firefly treats jaundice, which causes brain damage if untreated.

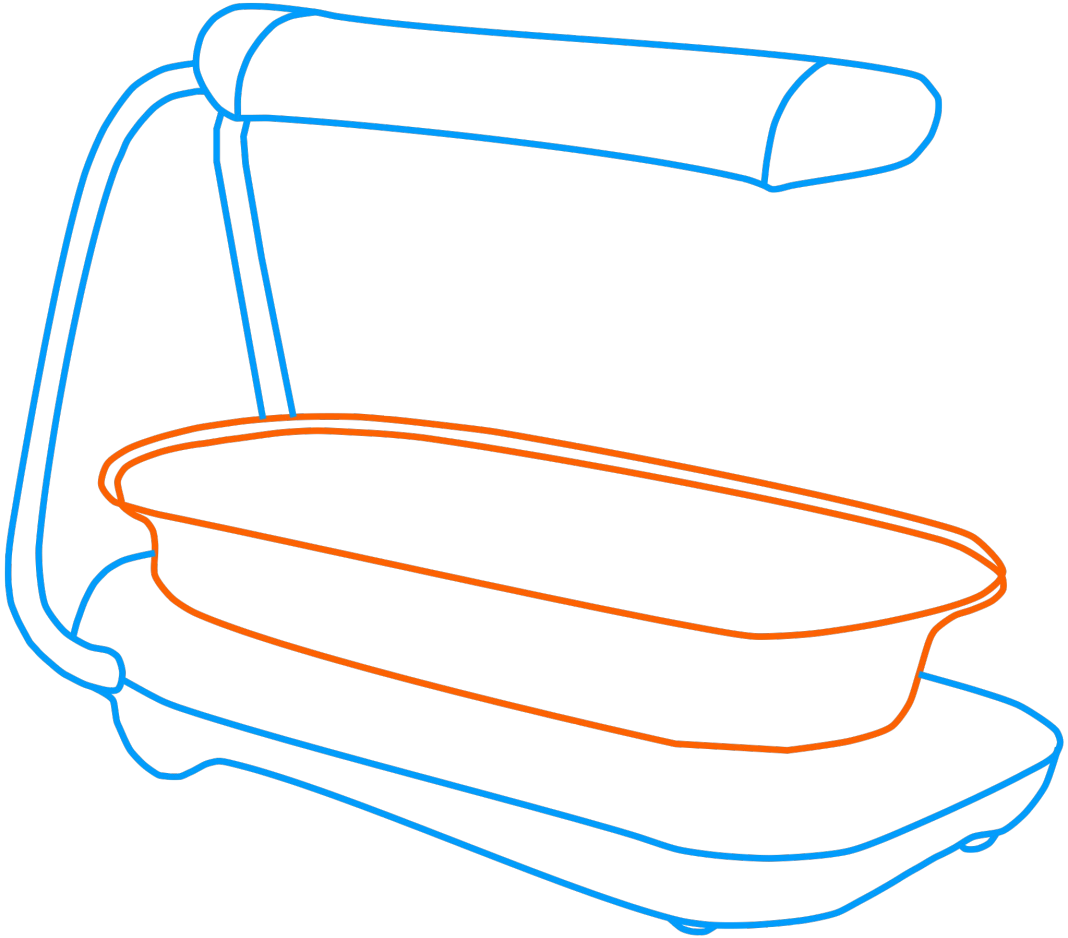
Treatment involves **exposure to blue light**.

60% of infants are born with jaundice.



Firefly is an **existing phototherapy device**.

Firefly is **incomplete** because infants may contract **hypothermia**.



Firefly and Otter are two parts to a **complete system**.

Pitfalls of Current Warmers

Large beds **spread infection**

Hard to use and **maintain**

Expensive

Hard to **access** & **transport**

AFFORDABLE: $250-$400 price point

DURABLE: 5-year lifespan

EFFECTIVE: even temperature control

FUNCTIONAL: no consumables

USABLE: hard to use wrong, accessible, cleanable

AESTHETICS: looks high-quality & professional

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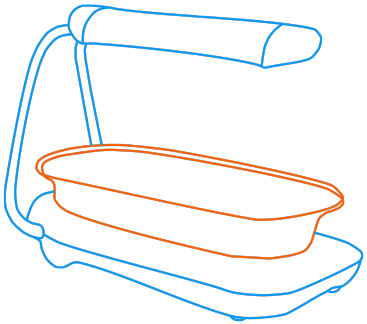
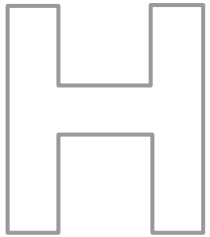
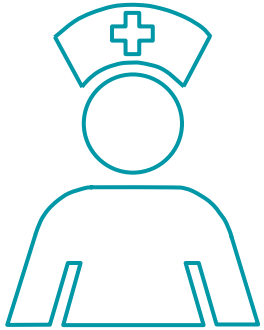
Theory of Change

Input	Output	Outcome	Impact
			
Otter+Firefly	Hospitals receive	Healthcare workers use	Fewer complications and faster treatment time

Global Health Team Value Proposition

Input

Output

Outcome

Impact

We aim to **decrease morbidity** in jaundiced newborns in low-resource hospitals by **adding cost effective warming to Firefly**, which will **prevent** other **complications** such as hypothermia and infections.

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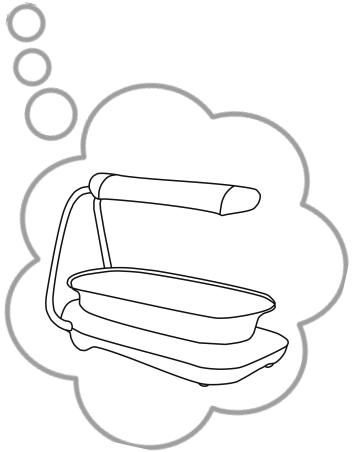
Semester Overview

Primary Partners

design that matters™

Salem, MA

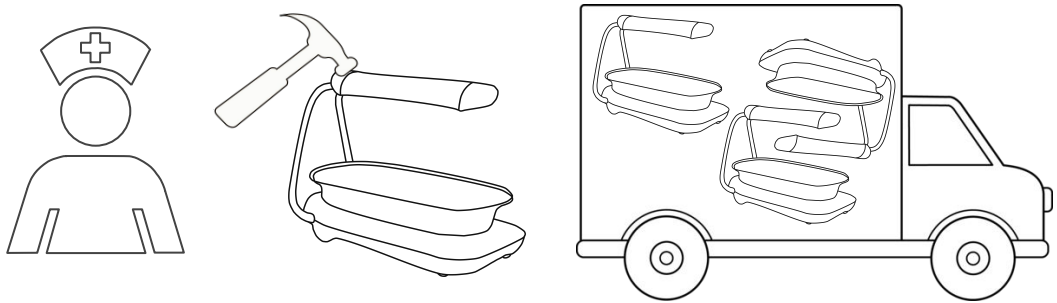
Design, Engineering



MTTS
Medical Technology Transfer and Services
EN ISO 13485: 2012 Certified Company

Hanoi, Vietnam

Codesign & User Testing, Manufacturing, Certification, Distribution, Maintenance



Introduction

Context | Theory of Change | | |

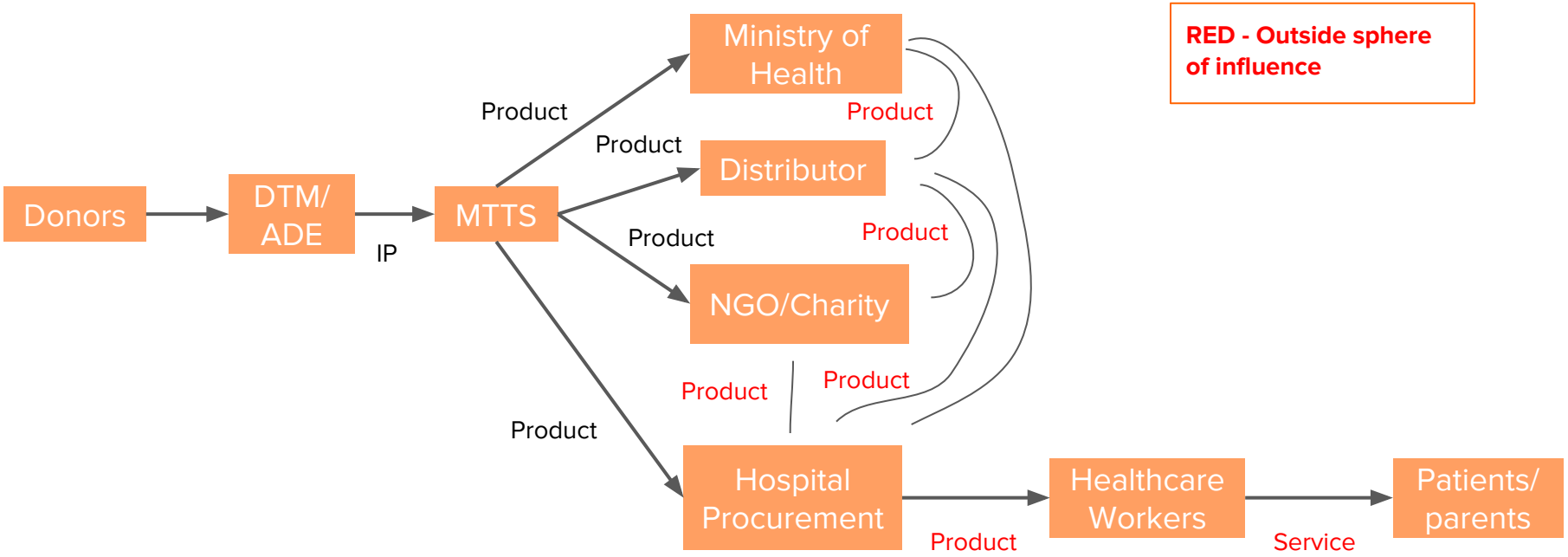
Product Venture

Partners | **Ecosystems** | |

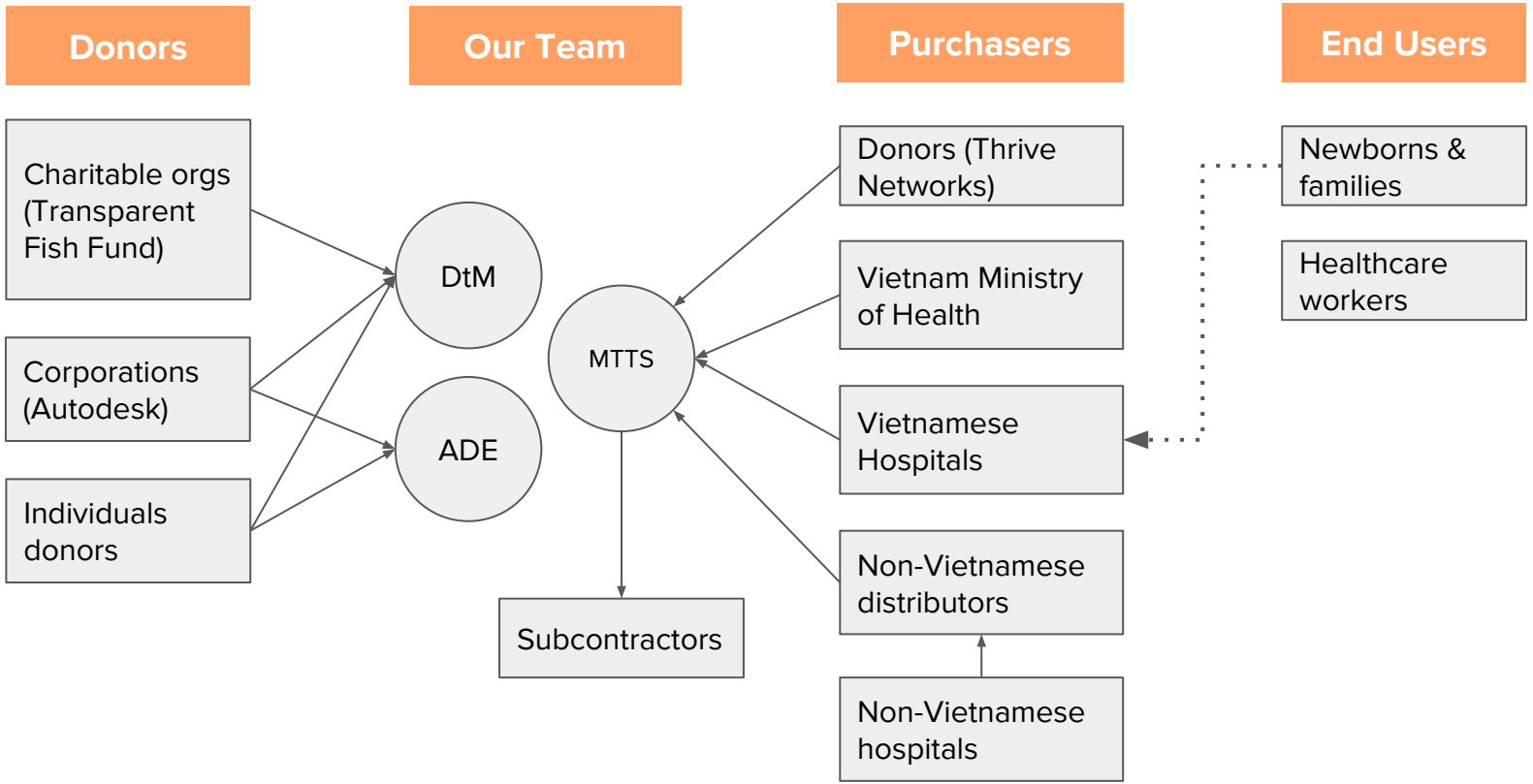
PLAN

Assumptions | Vietnam Insights | Semester Overview

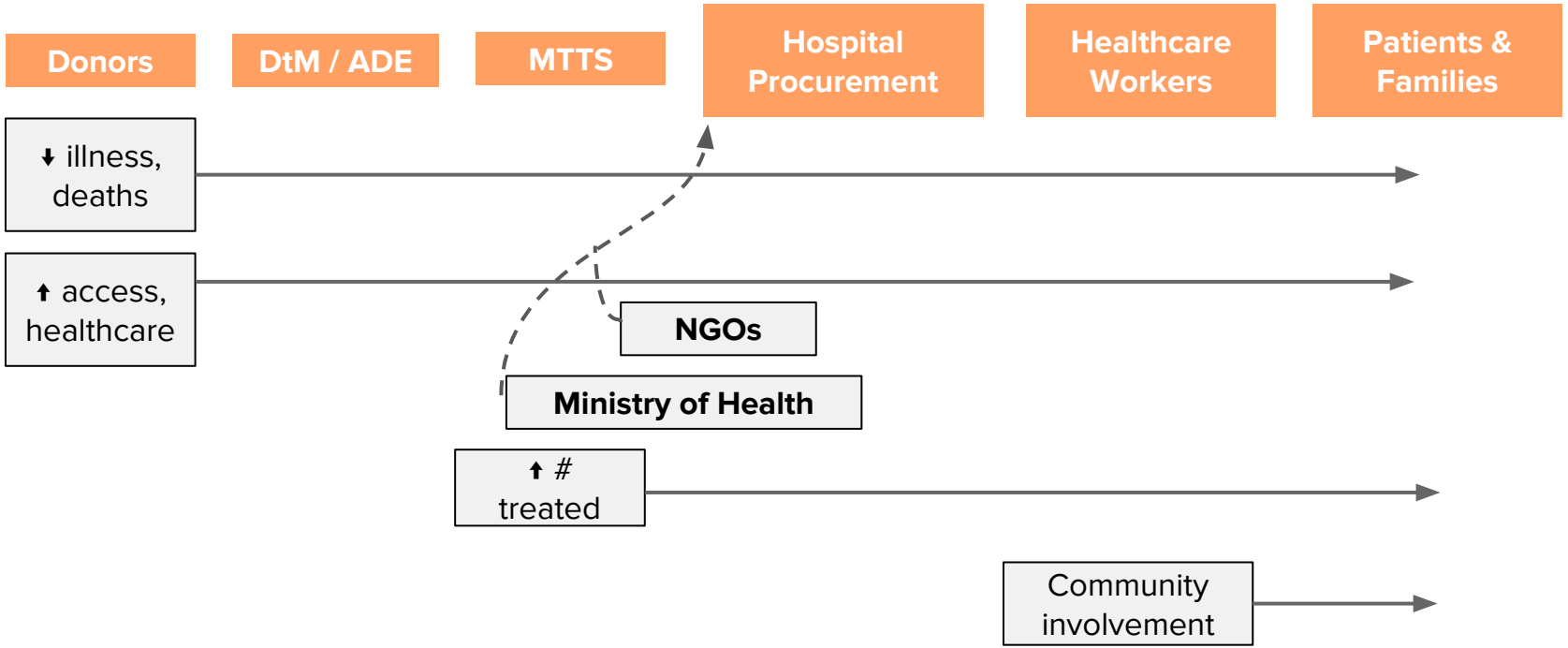
Value Chain Analysis - Product



Value Chain Analysis - Money



Value Chain Analysis - Social Impact



Stakeholders' Value Propositions

design that matters™

ADE

NGOs

Otter is a **durable** warmer that **streamlines and quickens Firefly** jaundice treatment by **minimizing newborns' risk** of hypothermia and infections.

MTTS
Medical Technology Transfer and Services
EN ISO 13485: 2012 Certified Company

A **low-cost, low-maintenance** heating device for infant-newborns with a **high-quality and robust** design, that is **easily distributable** through Firefly markets.

*Update for more information from Vietnam Hospital Procurement (Pending)

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Vietnam trip Insights | Assumptions | Semester Overview

Vietnam Trip Insights

Target Audience

- Severity characterized by age and jaundice level
- District Hospitals w/ incubators and Firefly

Target Market

- Staged rollout to existing 20+ countries with Firefly
- **Confirmed that Otter will be bundled w/ Firefly**

Product Requirements

- **28 - 38°C controllable temp. range**
- **Familiar interface**
- $250-400 price point

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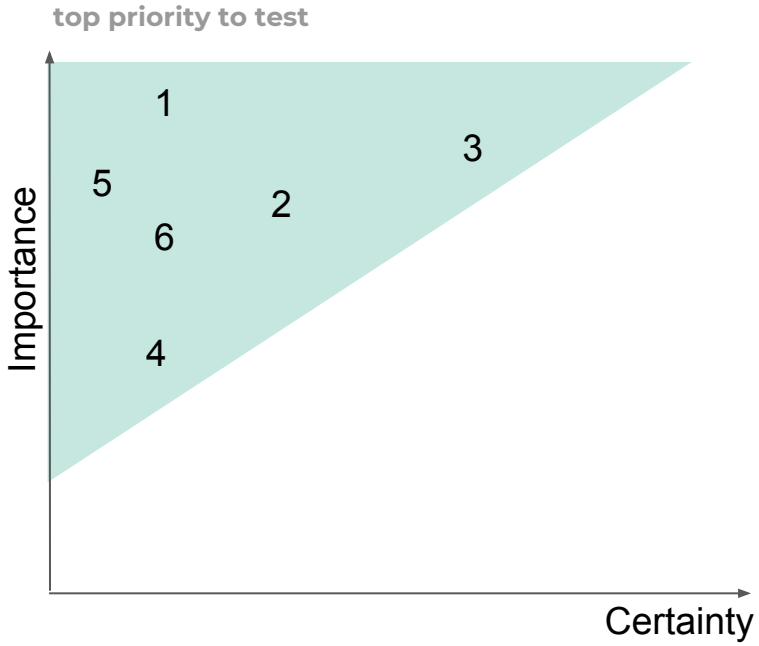
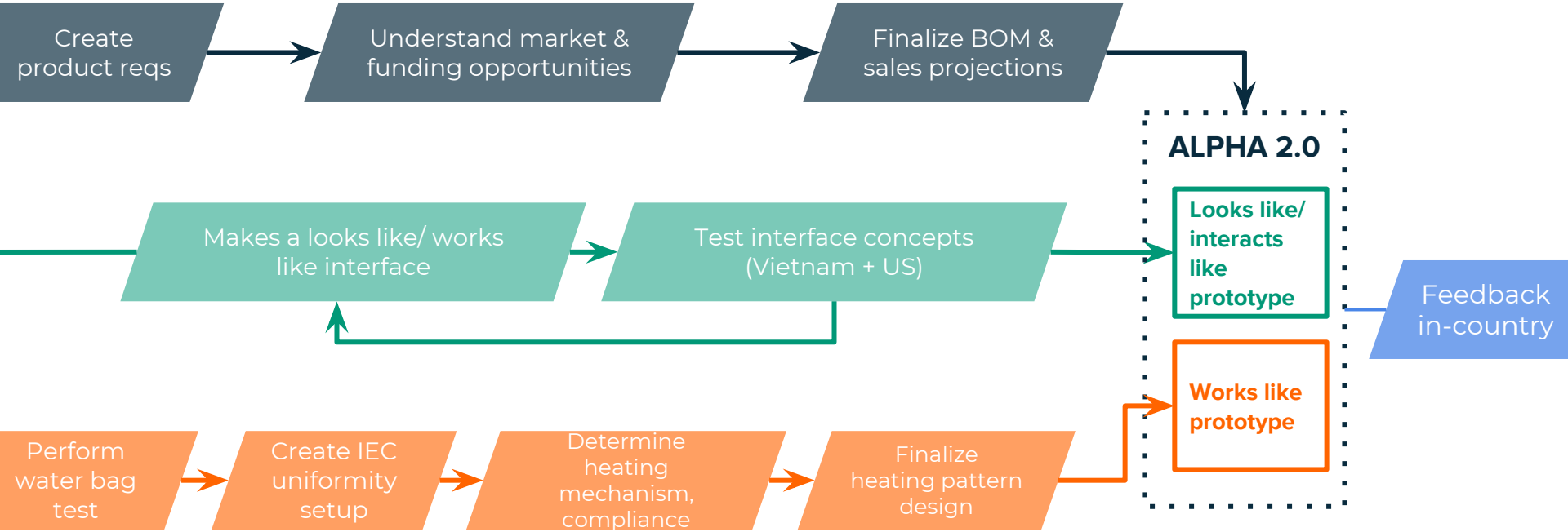


Engineering assumptions
Business assumptions

1. Otter has a willing and existent market.
2. Comparables: There exists literature demonstrating effectiveness of neonatal conductive warming over radiant/incubator warming.
3. SROI: There is social impact (updated with more nuanced M&E metrics and trip insights).
4. Otter is compatible with and enables other treatments.
5. Otter's closed loop temperature control should either close the loop around the baby, or around the product surface.
6. ITO film & kanthal have comparable lifespans.

Spring 2017 Plan



Product Goals

Heating system: develop works-like prototype

- ~~Read & understand relevant IEC standards for warming~~
- ~~Formalize product requirements, MTTS-style~~
- ~~Research~~, test, finalize heating element (wire v. film)
- Conduct IEC uniformity standards tests
- Develop closed-loop temperature control
- Research & compare different methods of taking temperature (IR, probe, thermistor, thermocouple)

Interface: develop looks-like/interact-likes prototype

- ~~Brainstorm different interface ideas based on IEC specs & trip feedback~~
- Test interface designs in the US and Vietnam
- Design & CAD interface housing
- Fabricate interface
- Assemble interface
- Test interface

~~done~~ / in progress / to-do

Venture Goals

- ~~Define value proposition for each stakeholder~~
- Create persona per stakeholder
- Examine COGS
- Update product pricing analysis
- Collect studies of conductive infant warming for clinical evaluation documentation and CE mark
- Develop marketing plan for funding and awareness
- Update SROI with more nuanced metrics and trip insights

~~done~~ / in progress / to-do