Path to Profitability Webinar

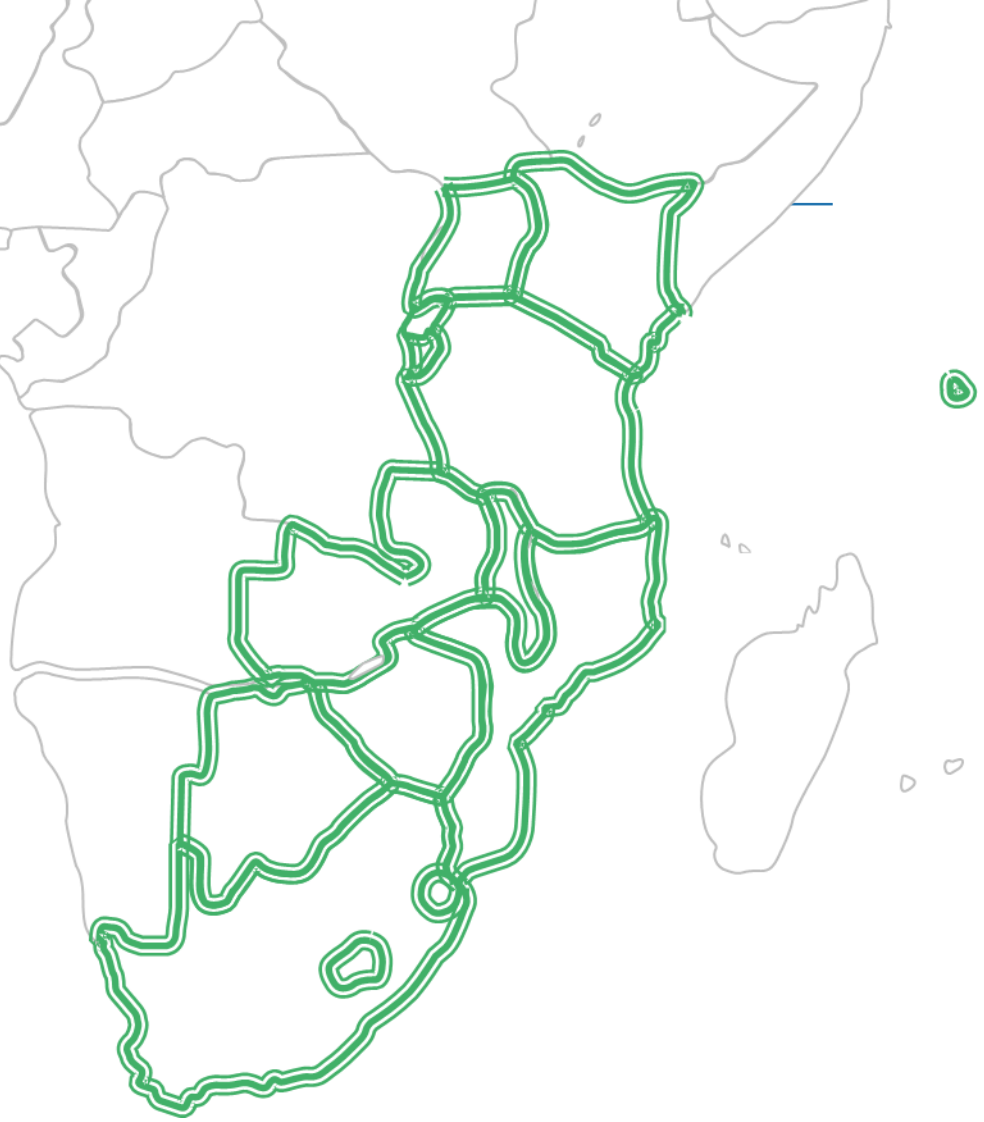
EEP Africa and IFC Lighting Global

Webinar Logistics

- Keep your microphone muted
- Write your questions to the chat box
- We will stop for questions and then you can also voice your question
- Agenda
  - Introductions
  - Presentation of the Path to Profitability tool
  - Q&A

Introduction to EEP Africa

- Multi-donor fund providing early stage grant and catalytic financing to innovative clean energy projects, technologies and business models
- Hosted and managed by NDF with funding from Austria, Finland, NDF
- Covering 15 countries in Southern and East Africa



AUSTRIAN DEVELOPMENT COOPERATION

Ulkoministeriö
Utrikesministeriet
Ministry for Foreign Affairs of Finland

NORDIC DEVELOPMENT FUND

EEP Africa based on Three Pillars

Clean Energy Financing

Investment Facilitation & Business Development

Knowledge, Policy & Partnerships

BUSINESS DEVELOPMENT SUPPORT

- **Covid-19 Rapid Response BDS**
- **Need based** support to portfolio companies
  - Cash flow management
  - Financial management support
  - Business model development
  - Access to finance
- Content through **webinars**
  - Financial Management Training
  - eWaste market trends – together with Clasp
  - Path to Profitability - together with IFC
- Reach out to your EEP Africa **Portfolio Coordinator** when you need help!

EEP Africa

NDF NORDIC DEVELOPMENT FUND

Path to Profitability

Introduction

Miguel A. Soriano, PhD

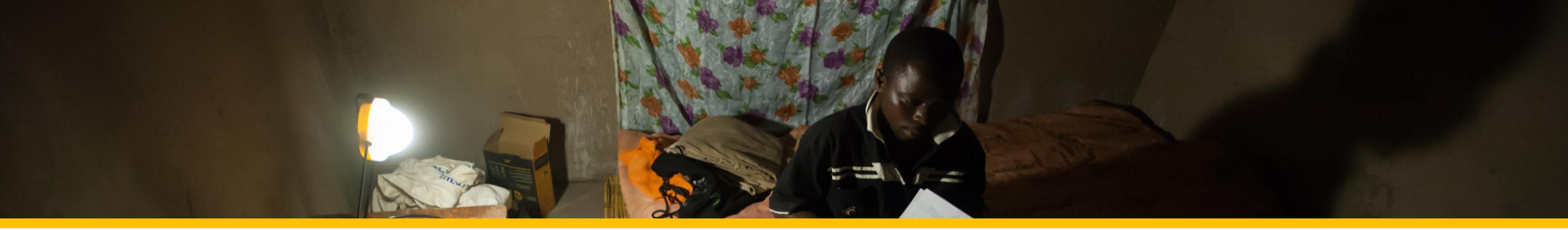
June 11, 2020

LIGHTING GLOBAL
Catalyzing markets for modern off-grid energy

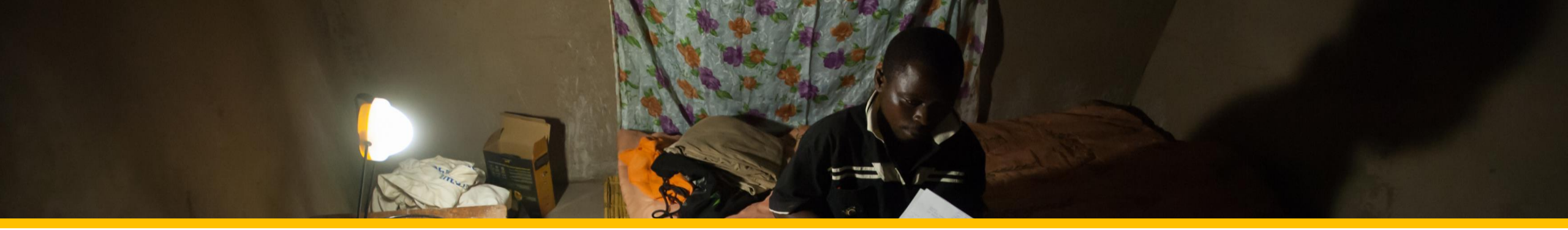
AN INNOVATION OF WORLD BANK GROUP
THE WORLD BANK IFC International Finance Corporation

Agenda

1. Introduction
2. Webinar Objectives
3. Presentation on Path to Profitability Framework / Tool
4. Discussion / Q&A



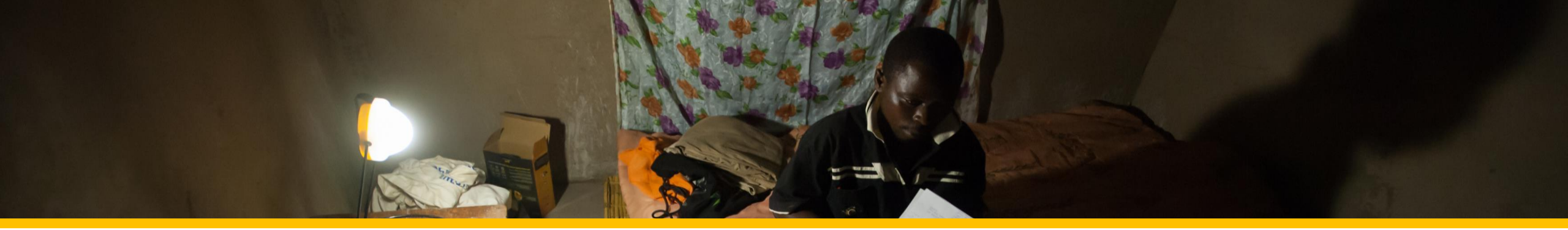
1. INTRODUCTION TO LIGHTING GLOBAL



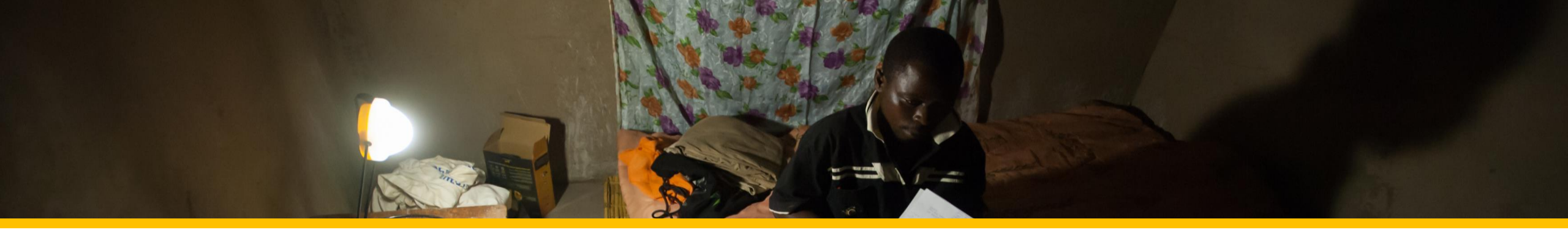
2. WEBINAR OBJECTIVES

Webinar Objectives

- Introduce the Path to Profitability framework / tool to OGS companies
  - Why this framework is important for companies serving customers at the Base of the Pyramid (BOP)
  - Provide deeper insights into the underlying variables that shape performance in low-income, last mile markets
- Walk through the main components of the Path to Profitability framework / tool
  - Two key components: operational model mapping and bottom up financial modeling
  - These components connect operations to profits and highlight the path to profitability



3. PATH TO PROFITABILITY FRAMEWORK / TOOL



A. OVERVIEW

What is Path to Profitability?

- Path to Profitability (P2P) is a unique framework designed for off-grid solar (OGS) firms operating in emerging markets that allows them to evaluate their pricing, margins and cost structures in order to **achieve profitability at a unit level**
- P2P is designed with **early-stage, middle and scaling firms** in mind to support the firm's profitability at various phases including launching, refining and pivoting
- The core principle of the framework and methodology is the Integrated Venture Modeling (IVM) approach, which relies on two main tools: (1) Operational Model Mapping and (2) Bottom Up Financial Modeling
- **Ultimately, the methodology looks at how OGS firm can achieve profitability at scale at the last mile operating unit**

The COVID-19 Pandemic and Path to Profitability

- During the COVID-19 pandemic, the focus of most OGS companies has been on survival and maintaining liquidity
- As lockdowns are being relaxed in most parts of the world, OGS companies need to start thinking about the future of their business and how to go to market in the new “normal”
- The focus on costs and unit economics becomes crucial for businesses to become sustainable – this is where Path to Profitability can be extremely helpful
- The diagnostic tool is not a replacement of your financial statements, but provides a way to better understand your operations and how to go to market

Path to Profitability – Program Stages

01

Plenary Sessions

Presentations to educate firms on the methodology

02

Pilot Test with OGS Firms

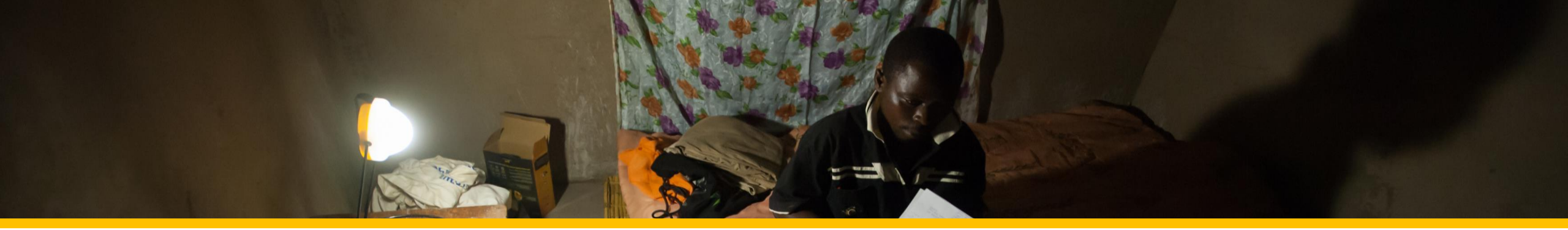
Development of operational business model and bottoms up financial model

03

Implementation of Recommendations

Current Progress

- Plenary Sessions conducted in Kenya, India and Myanmar
- Pilot test with 2 PAYGo firms in Myanmar
- Implementation ongoing in 1 PAYGo firm in Myanmar



B. THE MAIN ISSUES RUNNING A BUSINESS AT THE BOP

Downstream Profit Squeeze

Downward Pressure on Operating Unit Revenues

- Limited geographic reach
- Lower unit sizes & price points
- Lower consumption/use rates
- Slower adoption rates

Upward Pressure on Operating Unit Costs

- Smaller operating units with lower economies of scale
- High touch sales to drive sustained adoption
- Low literacy rates and smart phone penetration
- Cash-based payments

Blind Spots of Conventional Modeling

Scale

- Conventional models work top-down, focusing on venture level operations
- However, key choke points for businesses at the BOP are at the unit level

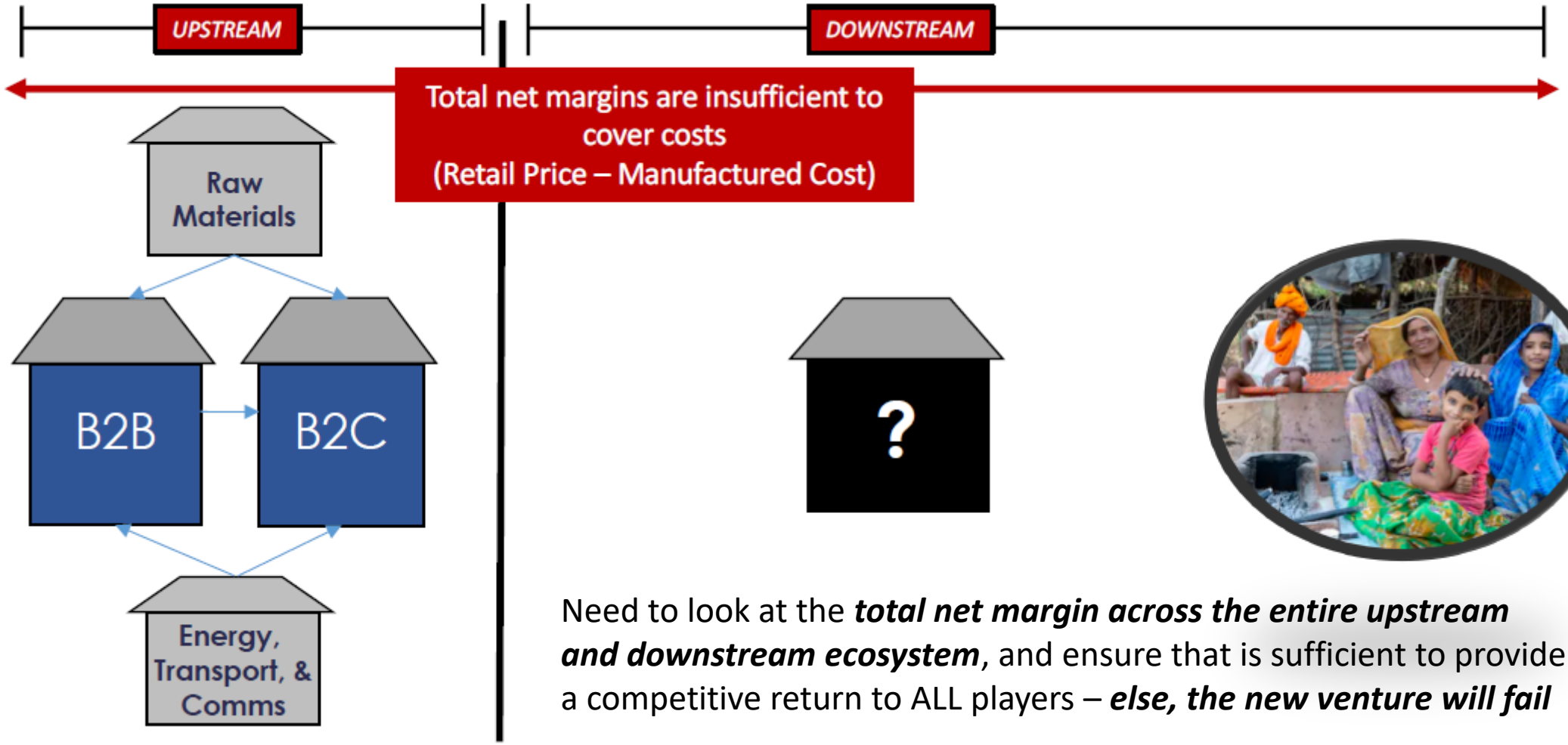
Last-Mile Operating Unit

Scope

- Models narrowly focused onto operations and profits flowing between their ventures and immediate paying customer
- However, those customers in many cases are distributors rather than end users

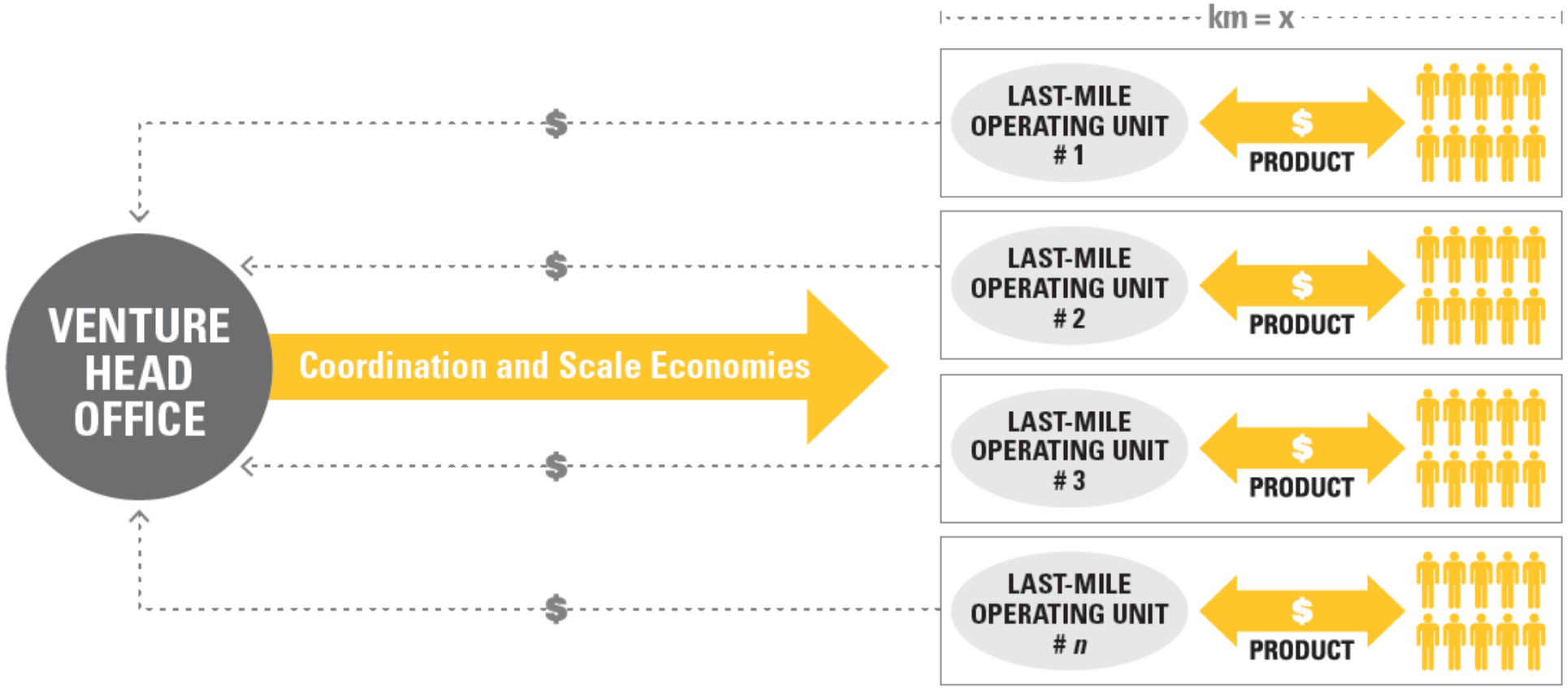
Downstream Channel Gap

The Downstream Channel Gap



Need to look at the ***total net margin across the entire upstream and downstream ecosystem***, and ensure that is sufficient to provide a competitive return to ALL players – ***else, the new venture will fail***

The Last-Mile Operating Unit – The Engine of a Business



Last-Mile Operating Unit

Smallest, self-sustaining entity within a larger venture with responsibility for sales and service to end customers

The Last-Mile Operating Unit – 4 Critical Variables

Last Mile Unit Performance =

$$\frac{\text{REVENUES}}{\text{COSTS}}$$

REVENUES: Reachable Market (R) × Steady-State Penetration (P)

COSTS: Transaction Intensity (I) × Customer Load (L)

(R): the population of potential customers accessible by the operating unit

(P): the percentage of the reachable market that are regular customers of the operating unit at steady-state

(I): the time required to support the sales/service transactions the operating unit conducts with its customer base over the course of a month

(L): the number of transactions that one (sales) person can manage in a month

Balancing the Profitability Equation

CASH OUT = CASH IN

Start Up Costs + Running Costs + Finance Costs = [Price x Margin] x [Reach x Penetration]

Fixed

Fixed

Penetration Trap

1. Rising unit costs (I & L) weigh down the cost side of the equation…

2. Downward pressure on price increases imbalance…

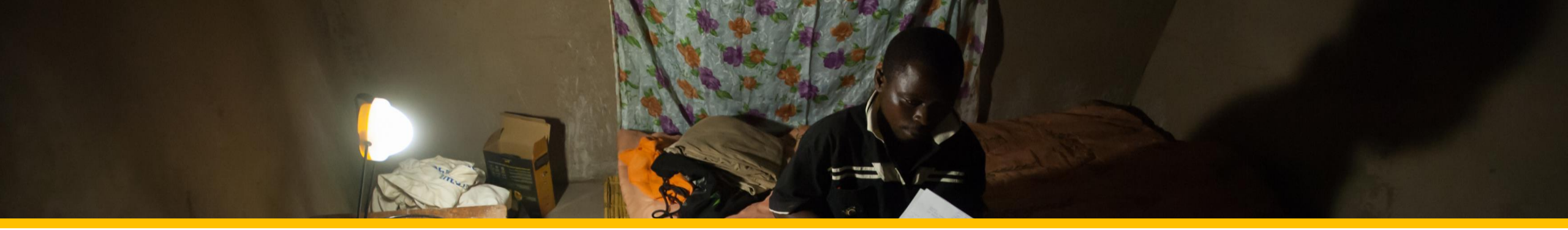
3. Margins and Reach are fixed in near term…

4. Penetration acts as a "steam valve" for the venture, rising to allow the numbers to "balance out" under the existing business model

The Last Mile Penetration Trap in Action

Households Reached By Unit	30,000	30,000	30,000	30,000	30,000	30,000
Monthly Operating Unit Costs	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
Cost Increase %		10%	20%	30%	40%	50%
Monthly Operating Unit Costs	**$ 1,000**	**$ 1,100**	**$ 1,200**	**$ 1,300**	**$ 1,400**	**$ 1,500**
Price	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00
Gross Margin	40%	40%	40%	40%	40%	40%
Contribution, Gross	$ 8.00	$ 8.00	$ 8.00	$ 8.00	$ 8.00	$ 8.00
Repurchase Period, Months	24	24	24	24	24	24
Contribution, Month	**$ 0.33**	**$ 0.33**	**$ 0.33**	**$ 0.33**	**$ 0.33**	**$ 0.33**

B/E Households Baseline	3,000	3,300	3,600	3,900	4,200	4,500
Penetration %	**10%**	**11%**	**12%**	**13%**	**14%**	**15%**
B/E Households 5% Price Cut	3,429	3,771	4,114	4,457	4,800	5,143
Penetration %	**11%**	**13%**	**14%**	**15%**	**16%**	**17%**
B/E Households 10% Price Cut	4,000	4,400	4,800	5,200	5,600	6,000
Penetration %	**13%**	**15%**	**16%**	**17%**	**19%**	**20%**
B/E Households 20% Price Cut	6,000	6,600	7,200	7,800	8,400	9,000
Penetration %	**20%**	**22%**	**24%**	**26%**	**28%**	**30%**



C. INTEGRATED VENTURE MODELING

Path to Profitability – Integrated Venture Modeling

The Logic Behind Integrated Venture Modeling

Translate operational parameters into a P&L statement and NPV

Required price/margin for "whole system" profitability **over the investment period**

Last mile operating unit's **whole cost structure** (I & L)

Granular **flows** of product, info, & money to/from the end user

Last-Mile Operating Unit's **at-scale transactions** (R & P)

RPIL Drives the Modeling

Key Characteristics

What it Can be Used For

- It is a pricing and business model innovation tool
- Aligns field-level managers, CFOs and investors on the critical operational KPIs that ultimately determine a venture's success / failure

What it Cannot Do or Be Used For

- It is a methodology to understand and simulate operational drivers of performance—not a "turbotax" that kicks out an answer
- It is not a substitute for a traditional P&L…legally reporting on your firm's current performance

The Logic Behind Integrated Venture Modeling

Pricing Tool

Pilot Management Tool

Business Model Innovation Tool

Success = ROC
Cash, Not Valuation

Integrated Venture Modeling – Two Main Tools

Operational Modeling

Bottom-Up Financial Modeling

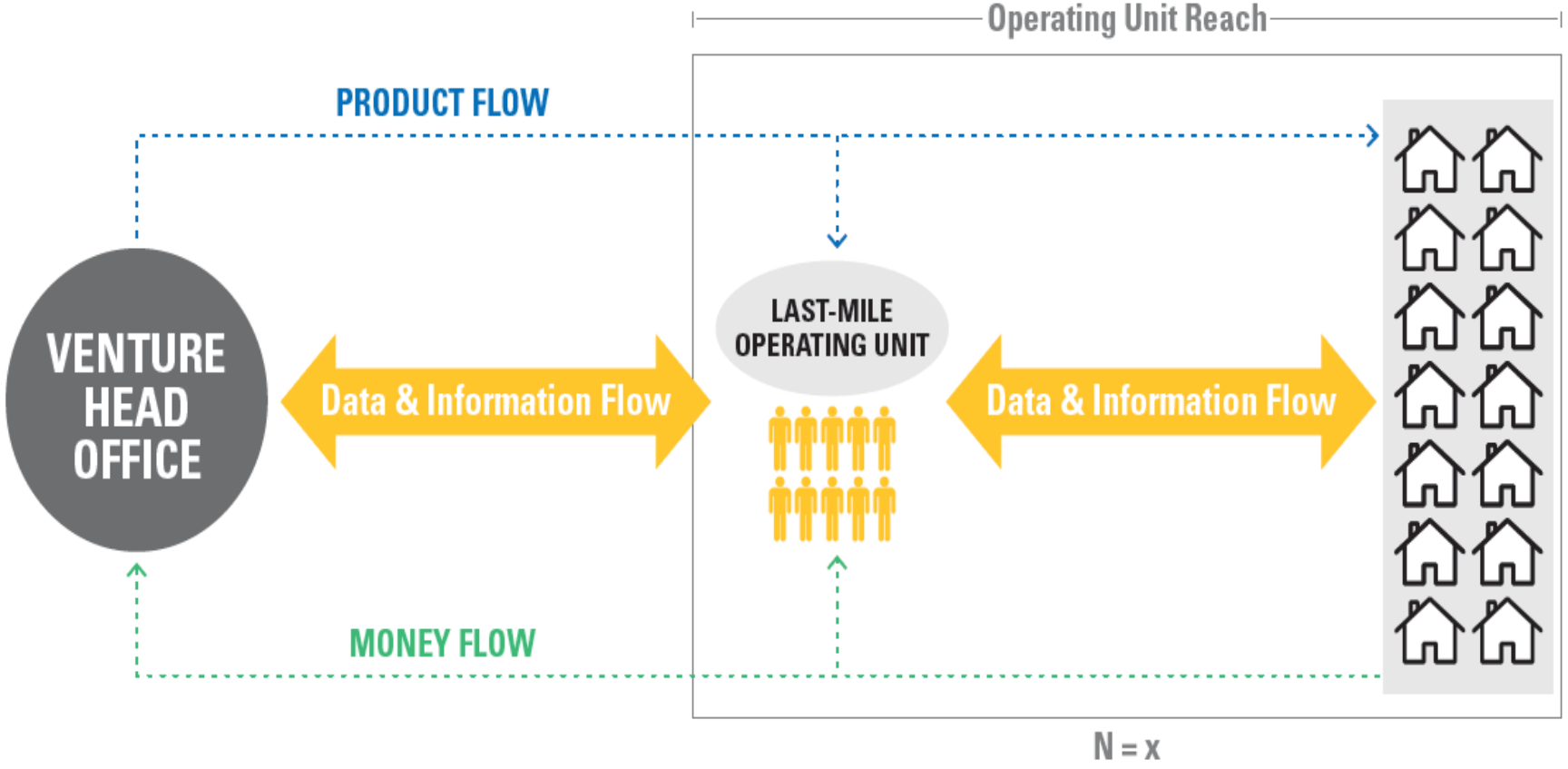
A systematic approach to detailing the activities and actors involved in fulfilling a business's three core flows

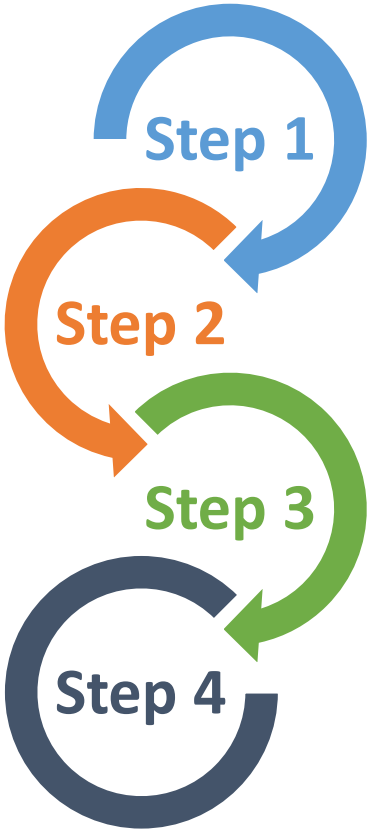
- Product
- Money
- Information

A systematic approach to understanding the profit and cost drivers underpinning a venture by building a complete picture of the total costs that a single, last-mile operating unit has to support

Operational Model Mapping

Mapping the Flows of Product, Money and Data / Information





Identify Key Places and People

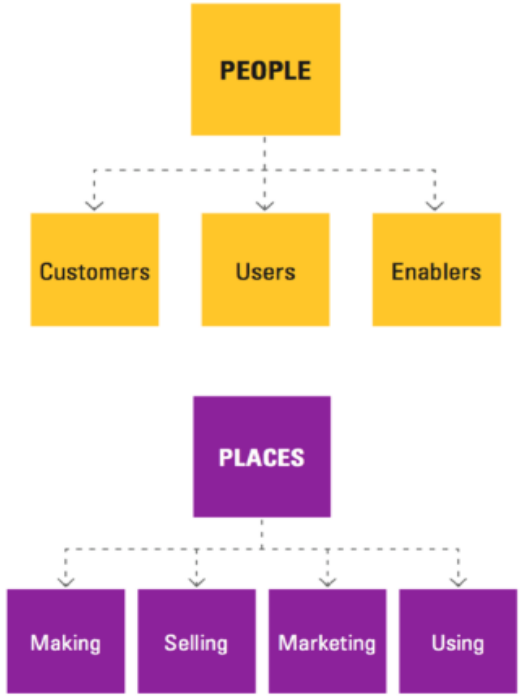
Identify Key Business Flows

Map the Business Flows & Bracket the Units

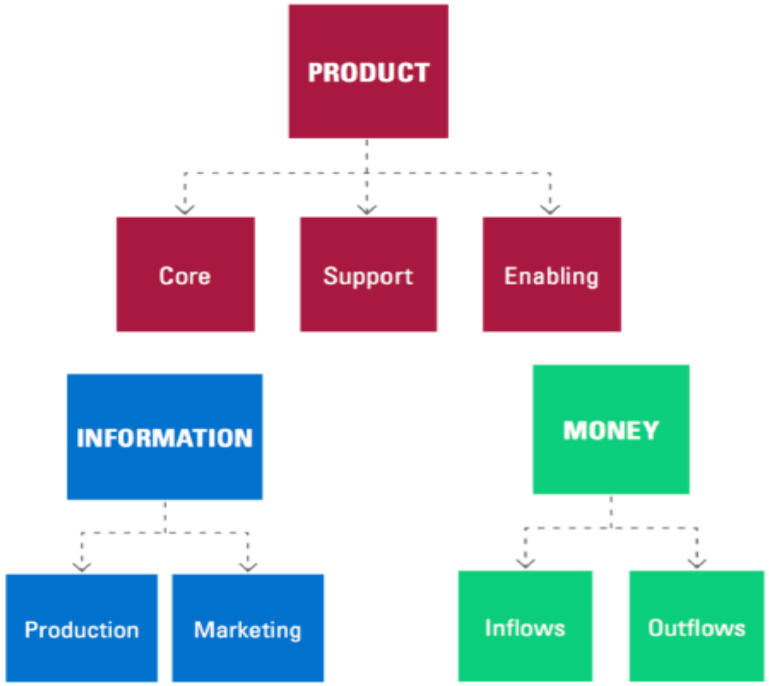
Determine Steady-State Activities & Staff

Operational Model Mapping – Overview of Key Steps

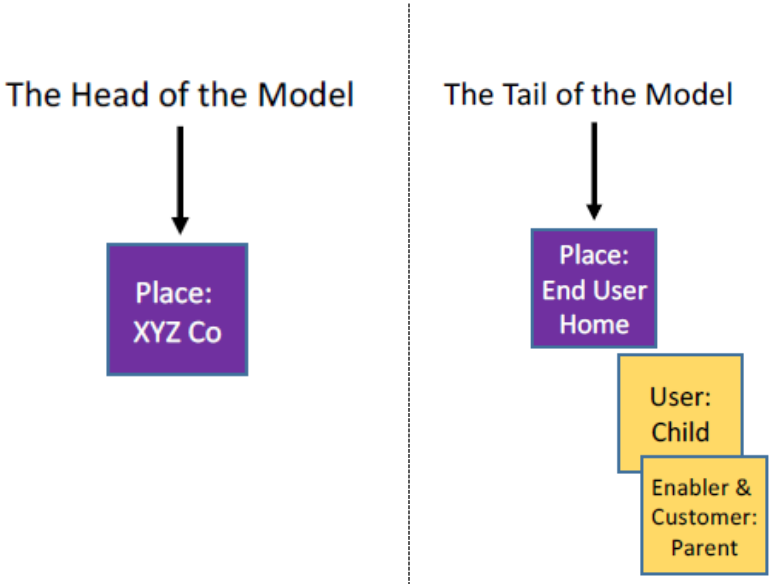
STEP 1
Identify Key Places & People



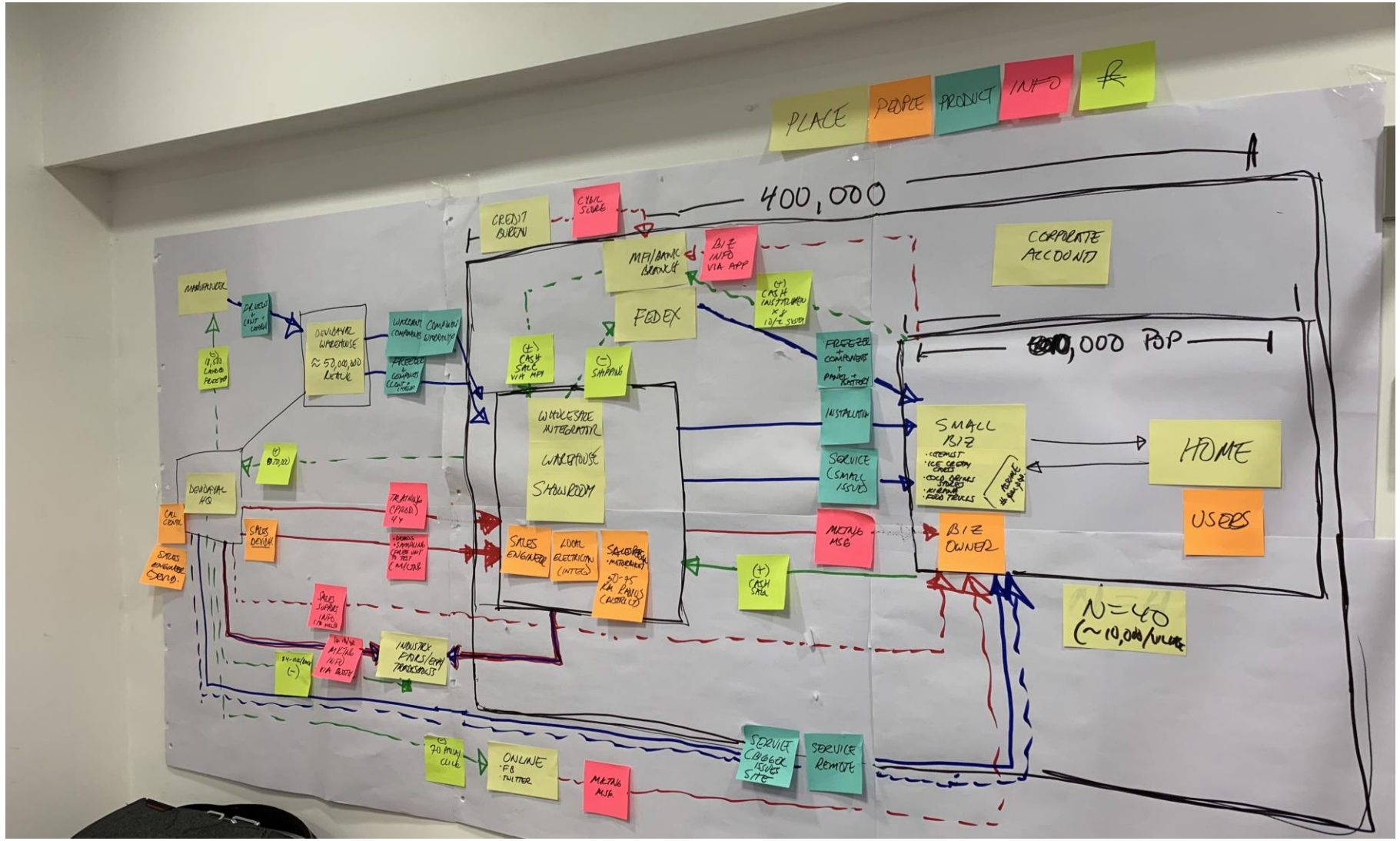
STEP 2
Identify Key Business Flows



STEP 3
Map the Business Flows & Bracket the Units



Operational Model Mapping – Example



Operational Model Mapping – Key Activities (cont'd)

STEP 4
Determine Steady State Activities & Staff

- Define **key activities** that need to happen to move each flow to/from one Place/Person to the other:
  - Who would **perform** this activity?
  - Who would **support** this activity?

EXAMPLE
HR Positions => Activities => Drivers => Variables

Operating Unit					
	Employer				
		SME Sales		**Drivers**	***Variables***
			Recruit New & Replace Drop Outs		
			Stage 1: gather leads	Conferences	*Assumes 2 days per conference, 2 days preparation per conference and 1 conference per year per province*
			Stage 1: gather leads	Community Events	*Assumes 3 days per event, 2 days preparation per event and 4 events per year*
			Stage 2: warm call	Follow up calls on leads	*Requires 3 calls to schedule longer call to discuss business needs; assume 25% conversion rate at this sales stage*
			Stage 3: close deal	Longer call to close deal	*Requires 2 calls to close deal; assume 50% conversion rate at this sales stage*
			Maintain Existing		
				Check-in call	*Calls to all existing customers to gather feedback and gauge levels a satisfaction*
		Corporate Sales			***Notes***
			Recruit New & Replace Drop Outs		
			Stage 1: gather leads	Conferences	*Assumes 2 days per conference, 2 days preparation per conference and 1 conference per year per province*
			Stage 1: gather leads	Research & Network	*Desk research on corporates with high volumes of low skilled labour and high turnover; contact via Pearson network LinkedIn*
			Stage 2: warm call	Follow up calls on leads	*Requires 3 calls to schedule longer call to discuss business needs; assume 25% conversion rate at this sales stage*
			Stage 3: close deal	Meeting to close deal	*Assumes 2 hours to travel and meet; Requires 5 meetings to close deal; assume 50% conversion rate at this sales stage*
			Maintain Existing		
				Check-in meeting	*Meet with all existing corporate customers to gather feedback and gauge levels a satisfaction*
				Answer queries	*Assumes 20% of all corporate customers need support*

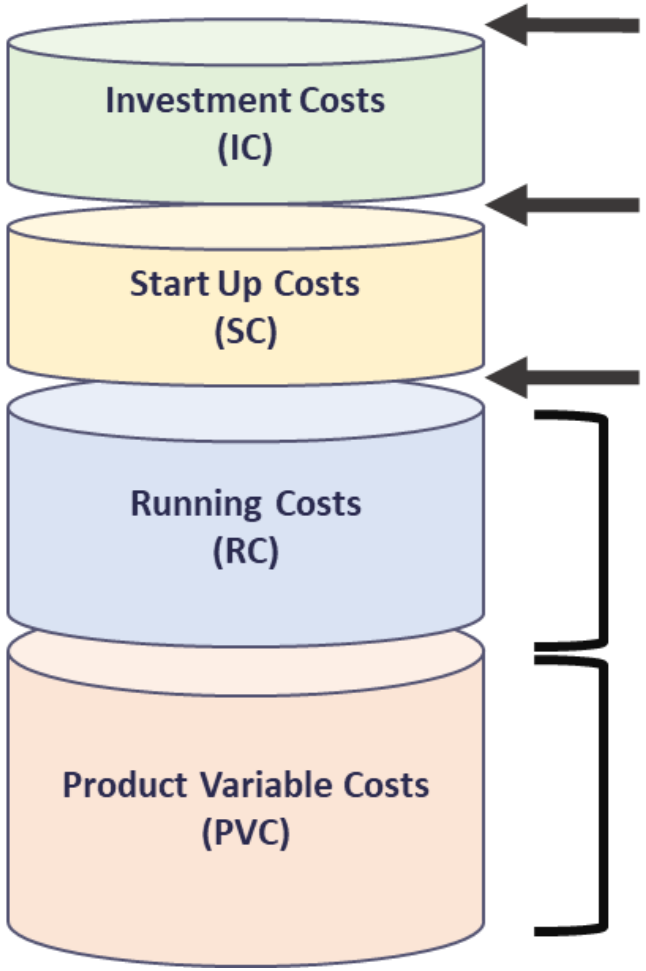
Bottom-Up Financial Model - Relating Price to Profitability

Competitive rate of return on capital provided

Capital assets & development/launch costs

Human resources & general operating (e.g., marketing, advertising, training)

Raw materials, components, packaging, duties/tariffs, shipping



Price = PVC +RC + SC + IC

Price = PVC +RC + SC

Price = PVC +RC

Price < PVC +RC

Price < PVC

Investment Profitability
- Self-scaling

Venture Profitability
- Subsidize investors

Operating Profitability
- Subsidize replication

Operating Losses
- Subsidize operating unit

Product Losses
- Subsidize product

Bottom-Up Financial Modeling – Key Steps

Last-Mile Operating Unit's At-Scale Whole Cost Structure

TOTAL RUNNING COSTS | TOTAL START-UP COSTS | TOTAL INVESTMENT COSTS

Step 1: Bound the Unit & Head Office

Step 2 (a) Calculate Unit's Running Costs

Step 2 (b) Allocate Head Office Running Costs

Step 3 (a) Calculate Unit's Start-Up Costs

Step 3 (b) Allocate Head Office Start-Up Costs

Step 4 (a) Calculate Unit's Investment Costs

Step 4 (b) Allocate Head Office Investment Costs

Step 5: Calculate Required Price & Margin

Step 6: Build Whole-Cost P&Ls & Calculate IRR

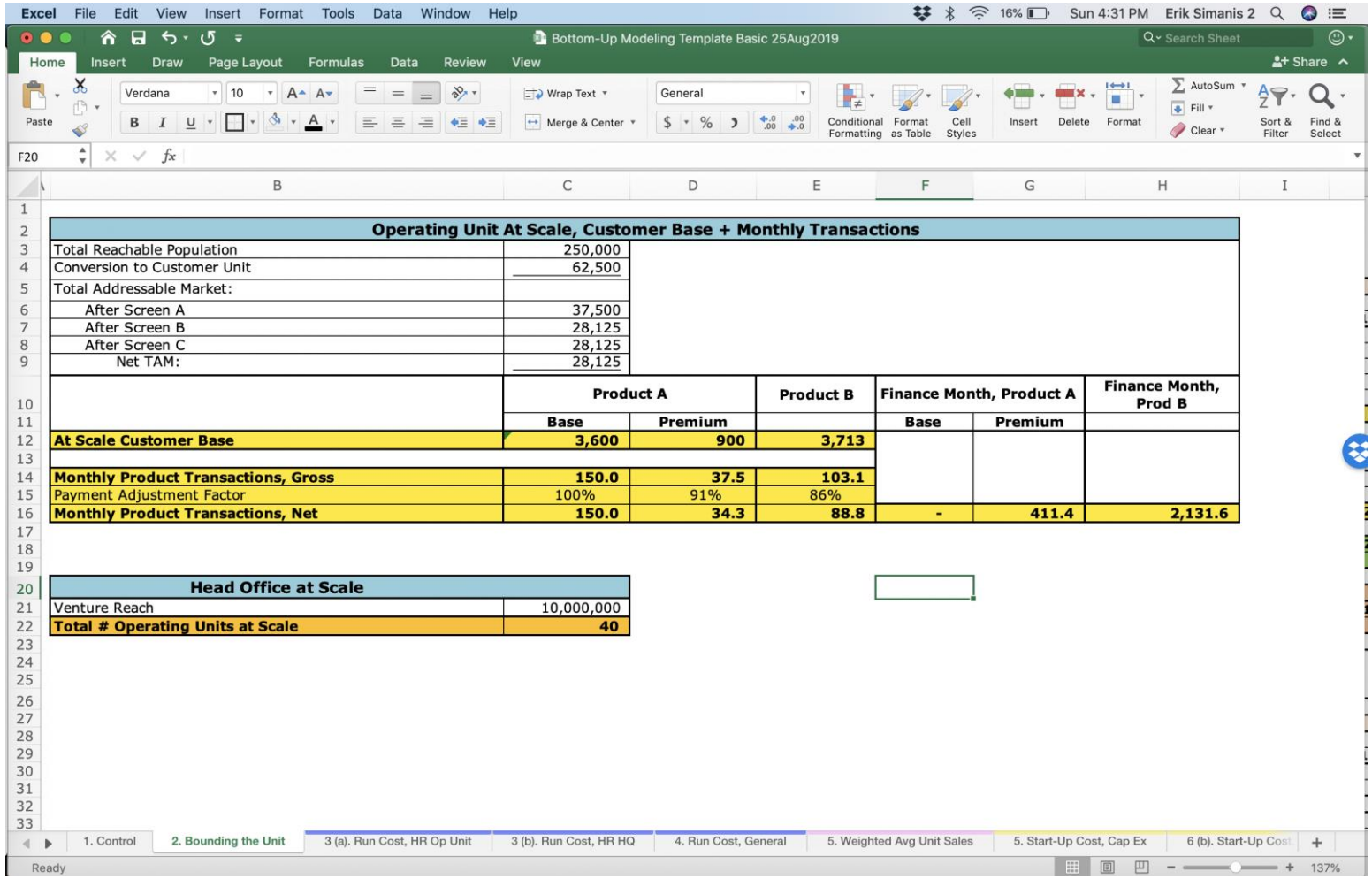
Activity Drivers

Bottom-Up Financial Modeling – Excel Template Caveats

There is no universal financial template...but *every* business can be modeled.

Core structure will (post-pilot) reflect PAYGo context...but every PAYGo business model will be different.

- Multi-product, durable good
- Sold "direct" to households
- Customer financing option, ranging from 0-24 months
- 5-year investment period



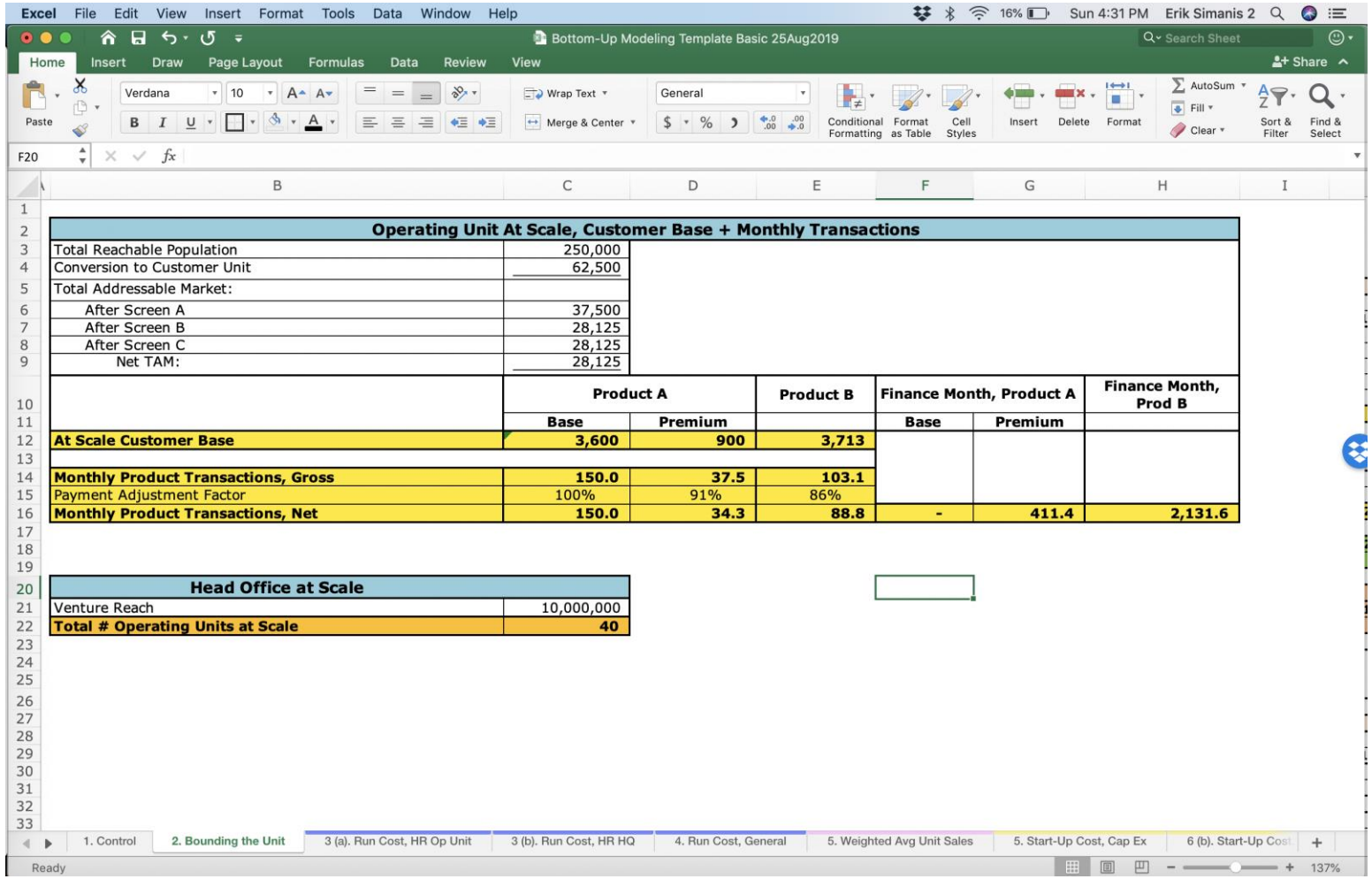
Bottom-Up Modeling Template Basic 25Aug2019

Operating Unit At Scale, Customer Base + Monthly Transactions						
Total Reachable Population	250,000					
Conversion to Customer Unit	62,500					
Total Addressable Market:						
After Screen A	37,500					
After Screen B	28,125					
After Screen C	28,125					
Net TAM:	28,125					
	Product A		Product B	Finance Month, Product A		Finance Month, Prod B
	Base	Premium		Base	Premium	
At Scale Customer Base	3,600	900	3,713			
Monthly Product Transactions, Gross	150.0	37.5	103.1			
Payment Adjustment Factor	100%	91%	86%			
Monthly Product Transactions, Net	150.0	34.3	88.8	-	411.4	2,131.6

Head Office at Scale	
Venture Reach	10,000,000
Total # Operating Units at Scale	40

Bottom-Up Financial Modeling – Excel Template Overview

- **All variables on a control tab**; variables are listed out in the order by which the calculations are performed
- **Each Whole Cost dimension calculated on a separate tab** (sometimes broken into two parts)
- **The Whole Cost calculations "ladder-up"**; early ones are linked to later ones



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Head Office at Scale	
Venture Reach	10,000,000
Total # Operating Units at Scale	**40**

Bottom-Up Financial Modeling – Step 1

- Bounding the Unit is a series of calculations to determine **how many customers and sales transactions** the average last-mile operating unit will manage at scale.

- By knowing a last-mile operating unit's average sales transaction volume, an entrepreneur or venture manager can **determine how big the op unit needs to be**—in terms of human resources, capital assets, and business activities— and the costs associated with running it.

- Similarly, Bounding the Head Office indicates **how many last-mile operating units** the venture will need to support at scale—the critical determinant of the head office's size and cost structure.

Step 1:
Bound the Unit
&
Head Office

Bottom-Up Financial Modeling – Step 2

- Two components to Total Running Costs:
  - **Human Resource Cost**
  - **General Running Cost**

- Keys to Total Running Costs are **good activity drivers**; the more granular, the more they connect them back to customer base calculations, the more valuable the model. Examples:
  - Churn Rate
  - Sales Conversion Rate
  - Lead Conversion Rate
  - Marketing Mix

- Head Office costs allocated to single Operating Unit by dividing Head Office cost by the **total number of operating units at scale**

TOTAL RUNNING COSTS

Step 2 (a) Calculate Unit's Running Costs
Step 2(b) Allocate Head Office Running Costs

Bottom-Up Financial Modeling – Step 3

- Two components to Total Start-Up Costs:
  - **Cap Ex**
  - **Development & Launch Costs**

- Start-up Costs include launch marketing and tech / product development
  - Costs fully amortized over the investment period
- Start-up Costs at Last Mile Operating Unit and at Head Office

Step 3 (a)
Calculate Unit's Start-Up Costs

Step 3 (b)
Allocate Head Office Start-Up Costs

Bottom-Up Financial Modeling – Step 4

- Two components to Total Investment Costs:
  - **Investment Costs, Debt**
  - **Investment Costs, Equity**
- Note: Working Capital calculated as an input – working capital to fill losses, and working capital for customer financing
- Debt financing level can be specified as variable; amount applied first to Cap Ex, then to Start-Up, and then to Working Capital
- Cost of Equity best considered the opportunity cost of capital (what could I earn on this money without risk?); total cost of equity based on all start-up cost and working capital requirements not covered by available debt financing

TOTAL INVESTMENT COSTS

Step 4 (a) Calculate Unit's Investment Costs
Step 4(b) Allocate Head Office Investment Costs

Bottom-Up Financial Modeling – Step 5

- Pricing has two main steps:
  - **Adding up all variable products** for a single unit of product;
  - **Allocating "whole costs"** to a single unit of product

- Model shows the **deviation** between **required** pricing and **targeted** pricing

- Model specifies cost cutting required, or the price increase possible
  - To **increase price**, use "Goal" seek function (set required to equal target price by changing targeted pre-tax ROI)
  - To **decrease** price, find the cost driver by identifying biggest cost components of Whole Cost, and then the biggest components of the specific dimensions

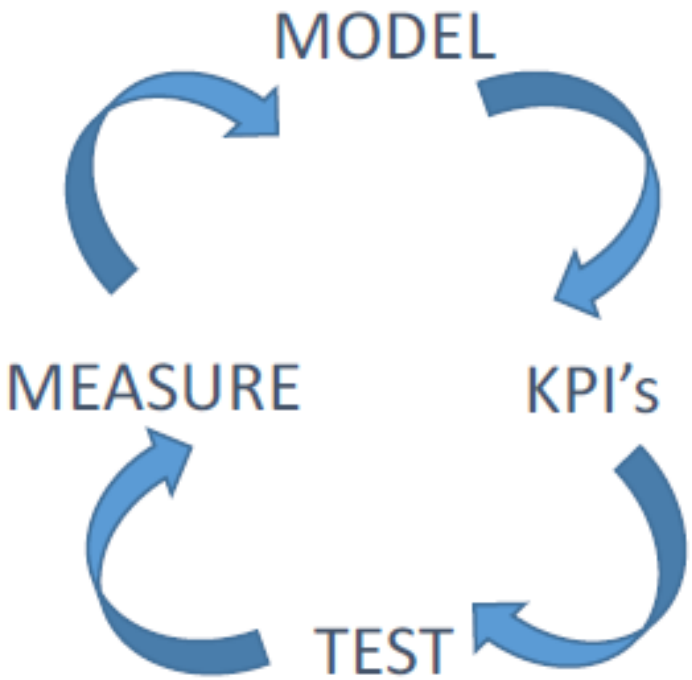
Step 5:
Calculate Required Price & Margin

Bottom-Up Financial Modeling – Step 6

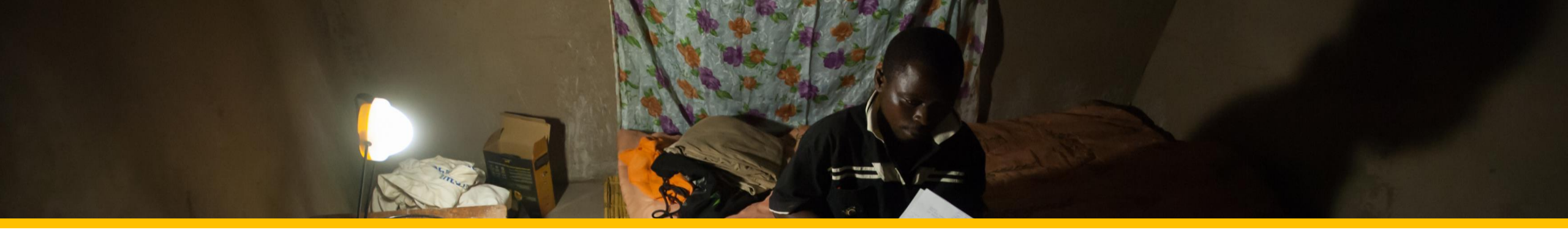
- Whole-Cost P&Ls (Operating Unit Level and Venture Level) show the **average performance** of the OU/Venture **over the investment period** (i.e., the performance based on average unit sales as a % or at-scale sales volume)
- The Whole Cost P&L "sums up" to 0; note that cost of equity is treated as a cost, not as a residual
- Annual P&Ls show the **average annual performance** based on the sales ramp up assumptions specified in the control tab
- The early years all typically have "negative deviations from the mean" and later years positive
  - The **sum of all the deviations equal 0**
- NPV/IRR calculation includes a terminal value; allows for the timing of start-up costs to be specified

Step 6:
Build
Whole-Cost
P&Ls
& Calculate IRR

Path to Profitability - Summary



Path to Profitability is a Business Model Design Tool, Not a One-Time Exercise



4. DISCUSSION / Q&A