welcome to pump away

WELCOME TO PUMP AWAY
ONE MILLION HOUSEHOLDS. THAT’S A CONSERVATIVE ESTIMATE OF THE CONSUMER MARKET FOR PIT LATRINE EMPTYING SERVICES IN ZAMBIA. CLEARLY THERE IS A HUGE NEED.
**THE NEED**

TODAY, MOST PIT LATRINE OWNERS HAVE ONLY ONE OPTION WHEN THEIR PIT FILLS.

They hire a local worker to empty the latrine by hand. Manual emptying is hazardous, time consuming, and, since the manual emptier only moves the waste to another location on the same property, ultimately unsustainable.

Mechanical emptying is preferable from a public health perspective, but is rarely a realistic option for pit latrine owners in Lusaka. Vacuum trucks empty septic tanks regularly, but they rarely service pit latrines. Current technology makes it impossible to fully vacuum the thick content in most pit latrines, and even when it is possible, pits are often too far from main roads. Additionally, emptying businesses simply don’t know how to effectively market their service to pit latrine owners.
THE OPPORTUNITY

Seeking to address this need, the Bill and Melinda Gates Foundation has funded the development of the Omni-Ingestor—an innovative new technology designed to improve the efficacy and efficiency of mechanical pit latrine emptying. With their support, Water and Sanitation for the Urban Poor and IDEO.org have teamed up to ask:

**HOW MIGHT WE DESIGN A BUSINESS AROUND THE OMNI-INGESTOR TO MAKE IMPROVED PIT LATRINE EMPTYING VIABLE?**
THE TECHNOLOGY

THE OMNI-INGESTOR IS STILL IN DEVELOPMENT, AND IS EXPECTED TO BE RELEASED FOR PILOT TESTING BEGINNING IN 2014. THE TECHNOLOGY WILL ULTIMATELY CONSIST OF SEVERAL COMPONENTS:

**EXTRACTOR***

The extractor technology will make the removal of waste from latrines and septic tanks more efficient and effective. It will be able to remove waste with a much higher density of solids than existing vacuum truck pumps, and will be able to pump over a greater distance, meaning pit latrines further from the road will now be accessible.

**FIXED PRE-PROCESSOR**

The fixed pre-processor will be a semi-centralized stationary technology where waste transporters can bring waste to be dewatered and de-gritted, increasing the density of waste to make further transportation and processing more efficient.

**MOBILE PRE-PROCESSOR**

The mobile pre-processor will have similar functionality to the Fixed Pre-Processor, but will be transported with the Extractor technology. It will remove water and sand from waste before it is put in the tank of the truck, making transport more efficient.

* BASED ON CURRENT ESTIMATES, ALTHOUGH THE FIXED AND MOBILE PRE-PROCESSORS MAY HAVE GREAT VALUE IN INCREASING TRANSPORTATION EFFICIENCY OF WASTE REMOVED FROM SEPTIC TANKS, THEY WILL HAVE MINIMAL, IF ANY, EFFICIENCY GAINS FOR WASTE REMOVED FROM PIT LATRINES. THEREFORE, FOR THIS PILOT ONLY THE EXTRACTOR TECHNOLOGY WILL BE UTILIZED.
THE PROCESS
Over six weeks, the IDEO.org team used a human-centered design approach to identify and design new business concepts. Beginning with a deep understanding of end-user needs, desires and aspirations, the HCD process prioritizes testing ideas through prototypes and sacrificial concepts.

BY THE NUMBERS
- 2 weeks in Lusaka
- 21 user interviews
- 8 operator interviews
- 2 prototype businesses
- 15 customer signups
- 5 brands tested
The result of this process is a business concept named Pump Away, designed to be pilot-tested in Lusaka by Water and Sanitation for the Urban Poor.

PUMP AWAY IS AN EFFECTIVE, ACCESSIBLE AND CONSISTENT SERVICE USING THE OMNI-INGESTOR TECHNOLOGY TO KEEP THE PIT LATRINES OF LUSAKA IN GOOD WORKING ORDER.
“Sometimes our neighbors use our toilet because theirs is full. I put a lock on, but they broke it. People are desperate.”

- Luca
WHAT WE LEARNED ABOUT PEOPLE

THE DEMAND IS HUGE

Millions of Zambians lack access to improved pit emptying services. That need translates into a huge demand for new services. Landlords are willing and ready to pay for reliable emptying services but don’t know where to turn.

LANDLORDS DRIVE DECISIONS

Tenants of compounds—mostly women—share responsibilities for the day-to-day maintenance of latrines, but landlords are the ones who decide to empty.

TENANTS CAN INFLUENCE LANDLORDS

Although they don’t hold the final decision-making power, tenants can encourage landlords to empty their latrines, and may even be willing to chip in to make it more affordable.
WHAT WE LEARNED ABOUT PEOPLE

MANUAL EMPTIERS ARE THE COMPETITION TO BEAT
Most landlords don’t even consider mechanical emptying until they’ve run out of land to dig new pits. They assume vacuum trucks will be too expensive, won’t be able to reach their latrines or will only empty liquids.

OUT OF PIT, OUT OF MIND
When emptying a pit, landlords prefer to have it fully empty so they don’t have to think about it for a few years.

SOMETIMES A LITTLE BREATHING ROOM WILL DO
Although a fully empty pit is the ideal, sometimes it fills before a landlord can afford to have it fully emptied, so they’ll pay for a partial empty.

“You mean a truck will come here? I didn’t even know that was possible.”
- FLORENCE

“Sometimes people are desperate, and I negotiate with them to just give them a little breathing room.”
- HERBERT
WHAT WE LEARNED ABOUT PEOPLE

ALL VACUUM TRUCKS ARE CREATED EQUAL

When customers do decide to hire a vacuum truck, any vacuum truck will do. Without allegiance to any particular operator or company, customers generally seek out the cheapest option, knowing that they’re all equally unreliable.

CUSTOMERS WANT TO SEE IT TO BELIEVE IT

Evidence creates trust. When promised a new type of pump, customers want to see the technology to know it’s truly different. When a new company comes knocking at their door, landlords want to know where they’re based. And when promised an empty pit, landlords want to see a fully empty pit with their own eyes.

“Vacuum trucks are like taxis. You have to go and find them wherever they may be, and once you’ve found one, they’re all the same.”
— RICHARD
“Tenants complain that their children are going to get cholera or diarrhea. Even us, we’re scared, but we don’t know what to do.”

- FLORENCE
WHAT WE LEARNED ABOUT BUSINESS

NOBODY IS MARKETING TO PIT LATRINE OWNERS

Vacuum truck owners don’t like servicing pit latrines—they’re too hard to get to and filled with garbage. Manual emptiers don’t market themselves at all—they rely instead on occasional word-of-mouth referrals. As a result, nobody is marketing directly to pit latrine owners.

VACUUM TRUCK ENTREPRENEURS MEAN BUSINESS

Although it’s a side business for most entrepreneurs, owning a vacuum truck is a major investment. Owners are always looking for ways to grow their business, and are open to new technologies, franchises, and services.
WHAT WE LEARNED ABOUT BUSINESS

PIT LATRINES ARE AN UNKNOWN MARKET

Vacuum truck entrepreneurs tend to think of expansion in terms of serving more of their existing customer base: septic tank owners. They recognize the huge market that pit latrine owners represent, but don’t know how to reach them, preferring instead to buy more trucks to service septic tanks, or to expand to new cities.

EMPTYING IS AN INEFFICIENT INDUSTRY

Vacuum trucks sit on the side of the road for days at a time because they don’t know how to reach more customers. Even when they are operating at capacity, there’s a lot of inefficiency in their process, from redundant employees to poor transportation optimization.

DISTANCE AND ACCESSIBILITY DRIVE COST

The first question vacuum truck owners ask when deciding how much to charge to empty a latrine or septic tank is “Where is it?” Based on the answer they’ll decide how much to charge (distance from the dump is the main variable in the cost), and whether it’s worth the risk (bumpy roads and narrow turns mean potential damage to the truck).
“Get it all out? I’d have to put water, stir, pump, add more water, stir pump. I’d be there the whole day. That’s why I can’t do pit latrines.

- HERBERT
BRAND PROMISE

PUMP AWAY IS AN EFFECTIVE, ACCESSIBLE AND CONSISTENT SERVICE USING THE OMNI-INGESTOR TECHNOLOGY TO KEEP THE PIT LATRINES OF LUSAKA IN GOOD WORKING ORDER.

Pump Away—the proposed brand for this pilot test—will build trust and recognition with customers by tying together the various touch-points of the customer experience—sales, service and technology. By using a clearly defined brand, Pump Away will distinguish itself from the unbranded competition and demonstrate that not all emptying technologies are created equal.

Pump Away as a brand name was a clear winner with potential customers in prototype testing. The English words were aspirational yet understandable. Also important, pit latrine owners immediately knew what the service was for.
BRAND VALUES

EFFECTIVE

• We have the most up-to-date and high performance technology on the market.
• The benefit of our technology is visible and clear.
• We pump solids and liquids, and even empty garbage.
• When we say we’ll get it out, we get it out.

ACCESSIBLE

• Our service is affordable.
• We provide options to meet your needs.
• We come to your home and your neighborhood.
• We can reach pits up to 50m from the road.

CONSISTENT

• We show up on time.
• We guarantee the quality of our service.
• We offer consistent pricing
• We are committed to transparency.
“I don’t remember who emptied it last time. I just went to Garden Compound and found one—they’re all the same.”

- ISAAC

“‘Chimbuzi’ sounds like we’re moving backwards, but Pump Away makes sense. It sounds like we’re moving forward.”

- YOTAM
THE SERVICE
THE PUMP AWAY SERVICE IS DESIGNED TO MEET CUSTOMER NEEDS WHILE DEMONSTRATING THE VIABILITY OF A NEW BUSINESS MODEL.

WHY PUMP AWAY IS DIFFERENT

PROACTIVE SALES
Pump Away meets customers on their home territory with a door-to-door Sales Agent. No longer do customers have to go across town to find a latrine emptier, and because of the Pump Away's Omni-Ingestor technology, no home is impossible to reach.

The proactive Sales Agents recruit several customers in a small area, increasing efficiency by reducing transport and setup costs during service. And because the technology will have a longer reach, the truck can park in one place while emptying many latrines.

OPTIONS THAT MEET CUSTOMER NEEDS
Not everybody has the cash for a full empty. Pump Away offers emptying options that meet customers' needs and budgets.

Offering multiple options enables Pump Away to reach customers that were previously ignored, while creating higher revenue offerings.

EVIDENCE OF A JOB WELL DONE
The Omni-Ingestor technology used by Pump Away will do what no other vacuum trucks have been able to do. Pump Away will get the job done, and prove it, every time.

By demonstrating the quality of their technology and service Pump Away will increase brand recognition, trust and loyalty.
THE SERVICE

INITIAL ENGAGEMENT

SALES & SIGN-UP

01 MEET
A dedicated Sales Agent visits landlords at their homes and introduces the new service directly to pit latrine owners.

02 INSPECT THE PIT
The Sales Agent inspects the pit and evaluates ease of access for the pump as well as composition and level of the waste.

03 SIGN-UP & DEPOSIT
The customer is offered a full empty and an option for a recurring partial empty when signing up, and gives a deposit to the Sales Agent.

SECOND ENGAGEMENT

CONFIRMATION & SERVICE

04 SCHEDULE & REMINDER
Prior to actual service day a reminder call/sms is sent to customer to confirm the date.

05 PUMP IT AWAY
The Pump Away team comes according to schedule. They park the truck on the nearest road, the long hose is deployed and the technology takes care of the rest.

06 SEE & PAY
The Pump Away operator reviews the completed job with the owner and shows evidence of the amount of waste removed. When the customer is satisfied, they pay the balance.
“This business is such a good idea—I should just do it myself.”

- Isaac
**BEHIND THE SCENES**

**CLUSTERED SIGN-UP**
Because of the direct sales channel, Pump Away can sign up several customers in a small area. This clustered sign-up approach enables Pump Away trucks to fill to maximum capacity before driving to the dump, saving precious time and money.

**BUILD PIT DATABASE**
Over time, as Pump Away services pits in various parts of Lusaka, salespeople and operators will collect information that will feed into a central pit latrine database. This database can provide useful information about neighborhoods, pit consistency, etc., while also ensuring that latrines are serviced according to schedule.

**DAY SCHEDULE**
Once a customer has been called to confirm their appointment, the Pump Away Operations Manager compiles a daily schedule to give to the driver. The schedule will contain all the pertinent information, such as location, amount to empty, payment due, and approximate time of service.
FILL THE TANK
Because of the longer hose and clustered sign-ups, Pump Away drivers and operators will be able to park the truck near several customers and service their latrines without having to move the truck. This minimizes set-up and transportation time, and allows for Pump Away to operate at greater efficiency than other vacuum trucks.

DUMP WHEN FULL
When full, the vacuum truck drives to official dumping site and empties waste. Because of the thicker consistency of waste the truck must empty from the back.
ADDITIONAL IDEAS

OFFER LAST MINUTE SIGNUPS
In instances when all the daily customers have been serviced but the truck isn’t filled to capacity, Pump Away can offer last minute deals for nearby pit latrine owners.

NEIGHBORHOOD KIOSKS
Many customers we spoke with wanted to know where Pump Away is based. Pump Away kiosks in target neighborhoods may help build trust and awareness.

ROAD SHOW AND DEMONSTRATIONS
To kick-start demand in new neighborhoods, Pump Away could host road shows and technology demonstrations.
**ADDITIONAL IDEAS**

**COLLATERAL MATERIAL FOR TENANTS**
When landlords aren’t home to speak with the Pump Away Sales Agent, specially designed collateral will help facilitate a conversation between tenants and landlords, enabling tenants to make the Pump Away ‘pitch’ themselves.

**CELEBRATE EMPTYING**
To reinforce the effectiveness of Pump Away’s technology, celebrate the before and after moments. For a full service take pictures of the pit before and after. For a partial service use a special Pump Away measuring stick to demonstrate the amount removed. Additionally, if possible the technology itself should have visible gauges to allow users to see the pumping in action.

**50 METERS CLUB**
Group discounts when neighbors (within 50m radius) contract service on the same day. The discount is proportional to the number of people who join.
THE BUSINESS MODEL
THE BUSINESS MODEL

CUSTOMER
• Primarily landlords
• Sometimes tenants

REVENUE
• Upfront deposit
• Payment for service
• Recurring fees for partial empties

OFFER
• Mechanical waste removal from private household pit latrines

TOUCHPOINTS
• Door-to-door sales
• Emptying service

THIS PILOT TEST IS DESIGNED PRIMARILY TO TEST THE DESIRABILITY OF THE PUMP AWAY TECHNOLOGY AND SERVICE WITH CUSTOMERS. THE BUSINESS MODEL OUTLINED HERE IS BROKEN DOWN INTO THE FOUR BUILDING BLOCKS ESSENTIAL TO RUNNING THIS PILOT.
WHAT TO TEST

Pump Away as a service, brand and technology is headed to pilot. As such, there are some variables and risks that should be tested during this phase.

01 CUSTOMER RETENTION

02 SALES AGENT COMMISSION

03 PRICE AND DEPOSIT AMOUNT
BRANDED COLLATERAL
NO ONE IS ACTIVELY TRYING TO REACH PIT LATRINE OWNERS—PUMP AWAY EXISTS TO CHANGE THAT.

As a highly professional and branded service it is important to have materials that clearly identify the brand, building recognition among customers and distinguishing Pump Away from the competition.
IDENTITY

PRIMARY LOGO
This conveys utility and performance. The primary logo should be used in instances when Pump Away wants to make a point and be instantly recognizable.

ALTERNATE LOGO
This should be used in situations where vertical space is limited.

MARK
This is to be used as an icon. It will be synonymous with the brand Pump Away.
**PRIMARY COLORS**
These colors should always be used for bold moments, for instance for worker uniforms.

**SECONDARY COLORS**
These colors are intended to support the primary colors and can be used for smaller items such as worker gloves.

**TYPEFACE**

**PRIMARY TEXT**
Use Flama Black caps for headlines and important call-out information.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

**SECONDARY TEXT**
Use Flama Light for body text and less important information.

a b c d e f g h i j k l m n o p q r s t u v w x y z
BRANDING THE TECHNOLOGY

OMNI-INGESTOR AESTHETICS
The technology behind Pump Away will be a key part of its success and as such should be branded. During the prototype phase potential customers were eager to see the technology.

ADDITIONAL MARKINGS FOR THE VACUUM TRUCK
In customers’ minds, all vacuum trucks are created equal, but the Pump Away truck will be different. It represents quality, and markings on the truck should convey that.
SALES AGENT MATERIAL

SALES BINDER
A sales binder will help Sales Agents organize their collateral as they go door-to-door. It should clearly display the Pump Away mark and/or logo on the outer cover. In prototyping, these binders added an element of professionalism that was appreciated.

NAMETAG + BUSINESS CARDS
While prototyping the Pump Away service multiple potential customers requested business cards from the sales force.

SHIRT + CAP
A uniform will be one of the clearest signs of a unified brand and service. It commands respect and makes Pump Away an outlier with a sanitation salesforce in the field. During the prototype the uniform seemed to represent a higher level of education for the Sales Agent and incited trust in potential customers.
FLYER
Virtually every person encountered during the prototyping phase requested that some type of information be left behind. This flyer is designed to convey information quickly and succinctly to landlords.

SERVICE OPTIONS & PRICING
This is an informational page that should remain with the salesperson. It is used in door-to-door visits to demonstrate the options that Pump Away offers.

SIGNUP SHEET + RECEIPTS
This sheet allows a Sales Agent to record the vital information about date, time and contact information of the customer, while also capturing data about the pit inspection. Prototyping showed customers also appreciate a receipt and are more inclined to pay deposits when given documentation of that payment.
OPERATION TEAM MATERIAL

**T-SHIRT**
A uniform will be one of the clearest signs of a unified brand and service. It commands respect and makes Pump Away visible to the community.

**SCHEDULE + RECEIPTS**
This schedule should be printed daily for the truck driver and operator. The receipts should be given to every customer after the servicing. Prototyping showed customers appreciate a receipt. This gesture may result in greater customer retention.

**COVERALLS**
This is a traditionally worn item by sanitation workers and should be maintained to protect workers and brand Pump Away.

**CAP + GLOVES + RUBBER BOOTS**
These features are seen as aspirational by many workers in the sanitation business. Their presence on Pump Away workers indicates professionalism and suggests the job will be done well.
EXTRA MATERIAL

LATRINE MARKINGS
An insight that informed this concept is that social pressure can be used to push landlords towards adoption of Pump Away. This is an attempt to address that. A visible marking on latrines that have been serviced is the clearest way to show a neighbor or tenants that a latrine is clean.

STICKERS
These are meant to provide an easy way to quickly brand collateral, and can also be used as incentives during road shows or big marketing initiatives.