Urban Water Partners

Cameron Bossert ○ Meghan Bridges ○ Will Meneray ○ Brendan Stevens
Clean water is essential to health and development, and yet it is extremely scarce in many parts of the developing world.
The Opportunity

Urban Water Partners

Slowsand filtration leverages and enhances current supply chain
The Potential – Return on Equity

The financial returns exceed those of the previous model, and the social value proposition is much more sustainable.

Year 1: - 55%
Year 2: 450%
Year 3: 650%
Year 4: 1080%
Year 5: 1270%

Seeking $200,000 investment for 20% equity stake
Business Model Alterations

Alterations strengthen the model and create economic and social value
Agenda

1. Industry
2. Old Business Model
3. New Business Model
4. Financials
5. Conclusion
Tanzanian Water Market
Dar es Salaam

- 10% of population has legal connection to water supply

- 25% of water sourced from Ruvu River reaches legally-connected customers

- Culture of water vendors

- Bottled water too expensive for BoP consumers

Dar es Salaam is an optimal starting location for Urban Water Partners
Technology Justification

- Recognized by UEPA and WHO
- Removes many types of contaminants
- Produces water ready to drink
- Limited maintenance and energy input required
- Other water purification methods are expensive, unproven, or insufficient for drinking water

Slowsand water filters is the technology best suited to slums in Dar es Salaam
There is a significant target market to sell and purchase clean water from UWP.
Government Involvement

Regulation
Small business licenses
Illegal taps
Ban on sachet water
Corruption

UWP must develop and maintain a good relationship with the government
Old Business Model
Original Business Model

Vendors have little accountability to UWP and no incentive to report earnings accurately.
# Original Business Model

## Key Risks:
- Speed of rollout vulnerable
- Vendors under-reporting revenue
- Escalation of bribery and corruption
- Manufacturing set-up risk
- Vendor abuse of filters

The original business model imposes significant risks on investors without a sufficient risk mitigation strategy.
Microfinancing

UWP

Vendor

Water Filter = $400

- Lends vendor $200 for remaining purchase price
- Receives interest on principal outstanding

- Groups of 5 women agree to cover each other’s loan
- Monthly repayments from water earnings

Accountability and fairness are the central pillars of UWP’s business
Revenue Model

Interest + Principal Repayments

Loan Repayment

Operating Flows

UWP

Vendor

Consumer

67% of Revenues remitted to UWP

100% of Revenues

UWP Vendor Consumer
Vendors

- Supplemental income for family
- Minimal cannibalization of husband’s business
- Free access to clean drinking water for personal use
Incentives - Government

- Community initiatives to put filters in schools and orphanages will increase buy-in

**Government**

- Increase in connections to water system
- Delays need for water purification infrastructure
- Reduction in death and disease in urban areas
Incentives – Blue Future Filters

- South African manufacturer Hilfort Plastics can supply plastic jugs

Blue Future Filters

- Creation of a market for targeted product
- Limit risk by focusing on manufacturing
- Iterative approach to product design
Incentives – WaterAid

- U.K. based NGO with an annual operating income of £45.6 million

WaterAid
- Amplifies the impact of their expertise
- Limited investment for substantial reach
- Focus on education rather than distribution
Building a Network

- UWP’s competitive advantage is its role in the network as a **connector**
- Information flows between each stakeholder to make the network **stronger**
- By sharing the value created in the network, UWP’s strategy is **sustainable**
- UWP’s strategy is replicable, scalable and profitable in **other markets**
Unique marketing initiatives will distinguish UWP and its water, and help it gain the trust of locals in Dar es Salaam.
Financial Implications
The suggested UWP business model offers substantial opportunities for growth in both the top and bottom lines.
Cash flow positive during each of the projected years and sustainable beyond a $200,000 equity infusion in year 1 and a $1mm term loan in year 2
Revenue Sources

Microfinance is a small, low risk component of revenue, but a significant enabler of UWP’s water business.
Profitability is driven by scale; the suggested model drives more substantial upside than a realistic view of the original model.
An investor can earn a very attractive annualized return on a $250,000 investment, based on comparable consumer staples multiples (adjusted down).
1st Expansion – Within Tanzania

Expanding to Arusha leverages WaterAid’s existing operations and UWP’s Tanzanian relationships to further the company’s social mission.

**Arusha, Tanzania**

- Population: 1.3mm (2002)
  - WaterAid is active throughout Tanzania
  - Arusha has active, year-round water vendors on the streets
  - CAGE distance is negligible
UWP can have the most success expanding into bordering countries that satisfy its expansion criteria; in order, Nairobi, Kampala, Lusaka, and Maputo.

<table>
<thead>
<tr>
<th>Country</th>
<th>Population</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nairobi, Kenya</strong></td>
<td>3.1mm</td>
<td>WaterAid is active, Vendor culture, CAGE is lower</td>
</tr>
<tr>
<td><strong>Kampala, Uganda</strong></td>
<td>1.4mm</td>
<td>WaterAid is active, Vendor culture, CAGE is lower</td>
</tr>
<tr>
<td><strong>Lusaka, Zambia</strong></td>
<td>1.7mm</td>
<td>WaterAid is active, Vendor culture, CAGE is moderate</td>
</tr>
<tr>
<td><strong>Maputo, Mozambique</strong></td>
<td>1.3mm</td>
<td>WaterAid is active, Vendor culture, CAGE is higher</td>
</tr>
</tbody>
</table>
Timeline

Within 1 month
- Initiate relationship with WaterAid
- Hire managers
- Set up MFI
- Select districts
- Find first cooperatives

Within 6 months
- Set cooperative sales targets
- Begin mobile app development
- Partner with local artists

Within 1 year
- Analyze health survey data
- Expand to ten districts
- Review sales targets; get feedback from cooperatives
- Reward top cooperatives

Within 5 years
- Work with BFF to set up manufacturing plant in Tanzania
- Expand within Tanzania and to other East African countries
- Continue to monitor consumer health

UWP will be in a strong position for growth within Tanzania by the end of the first year and outside of Tanzania by the end of the fifth year.
**Conclusion**

**Shareholder Value Creation**
- 68% equity appreciation
- 45% annual profit growth
- $7 million annual revenue by 2016

**Social Value Creation**
- Female empowerment
- Reduced pollution
- Improved health
- Economic prosperity

**Co-creation of Value in East Africa**

Seeking a $200,000 investment for 20% equity stake

Urban Water Partners
Thank You
Appendix

Primary Presentation

Technological Justification
Market Selection
Consumers
Government Involvement
Old Business Model
New Business Model
  Revenue Model
  Microfinancing
  Incentives
  Building a Network
  Marketing Plan
Financial Analysis
Business Risks
Expansion Plans
Timeline

Supplementary Slides

Market Analysis
New Business Model Roles
New Business Model Criteria
Projected Income Statement
Projected Cash Flow Statement
Ratio Analysis
Vendor Financial Outcomes
Government Financial Outcomes
Market Saturation
Cost of Water to Consumers
Perceived Value of Drinking Water
Key Assumptions
Loan Portfolio Analysis
CAGE Framework
New Business Model

Goals

- Increase vendor accountability
- Eliminate under-reporting and filter damage
- Leverage community ties and ensure social value creation
New Business Model - Roles

UWP

• Coordinator of the network
• Link between vendors and BFF
• Provides micro-financing support

Technician

• Trained by NGO partner – WaterAid
• Serve the role of technicians
• Oversee collectives in each district

Collective

• Link to the customers
• Remit revenue to UWP and repayment
• Groups of 5 – 6 which are collectively responsible for loan repayments

Vendor
Business Model Summary

Acceptability
- Women not eliminating need for male water vendors

Affordability
- Attachment to WaterAid brand mitigates lack of local knowledge

Availability
- Micro-financing an acceptable method of purchasing in Tanzania

Awareness
Acceptability

- Women not eliminating need for male water vendors
- Attachment to WaterAid brand mitigates lack of local knowledge
- Small up-front cost to attach to local water network
- Micro-financing an acceptable method of purchasing in Tanzania
- Micro-financing breaks purchases down into manageable payments

Affordability

- Portion of initial purchase being covered by UWP

Availability

Awareness
Business Model Summary

Acceptability

- Small up-front cost to attach to local water network

Affordability

- Micro-financing breaks purchases down into manageable payments
- Collectives create clusters for consumers to travel to
- Portion of initial purchase being covered by UWP
- Managers regional-focus makes them easy to access for repairs

Availability

- Product itself has excess capacity to account for peaks in demand
Business Model Summary

Acceptability

Affordability

Availability

• Collectives create clusters for consumers to travel to

• Managing regional allows for quick easy recognition

• Collectives able to leverage off their existing community networks

• Co-branding with NGO gives instant credibility and reach
### Projected Income Statement

Projections reveal substantial profit potential, with the business turning profitable in year 2

<table>
<thead>
<tr>
<th>Income Statement</th>
<th>Year I</th>
<th>Year II</th>
<th>Year III</th>
<th>Year IV</th>
<th>Year V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Revenue - Water</td>
<td>$ 73,000.0</td>
<td>$ 2,920,000.0</td>
<td>$ 4,380,000.0</td>
<td>$ 6,132,000.0</td>
<td>$ 7,008,000.0</td>
</tr>
<tr>
<td>Interest Revenue - Loan Portfolio</td>
<td>$ 1,505.6</td>
<td>$ 57,565.2</td>
<td>$ 79,923.0</td>
<td>$ 96,539.6</td>
<td>$ 108,586.6</td>
</tr>
<tr>
<td>Provision for Loan Losses</td>
<td>$ 243.8</td>
<td>$ 9,683.0</td>
<td>$ 11,895.2</td>
<td>$ 14,717.7</td>
<td>$ 16,764.1</td>
</tr>
<tr>
<td>Revenue Sharing - Vendor</td>
<td>$ 24,333.3</td>
<td>$ 973,333.3</td>
<td>$ 1,460,000.0</td>
<td>$ 2,044,000.0</td>
<td>$ 2,336,000.0</td>
</tr>
<tr>
<td>Net Revenue</td>
<td>$ 49,928.6</td>
<td>$ 1,994,548.9</td>
<td>$ 2,988,027.9</td>
<td>$ 4,169,821.8</td>
<td>$ 4,763,822.4</td>
</tr>
<tr>
<td>Total Expenses</td>
<td>$ 197,066.7</td>
<td>$ 1,364,166.7</td>
<td>$ 1,955,500.0</td>
<td>$ 2,283,366.7</td>
<td>$ 2,523,633.3</td>
</tr>
<tr>
<td>Operating Income / EBIT</td>
<td>$(147,138.1)</td>
<td>$ 630,382.3</td>
<td>$ 1,032,527.9</td>
<td>$ 1,886,455.2</td>
<td>$ 2,240,189.1</td>
</tr>
<tr>
<td>Net Earnings Before Tax</td>
<td>$(147,138.1)</td>
<td>$ 730,382.3</td>
<td>$ 1,032,527.9</td>
<td>$ 1,886,455.2</td>
<td>$ 2,240,189.1</td>
</tr>
</tbody>
</table>
UWP is projected to generate strong cash flow – it sustains itself off internally generated cash flows and the previously outlined financing plan.
Select Projected Ratios

<table>
<thead>
<tr>
<th>Ratios</th>
<th>Year I</th>
<th>Year II</th>
<th>Year III</th>
<th>Year IV</th>
<th>Year V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return on Equity</td>
<td>-70%</td>
<td>511%</td>
<td>735%</td>
<td>1250%</td>
<td>1470%</td>
</tr>
<tr>
<td>Investor's Claim on Earnings</td>
<td>$(27,967.6)</td>
<td>$204,476.5</td>
<td>$294,105.6</td>
<td>$499,931.0</td>
<td>$588,197.8</td>
</tr>
<tr>
<td>Investor's Claim on Retained Earnings</td>
<td>$(27,967.6)</td>
<td>$176,508.8</td>
<td>$470,614.4</td>
<td>$970,545.4</td>
<td>$1,558,743.3</td>
</tr>
<tr>
<td>Implied Annual Rate of Return</td>
<td>-114%</td>
<td>-6%</td>
<td>33%</td>
<td>48%</td>
<td>51%</td>
</tr>
<tr>
<td>Investor's Claim on Cash</td>
<td>$5,552.0</td>
<td>$214,214.3</td>
<td>$235,839.2</td>
<td>$724,832.6</td>
<td>$1,311,928.1</td>
</tr>
<tr>
<td>Implied Annual Rate of Return</td>
<td>-97%</td>
<td>3%</td>
<td>6%</td>
<td>38%</td>
<td>46%</td>
</tr>
<tr>
<td>Asset Replacement Value</td>
<td>$10,000.0</td>
<td>$400,000.0</td>
<td>$600,000.0</td>
<td>$437,500.0</td>
<td>$500,000.0</td>
</tr>
<tr>
<td>Investor's Claim on Assets</td>
<td>$2,000.0</td>
<td>$80,000.0</td>
<td>$120,000.0</td>
<td>$87,500.0</td>
<td>$100,000.0</td>
</tr>
</tbody>
</table>

UWP offers investment protection through claims on various assets
## Vendor’s Perspective

<table>
<thead>
<tr>
<th>Projected Financial Impact for a Vendor</th>
<th>Year I</th>
<th>Year II</th>
<th>Year III</th>
<th>Year IV</th>
<th>Year V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue per Day</td>
<td>$ 4.0</td>
<td>$ 4.0</td>
<td>$ 4.0</td>
<td>$ 4.0</td>
<td>$ 4.0</td>
</tr>
<tr>
<td>Remitted to UWP</td>
<td>$ 2.7</td>
<td>$ 2.7</td>
<td>$ 2.7</td>
<td>$ 2.7</td>
<td>$ 2.7</td>
</tr>
<tr>
<td>EBITDA per Month</td>
<td>$ 40.0</td>
<td>$ 40.0</td>
<td>$ 40.0</td>
<td>$ 40.0</td>
<td>$ 40.0</td>
</tr>
<tr>
<td>EBITDA per Year</td>
<td>$ 486.7</td>
<td>$ 486.7</td>
<td>$ 486.7</td>
<td>$ 486.7</td>
<td>$ 486.7</td>
</tr>
<tr>
<td>Interest Expense</td>
<td>$ 36.3</td>
<td>$ 25.0</td>
<td>$ 14.8</td>
<td>$ 4.9</td>
<td>$ -</td>
</tr>
<tr>
<td>Net Profit per Year</td>
<td>$ 450.3</td>
<td>$ 461.7</td>
<td>$ 471.8</td>
<td>$ 481.7</td>
<td>$ 486.7</td>
</tr>
<tr>
<td>Net Cash Flow per Year</td>
<td>$ 401.6</td>
<td>$ 412.9</td>
<td>$ 423.1</td>
<td>$ 433.0</td>
<td>$ 486.7</td>
</tr>
<tr>
<td>Cost of Equity</td>
<td>21%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NPV</strong></td>
<td><strong>$2,135.83</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Credit Analysis                        |         |         |         |         |         |
| Total Debt / EBITDA                    | 0.30x   | 0.20x   | 0.10x   | 0.00x   | 0.00x   |
| EBITDA / Interest Expense              | 13.39x  | 19.48x  | 32.78x  | 98.35x  | na      |

Vendors can earn 25% above GDP per capita and easily service their microloan
# Government’s Perspective

## Without Ongoing Growth

<table>
<thead>
<tr>
<th>Projected Financial Impact for the Government</th>
<th>BASE CASE DRIVERS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year I</td>
</tr>
<tr>
<td># Cooperatives</td>
<td>10</td>
</tr>
<tr>
<td>Connections per Cooperative</td>
<td>1</td>
</tr>
<tr>
<td>Access Price per Month</td>
<td>$15.0</td>
</tr>
<tr>
<td>Incremental Rev per Month</td>
<td>$150.0</td>
</tr>
<tr>
<td>Incremental Rev per Year</td>
<td>$1,800.0</td>
</tr>
<tr>
<td>Cost of Equity</td>
<td>18%</td>
</tr>
<tr>
<td>NPV</td>
<td>$644,389.6</td>
</tr>
</tbody>
</table>

To put the NPV in perspective, Habitat for Humanity could build 560 homes in Tanzania with this funding.

In a non-growth scenario, the government will see substantial revenue upside from increased legal water connections.
## Government’s Perspective

With Ongoing Growth

### Projected Financial Impact for the Government

<table>
<thead>
<tr>
<th></th>
<th>Year I</th>
<th>Year II</th>
<th>Year III</th>
<th>Year IV</th>
<th>Year V</th>
</tr>
</thead>
<tbody>
<tr>
<td># Cooperatives</td>
<td>10</td>
<td>400</td>
<td>600</td>
<td>700</td>
<td>800</td>
</tr>
<tr>
<td>Connections per Cooperative</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Access Price per Month</td>
<td>$15.0</td>
<td>$15.0</td>
<td>$15.0</td>
<td>$15.0</td>
<td>$15.0</td>
</tr>
<tr>
<td>Incremental Rev per Month</td>
<td>$150.0</td>
<td>$6,000.0</td>
<td>$9,000.0</td>
<td>$10,500.0</td>
<td>$12,000.0</td>
</tr>
<tr>
<td>Incremental Rev per Year</td>
<td>$1,800.0</td>
<td>$72,000.0</td>
<td>$108,000.0</td>
<td>$126,000.0</td>
<td>$144,000.0</td>
</tr>
<tr>
<td>Cost of Equity</td>
<td>18%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NPV</td>
<td>$810,246.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In a growth scenario, the government will see even greater revenue upside from increased legal water connections.
Market Saturation

Table: Size of Market - Dar es Salaam

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liters Sold per Day</td>
<td>450,000</td>
</tr>
<tr>
<td>Share of Market</td>
<td>12%</td>
</tr>
<tr>
<td>Total Liters Sold per Day</td>
<td>3,750,000</td>
</tr>
<tr>
<td>Maximum Vendors for Complete Saturation</td>
<td>25,000</td>
</tr>
</tbody>
</table>

UWP has plenty of room to expand within the city that lessens the drive to expand abroad.
UWP water is competitively priced, and can offer superior value to customers via branding that builds consumer confidence.
Perceived Value of Drinking Water

Unfiltered Water + Purification - Purification Confidence Discount

Bottled water at $0.12 per liter
Filtered, unbranded water at $0.08 per liter

Branding is essential to UWP's success
Increased consumer confidence in a water provider decreases the confidence discount and increases perceived value

UWP can make itself more competitive by branding its consistently purified water; building consumer trust will increase their willingness to pay.
The key drivers reflect strengthening of the original business model and more conservative estimates for sales.
### Loan Portfolio Analysis

#### UWP

The loan book is a minor, reinforcing component of the UWP model.

#### Loan Portfolio Year I Year II Year III Year IV Year V

<table>
<thead>
<tr>
<th>Loan Portfolio</th>
<th>Year I</th>
<th>Year II</th>
<th>Year III</th>
<th>Year IV</th>
<th>Year V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning Principal Outstanding</td>
<td>$-</td>
<td>$7,068.8</td>
<td>$280,806.1</td>
<td>$393,709.4</td>
<td>$475,564.3</td>
</tr>
<tr>
<td>Loans Originated</td>
<td>$9,750.0</td>
<td>$380,250.0</td>
<td>$195,000.0</td>
<td>$195,000.0</td>
<td>$195,000.0</td>
</tr>
<tr>
<td>Paydown</td>
<td>$2,437.5</td>
<td>$96,829.7</td>
<td>$70,201.5</td>
<td>$98,427.4</td>
<td>$118,891.1</td>
</tr>
<tr>
<td>Provision for Loan Losses</td>
<td>$243.8</td>
<td>$9,683.0</td>
<td>$11,895.2</td>
<td>$14,717.7</td>
<td>$16,764.1</td>
</tr>
<tr>
<td>PLL %</td>
<td>2.5%</td>
<td>2.5%</td>
<td>2.5%</td>
<td>2.5%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Ending Principal Outstanding</td>
<td>$7,068.8</td>
<td>$280,806.1</td>
<td>$393,709.4</td>
<td>$475,564.3</td>
<td>$534,909.1</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>21%</td>
<td>21%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Interest Income</td>
<td>$1,505.6</td>
<td>$57,565.2</td>
<td>$79,923.0</td>
<td>$96,539.6</td>
<td>$108,586.6</td>
</tr>
</tbody>
</table>

#### End of Period Principal Outstanding

<table>
<thead>
<tr>
<th></th>
<th>Year I</th>
<th>Year II</th>
<th>Year III</th>
<th>Year IV</th>
<th>Year V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loan Portfolio</td>
<td>$7,068.8</td>
<td>$280,806.1</td>
<td>$393,709.4</td>
<td>$475,564.3</td>
<td>$534,909.1</td>
</tr>
</tbody>
</table>
Year 5 Profit Sensitivity to Loan Charge-offs

Risk in the loan book does not have a major impact on UWP’s profitability
Ghemawat’s CAGE framework gives decision-makers a powerful tool for analyzing expansion opportunities across four key dimensions.

**CAGE Framework**

<table>
<thead>
<tr>
<th>Cultural</th>
<th>Administrative</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Different languages</td>
<td>• Absence of colonial ties</td>
</tr>
<tr>
<td>• Different ethnicities</td>
<td>• Absence of shared monetary or political association</td>
</tr>
<tr>
<td>• Different religions</td>
<td>• Political hostility</td>
</tr>
<tr>
<td>• Different social norms</td>
<td>• Government policies</td>
</tr>
<tr>
<td></td>
<td>• Institutional weaknesses</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic</th>
<th>Economic</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Physical remoteness</td>
<td>• Differences in consumer incomes</td>
</tr>
<tr>
<td>• Lack of a common border</td>
<td>• Differences in costs and quality of natural, financial, human, infrastructure, and information resources</td>
</tr>
<tr>
<td>• Lack of sea or river access</td>
<td></td>
</tr>
<tr>
<td>• Size of country</td>
<td></td>
</tr>
<tr>
<td>• Weak transportation or</td>
<td></td>
</tr>
<tr>
<td>communication links</td>
<td></td>
</tr>
<tr>
<td>• Climate differences</td>
<td></td>
</tr>
</tbody>
</table>

**Cultural**
- Different languages
- Different ethnicities
- Different religions
- Different social norms

**Administrative**
- Absence of colonial ties
- Absence of shared monetary or political association
- Political hostility
- Government policies
- Institutional weaknesses

**Geographic**
- Physical remoteness
- Lack of a common border
- Lack of sea or river access
- Size of country
- Weak transportation or communication links
- Climate differences

**Economic**
- Differences in consumer incomes
- Differences in costs and quality of natural, financial, human, infrastructure, and information resources