Field Research Note: Can Low-Risk Debt Help Safe Water Enterprises Become More Profitable?

Background

Market Innovation: Water4's household connections, called ***NUMA Nows***, provide safe and convenient water at a customer's home when they need it. Nows reduce the time a household spends fetching water which may be why, on average, Now customers purchase three times as much water as kiosk customers. Water4 enterprises operate more than 1,700 Nows across Sierra Leone, Ghana, Zambia, and Uganda. The majority of these Nows are managed by 4Ward Development West Africa (4Ward), Water4's enterprise partner in Ghana.

Challenge: Water4 supports water businesses to reach complete reliance on customer revenue, both to repay capital investments and to cover all operating costs. In 2021, 4Ward covered 84% of its operating costs, 16% below its target. Government-fixed water tariffs don't allow for much flexibility in pricing 4Ward's products and services. Thus, selling more water at the prevailing water price is the best way to grow the business. To break even between operating costs and revenues, 4Ward is expanding Now sales to household customers in Ghana, but has limited available cash to do so through grants and donations. 4Ward decided to assess whether Nows could be expanded through more available debt financing.

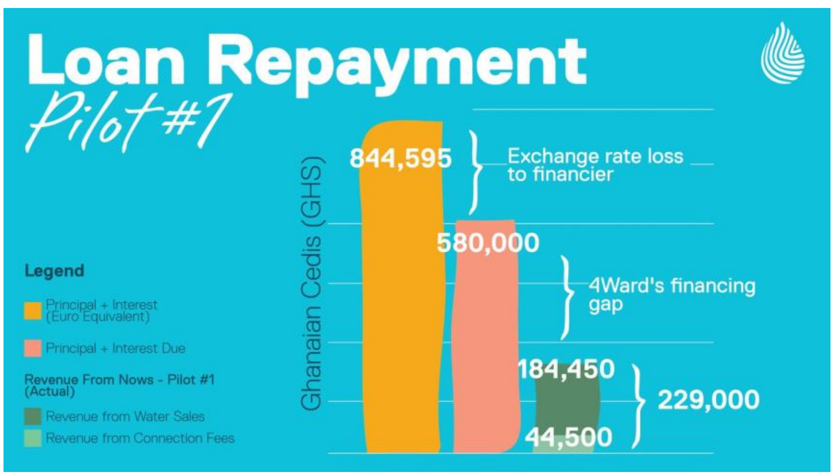
Research Questions: What would be the benefit of taking repayable cash today to build more Nows that will help the enterprise expand its future revenue base? What are the inherent risks and opportunities of taking on repayable finance rather than using non-repayable grants?

Financing Pilot #1 for Nows in Wassa East, Ghana in 2020

Design: In 2020, 4Ward sold Nows to 90 customers at 8.7% of the actual cost of a connection and the entire cost was financed through a low-interest loan made to 4Ward. The non-securitized loan was offered in local currency, or Ghanaian Cedis (GHS), at an affordable interest rate with a two-year grace period. 4Ward aimed to repay 100% of principal and interest from revenue generated from the 90 Nows.

Outcome: Under these loan terms, 4Ward can repay 40% of the total liability from revenue generated from Nows. The remaining 60% is considered the gap between Now revenue and the total amount owed by 4Ward and will be repaid but from other revenue sources.

Lessons Learned: The pilot has yielded substantial learnings, both in terms of how to modify the business model and how to best use financing in the future. The learnings presented below are being incorporated into a pilot #2, detailed on page 4.



Pilot #1 Design

- 90 Nows constructed
- 100% of each Now was financed
- 8.7% repayment in Year 1 from
- household via connection fee

Pilot #1 Outcomes

- 31% projected depreciation loss to financier
- 40% of the total liability can be repaid
- 60% financing gap over the course of the loan term
- NPV* = -380,000 GHS through 2040
- IRR** = -18.3%
- Learnings used to design a second pilot loan

What We've Learned about Nows:

1. ***Nows were too expensive to finance under the existing loan terms.*** 4Ward has cut the capital cost of a Now by 50% through an innovative redesign that centralizes storage.
2. ***If Now connections are also clustered together, capital costs can be pushed even lower.*** The company is putting an increased focus on maximizing the production capacity of its systems and the efficiency of new pipelines from established treatment plants to increase its return on investment.
3. ***Connection fees paid by the customer are too low and are not maximizing revenue for the business.*** 4Ward will increase the connection fee for the Now. This will help determine whether demand for purchasing a Now remains strong and what the impact is (if any) on monthly water sales from customers willing to pay a higher up-front cost.

*Net present value (NPV) calculates the current value of the future stream of payments from the investment.

** IRR is the Internal Rate of Return on the investment

4. ***Now customers purchase consistent volumes across seasons.*** Compared with 4Ward's fetch points, household connections provide more stability to the company's cashflow.
5. ***Large variations in monthly sales still exist across Now customers.*** Building more Nows under pilot #2 will help 4Ward learn consumption patterns from a larger pool of customers. However, this strategy to engage more Now customers will be somewhat limited by 4Ward's current construction capacity.

The patient capital loan forced a major shift in mindsets at 4Ward, from just building infrastructure to continuously selling more water more efficiently, which is the most challenging aspect of ongoing service delivery

What We've Learned About Financing:

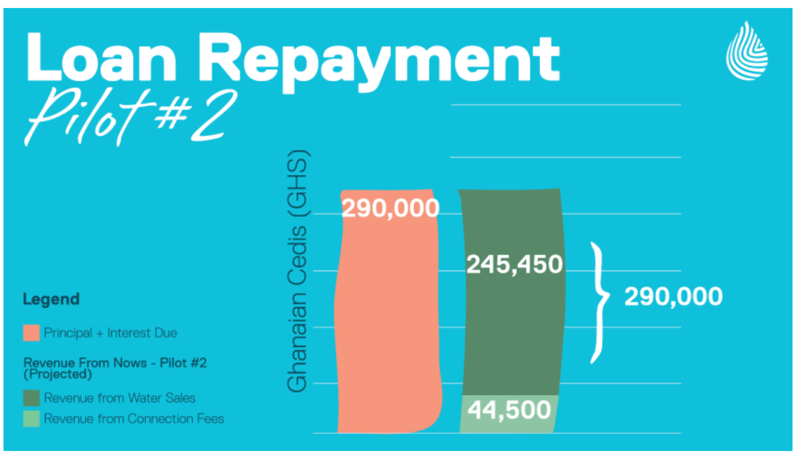
1. ***With water tariffs set by governments, 4Ward has available only a handful of other tools it can use to optimize the financing model.*** 4Ward must pull on the levers of connection fees, infrastructure costs (capital and O&M), and monthly water sales to figure out how to make financing work within these constraints.
2. ***More up-front emphasis on monthly water sales is required.*** When the loan was issued, 4Ward focused heavily on selling connections to new and not on maximizing water sales. Today, by working within the confines of a repayment period and a set water tariff, 4Ward has an incentive to add customer retention and higher sales volume strategies to its sales and marketing regimen. Now customer on-selling to neighbors, for example, is being explored.
3. ***Currency is a major risk factor in transitioning from grants to finance.*** The European-based financier took on all currency risk by enabling 4Ward to match the currency of its repayment with the currency in which its revenue is generated from customers. In 2021-22 the GHS depreciated 31% vis a vis the Euro, which yielded a 31% "savings" to the company compared with if they had repaid the lender in Euros. In the countries where Water4 works, currency risk mitigation strategies will continue to be a requirement for borrowing.
4. ***While Pilot #1 has a negative net present value and internal rate of return on investment, the trial has enhanced 4Ward's ability to improve the design of future investments.*** Without this loan, the company would not have been able to build the Nows, earn additional revenues from water sales and connection fees, and scrutinize sales data in a way that benefits future financing opportunities.
5. ***The value of financing goes far beyond making more cash available for business growth.*** Financing can be considered a business tool in and of itself. The patient capital loan forced a major shift in mindsets at 4Ward, from just building infrastructure to continuously selling more water more efficiently, which is the most challenging aspect of ongoing service delivery and is typically not a target priority of more traditional grant funding sources.

Financing Pilot #2 for Nows in Upper West, Ghana in 2023

Learnings from Pilot #1 are informing the design of a second pilot for financing Nows in a new customer service area in Ghana. The aim is to again repay 100% of the loan under the same terms as pilot #1. This requires blending loans and grants.

Design: In 2023, 4Ward will use the lessons from pilot #1 to conduct a second pilot. We assume a lower capital cost for Nows and a higher connection fee charged to customers (from 495 to 1,095 GHS).

Anticipated Outcome: Under these conditions, 4Ward could build 144 Nows with 50% of the cost borrowed as loans and 50% provided as grants. Assuming customers continue to purchase the same volume of water as under pilot #1, the revenue generated from these Nows would cover the full loan repayment (now only 290,000 GHS) and even cover operating costs as well. This results in an important breakeven point. The project would yield a 6.7% internal rate of return for the business.



Pilot #2 Design

* 144 Nows constructed
* 50% of each Now is financed
* 30% repayment in Year 1 from household via connection fee

Pilot #2 Outcomes

* 0% financing gap over the course of the loan term
* NPV = 0 GHS through 2040
* IRR = 6.7%

Conclusions. Low-risk debt can help Safe Water Enterprises become more profitable, but it must be designed for the specific market. Repayable finance, although more expensive, is more predictable and readily available than grant funding. 4Ward found that the loan worked as an incentive to both cut costs and increase revenues toward long-term sustainable service delivery. In essence, the business has started to focus more on customer satisfaction than simply fulfilling donor requirements to expand access to safe water points.

What's Next? Water4 and 4Ward aim to make Nows fully financeable through loans in the future, based on the results of pilot #2. This strategy will incentivize the business to build out an established water system based on strong customer demand, rather than unpredictable and limited donor funding. Water4 will continue to identify potential financing opportunities with investors willing to take on currency risk, and continue to work with governments on more flexible water tariffs that hedge against inflation and reflect the true cost of service delivery.

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