

## Grundfos Lifelink

*Delivering sustainable water services and technologies through innovative business models, partnerships and service models*

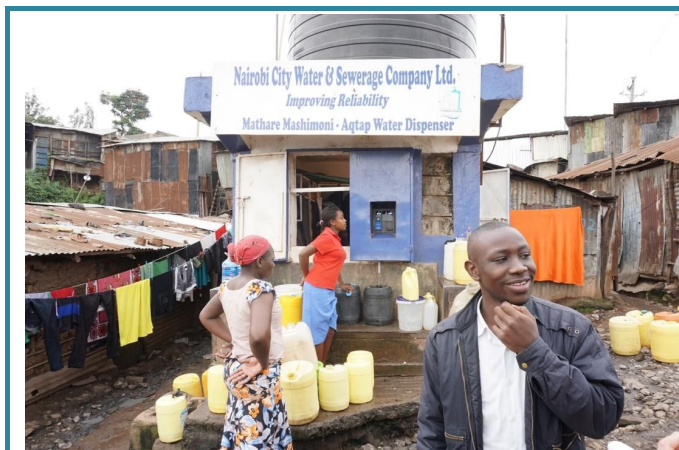


Photo credit @Anne Hyvärinen

**Responsible lab:** New Global Innovation Research Project, Aalto University

**Country of implementation:** Global; Kenya as first country of installation

**Website:**

<http://www.grundfos.com/market-areas/water/lifelink.html>

<https://newglobal.aalto.fi/>

**Contact:** Anne Hyvärinen, Sara Lindeman



### Challenges

Water is one of the most vital ingredients for human life, health, and wellbeing, as well as for the ecosystems and, thus, a key element for sustainable development. Globally, 884 million people lack access to basic drinking water services; the majority of them are in Sub-Saharan Africa<sup>1</sup>.

In developing regions, the sources of drinking water are often multiple and water connections do not reach all of the households, thus people fetch water where it is available. Besides piped water, the sources of water can include good quality water from boreholes as well as water of unknown quality from rivers, streams and lakes, open wells as well as collected rainwater. In some areas further from water connections or during water shortages, water trucks and, for instance, donkey carts can be delivering water.

Water projects, meaning establishment of e.g. boreholes or wells by donors, NGOs, governments or other parties, are a common means to improve access to water in developing regions. However, these projects suffer from a high failure rate. Besides, broken equipment, lack of spare parts, poor quality of pumps, insufficient operation and maintenance capabilities, and lack of ownership and financial resources are key reasons for the failures. This has resulted in inefficient investments - instead of establishing new water projects, resources are spent on rehabilitating broken water points.

A lack of a longer-term strategy and business models on how to maintain and operate water projects in developing regions is apparent. Collection of water fees and transparency in the management of these funds is closely related to the fore mentioned challenges - money is often lost and funds are

<sup>1</sup> Progress on Drinking Water, Sanitation and Hygiene: 2017 update and SFG baselines. Geneva: WHO & UNICEF. Available at:

<http://www.who.int/mediacentre/news/releases/2017/launch-version-report-jmp-water-sanitation-hygiene.pdf?ua=1>

not sufficient when maintenance or spare parts are required. Recognizing these various water challenges and their scale, Grundfos decided to start innovating sustainable water solutions.

## Description

### Objectives & Activities

#### About Grundfos Lifelink

Grundfos Lifelink organization and project was established in 2007 with the aim to deliver sustainable water supply services. Grundfos Lifelink was Grundfos' first commercially-oriented initiative into the BoP markets. Kenya was selected as a testing site for the development of Lifelink solutions.

As Grundfos had no previous commercial experience in Kenya, the Lifelink team spent a lot of time in the field during the first years, learning more about the challenges, environment and what kind of solutions could increase the sustainability of water services. Concepts and prototypes were developed rapidly to learn what works and what kind of features could be included.

*"We brought pilots to the market very fast, which allowed us to test if people are willing to pay for water and whether these small, tiny, payments are enough to somehow increase the level of sustainability."*  
Grundfos Lifelink Managing Director.

Four key dimensions were recognized as focal issues to be solved in order to improve sustainability of water services:

- Financial sustainability – by making water payments traceable and storable for future operation and maintenance purposes.
- Technical sustainability – by developing robust technologies with remote monitoring and service support features.
- Environmental sustainability – by replacing unsustainable diesel-powered pumps with solar-powered water pumps.
- Social sustainability – by providing reliable access to water.

#### Grundfos Lifelink Solutions

Grundfos Lifelink developed an automated water dispenser, water ATM, incorporated with mobile payment and remote monitoring services (commercial name AQtap). The water ATM is utilized with smart cards into which credit is loaded via mobile payments, thus eliminating cash and increasing financial transparency. Moreover, automated water payment collection allows storing revenue for future operation and maintenance needs - in traditional water projects, fees are collected in cash and the challenge of storing the funds for future needs, such as maintaining the water kiosk or purchasing spare parts, is faced. The online water management platform enables remote access to water data, and thus enables the water service providers to monitor the usage of water. Besides the technologies, completely new business model was developed to fit the target environments and ensure sustainability.



1st generation of Grundfos Lifelink water ATM, and a complete water kiosk Photo credit @

The 1<sup>st</sup> generation of Lifelink was ready in 2008, and besides the water ATM unit, it included pumps, solar panels and other necessary equipment for a water kiosk. It was quickly learned that strong local engagement was necessary, and that finding the right partners is crucial, but not easy. A local office was established in Kenya in late 2008, and the first prototypes were installed in the beginning of 2009. In the installation and running of the 1<sup>st</sup> and 2<sup>nd</sup> generation Lifelinks, the Grundfos Lifelink organization had a great role. They were involved in site selection, delivering and developing the technologies, as well as in implementation and servicing of the Lifelink systems. Data and learnings from the installed

Lifelink solutions were gathered and, based on them, modifications to the systems and business models were made. The strong involvement of Grundfos Lifelink in the field and in implementing and servicing the Lifelink systems enabled efficient learning.

The 1<sup>st</sup> and 2<sup>nd</sup> generation systems, which essentially were prototypes, were installed as complete water kiosks, including pumps, water tanks, water ATM dispenser, solar panels for powering the pump and ATM, etc. This enabled testing and development of the ATM in a more stable and controlled environment, than in a case where the ATMs are installed to existing infrastructure completely run by other parties.



3rd generation of Grundfos Lifelink water ATM, commercialized as AQtap. Photo credit @

The 3<sup>rd</sup> generation Lifelink, the commercialized version of the water ATM unit, was launched in the beginning of 2016. This version can be installed to both existing and new water points and kiosks and it is sold, for instance, to water utilities, water committees, governments, private water service providers and NGOs, who then offer the water supply services to individual consumers and communities. The water ATM can be purchased separately or together with other Grundfos technologies fit for water kiosks, such as pumps and solar panels. It is worthwhile to note that funding for these purchases often comes from donors, NGOs and other international organizations, and for public authorities' procurements the necessary tender processes are followed when applicable.

Grundfos continuously communicates with governments, water utilities, development sector organisations and the private sector, and develops partnerships with them to scale-up the Lifelink business and access new areas. Part of the Lifelink solutions is the service contract, which the operators of water kiosks sign with local service providers, whom Grundfos has trained – this enables continuous use and prompt maintenance services for the Lifelink systems. Thus, the Lifelink solutions are not only about delivering technology but delivering sustainable solutions, services and business models to the water sector.

Grundfos Lifelink's holistic business model Photo credit @Grundfos

### DESIGNING A HOLISTIC BUSINESS MODEL



### Sector & Value Chain

Grundfos Lifelink focuses on the water sector and on increasing the sustainability of water supply services in developing countries.

The development of Lifelink solutions begun from the individual users of water, and solving the challenges they face. In order to do this, the sustainability of the whole water supply value chain and surrounding environment needed to be understood and taken into account. This means not only knowing the individuals using water, but also the institutions and organizations providing water services, such as municipalities, water utilities and NGOs, as well as the authorities governing the sector. During the development of the Lifelink systems, Grundfos Lifelink organization was involved in activities throughout the value chain, e.g. in site selection and servicing the systems, but after the development phase these responsibilities were distributed to different partners and Grundfos now focuses on innovating and developing new solutions which are its core competencies.

### Partners

Partnerships play a key role in Grundfos Lifelink solutions and its business model. With the established multi-partnership business model, the long-term sustainability and functionality of the solutions are guaranteed in the targeted contexts. The responsibility for implementation, operations and maintenance, and other local activities are given to organizations, which are experts in the field, as these activities are not core business activities for Grundfos. In the following, brief examples of the partnerships and relevant parties in the Lifelink projects are given:

- o Grundfos Lifelink focuses on its core competencies: innovation and R&D to further improve the Lifelink solutions and to develop new solutions for the global water problems; manufacturing, sales as well as linking suitable partners to water projects and advising on business models.
- o Global NGOs, international organizations, donors provide local knowledge and networks as well as support on project implementation and funding. These organizations are experts in developing

countries and enable efficient and appropriate diffusion of the innovation. World Vision is one of the global organizations Grundfos Lifelink has a partnership agreement with.

- o Water service providers and communities are beneficiaries and users of the projects. Lifelink solutions solve issues water service providers face and enable them to deliver sustainable services to water users.
- o Local service partners take care of maintenance and servicing of Grundfos Lifelink solutions. Operators of Lifelink solutions are encouraged to sign a service agreement with the service partners. Grundfos provides training for these service providers in order to guarantee the level and capability to service Lifelink solutions.
- o Ericsson as a mobile interconnect platform provides access to use any mobile operator for the water payments (mobile money used for payments).

### Status

Grundfos Lifelink organization was established in 2007 and the first installations of the prototypes of the water ATM were done in 2009. Kenya was selected as a test market, including some installations in other East-African countries. The 3<sup>rd</sup> generation of the Lifelink water ATM is currently being commercialized in developing countries all over the world and partnerships play a key role in this scale-up. Besides the water ATM, commercially named AQtap, the Lifelink product range includes today also a water purification device called AQpure. The Lifelink solutions are constantly developed and besides the technologies, Lifelink solutions cover the innovative business model, service model and partnership model.

### Target group

Grundfos Lifelink solutions' primary target groups are the water service providers and low-income communities, mainly those living in rural areas and informal settlements. The Lifelink solutions aim to improve the sustainability of water services, which has a positive impact for both the operators of water services as well as the users of water in the communities. Furthermore, the Lifelink water ATM can provide a sustainable source of income to the operators of the water kiosks (e.g. local water committees, entrepreneurs or water utilities) as well as local service providers offering their maintenance services.

Due to the characteristics of water sector in developing regions, donors, NGOs and other organizations supporting the water projects also benefit from the Lifelink solutions through the increased sustainability and longer lifespan of water projects.



### Results achieved

By 2015, over 50 Lifelink sites had been established, with over 100,000 people served in East-Africa. By today, the number of projects and people served has increased as the Lifelink water ATMs are being commercialized and scaled-up globally. For instance in Kenya, Nairobi City Water and Sewerage Company explained that the reasons for purchasing Lifelink water ATMs to an informal settlement in Nairobi, was to ease the collection of water payments and to reduce the number of illegal connections to their water pipes by improving the access to water.

*"Now we are also able to quantify how much water is used and collect the money for it." Nairobi City Water and Sewerage Company employee.*

The results achieved by the Lifelink project are as follows:

- Social impact:
  - Enabling communities/water service providers to collect and store water payments for future use.
  - Reliable access to water.
- Environmental impact:
  - Longer lifespan of the products through suitable technologies and payment collection and service model.
  - Grundfos offers products powered by solar panels, thereby decreasing the use of unsustainable energy sources.
  - Efficient water management decreases water losses.
- Economic impact:
  - Effective water payment collection and storage of funds for future needs.
  - Provide job opportunities and sustainable income for water kiosk operators and local service providers.
  - More efficient use of donor, NGOs etc. funds targeted for water projects.



### Upscale and replication

Grundfos Lifelink solutions are scalable and replicable, especially in developing regions as the need for such solutions which increase the sustainability of water supply services is huge. The market-based approach guarantees that the systems are installed in places where there is demand. Working with a partnership model and leveraging the expertise and competencies of partners enables an efficient way of working and scaling up the Lifelink solutions.

Reluctance to pay for water can restrict the diffusion of Lifelink solutions to certain areas. Similarly, some might oppose to the concept of replacing manual water payment collection with an automated system. Competition from other players in the field might also hinder the upscale of Lifelink solutions. Many companies have recognized the opportunity for doing business whilst solving challenges in developing contexts, and the water sector is no exception.



### Lessons Learned

- Partnerships are key
  - Look for partnerships beyond traditional partners.
  - Select your partners carefully.
  - Ensure that there is a mutual understanding and that you share the same goals.
  - Gain local acceptance through partners.
- Learning by doing
  - Development of new products and service and business models requires time and resources.
  - Through years of prototyping and testing in the field, Grundfos was able to develop a globally scalable commercial version.
  - Allow for constant learning: Grundfos is still making modifications to its products.

- Know the local context (the environment, local challenges, etc.): hands-on work in the field is required, especially in the beginning
- Communication
  - Listen to your customers and what they really need
  - Communication with donors, NGOs, international organizations, water utilities and communities is important to make them aware of the Lifelink solutions, to identify and respond to their needs as well as to gather feedback on the solutions.
- Actively engage not only the projected customers but also institutional actors and potential partners