



Private Sector Solutions for Public Health Challenges

April 2016



Section	Page
Executive Summary	3
Introduction and Background	5
Current situation and Challenges	11
Business model	18
Operations and Product Development	29
Sales and Marketing	41
Organisational Structure and Governance	52
Financial plan and Investment	60
Social impact and Benefits	67
Risk Analysis and Mitigation	73
Implementation	75
Conclusion	75

Executive Summary (1/2)

Global view

Globally, close to 2.4 billion people lack access to adequate sanitation facilities and close to 80% of diseases in developing countries are caused by unsafe water sources. The provision of clean water and adequate sanitation is a key factor in the reduction of sickness and poverty. The UN estimates that inadequate sanitation costs the world close to US\$260 billion in economic losses and that every US\$1 spent on sanitation brings a US\$5.5 return by keeping people healthy and productive. Whilst the benefits of clean water are well known, access to it is often taken for granted and precious resources are regularly contaminated and/or wasted.

Situation in Vietnam

In the 1990s, 2 out of 5 people in Vietnam did not have access to improved sources of drinking water and 80% of the population lived in rural areas where tap water was non-existent and protected wells and springs were scarce. With support from international aid organisations, the government is working towards reaching universal access to water and sanitation by 2020.

Today, 98% of the country's 90+ million residents have access to improved drinking water sources. However, five million people still practice open defecation and less than 10% are connected to sewerage networks with treatment. The transmission of hygiene-related ailments carries an estimated economic cost to Vietnam of US\$262 million annually.

Handwashing with soap is considered one of the most cost-effective and easy tools for alleviating the disease burden on the poor. Good handwashing practices reduce the incidence of diseases such as pneumonia, skin and eye infections, and diarrhoea-related diseases that cause the death of 800,000 children each year. Despite widespread public awareness campaigns and billions invested on development programmes, actual handwashing practices remain severely low and achieving scale remains a challenge.

Current Business Model

Recognising the gap between handwashing awareness and practice, WaterSHED NGO, a global public-private partnership alliance dedicated to improved water and sanitation solutions, partnered with American human-centered design firm IDEO to develop a prototype for a low-cost handwashing device (HWD).

In 2014, HappyTap Co. Ltd was established as a Vietnamese social enterprise dedicated to providing market-based solutions to widespread challenges associated to poor water and sanitation. The company's flagship product – the Labobo – is a dedicated handwashing station that is affordable, easy to use and portable.

To date, HappyTap has sold 7,000 units by promoting both direct sales and indirect channels and by inviting local and online distributors and retailers to carry, promote and sell the device. However market demand has remained low due to a general lack of understanding about the device. HappyTap is also reliant on donor-funding to cover much of its operational costs.

Executive Summary (2/2)

Business Proposal

In April 2016, 20+ international executives travelled to Ho Chi Minh City to gain insights into the challenges and opportunities related to health and hygiene in Vietnam and to work with HappyTap management to produce a business plan for the company to become a financially viable socially-oriented commercial enterprise and to ramp up sales of the HWD in Vietnam and the region. Key features include:

- New version of the HWD includes a liquid soap dispenser and sensor technology, enabling HappyTap to collect, analyse and sell data on consumer behavior and handwashing practice;
- Key strategic partnerships with private, public and civil sector organisations to push the HWD through multiple distribution and sales channels:
 - Distribution partners with existing channels, a strong membership and/or customer base, and an interest to promote the HWD as a product with large-scale social impacts and as part of their product portfolio;
 - Channel sales partners interested in customisation of the HWD to bundle with their existing products & services and/or offer the HWD at a subsidized price, using the HWD as a vehicle to promote health and hygiene to people who need it;
 - Institutional sales to private, public or civil sector partners wishing to use or donate the HWD as part of their health and hygiene marketing campaigns, awareness raising activities and/or development programmes.
- Separation of HappyTap into two distinct entities: HappyTap company for the production, sales and distribution of the HWD and HappyTap Foundation for the design and delivery of educational hygiene-related campaigns and programmes to drive mass marketing efforts and create demand for the HWD. The Foundation will also be responsible for coordinating research related to handwashing practice and improved hygiene with relevant partners.
- Shareholding opportunity for investors and key stakeholders, enabling HappyTap to grow beyond its current status as fully owned by WaterSHED NGO and towards a culture of ownership and commercial accountability for those involved in the business.

Financial Highlights

- HappyTap presents an good opportunity for investors, locally and internationally, looking to create a significant impact on public health and hygiene in Vietnam and the region.
- HappyTap will require an initial investment of US\$2.6 million to cover capital expenditures and expenses, including the acquisition of new plastics moulds. The company will have a Net Present Value of US\$511,703 and an IRR of 11% with a payback period of 5.4 years.



Introduction & Background

Global Leaders Programme (GLP)



- The Global Institute For Tomorrow (GIFT) is an independent pan-Asian think tank providing content-rich and intellectually challenging executive education from an Asian worldview.
- The Global Leaders Programme (GLP) is GIFT's flagship executive education programme designed for managers from leading global organisations to think critically about the drivers of change in the 21st century and develop new business models that address the defining challenges of our time.

Project Team

- 23 participants from 8 countries and 12 companies and organisations participated in the 46th GLP in Hong Kong and Ho Chi Minh City, Vietnam in April 2016.
- In partnership with HappyTap Co. Ltd – a Vietnamese social enterprise dedicated to providing market-based solutions to widespread challenges associated to poor water and sanitation – participants worked to produce business recommendations to support the company’s commercial and social aspirations for improved handwashing practice in Vietnam and the region.



Team of professionals exploring business challenges and opportunities associated to health and hygiene in Vietnam

Scope of Project (1/2)

Programme Objectives

- Explore and gain deeper insights into South Vietnam, issues related to water and sanitation facilities and the significant need for improved handwashing practice.
- Create a business plan for HappyTap to significantly increase the sale of the HWD in Vietnam and the region, enabling the company to become profitable and to meet its social mission of improving public health regionally.
- Develop a financially viable business for HappyTap that is attractive for investors looking for both social and financial returns.
- Build out recommendations for HappyTap that take into account:
 - Country context including the social and economic factors that impact health and hygiene and influence handwashing behaviour and practice;
 - Manufacturing capabilities within Vietnam for an improved HWD using sensor technology;
 - Limited demand for, and understanding of, the HWD and its short and long-term social and economic benefits;
 - The potential for scalability across Vietnam and the region, and potentially in other parts of the world, both developed and developing, where handwashing practice remains low.



Scope of Project (2/2)

The GLP is a two-week leadership programme combining classroom and field-based learning.

Methodology for Field Project

- Visits and meetings with key stakeholders from the private, public and civil sectors to assess HappyTap's current business model, evaluate the need and demand for the HWD and the business opportunities for HappyTap.

Insights from key stakeholders including:

- Stakeholder meetings with local authorities in Tien Giang province, existing and potential end users in rural and urban areas, factory workers and union leaders, parents and teachers in kindergartens, existing and potential distributors and retailers, food and beverage outlets and a large FMCG company.

Outcomes

- Development of a business plan with analysis of 5 key areas: business model and strategy; operations and product development; sales, marketing and partnerships; organisational structure and governance; social impact; and financial analysis and investment.
- Presentation and highlights of business plan to representatives from international aid organisations, professionals from the plastics industry, representatives from MNCs, university students and the local media.



Vietnam



Background Information

- Population: 90.72 million (Male 49%: Female 51%)
- Population Rural 70%: Urban 30%
- Population growth rate: 1.1%
- GDP per capita: US\$2,052.30 (2014)
- GDP growth rate (2015): 6.5%
- Poverty rate: 8.4% (Urban: 3%, Rural 10.8%)
- 54 Ethnic groups & 64 provinces and cities



Strong economy in the region transitioning from a centrally planned economy towards a more open, competitive and export-driven economy.

Water and Sanitation

- Over 30% of the population in rural areas lacks access to improved sanitation facilities
- Financial losses – reflecting expenditure or income losses resulting from poor sanitation – average 0.49% of annual GDP, while overall population welfare losses average 1.3% of GDP



Current Situation & Challenges

The state of water, sanitation and hygiene

- Globally 2.4 billion people live without access to improved sanitation of which almost 1 billion practice open defecation. The World Bank estimates that in Asia 53% of the population still lack access to improved sanitation. The world missed the MDG target in 2015 for sanitation by almost 700 million people.
- Clean water, basic toilet and sanitation facilities and good hygiene practices lie at the root of many development challenges and are essential for ensuring the wellness of children and their families, while reducing the negative impacts on public health, education and the environment.
- Without this basic need, the lives of millions of people are at risk of disease. Sanitation- and water-related diseases are a leading cause of death; almost 1,000 children under five die each day from diarrhea cause by inadequate water, sanitation and hygiene.
- Economically, poor sanitation costs countries billions, amounting to the equivalent of 6.3% of GDP in Bangladesh, 6.4% of GDP in India, 7.2% of GDP in Cambodia and 3.9% of GDP in Pakistan annually.
- Proper habits of hygiene including handwashing with soap is also a proven and efficient means to reduce the risks of pandemic flu and other diseases spread through human contact.



Indirect impact of poor sanitation



2.4 billion people lack access to adequate sanitation, resulting in an estimated US\$260 million in economic losses

Hygiene and Sanitation in Vietnam and the region

- WASH is the collective term for Water, Sanitation and Hygiene, which together represent a growing sector. Without toilets, water sources become contaminated; without clean water, basic hygiene practices are impeded.
- Key WASH priorities include access to safe water, the provision of basic toilets and ways to separate human waste from contact with people (sanitation), and good hygiene practices such as handwashing with soap.
- Vietnam has made good progress towards the Millennium Development Goal target: 98% of the population have access to improved drinking water sources, though sanitation coverage remains a significant challenge.
- Over 70% of Vietnam's population live in rural areas where disparities remain in access to clean water.
- Income losses resulting from poor sanitation are equal to approx. 0.5% of annual GDP, while overall population welfare losses are equal to 1.3% of GDP.

Access to piped water

Country	Urban (%)	Nationwide Rural (%)	Total (%)	Capital City only (%)
Malaysia	95	64	84	100
Philippines	60	22	44	58
Thailand	80	12	34	83
Vietnam	51	1	14	84
Indonesia	31	5	17	51
Indonesia (2005)	32	8	19	47
Cambodia	31	1	6	84

Source: UNDP: 2004, ADB, 2004.



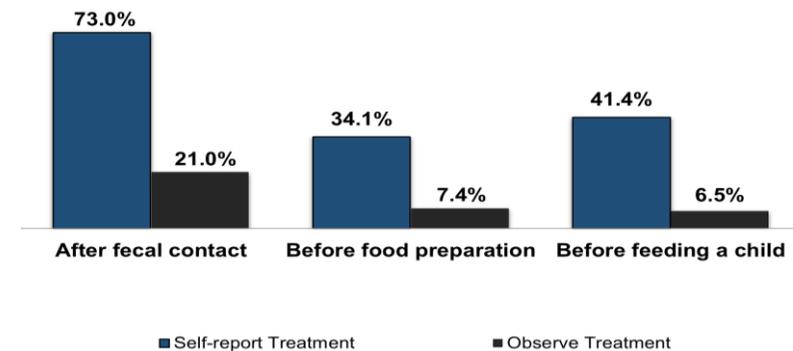
Water supply and sanitation in Vietnam characterised by notable achievements, yet challenges remain

Why promote handwashing with soap?

- The simple act of handwashing can save lives. Washing hands with soap at critical times, like after going to the toilet or before eating, can have a significant impact on children's health. Good hygiene practices reduce the incidence of diseases such as pneumonia, skin and eye infections and diarrhea-related diseases like cholera and dysentery.
- Regular handwashing with soap can reduce the number of incidents of diarrhea by around 50 percent. In Nepal a study found that newborns whose mothers washed their hands before handling their infants had a 44% lower risk of death.
- In Vietnam despite widespread public awareness campaigns and billions invested in rural communities and schools, actual handwashing practices remain severely low and achieving scale is a challenge. Only 3% of mothers reported washing their hands with soap before preparing food and only 9% of mothers wash their hands with soap immediately before feeding a child.
- Education and commendation are important to promote hygiene. As critical is promoting behavior change that involves working closely with communities, studying existing beliefs, defining motivation strategies, and encouraging practical steps towards positive practices.
- Global Handwashing Day is 15 October every year.



Reported vs observed rates for washing hands at key times



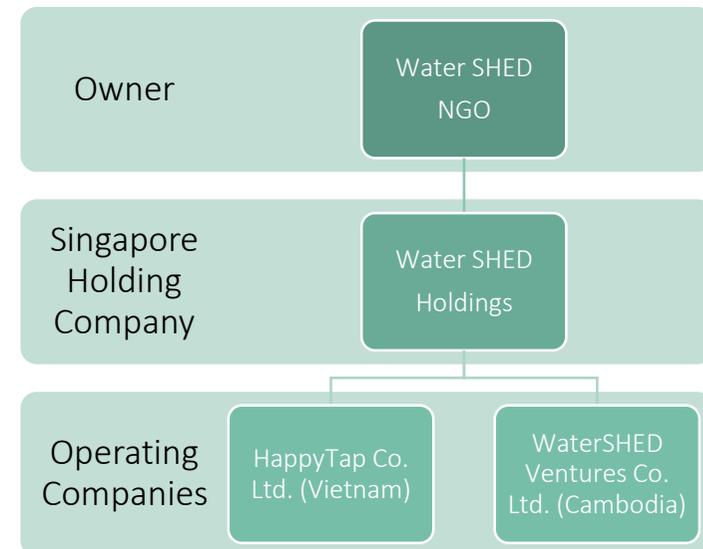
Handwashing with soap: one of the most effective and inexpensive ways to avert child deaths

HappyTap Company

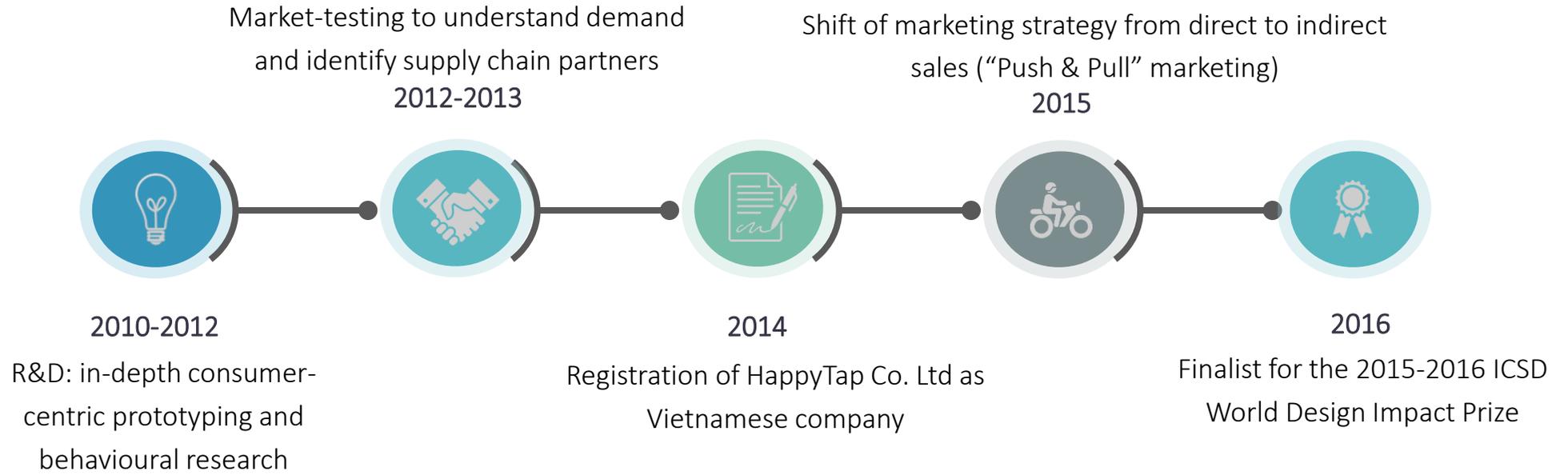
- Recognising the gap between handwashing awareness and practice, WaterSHED NGO, a global public-private partnership alliance dedicated to improved water and sanitation solutions, partnered with IDEO, an American human-centered design firm to develop a prototype for a dedicated handwashing device.
- By using a market-based approach, HappyTap successfully developed the first-of-its-kind manufactured handwashing device (HWD) called the Labobo:
 - Low cost and low tech, designed as an aspirational household product for rural and urban customers;
 - Brings water and soap together in one convenient location;
 - Portable and easy to refill
- HappyTap Co. Ltd., incorporated in Vietnam in 2014, is the flagship operating company of WaterSHED NGO



Existing shareholding structure



HappyTap: Milestones



Institutional clients include



Key partners



Featured in international media



Current marketing strategy & key challenges

HappyTap's current marketing "Push and Pull" strategy: Dedicated sales team to build relationships with partners along the supply chain and create awareness about the device through Integrated Promotion Campaigns. Focus of the sales team:

- "Pushing" sales by inviting distributors and retailers to carry, promote and sell the *Labobo* as part of their line of products. Distributors also commit to purchasing a minimum order per month and to storing the device in their own facilities;
- "Pulling" in potential customers into retail stores by using direct communications and promotional / marketing events. Events typically take place at the local market or at the retailer store to direct sales directly with the partner retailer;
- Marketing to institutional clients interested in health and hygiene, such as NGOs, schools, companies, etc. for bulk orders to reach a larger pool of potential end-users.

PUSH & PULL Marketing Strategy



Current challenges

- Costly direct sales approach to end-users, retailers and distributors; has not translated into significant sales volumes
- Low market demand for the device due to limited awareness and understanding of its function, purpose and benefits
- Company reliant on donor-funding for all operational costs and fully-owned by WaterSHED NGO, limiting the options for investors and limiting the commercial imperatives
- Very low marketing budget and unclear customer segmentation
- High staff turnover

Current strategy insufficient to drive large sales volumes and create awareness and demand for the product



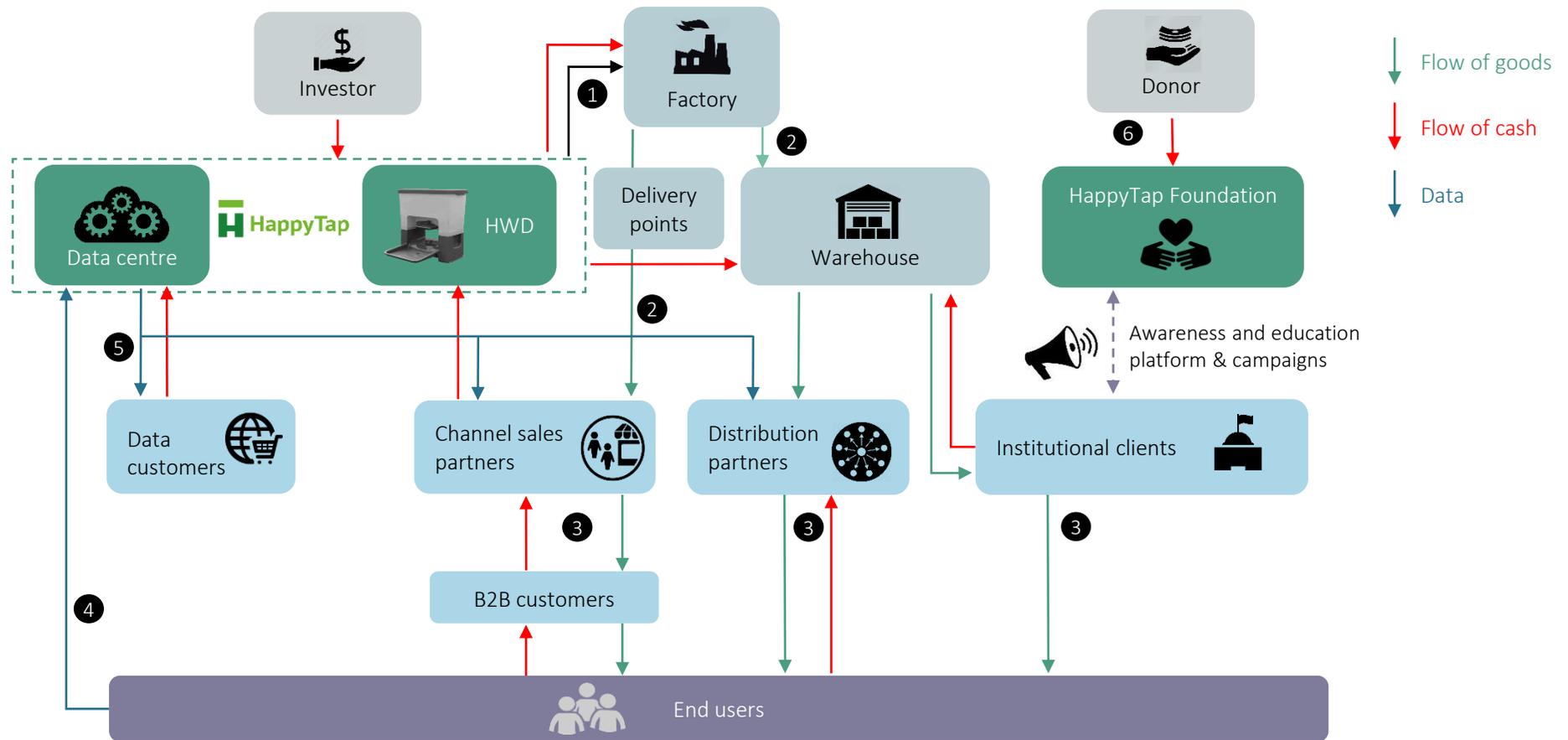
Business Model

Summary

- Proposed business model supports the large-scale sale and distribution of HappyTap's HWD to increase handwashing practice in Vietnam and the region and improve public health in both rural and urban locations.
- The business will leverage the advantages of sensor technology for the development of a new HWD with two in-built sensors to collect localized data on consumer behaviour, water and soap consumption, frequency of handwashing practice, etc. The data sent to HappyTap's data centre is analysed and sold to customers from the private and civil sectors.
- Strategic partnerships will drive revenue through multiple channels:
 - **Distribution partners** with an interest in promoting health and hygiene to carry and distribute the HWD in their product suite.
 - **Channel sales partners** with an option to customise the HWD; to be used as a vehicle to increase sales of FMCGs that can be bundled with the HWD or meet other objectives of sales partners.
 - **Institutional customers** include NGOs or MNCs seeking to use/donate the HWD as part of health and hygiene marketing or educational campaigns, etc.
- HappyTap company to be clearly distinguished from a separate foundation dedicated to channelling donor funding towards not-for-profit educational programmes and mass marketing campaigns related to improved health and hygiene in order to create a demand for the HWD. This presents significant opportunities for collaboration with existing and large-scale hygiene- and sanitation-related campaigns and programmes (national, regional and global).



Proposed Business Model



- 1 Orders for HWDs are processed by HappyTap and transferred to the factory for production. Production currently includes 2 factories.
- 2 HWDs are either delivered to the customer directly or stored in a warehouse (from year 2). For customised HWDs, channel sales partners can arrange for temporary storage at a chosen delivery point.
- 3 HWDs are sold to end-users either through channel sales partners or key distribution partners with existing platforms and networks. Institutional clients may purchase the HWD and sell or donate to end-users as part of a marketing or education campaign on handwashing.

- 4 End-users register their HWD through a mobile app. Data on location, water and soap usage collected from the HWD is sent to the cloud and to HappyTap's data centre for analysis.
- 5 Data on consumer behaviour and handwashing practice is sold to data consumers.
- 6 HappyTap Foundation receives donor funding to design and implement educational programmes and co-organise marketing events around handwashing to raise awareness and create demand for the HWD.

Rationale for proposed business model

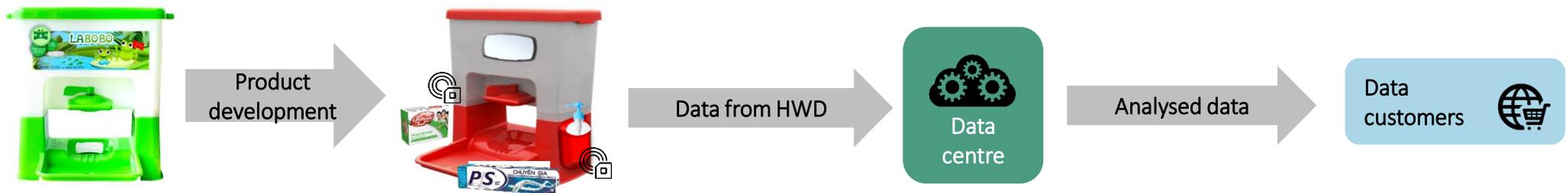
- Significant need for a dedicated handwashing device has not yet translated into a market demand.
- HappyTap's HWD is the first-of-its kind and is currently the only commercial device developed and designed using a consumer-driven and market-based approach.
- No existing competition as all other handwashing appliances are either informal, inconvenient or impractical to use.
- HappyTap's HWD can be customised and/or bundled with other products, therefore presenting numerous opportunities for collaboration and partnership with industry leaders, from the private, public and civil sectors.
- Strong interest and appetite from businesses and development aid organisations for data on customer behaviour, handwashing practice and frequency, usability and consumption of fast moving consumer goods in key emerging markets.
- Decreasing price of sensors and data technology and increasing mobile penetration in key emerging markets.
- Significant market for a HWD in Asia, beyond single end-users and households which includes factories, food and beverage outlets, schools and kindergartens, etc.



Happy Tap's HWD is a highly original and effective product designed to meet a vast need around Asia

Product development & Data flow

- In order to reach scale, it is recommended that HappyTap move away from a singular HappyTap branded product (Labobo) towards the production of a generic handwashing device (HWD) that can be rebranded or modified according to a customer or partner's preference. This generic model will include a liquid soap dispenser holder to accommodate the growing trend of liquid soap usage. Bundling the product with a pipe for the evacuation of waste water is also recommended.
- New features of the HWD 2.0 include the addition of 2 in-built sensors located at the base of the water container and at the base of the liquid dispenser holder. Both sensors will collect data on water and soap consumption and relay this information to HappyTap's Data Centre for analysis. The data can be sold to distribution partners, institutional clients, channel sales partners and others. Data on handwashing practice can also inform the Foundation for the design and implementation of targeted educational campaigns and development programmes.
- A mobile application will have to be developed to support user registration and to enable the relay of data to the Cloud system.
- Channel sales partners will have the option to customise and/or accessorise the HWD to meet their branding and marketing needs. The HWD can also be turned into a beauty/health station by bundling it with a suite of health, hygiene or wellness products.
- Customisation & accessorisation include: change of HWD colour, change of decal with different marketing message, imagery, logo, option for a mirror, etc. Customisation does not include any material modifications that would require creation of a new mould.



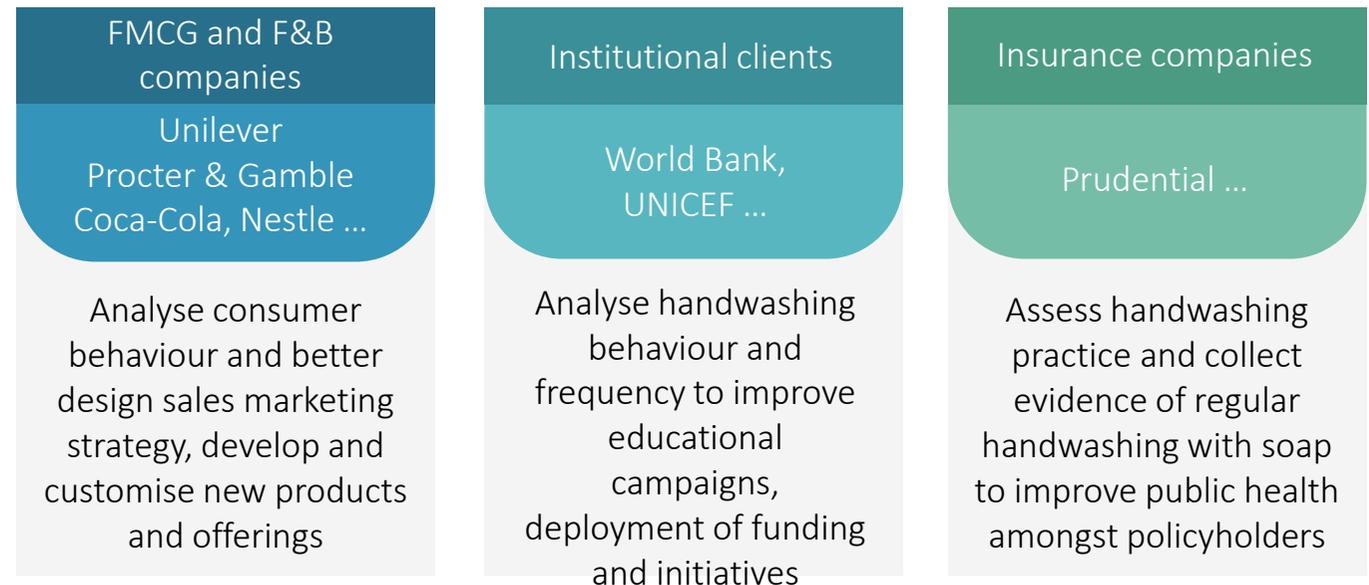
New customisable handwashing device with sensor technology to better understand handwashing practice

Applications of sensor technology for handwashing

- In regions where the awareness of handwashing is high but practice remains low, the application of sensor technology facilitates a better understanding of handwashing behavior and soap consumption, a powerful tool for behavior change campaigns.
- For commercial partners, data on customer behaviour, particularly those located in difficult to access rural areas will be a valuable resource to inform product development, marketing and communication messages and customer engagement campaigns.
- As owner of the data, HappyTap company will be well positioned to provide insights to existing or future companies seeking to reach this attractive consumer segment with new or existing products.
- For governments data analytics will provide valuable insights related to public hygiene and health habits among its population from which to better understand demographic trends, productivity and mitigate future risks from disease.



Potential data customers



Multiple applications for data on handwashing practice amongst public, private and civil sectors

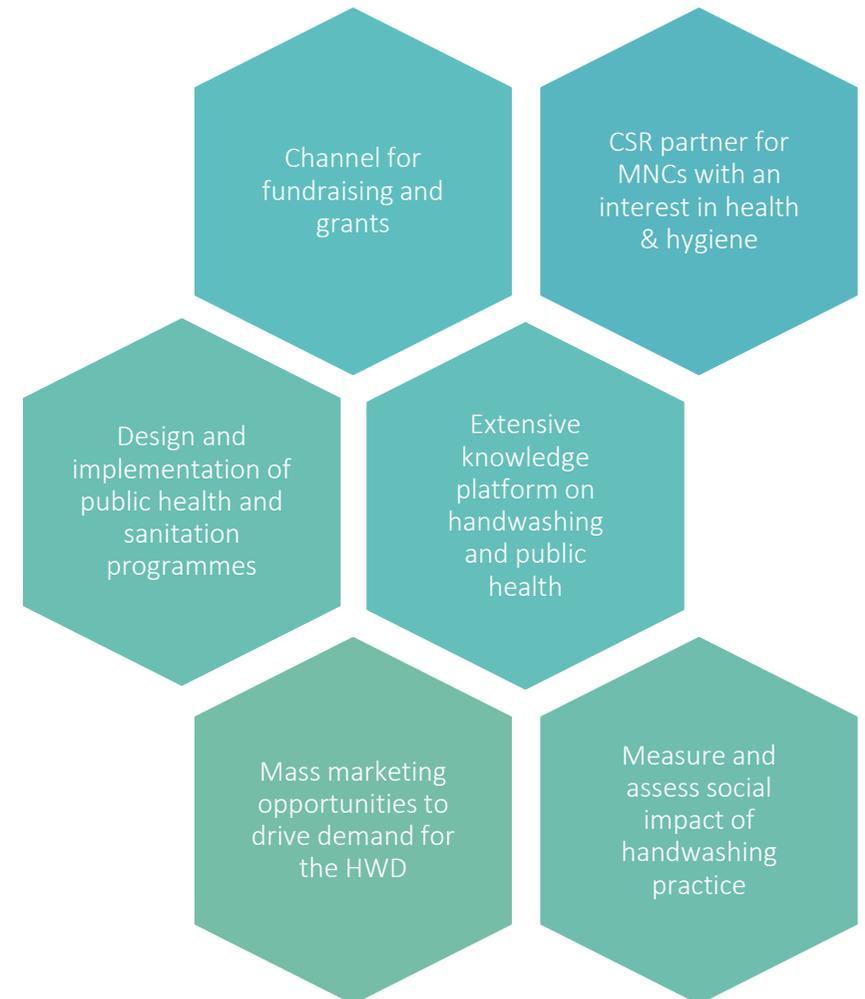
New revenue streams for HappyTap

- In order to reach scale and significantly increase sales volumes, HappyTap will focus on diversified sales and distribution channels to reach a larger number of end users

Revenue streams	Description	Potential partners & clients
Distribution partners	<ul style="list-style-type: none"> Provide access to existing distribution channels and network HWD as new or complementary product in existing product portfolio Can provide platform for HappyTap or co-join marketing events to promote the HWD Can benefit from HappyTap mobile app to promote own products 	iCare Benefits, DSKH, Women's Union, sanitation convenience stores, etc.
Channel Sales partners	<ul style="list-style-type: none"> Option to customise or accessorise the HWD to meet marketing needs Option to bundle HWD with existing products to create a health or beauty station Will have existing network of distributors and retailers to sell HWD 	FMCG, F&B, and Insurance companies, suppliers of equipment and furniture for food outlets, etc.
Institutional clients	<ul style="list-style-type: none"> Bulk orders of HWD to use in educational and/or marketing campaigns related to public health and hygiene HWD and its associated social benefits as a vehicle to advance social mission of organisation or company HWD to be used or donated as part of programme or campaign Option of customise HWD to meet marketing needs 	NGOs, government agencies, schools and kindergartens, development aid agencies, MNCs, etc.
Data consumers	<ul style="list-style-type: none"> Interest in receiving analysed data on handwashing practice, and water & soap usage to better inform product development, health insurance policies, geographical focus for future campaigns, marketing activities, etc. 	FMCG, F&B companies, research institutes, insurance companies, government bodies, etc.

HappyTap Foundation: Creating demand for a dedicated HWD

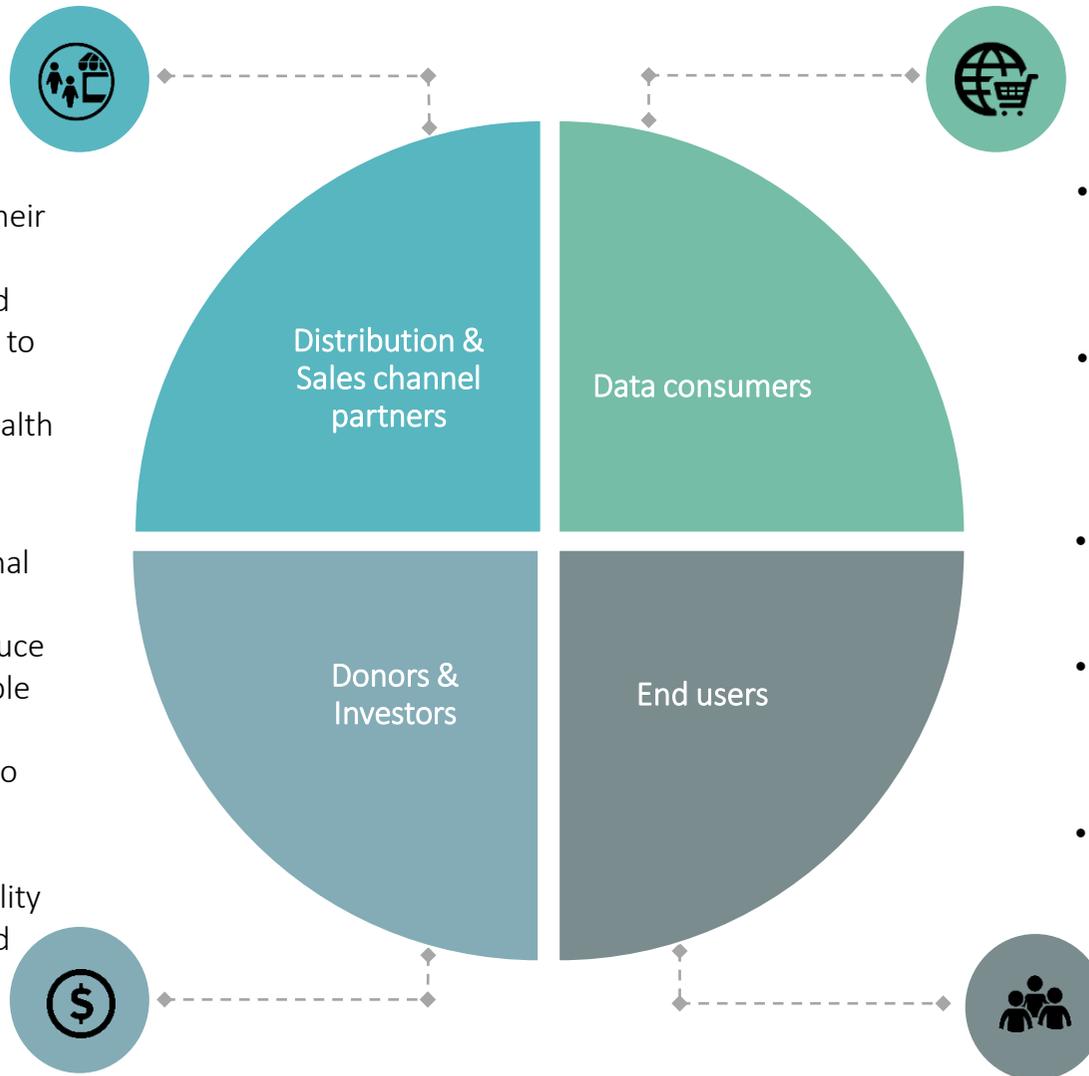
- HappyTap's low sales volumes are primarily due to a weak market demand for a dedicated HWD, the benefits of which remain not well understood.
- Given the high-costs typically associated with mass marketing campaigns, a new HappyTap Foundation, separate from the commercial entity, will be established to manage funding from donors and lead all not-for-profit activities.
- The HappyTap Foundation's mission will be to increase awareness and understanding amongst the public about hygiene, public health, water and sanitation, especially handwashing with soap through educational campaigns and mass marketing events.
- Such events may be co-organized with development organisations, NGOs and government agencies, allowing the Foundation to target a broader audience in view of creating market demand for the HWD.
- Registered as a charitable organization, the HappyTap Foundation can also seek pro-bono services from PR or advertising companies to develop a compelling brand image, marketing material and campaign events. Such activities would also support a partner company's agenda and targets for Corporate Social Responsibility and increased social impact.
- The Foundation will also be able to leverage data collected from the HWDs on handwashing practice to lead and coordinate measurement impact studies in partnership with international NGOs, aid agencies, research institutes and universities.



Separating the commercial and non-profit activities of HappyTap allows greater impact of both

Key Stakeholders & Interests

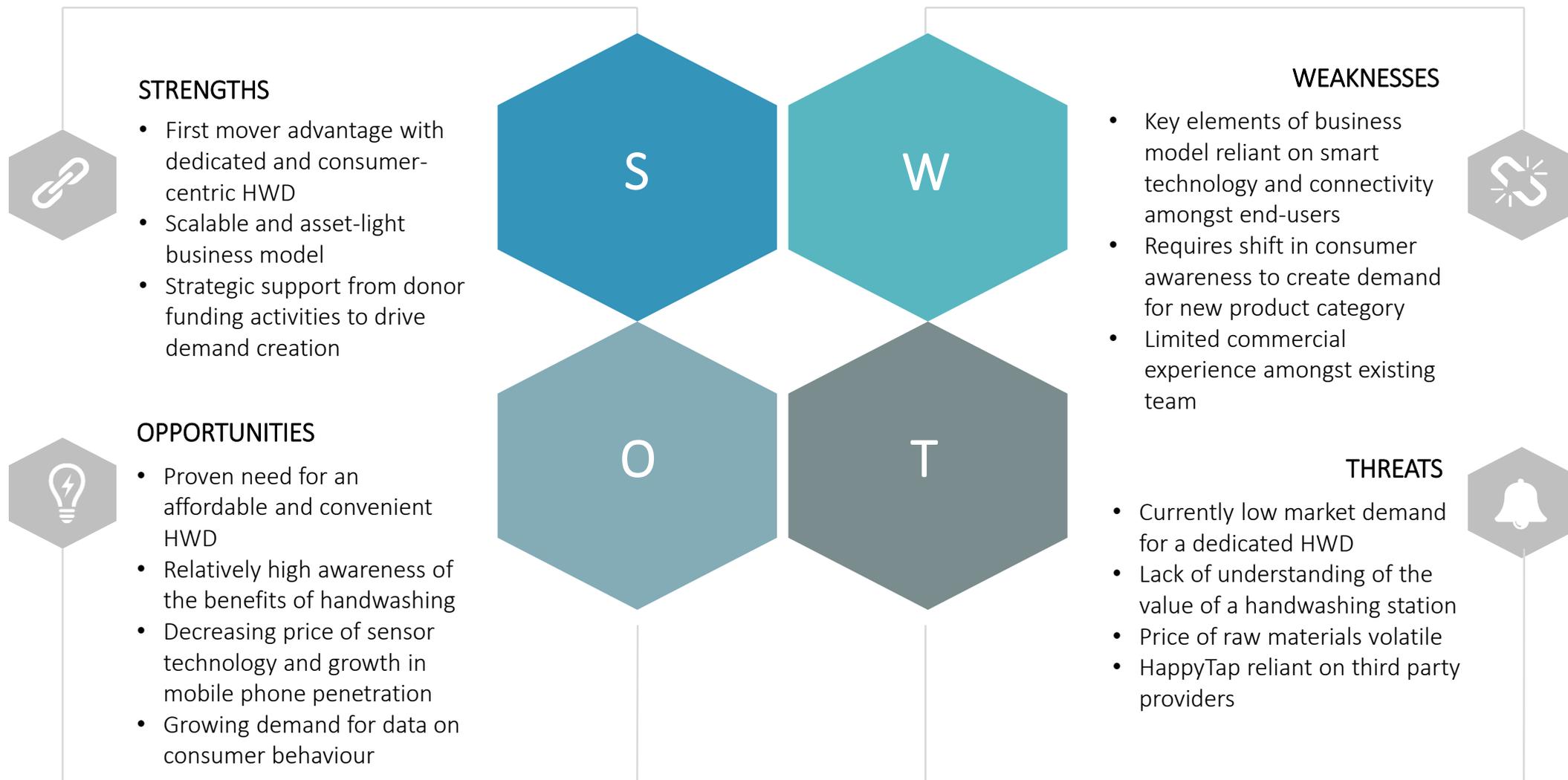
- Add a new product with significant social benefits to their suite of products
- Option to customise HWD and bundle with existing products to drive increased sales
- Support efforts to improve health and hygiene in the region
- Desire to contribute to regional and global efforts to improve water and sanitation and reduce the incidence of communicable diseases
- For investors, the aspiration to get both social and financial returns on their investment
- Transparency and accountability of the management team and board of directors



- Access to valuable data on consumer behavior, handwashing practice and frequency, usage of water and soap, etc.
- Support better inform strategy, product development and marketing communications
- Access to an affordable, convenient and simple to use handwashing device
- Access to a range of tips, games, promotions and information on health and hygiene via a product-related mobile app
- Healthier communities in areas where access to clean and safe water and sanitation facilities is limited

Opportunity for investors and private sector to contribute to improved public health through scalable social business

SWOT Analysis



Opportunities as well as key threats related to need to create demand for brand new product



Operations and Product Development

Overview

- HappyTap's recommended product development will involve the creation of a new plastics mould to accommodate sensor technology and the additional liquid soap holder. Clients and partners also have the option of customizing the device according their own branding requirements or for a specific campaign.
- Production of the device will remain in South Vietnam where the plastics industry is developed and mature and with HappyTap's existing manufacturers until demand exceeds their production capacity. Storage of the HWD will be at HappyTap office & warehouse in HCMC in the first year and until orders ramp up. From year 2, the HWD will be stored in a rented warehouse in CanTho city.
- Data collected from the HWD will be sent to a Cloud Data Center for analysis. Cloud storage is owned and managed by an outsourced storage company but ownership of the data remains with HappyTap, unless previously negotiated with the client or partner.

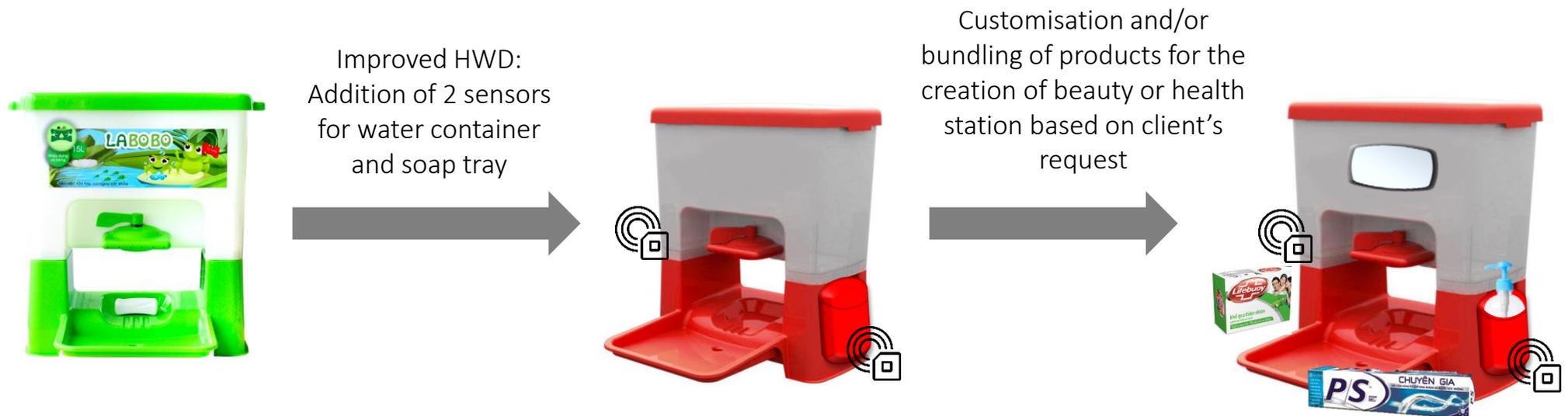


Product development and customisation

In order to reach scale, HappyTap must move away from a solely branded product (Labobo) towards a generic HWD that can be rebranded or modified according to a customer or distributor's preference.

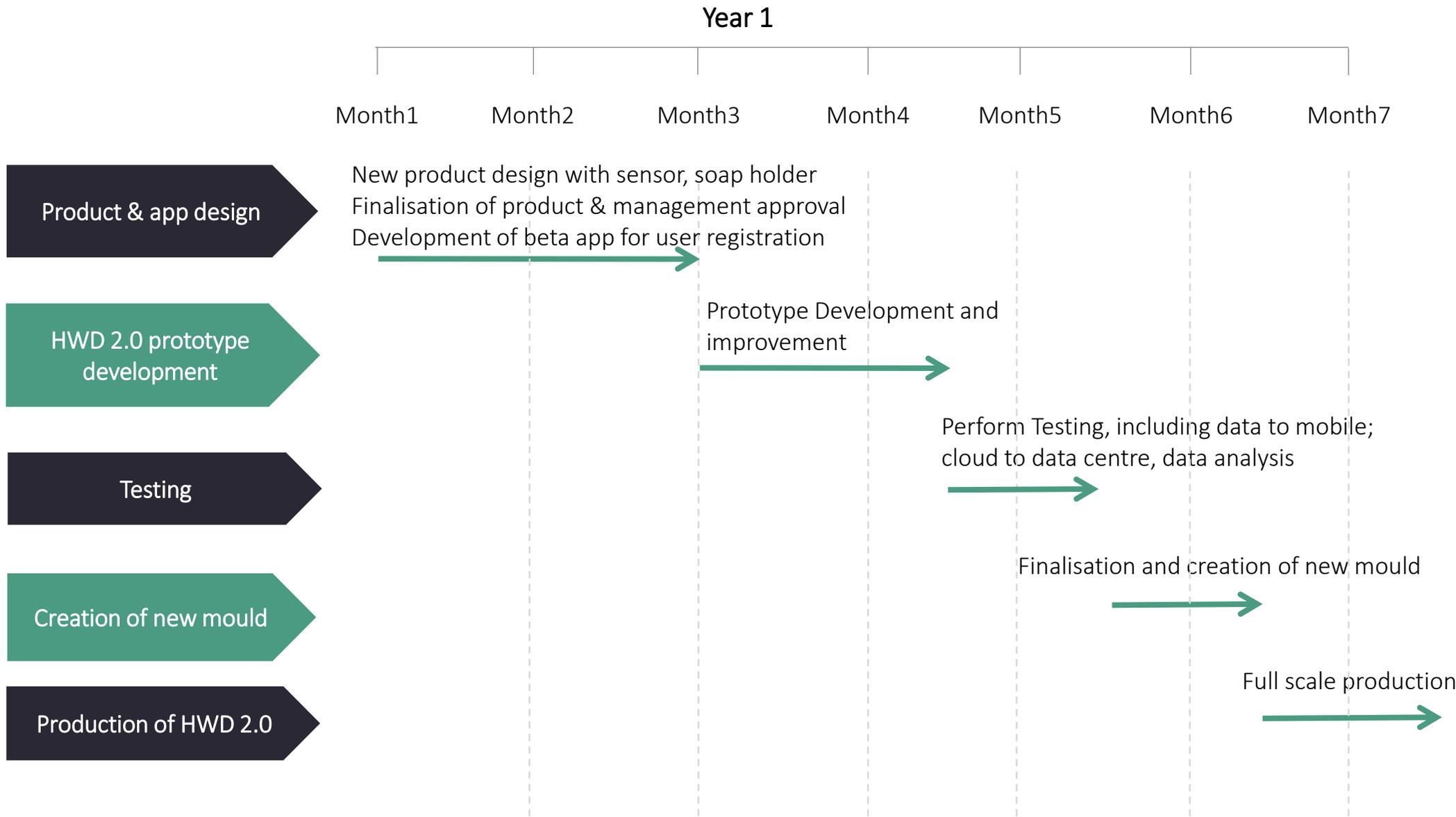
Proposal for a two-phase product development approach:

1. Develop a generic HWD that does not only target young children but can be attractive to a larger pool of potential end-users and for a wider range of locations (F&B outlets and schools for example). New HWD to be equipped with 2 sensors to detect the weight of water (sensor at the base of the water container) and the weight of soap (sensor in the soap tray*). Data collected can help measure handwashing practice and consumer behaviour. (*design of soap try/holder to be determined)
2. Option to customise/brand the HWD (change colour, change decal, add mirror) to a company's specific needs or campaign and/or to turn the HWD into a beauty/health station by bundling it with a suite of related products.



Product customisation opens numerous opportunities with new distribution and channel sales partners

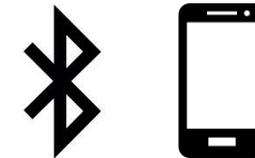
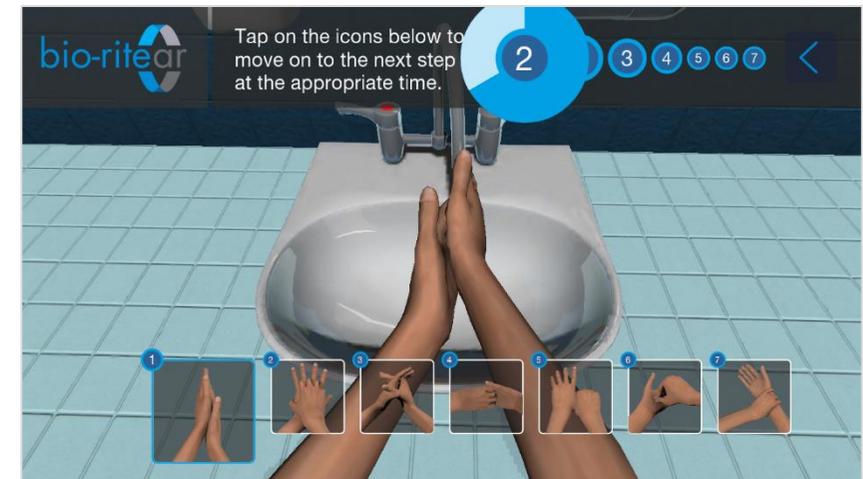
Production timeline for HWD 2.0



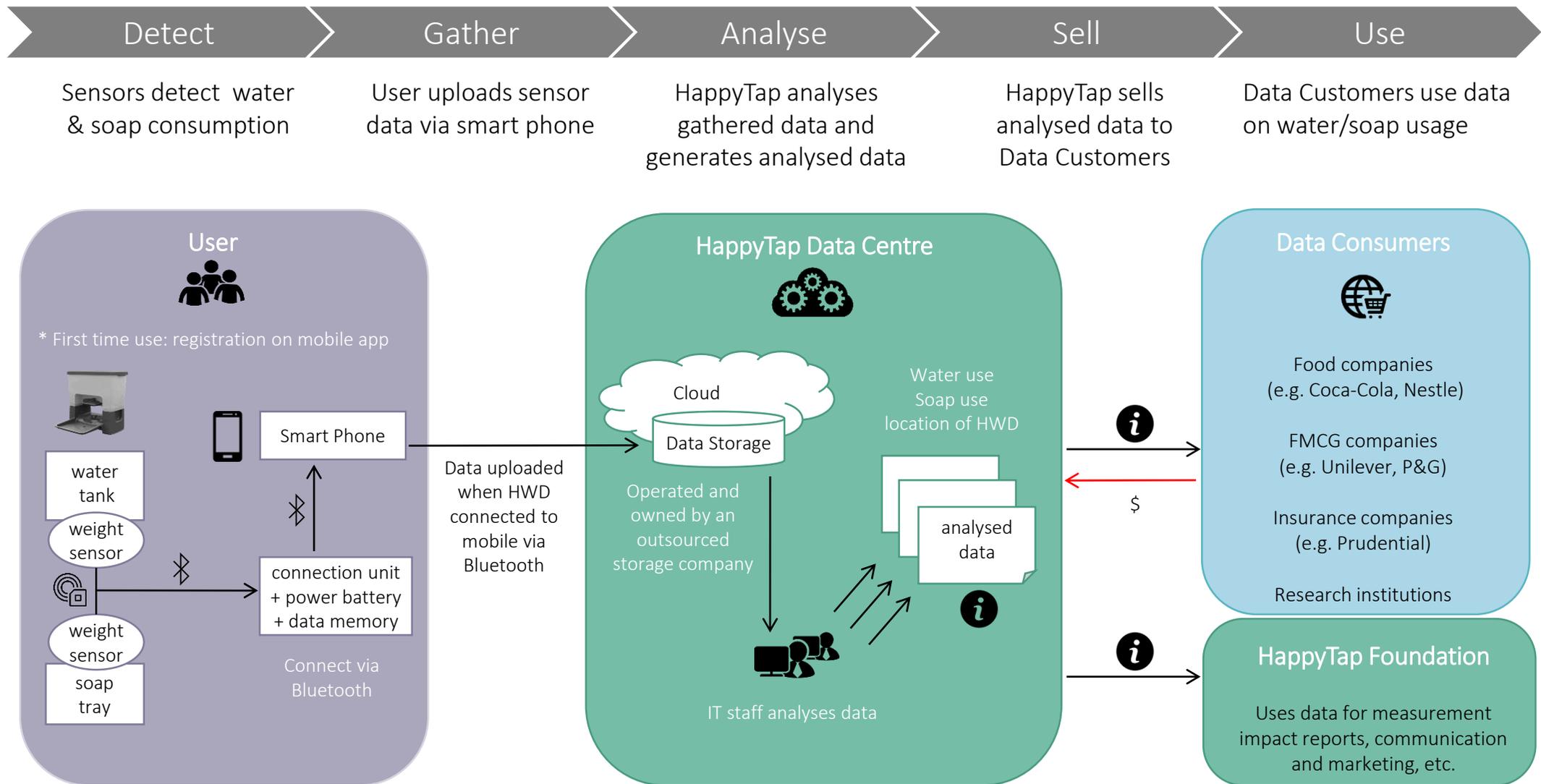
Production of the improved HWD expected to begin quickly without full-scale redesign of the product

Registration of device through mobile application

- Data transfer from the HWD requires:
 1. A user to register his/her HWD using a mobile application (name & location). No other personal details will be required.
 2. The user's mobile phone to be connected to Bluetooth to enable the successful transfer of data to the cloud.
- To incentivise users to connect and register the device, a number of features and promotions will be included through the mobile app.
- Key features of the mobile application include:
 - An introduction to the HWD, key features and contact details for HappyTap company and foundation;
 - Gamification programme for children to encourage handwashing (using scoring points for example);
 - Health and hygiene tips and advice for family members;
 - Promotions on products, either related to health and hygiene (soap, toothpaste, etc.) or related to nutrition and wellness for example;
 - Above features only accessible once Bluetooth is activated.
 - Recommended for HappyTap Foundation to secure donor funding for support in the development of the app and related educational content production



Data flow: from end-user to cloud storage (1/2)



Combining the best of human-centered low-tech design and high-tech data solutions

Data flow: from end-user to cloud storage (2/2)

Data table: user information

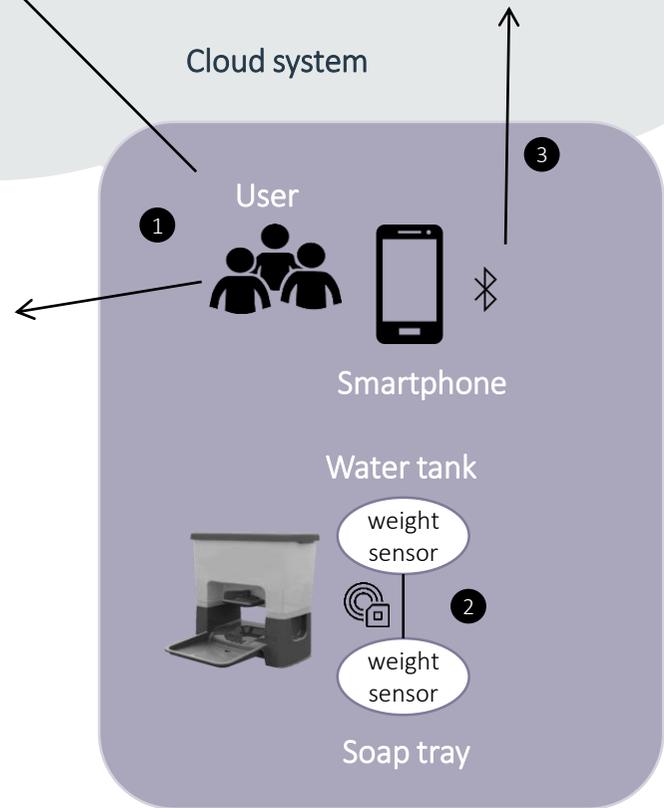
Attribute	Example
User ID	U001
Name	Minh
Address	99-99, Ho Chin Min City
# of Kids in Family	3
#of Adults in Family	4

Data table: data from sensor

Attribute	Example
User ID	U001
Date and time of detected	2016/04/29 10:12
Water weight	1200 g (in this case, water is 80%. calculating $80\% = ((1200g - 0g) / (1500g - 0g))$)
Soap weight	290 mg (in this case, soap is 60% . calculating $60\% = ((290mg - 200mg) / (350mg - 200mg))$)

Data table: water tank & soap information

Attribute	Example
User ID	U001
Weight of water tank 100%	1500 g
Weight of water tank 0%	0 g
Weight of soap 100%	350 mg
Weight of soap 0%	200 mg



- 1 First time: User registers the user data (name, address and particulars of household) and HWD information
- 2 Sensors in HWD detect the weight of water and soap periodically, and stores data in the memory of the sensor
- 3 User connects smartphone to HWD via Bluetooth technology to upload the data from HWD to the cloud system

Data customers

- Data analytics and data-driven strategies that deliver measurable results are becoming more common and essential for businesses looking to stay ahead of the curve. With more products and services available to customers, businesses that are regularly updated and informed on consumer behavior and consumption trends have a better chance to respond quickly to market signals and develop more targeted products and campaigns. Data analytics can help inform strategy and business development, customer service, marketing, R&D, operations and production and many more.
- Analytics and the insights they deliver are changing competitive dynamics by delivering acuity and focus. A study in Forbes (July 2014) presents forecasts and market estimates for analytics and the business of data. The Advanced and Predictive Analytics (APA) software market is projected to grow from US\$2.2 billion in 2013 to US\$3.4 billion in 2018, attaining a 9.9% CAGR in the forecast period.
- As big data and analytics become more mainstream and indispensable for business, the number of data consumers purchasing data on handwashing practice is expected to increase year-on-year. HappyTap's revenue from data sales is based on the price assumption of US\$4,000/month and is not dependent on data volumes.

Expected revenue from data sales

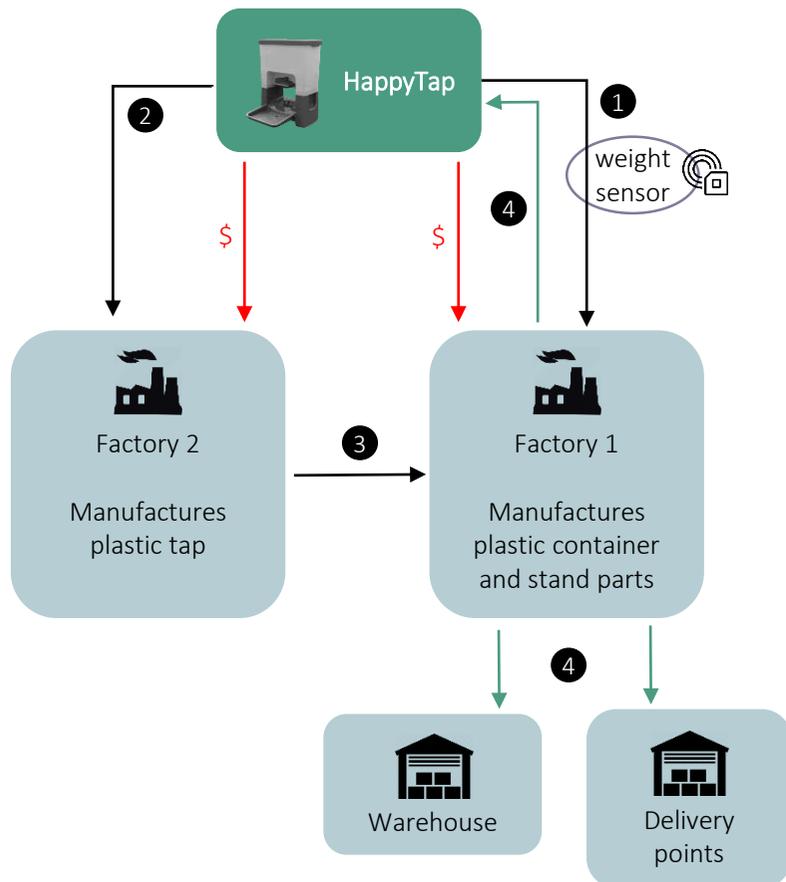
Year	# data customers	Price of data (US\$/month/company)	Revenue (US\$/month)
1	1	4,000	4,000
2	6	4,500	27,000
3	11	5,000	55,000
4	16	5,500	88,000
5	21	6,000	126,000

Potential Data Customers



Production of the HWD 2.0

- Production of the HWD is currently outsourced to 2 factories: Chi Lac Khang is responsible for manufacturing the tap, which is then sent to Tashing who responsible for the manufacture of the water container, lid and stand and for the assembly.
- For HWD 2.0, a new mould will be required to accommodate the liquid soap holder. Sensors will be ordered by HappyTap and shipped to Tashing before being embedded into the water container and liquid soap holder.
- From Year 3 onwards, additional moulds will be acquired to establish new production lines. Production capacity per factory is approximately 15,000 units per month.



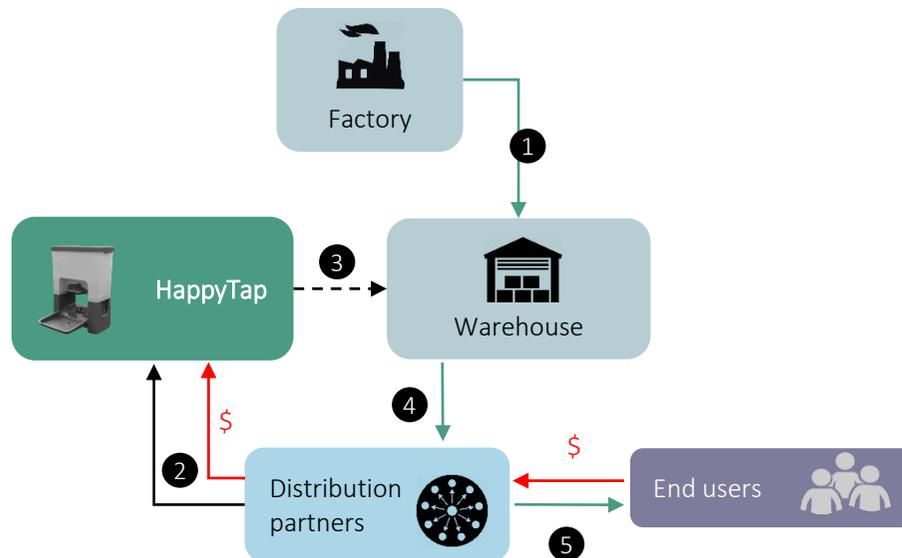
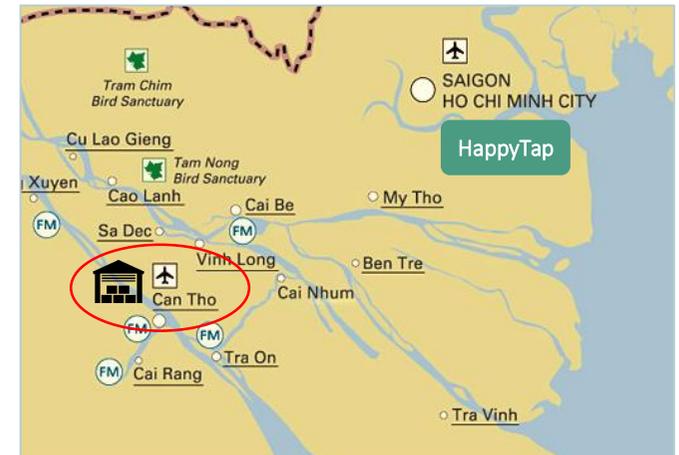
- ① HappyTap places order for weight sensors and has them delivered to Factory 1 (currently Tashing factory) along with order for container and stand
- ② HappyTap places order with Factory 2 (currently Chi Lac Khang) for plastic tap
- ③ Plastic tap is delivered to Factory 1 for assembly, including the two sensors in the water container and soap dispenser
- ④ HWD is delivered either to HappyTap office (if small quantity), a warehousing facility or various delivery points for Channel sales partners

Product specifications

- Dimensions: 410mm x 420mm x 496mm
- Container capacity: 15 liters
- Weight: 2.3 kg
- Material: PolyPropylen
- Special designed ball valve to adjust water spray to help save water. The HWD can used to wash hands 40 times with its current water capacity
- Portability makes HWD cost-effective and easy to assemble in areas without piped water or with no dedicated handwashing station

Distribution partners: Order processing and fulfilment

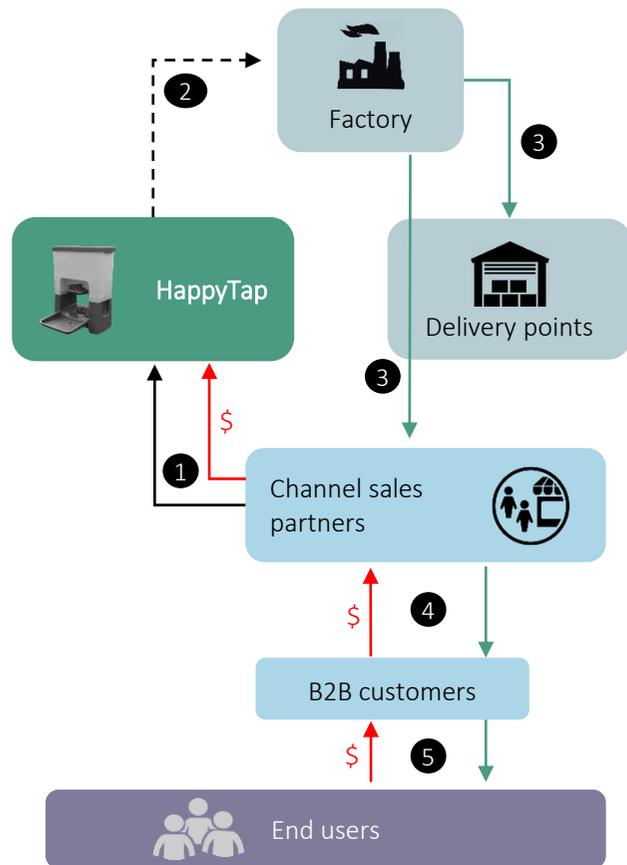
- In the first year of operations, whilst the number of manufactured HWDs remains limited, all devices will be stored at the HappyTap office
- From year 2, HappyTap will use a third party logistics provider to outsource the warehousing services to Can Tho: 4 hours drive from HCMC, easy access to local and international distributors
- Capacity of up to 50,000 units and rental cost of US\$250/month
- Advantages of third-party logistics provider: cost and time savings, low capital commitment, business focused on logistics/warehousing, flexible.



- 1 HWDs manufactured and stored in warehouse
- 2 Distribution partner places order for HWD with HappyTap
- 3 Warehouse is informed of distributor's order. Option for distributor to collect HWD from warehouse directly or for HappyTap to deliver to distribution centre
- 4
- 5 HWD distributed and sold to end users through existing platform, points of sale, distributor and retail networks

Costs reduced by working with a third party logistics provider for warehousing facilities

Sales channel partners: Order processing and fulfilment



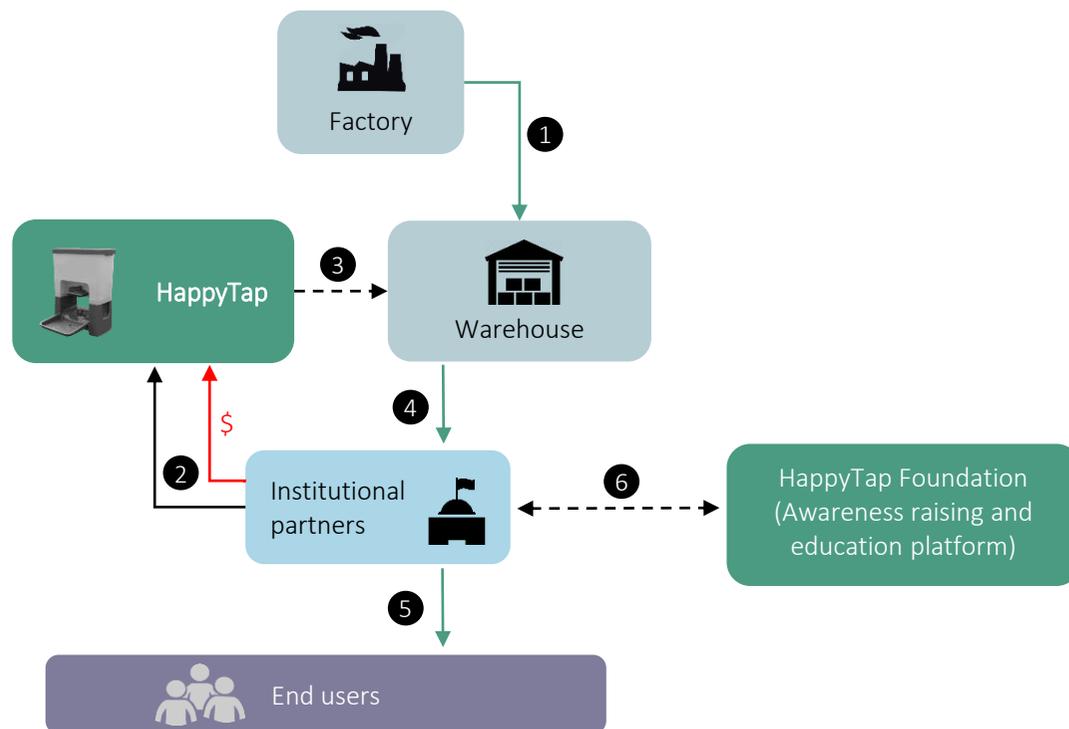
- For the order processing and fulfilment to be run efficiently, HappyTap will have to strike a balance between factors that drive order fulfilment costs and successfully maintaining customer satisfaction.
- Factors that influence order fulfilment costs include expediting orders to meet customer order dates, managing shipping delays or transportation issues, and the number of staff required to manage order entry processes.
- Customer satisfaction will be based on meeting order dates, responding to changing customer order delivery expectations and managing different rules and order management processes for each customer.

- 1 Channel sales partner places order for HWD with HappyTap, specifying requirements for product customization if required.
- 2 HappyTap places order with factory
- 3 HWDs are delivered directly to channel sales partner or temporarily stored in a delivery point, to be arranged by the customer
- 4 HWDs are sold to intermediaries or B2B customers (such as factories for example) who then sell the HWD to end users, possibly at a subsidized fee.
- 5

Logistical costs and inventory reduced by shipping HWD directly from factory to sales channel partners

Institutional sales: Order processing and fulfilment

- While not expected to result in the largest volumes of sales, relative to distribution partners and sales channel partners, institutional direct sales for HappyTap is an important and significant element of the proposed revenue model, as it also supports the ongoing awareness and education campaign driven by the Foundation.
- HappyTap Foundation will be well positioned to help support sales to institutional partners as they will be leading education campaigns that may also use the HWD. End users will be given the device or exposed to its usage through various campaigns and relationship with development and government agencies



- 1 HWDs manufactured and stored in warehouse
- 2 Institutional partner places order for HWD with HappyTap
- 3 Warehouse is informed of customer's order and HappyTap to arrange delivery of HWD to institutional client including any specifications for customisation
- 4 HWD used or donated to end users during promotional/marketing events, educational campaigns on health and hygiene
- 5 Opportunity for HappyTap Foundation to collaborate with institutional partners on educational activities

Institutional sales managed and fulfilled by HappyTap Company while supported by HappyTap Foundation



Sales and Marketing

Overview

In order to achieve scalability with the HWD, HappyTap's sales and marketing approach will include:

- Diversifying sales and distribution channels through key partnerships, including distribution partners with existing channels, channel sales partners with an interest in customising the HWD and/or bundling it with their existing products, and institutional clients wishing to use or donate the HWD as part of their health and hygiene marketing campaigns.
- Expanding outside Vietnam to tap into markets where the need for handwashing stations are real, such as Cambodia (Phase 1), Myanmar & Bangladesh (Phase 2) and eventually India, Indonesia & the Philippines (Phase 3).
- Most of the demand creation for the HWD will be driven and generated through donor-funded mass marketing campaigns co-organized between HappyTap and key partners. Funds for such initiatives are to be channeled through the newly-established HappyTap Foundation



Distribution Partners

Potential distribution partners		Value proposition
iCare Benefits	<ul style="list-style-type: none"> Membership-based retail platform serving 700 factories, or over 1.8 million factory workers in Vietnam Present in 6 countries across Asia including Vietnam, Indonesia, Philippines, Thailand, Cambodia, India and Laos Offers simple and interest free repayment plan Customer profile: factory workers originally from rural areas and from households without indoor plumbing 	<ul style="list-style-type: none"> Additional revenue by having HWD as additional product in “Healthy Living” portfolio No inventory for iCB as HWD delivered from warehouse on a just-in-time basis Opportunity to promote existing products through the HappyTap mobile app Can partner with HappyTap for joint marketing events
Drug stores / Convenience stores selling sanitation products	<ul style="list-style-type: none"> Retailers in 21 provinces and 680 communes across Vietnam offering off the shelf sanitation solutions Customer profile: Families in rural and urban areas in search of low cost solutions for sanitation devices 	<ul style="list-style-type: none"> Additional revenue by having HWD as additional product Contributing to healthier community by carrying hygiene solution Can partner with HappyTap for joint marketing events
Women’s Union	<ul style="list-style-type: none"> 13 million members across all provinces and communes in Vietnam Active with households and communities through regular face-to-face activities at grassroots level Opportunity to champion the HWD to women in rural areas where access to indoor plumbing is limited and where the need for a dedicated HWD is highest 	<ul style="list-style-type: none"> Support the Women Union’s mission to foster the development of women and promote the health and wellness of women and their families Opportunity for Women’s Union members to benefit from equity stake in the company Can partner with HappyTap Foundation for joint promotional and educational events
Suppliers of Food & Beverage durables	<ul style="list-style-type: none"> Typically have a portfolio of products such as chairs, tables, kitchen appliances, etc. to fully equip a F&B outlets with all necessary amenities 	<ul style="list-style-type: none"> Additional revenue by having HWD as new product Support better hygiene and handwashing practices in F&B outlets where the risks of contamination through food are high HWD can also be used for mobile outlets

Channel Sales Partners

	Potential channel sales partners	Value proposition
<p>FMCG companies (Health and beauty)</p>	<ul style="list-style-type: none"> • Business model based on selling non-durable products quickly and at relatively low cost. Characterised by frequent purchases, low prices, high volumes, relatively low margins, extensive distribution networks and high stock turnover • Have existing CSR initiatives & foundations to promote improved health and hygiene amongst customers and the general public • Strategy to reach low-income households • Example: Unilever, Johnson & Johnson, P&G, Colgate • Products sold: toiletries, over-the-counter drugs, and other non-durable products 	<ul style="list-style-type: none"> • Using the HWD as a vehicle to push sales of toiletries, consumable products related to health (over-the-counter) • Option to customise or accessorise the HWD to meet branding requirements and/or to bundle the HWD with existing products (especially soap) to create a package of products around a health or beauty station depending on target customer (women, families, etc.) • Opportunity to promote existing products through the HappyTap mobile app • Can partner with HappyTap for joint marketing events



Channel Sales Partners

Potential channel sales partners		Value proposition
Multinational food companies	<ul style="list-style-type: none"> • Business model based on selling perishable products quickly and at relatively low cost. Characterised by frequent purchases, low prices, high volumes, extensive distribution networks and high stock turnover • Have existing CSR initiatives & foundations to promote improved health and nutrition amongst customers and the general public • Example: Nestle, Danone, Vinamilk, Fonterra • Products sold: dairy products, drinks, baby foods, snacks, medical foods 	<ul style="list-style-type: none"> • Using the HWD as a product to support health and well-being and thus sales of nutrition related products • Using the HWD to instill greater handwashing practice amongst operators in the food supply chain, especially producers and processors • Opportunity to promote existing products through the HappyTap mobile app • Can partner with HappyTap for joint marketing events
Insurance companies	<ul style="list-style-type: none"> • Provide life and health insurance products to middle-income households • Keen to instill a lower incidence of illness, sickness and therefore claims amongst policyholders 	<ul style="list-style-type: none"> • Use the HWD as a vehicle to promote handwashing with soap and better hygiene practice at home and the workplace in order to reduce illness and sick days • Support a company's workplace health promotion programme by channeling the HWD to B2B customers such as factories taking out group policy for workers. B2B customer in turn provide the HWD to employees either at a subsidised fee or free of charge • Build stronger relationship between insurance company and B2B customers and build goodwill amongst factory workers and policyholders

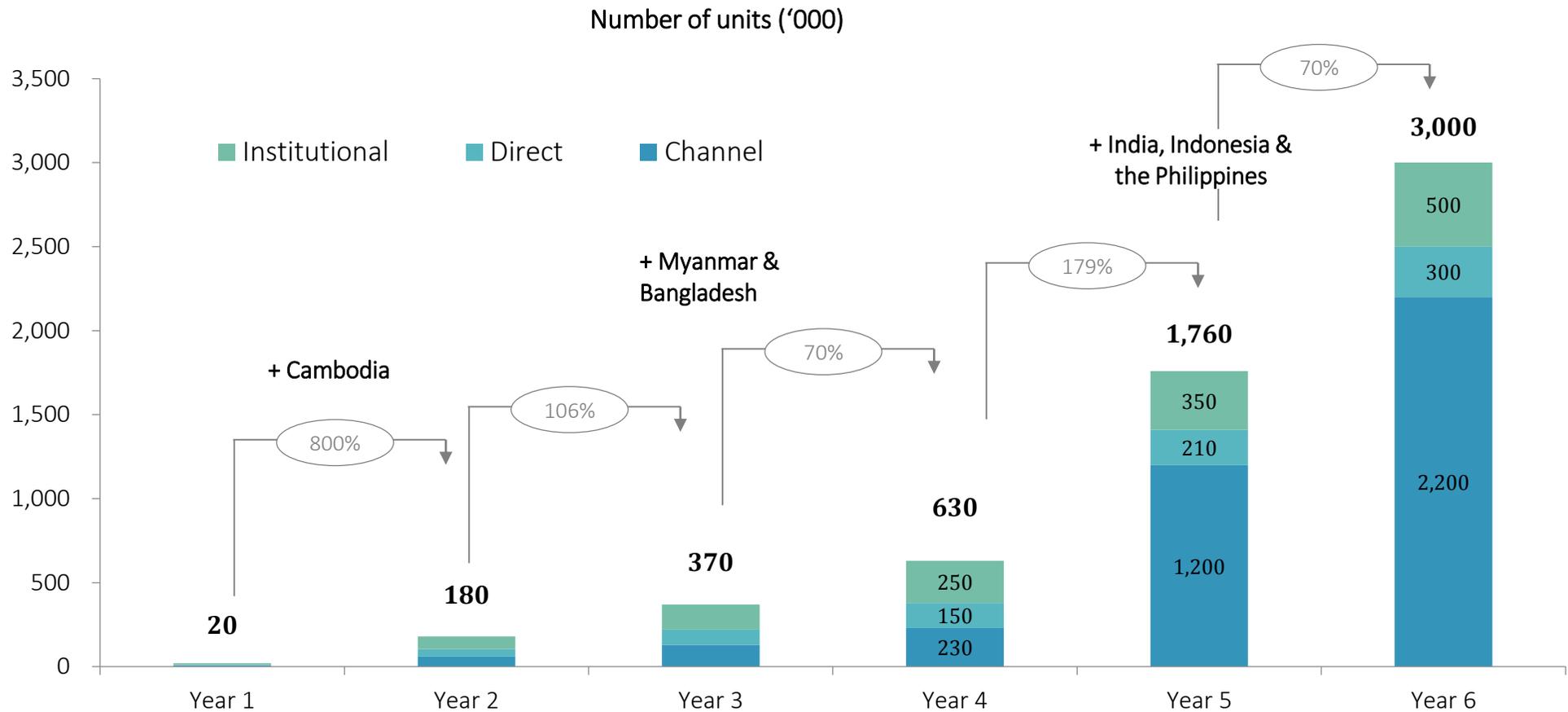
Institutional sales

- A number of institutional organisations and companies that have a mandate to support improved health, hygiene and sanitation frequently conduct marketing campaigns, promotional events and educational activities, either to raise awareness about health-related issues, engage policy makers, create demand and interest for a new product or approach new potential partners.
- For such events, the HWD could be purchased in bulk and either used or donated to guests, end-users, partners, etc. for the purpose of educating the public on handwashing with soap and promoting their products.
- HappyTap and the HappyTap Foundation can leverage the media attention and marketing opportunity typically associated with these events as well as the partner's brand to increase visibility and create market demand for the HWD.

Potential institutional partners		Example
NGOs and development aid agencies	<ul style="list-style-type: none"> • NGOs and development agencies dedicated to child health, nutrition, healthcare services, preventative medicine, water & sanitation, women's empowerment, education, affordable housing, etc. 	<ul style="list-style-type: none"> • UNICEF, USAID, Save the Children, Population Services International (PSI), Plan International, the Red Cross, UNHCR, Habitat for Humanity
Educational institutions	<ul style="list-style-type: none"> • Schools, kindergartens, day care centres in rural and urban areas with limited or poor water and sanitation facilities • Parents and families living in homes with no indoor plumbing • Opportunity to involve teachers' unions for championing handwashing with soap at school 	<ul style="list-style-type: none"> • Over 5,000 kindergartens and daycare centres in HCMC alone
FMCG companies & associated foundations	<ul style="list-style-type: none"> • Global partnerships with Oxfam, PSI, Save the Children and UNICEF to develop programmes on new rural distribution models, behavior change through handwashing programmes and activities, Global Handwashing Day, etc. 	<ul style="list-style-type: none"> • Unilever Foundation, Procter & Gamble Fund (grants for Global Health), Johnson & Johnson Safety & Care Commitment, etc.

Projected sales volumes

- By diversifying its sales and distribution channels, sales of the HWD are projected to reach 3 million units by year 6 in 6 different countries around Asia.



Significant sales volumes reached through aggressive expansion into key regional markets

Key markets for business growth

- Key markets identified as having a high need for improved handwashing practice and sanitation facilities amongst low income households.



- India**
- Population: 1.23 billion
- Increasing awareness about health and handwashing
- Strong presence of MNCs, incl. FMCGs
- Opportunity for cheaper production to reach scale

- Bangladesh**
- Population: 157 million
- Growing number of urban poor
- High migration from rural to urban areas, putting strain on water and sanitation facilities

- Indonesia**
- Population: 250 million
- Limited sanitation facilities in both rural and urban areas
- Economic losses due to poor sanitation equivalent to 2.3% of GDP

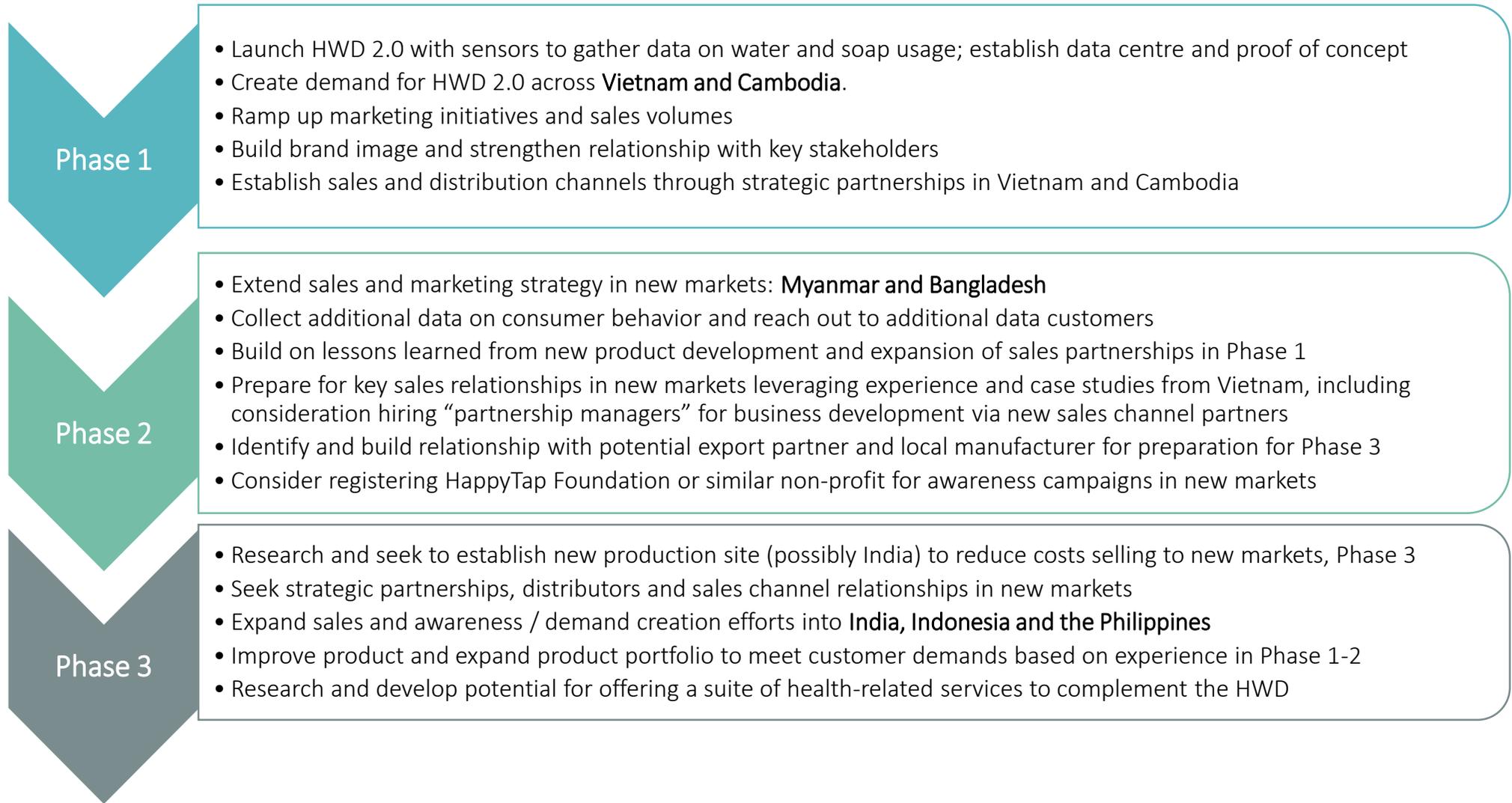
- Vietnam**
- Population: 90 million
- High awareness of importance of health and handwashing
- Strong economic growth and plastics industry

- Cambodia**
- Population: 15 million
- Limited access to adequate water and sanitation facilities, especially in rural areas
- Capital Phnom Penh close to HCMC Vietnam

- Myanmar**
- Population: 52 million
- MNCs entering market and eager to tap into large consumer market
- Notable disparities between rich and poor

- The Philippines**
- Population: 94 million
- 8% of the population without access to improved sanitation
- Congested slums in urban areas

Sales expansion into key markets



Phased expansion to reach key markets with large populations, need for improved hygiene, building on early successes

Marketing strategy for demand creation

- Establish a separate HappyTap Foundation to lead non-profit initiatives such as educational programmes and campaigns on hygiene and handwashing with soap.
- Use the foundation to channel available funds, grants and donations to drive and/or co-design mass marketing campaigns around health, hygiene and handwashing to create demand for the HWD.
- Use the data from HWDs to design more targeted marketing campaigns.

Potential partners	
Partner campaigns	<ul style="list-style-type: none"> • Collaborate with NGOs, development aid organisations, MNCs and others on existing hygiene-related marketing campaigns or co-design development initiatives that use the HWD as a vehicle to convey importance of improved handwashing behavior
Champions & Ambassadors	<ul style="list-style-type: none"> • Work with community leaders, celebrities and leading politicians to advocate for handwashing with soap, and inspire followers and communities to wash their hands with soap
Advertising and PR companies	<ul style="list-style-type: none"> • Engage with partners to define a strong marketing message that will resonate with target customers • Build a series of campaigns around handwashing with soap, e.g. healthier and more productive families and communities; children who wash their hands automatically and parents' pride; owning a smart HWD and showcasing gamification, social media, sensor technology, health tips, etc.



Existing handwashing campaigns

- Numerous NGOs and development agencies around the world have a mandate to advance understanding about health and hygiene and to encourage better handwashing practices through short- to long-term programmes, awareness and educational campaigns, the production of toolkits and good practice guidance materials, etc. to create impact. Companies also regularly conduct marketing activities and events that are socially-driven whilst being aligned with their business targets.
- Below are examples of existing campaigns and programmes that support handwashing with soap and improved public health. There are many opportunities for HappyTap and the foundation to align its marketing and educational campaigns with existing initiatives to pool resources and reduce costs whilst adding value to each party's initiatives and mission.

Existing handwashing campaigns	
UNICEF	<ul style="list-style-type: none"> Child-focused programmes in different provinces across Vietnam UNICEF and iCare Benefits hand washing project
World Bank	<ul style="list-style-type: none"> Water & Sanitation Programme (WSP) to scale up rural water supply and improved sanitation facilities across Vietnam Targeting 680 communes in 21 provinces
Population Services International	<ul style="list-style-type: none"> Social marketing for improved water and sanitation and hygiene
Unilever	<ul style="list-style-type: none"> National campaign to reach 25 million washing their hands with soap by 2020
Labour Union	<ul style="list-style-type: none"> Opportunity for Labour Union to endorse the HWD and present the product in factories, to management and to employees
Women's Union	<ul style="list-style-type: none"> Ongoing programmes (national, provincial and communal) engaging its large membership base to educate mothers on childcare and improved hygiene





Organisational structure and governance

Overview

- The mandate of HappyTap is to improve health and hygiene in Vietnam and the region through promoting handwashing with soap and to ensure the interests of key stakeholders are protected, while driving overall social benefit and creating returns for investors.
- HappyTap will be run by a core management team and governed by a Board of Directors, that will include members from the HappyTap management team, private investors and independent non-executives.
- An Advisory Council will be established to provide oversight and advice to the Board of Directors on trends, policy changes and innovations in the public health, water and sanitation sectors.
- It is recommended that the ownership structure be changed to allow shared ownership amongst potential investors looking for both social and financial returns, also known as “impact investors” as well as key partners with a vested interest in the HappyTap business.

Objectives of the Board

- Create a common understanding amongst all stakeholders and a transparent and accountable governance structure to ensure sustainable business development for HappyTap.
- Employ professional staff with strong networks in Vietnam and in the water and sanitation, public health and possibly the technology businesses to guarantee that the company's core activities are adequately managed and undertaken.



Why good governance matters

What is corporate governance?

- Corporate governance is driven by principles such as conducting business with integrity, fairness and transparency and making all the necessary disclosures so as to protect the interest of all stakeholders.
- Organisations, both public and private, should comply with all the laws of the land, be accountable and responsible towards stakeholders, and commit to conducting business in an ethical manner. They should focus on balancing shareholder interests with those of other key stakeholder groups, including customers, communities and supporters.
- Governance mechanisms include the monitoring of the actions, policies, practices, and decisions of corporations, their agents, and affected stakeholders.

Why does HappyTap need corporate governance?

- As an intended recipient of investment and donor funding, mechanisms need to be in place to deliver accurate and transparent information on where funds are being directed, how the collected data is being used and what social impact is created.
- Corporate governance is essential to increase the accountability and the transparency of HappyTap thereby protecting the interests of investors and ensuring the objectives of the company are met through well-established legal norms.
- Good governance will positively influence the reputation of HappyTap and can mitigate the risks associated with managing funds and working with multiple partners.



Proposed governance framework

Governance plays an importance role in establishing business direction and control of an company. In HappyTap, the following governance framework is proposed to ensure smooth business management and operations.

Objectives

- To administer plans set out for the company to be carried out in most effective manner
- To manage the funds invested for long term growth at minimum level of risk. The Company remains financially sound.
- To meet the objectives and expectations of key stakeholders
- Company works at high level of professionalism both internally and externally.

Principles

- Compliance with all national laws relevant to the business.
- Fulfilling social obligations, including commitment towards partners and stakeholders, commitment towards the community, product safety
- Advocates management and finance transparency, accountability and disclosure
- Safeguarding interest of organisation and various stakeholders
- A guide against unethical practices.



An external auditor will be appointed to ensure best practices at all levels in the company; responsible to provide periodic audit reporting to the Board.

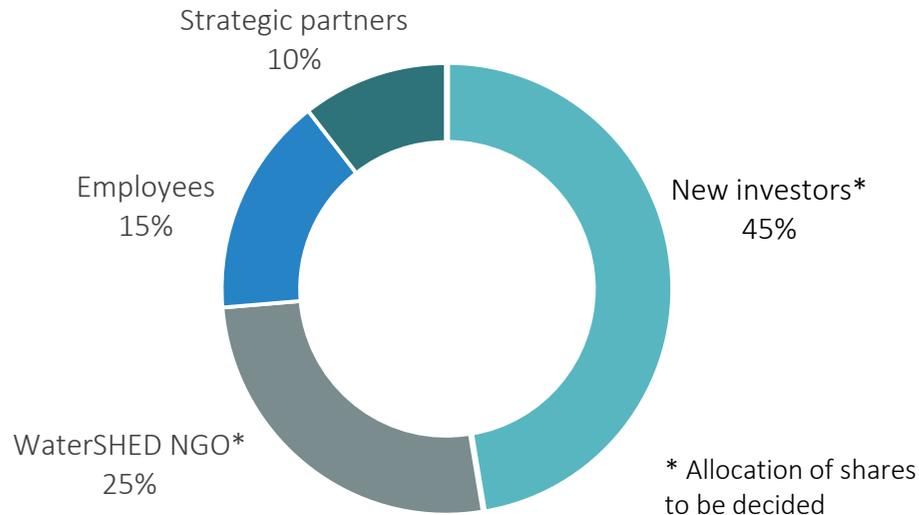
Imperative for emphasis on good governance as external investors are invited to share in HappyTap ownership

Proposed ownership structure

- In order to implement the proposed business model, WaterSHED NGO will invite potential investors to provide capital investment.
- The company will also open up ownership (up to 10% equity) to strategic partners such as key distribution partners to obtain their lasting support in the business.
- Up to 15% equity will be allocated to employees who have seniority to incentivize performance and retain talent. Shared ownership not only allows employees to share the company's profits and earnings but also contributes to creating a culture of ownership for its members.



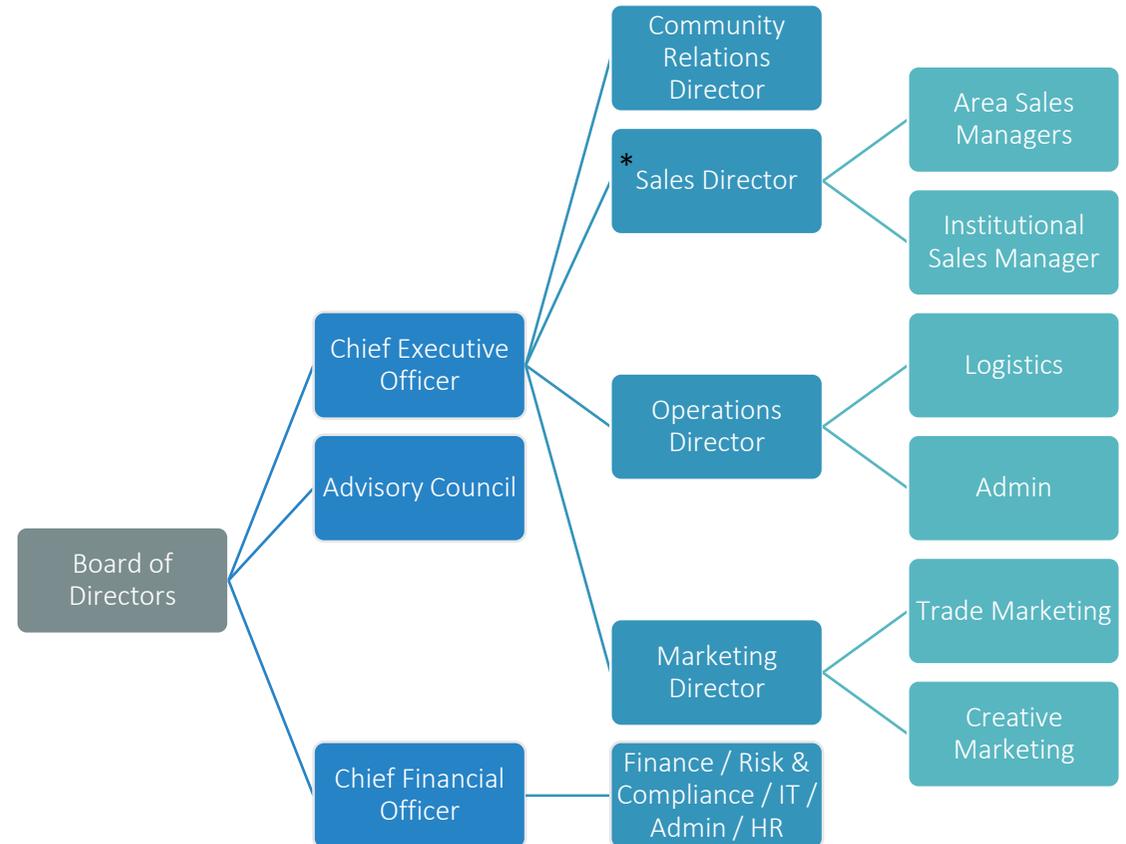
Proposed shareholding structure



Proposed organisational structure (excludes HappyTap Foundation)

HappyTap will be run by a core management team and governed by a Board of Directors.

- **The Board of Directors** is the main governance body of HappyTap responsible for overall strategic direction and monitoring to ensure the allocation of financial resources in achieving HappyTap's objectives. It will be made up of the executive team, investors and independent non-executives. Potential board members include: WaterSHED NGO, the CEO, the CFO, independents (Women's Union, iCare Benefits, government official, expert from academia / industry expert)
- An **Advisory Council** is a body of independent external who provide oversight and advice to the Board of Directors for continuous improvement of the company based on acute knowledge of trends in the health and hygiene sector. Potential Advisory council members include the Ministry of Health, MNCs, International development aid agencies, Women's Union, etc.
- The **CEO** of HappyTap is responsible to the Board in providing leadership in the daily operations of the business and executes the Board's decisions in order to achieve the company's objectives and ensure good management.
- The **management structure** will support the company's robust governance mechanisms and financial controls. The CFO, COO and Head of Investor Relations report directly to the CEO and are responsible for services offered via the app.



* Upon expansion, HappyTap to consider international partnership managers, to be reflected in projected staff costs

Advisory Council proposed to provide oversight and design programmes for optimal social impact

Roles & Responsibilities

Board of Directors

- Establish vision, mission, values and strategies of HappyTap.
- Exercise accountability to shareholders and be responsible to relevant stakeholders by monitoring performance of CEO.



CEO

- Key responsibility to drive sales through various channels and build relationship with key strategic partners.
- Direct liaison between the Board and company management.
- Responsible for decision making for the overall business of HappyTap.



CFO

- Primarily responsible for managing the financial risks of the company.
- Responsible for financial planning and record-keeping, as well as financial reporting to higher management.
- Ensuring compliance with best practices.



Community Relations

- To work with government agencies, nonprofit organizations and private companies to manage social impact programmes.
- HappyTap's liaison with the Foundation.
- 2 Community Relations Officers



Operations Director

- Managing warehouse, inventories, logistics and administration.
- Oversee HappyTap Data centre.
- 1 Operations Director
- 2 Logistics officers
- 2 Admin clerks



Sales & Marketing

- Increase brand awareness and drive sales forward.
- International partnership managers to be considered.
- 1 Sales Director
- 4 Area sales Managers
- 1 institutional Sales Manager



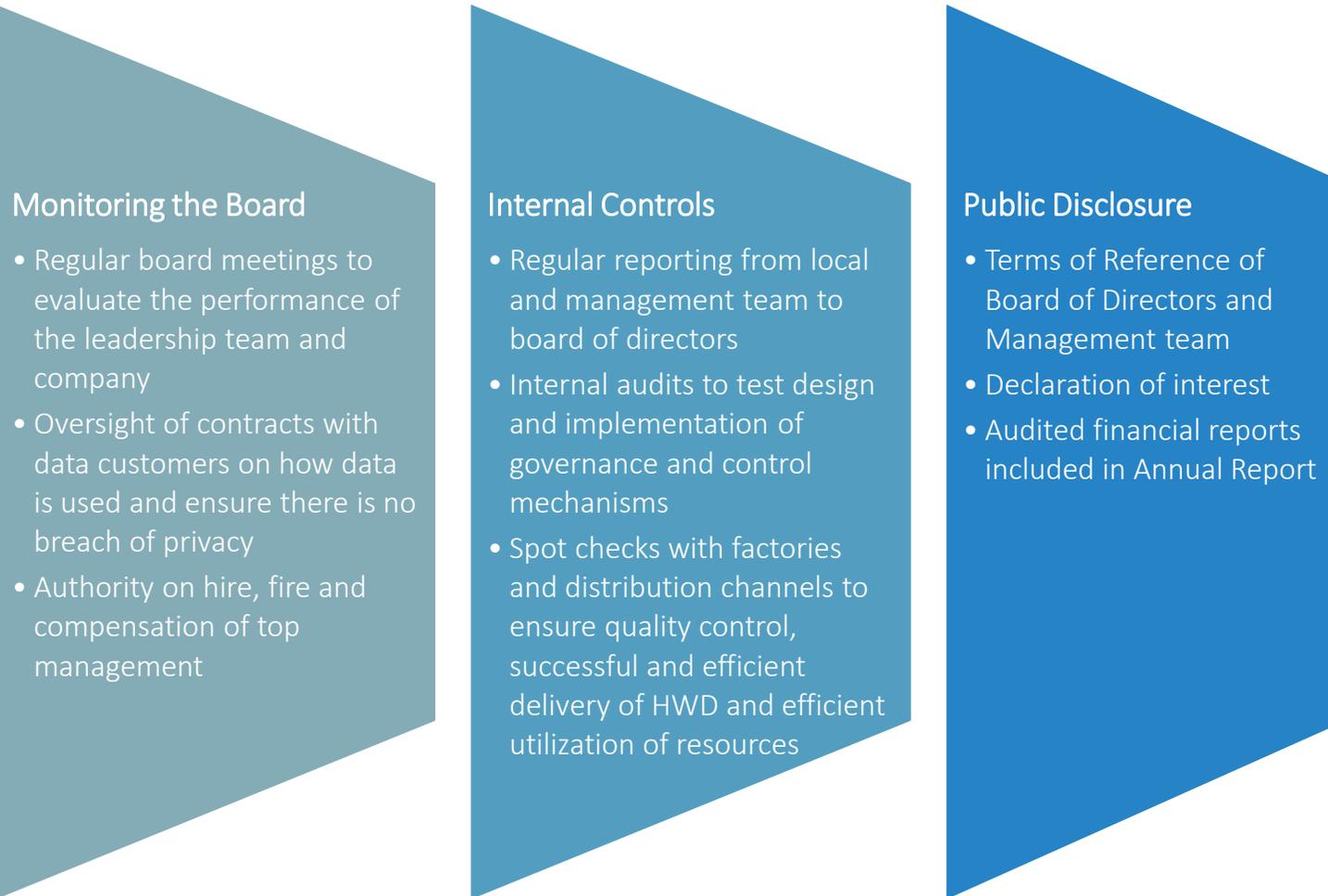
Finance & Admin

- Provide overall business support to the organisation to meet the business objectives, including admin, HR, IT support, Risk & Compliance.
- 8 staff



Transparency and Disclosure to Investors

With funding and support from financial supporters and investors, mechanisms need to be in place to deliver information on where money is directed, what services are conducted, how the data is being used and what social impact is created.



Disclosure of deployment of funds to investors and financial partners



Financial Plan and Investment

Summary

Assessment Year:

6

Metrics	Results
Total Investment	\$2,603,332
Net Present Value	\$511,703
Internal Rate of Return	11%
Payback Period	5.4 Years



- HappyTap’s social business presents a significant opportunity for investors, both locally and internationally, who wish to create significant impact on public health in Vietnam and the region.
- This section includes the base case financial projections for HappyTap’s first 6 years of operation.
- HappyTap will require an initial investment of US\$2.6 million to cover capital expenditures and expenses, including the acquisition of new plastics moulds.
- The model shows that HappyTap offers investors an IRR of 11% over a 5 year period
 - Base case assumes 3 million units sold and a 25% margin on the selling price
 - Best case assumes 4.2 million units sold and a 40% margin on the selling price
 - Worst case assumes 1.8 million units sold and a 15% margin on the selling price

Key Financial Assumptions

Revenue Assumptions

- Data sold for US\$4,000/month/company in Year 1, up to US\$6,000/month/company in Year 6.
- Data price not contingent on data volumes
- ForEx: 1US\$ = VND22,000

Operating Assumptions

- Production capacity per factory @ 15,000 units per month
- Data centre costs: US\$100/mo to increase to US\$500/month by Year 5
- Account receivable (collection period): 30 days

Scale of Operations

- Expansion into new markets will require the acquisition of 17 new plastics moulds at US\$100,000 each (by year 6)
- Costs related to marketing and educational campaigns in new markets to be kept low thanks to relationships with key partners to drive distribution

Cost Assumptions

- Cost of production to decrease from US\$5.5 in Year 1 down to US\$4.0 by Year 6
- Cost of sensor technology to decrease from US\$5.0 in Year 1 down to US\$3.5 by Year 6
- Warehousing costs estimated at US\$300/month
- Marketing costs estimated at 5% of gross revenue

Investment

- Investment required amounting to US\$2.6 million
- Internal Rate of Return (IRR) of 11% with a payback period of 5.4 years

Income Statement Projection

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Revenue		286,625	2,687,625	5,056,063	7,753,688	20,223,000	33,405,750
Gross Profit		75,925	794,325	1,535,613	2,390,738	5,248,200	10,884,750
Gross Margin		26.5%	29.6%	30.4%	30.8%	26.0%	32.6%
Less: Indirect Costs							
Wages and salaries	(120,136)	(240,273)	(518,891)	(626,748)	(689,025)	(789,917)	(829,413)
Insurance for employees	(28,045)	(56,090)	(117,548)	(141,746)	(155,640)	(178,039)	(186,940)
Depreciation	(50,000)	(50,000)	(50,000)	(90,000)	(130,000)	(180,000)	(320,000)
Design, App, etc	-	(30,000)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)
Marketing Expense	(150,000)	(13,131)	(118,181)	(219,803)	(334,884)	(935,550)	(1,594,688)
Educational campaigns	-	(42,273)	(36,364)	(42,273)	(18,182)	(11,364)	(11,364)
Commission Fee	-	(13,131)	(118,181)	(219,803)	(334,884)	(935,550)	(1,594,688)
Others	(44,540)	(100,848)	(107,120)	(128,681)	(142,754)	(178,251)	(209,207)
Profit before Interest and Tax	(392,721)	(469,821)	(276,959)	61,559	580,368	2,034,530	6,133,452
Less: Tax				(15,390)	(145,092)	(508,633)	(1,533,363)
Net Income	(392,721)	(469,821)	(276,959)	46,169	435,276	1,525,898	4,600,089
Net Margin				0.9%	5.6%	7.5%	13.8%

Business is self-sustaining from Year 3 onwards

Cash Flow Projection

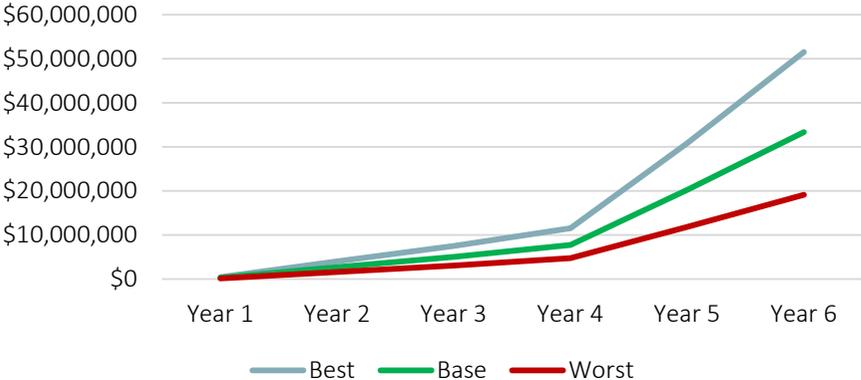
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Net Income after Tax	(392,721)	(469,821)	(276,959)	46,169	435,276	1,525,898	4,600,089
Cash Flow from Operations	(342,721)	(431,818)	(332,055)	30,695	444,545	1,207,732	4,167,874
Cash Flow from Investment	(250,000)	-	-	(200,000)	(200,000)	(500,000)	(700,000)
Free Cash Flow	(592,721)	(431,818)	(332,055)	(169,305)	244,545	707,732	3,467,874
Cash Flow from Financing	649,842	445,326	492,285	464,982	77,401	473,497	0
Net Cash Flow	57,120	13,508	160,229	295,676	321,947	1,181,229	3,467,874
Initial investment	2,603,332						
NPV		(3,003,163)	(3,287,847)	(3,263,481)	(2,936,727)	(2,114,764)	511,703
IRR				-92.0%	-43.0%	-14.7%	11.0%
Accumulated cash flow	(2,603,332)	(3,035,150)	(3,367,205)	(3,336,510)	(2,891,965)	(1,684,233)	2,483,641
Payback period	5.4 years						

Balance Sheet Projection

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Assets							
Cash	57,120	70,628	230,857	526,533	848,480	2,029,710	5,497,583
Trade and other receivables	-	23,558	220,901	415,567	637,289	1,662,164	2,745,678
Fixed Asset: Mould	80,000	60,000	40,000	180,000	280,000	600,000	980,000
Inventory	-	5,756	51,805	96,352	146,799	410,104	699,041
Mobile app and data centre	120,000	90,000	60,000	30,000	-	-	-
Total Asset	257,120	249,942	603,563	1,248,452	1,912,568	4,701,978	9,922,303
Liabilities							
Trade and other payables	-	17,318	155,614	289,352	440,790	1,230,805	1,851,041
Total Liability	-	17,318	155,614	289,352	440,790	1,230,805	1,851,041
Liabilities & Shareholders' Equity							
Shareholder's Equity	649,842	1,095,167	1,587,452	2,052,433	2,129,835	2,603,332	2,603,332
Accumulated Retained Earnings	(392,721)	(862,543)	(1,139,502)	(1,093,333)	(658,057)	867,841	5,467,929
Total Equity	257,120	232,624	447,950	959,100	1,471,778	3,471,173	8,071,261
Total Liability and Equity	257,120	249,942	603,563	1,248,452	1,912,568	4,701,978	9,922,303

Scenario Analysis

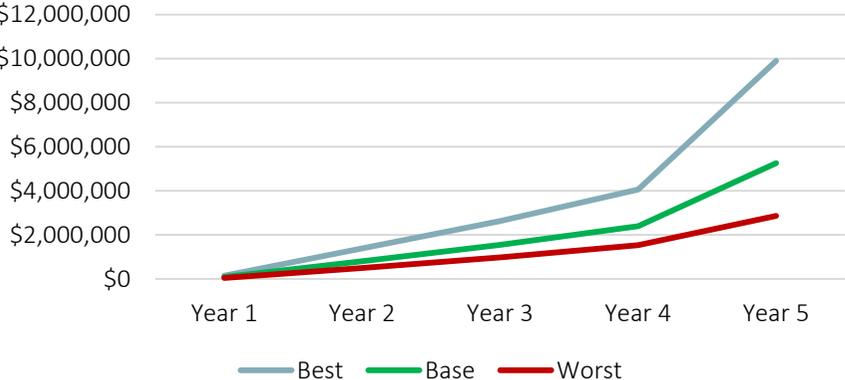
Revenue



Cost of Goods Sold



Gross Margin



Net Income



Significant business growth generated with proposal



Social Impact and Benefits

Summary

- Handwashing with soap is one of the most efficient and cost-effective ways of improving health outcomes. Yet there are very few commercial solutions that are affordable, can be produced and marketed at scale and have the potential to have a lasting impact on handwashing practice and behavioural change.
- The potential social impact of HappyTap and its handwashing device is immense, not only for the immediate end-user, but also for individuals that are exposed to it. Owners of a HWD who use it regularly are more likely to have a higher awareness about the risks associated to poor sanitation and hygiene and to encourage their family members to wash their hands at critical times.
- As a social enterprise seeking outside investment, HappyTap will be expected to measure its social impact and report on its achievements and shortfalls. Reporting social impact and performance can service as a powerful marketing tool and contribute to advocacy efforts for policy changes.



Commercial entity driving improved public health



- Efforts to provide public health solutions and improved water and sanitation facilities have typically fallen within the remit of development agencies and the government. Despite the importance of adequate and affordable hygiene solutions to a population's development and well-being, very few commercial entities have successfully marketed a product that has the potential to save lives.
- In addition to being a commercial entity with solid potential for generating attractive financial returns, HappyTap is first and foremost a social enterprise whose mission is to improve health and hygiene amongst communities who lack access to clean and safe sanitation facilities and/or piped water.
- With every HWD sold and utilised, HappyTap not only grows the company but also contributes to solving a pressing public health need amongst households, communities, and workplaces.
- Furthermore all awareness-raising campaigns and educational programmes developed and implemented by the HappyTap Foundation will contribute to advancing efforts in the area of public health. The very nature of the company's and the foundation's marketing strategy directly contribute to the overarching mission to create lasting social value.

Improved public health and positive social impact are at the core of HappyTap's business

Why measure social impact

- As a commercial enterprise, HappyTap will quantify its performance and measure results. As a socially-driven entity, the company will also be expected to provide indicators to measure and assess its social performance.
- **Accountability amongst investors and donors**
 - Donors will expect funds deployed towards a particular programme or initiative to have been optimised to reach short-term goals (number of beneficiaries and households reached, for e.g.) and to support long-term impact on societal issues (poverty alleviation, greater health outcomes and educational attainment amongst children for e.g.).
 - Social Impact Investors looking for both financial and social returns will expect the company to provide attractive returns on investment whilst delivering results on their social performance. Data-driven results will validate the social mission of the company and can help attract new social impact investors.
- **Contribute to a growing pool of knowledge** and understanding about health and hygiene issues and handwashing practice in countries where the HWD is being distributed, sold and utilized. Data and social performance indicators provide an effective way to monitor behavior change in handwashing practice and tackle the global public health challenge.
- **Stronger communication and more comprehensive reporting** of the value being created by the company to both internal and external stakeholders. Necessary to:
 - Increase transparency and accountability of the company's activities whilst monitoring the benefits and shortfalls of products, services, distribution channels and partnerships, etc.
 - Use social impact measurements and case studies in advertising and marketing materials to attract new customers, partners and investors
 - Advocate for adequate policy frameworks and further investments (private and public) in the water & sanitation sector
- **Improved processes and management**
 - More effective evaluation and planning of operational management, product development, marketing strategies etc.

Measuring social impact will drive accountability and efficiency in achieving positive health outcomes

Measuring Social Impact

POTENTIAL INDICATORS

- Indicators for measuring social impact can be in the form of qualitative or quantitative data. Sensor technology and mobile apps associated with the HappyTap device offer new tools for consolidating user data and feedback, not previously accessible in handwashing awareness campaigns.
- It is recommended that the Foundation coordinate efforts to develop various research methodologies and surveys in partnership with development agencies and intergovernmental organisations (World Bank, USAID, UNICEF, etc.), local universities and research institutes, and conducted with the support of the Vietnam Women's Union.
- Data from local clinics and hospitals to be cross-referenced with sales coverage and expected usage of the HWD to correlate positive public health outcomes with improved hygiene behaviour change.
- Positive outcomes from quantitative and qualitative measurement efforts will support continued funding from donor agencies to expand awareness campaigns both in Vietnam and future markets (Myanmar, Bangladesh, India, Indonesia, Philippines) which will in turn drive increased demand for the HWD and support sales expansion for HappyTap.

Data-based indicators

- Use of HWD sensors to track location, and water and soap levels over time, providing specific data on consumer behavior, handwashing practice and frequency
- Apps download and usage frequency
- Number of end-users in any specific location and number of educational campaigns run over a specific time
- Expenditures on healthcare and/or disease-related issues

Survey-based indicators

- User satisfaction recorded through surveys and on social media platforms and through HappyTap mobile app
- Surveys conducted through schools to document shifts in mindsets of children using or exposed to the HWD at home or in school
- Surveys of large employers in regions where the HWD has achieved significant penetration to determine impacts on behavior of the individual and their family or community

Quantitative and qualitative indicators will reinforce awareness campaigns and lead to greater demand

Expected social and economic benefits

- Reduce household expenditure on healthcare
 - Regular handwashing with soap at critical times can significantly reduce the incidence of water-borne and sanitation-related disease and illness. The economic losses are mainly driven by premature deaths, the cost of health care treatment, lost time and productivity seeking treatment, and finding access to sanitation facilities. Reducing a household's healthcare expenses can alleviate a family from a considerable economic burden.
- Strong correlation between improved health and economic performance:
 - Health is an important human capital. Reduce time away from school or the workplace due to illness, thereby increasing an individual's physical capacity (such as strength and endurance), mental capacity (such as cognitive functioning and reasoning ability), and therefore productivity. Improved health is also tied to demographic indicators such as life expectancy or child mortality.
 - Health and income are also intrinsically linked at a macroeconomic level. Higher incomes typically promote access to goods and services that can help improve health and nutrition in the long term, which in turn can translate into higher available labour inputs and increased economic growth and value.
 - It is estimated that health differentials account for about 17% of the variation in output per worker across countries. Improved health allows low-income communities to fully participate in economic and social life.
- Reduce the gap in access to sanitation solutions between end-users from different income brackets
- Partnership with the Women's Union at communal and district level through regular educational programmes can strengthen community ties and engagement

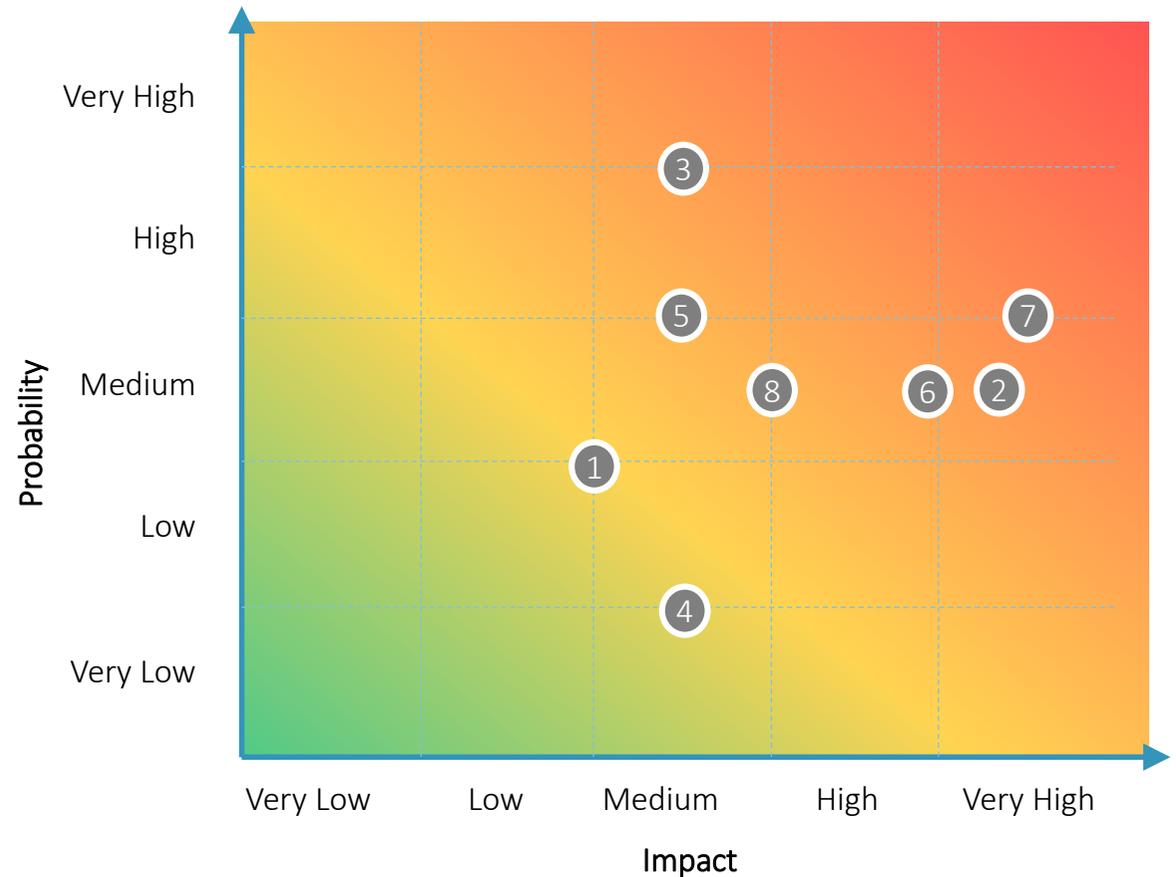




Risk Analysis & Mitigation

Risk Analysis & Mitigation

- 1 **Risk:** Manufacturing partner unable to meet high volumes
Mitigation: Regular monitoring of supply and appointment of new production partner as required
- 2 **Risk:** Low market demand for a dedicated handwashing device amongst target customers
Mitigation: Mass marketing and educational programmes developed with leading advertising companies and increased presence on social media
- 3 **Risk:** Low registration rate of HWD on the mobile app amongst end-users thus, less data generated than expected
Mitigation: Gamification strategies, discounts on products provided through mobile app to encourage connectivity
- 4 **Risk:** Ownership of data generated from HWD creates issues related to user privacy
Mitigation: Ensure high degree of transparency on type of data collected and usage and anonymity
- 5 **Risk:** Entry of new competition producing generic HWD
Mitigation: Increasing the barrier to new entrants by strengthening user engagement through mobile app
- 6 **Risk:** Failure to achieve sales partnerships as projected
Mitigation: Increase partnership incentives and ensure broad and healthy pipeline of alternative channels
- 7 **Risk:** Inability to secure required investment
Mitigation: Emphasise opportunity for social impact investors to drive significant social benefits; Maintain asset-lean model for business plan and scale-up of operations
- 8 **Risk:** Increased cost of raw materials
Mitigation: Adjustment of unit prices and cost optimization





Implementation

Implementation Timeline

Focus Area	Phases	Year 1				Year 2				Year 3				Year 4				Year 5				
		Q1	Q2	Q3	Q4																	
Governance, Org. structure & HR	Establish Board of Directors & Advisory Council																					
	Review and establish HappyTap governance and organisational framework																					
	Establish HappyTap Foundation and organisational structure																					
	Secure key management – CEO, CFO and other Directors																					
	Recruit and train local team																					
	Identify and recruit international partnership managers to manage business development and sales overseas																					
Operations & Product Development	Identify and select suppliers of raw materials, manufacturers and assess production capacity, inventory management and collection/payment periods																					
	Identify and confirm warehouse, logistics and delivery processes																					
	Develop and design new HWD product with sensor technology & soap holder																					
	Prototype development, testing and improvement																					
	Finalise new features of HWD 2.0 & start production																					
	Develop and test new app for user registration																					
	Test data to mobile, cloud to data centre & data analysis																					
Sales and Marketing	Identify and secure commitment from key sales and distribution partners for Vietnam																					
	Conduct market research and analysis for expansion into new markets																					
	Develop HT and joint educational and marketing campaigns																					
	Identify and secure commitment from key sales and distribution partners in new markets																					
	Customise mobile app for expansion into new markets																					
	Identify and confirm data centre and processes for new markets																					
	Scale-up sales in Vietnam and Cambodia																					
	Start Phase 2 sales																					
	Start Phase 3 sales																					
Finance	Raise funds/investment for development of mobile app																					
	Raise funds/investment for capex																					



Conclusion

Critical Drivers for Success

- HappyTap is well-positioned to build on learnings and success to date, leverage its expertise on handwashing and benefit from its existing partnerships to become a market leader in the provision of market-based hygiene solutions.
- HappyTap's commercial viability and continued growth hinges on leveraging its first mover advantage with the development of a unique commercial handwashing device, exploring opportunities for data analytics and sensor technology to grow its business, utilising the analysed data to gain a better understanding about handwashing and seeking out social impact investment opportunities to support regional expansion.
- HappyTap has the potential to have a direct and immediate impact on the overall quality of life and health outcomes of hundreds of thousands of people across Vietnam and the region.
- Several key drivers for success include:
 - Strong focus on the company's social development and financial stability without compromising profitability.
 - Simple and robust business model to promote a well-informed culture of handwashing and hygiene in communities where the need is most pressing.
 - Identify risks and develop action plan to address these quickly and efficiently.
 - Targeted approach for acquisition of distribution channels and sales partners with an interest in products with large-scale social impacts.

