Private Sector Solutions to Public Health Challenges in Vietnam

Ho Chi Minh City, Vietnam, April 2016

Introducing the 2016 Vietnam Global Leaders Programme

OVER TWO WEEKS in April 2016, GIFT brought over twenty business executives and managers of civil society organisations to Ho Chi Minh City to work with **HappyTap Inc.**, a company that had developed the world's first lowcost commercial handwashing device. Participants were tasked with developing a business plan that would support the expansion of **HappyTap** throughout Vietnam and the region and to more effectively market the socially beneficial device to consumers, especially those with limited access to indoor plumbing.

HappyTap's original, "human-centred designed" device serves a specific social need: promoting handwashing with soap amongst children, families and other key segments of society. It is an aspirational household product that facilitates the most direct and cost effective means by which to reduce diarrhoeal and other contagious diseases, of critical relevance to Vietnam, developing Asia and much of the rest of the developing world. While there is great need, there is not yet established demand for such a product – hence the challenge for participants.

The 2016 Vietnam Global Leaders Programme was a return to Vietnam and the topic of handwashing, building on a project partnership from 2010 through which GIFT worked with WaterSHED NGO, an initiative of USAID, and the Water and Sanitation Programme (WSP) of the World Bank. The result of the initial partnership was a plan for a new business that would commission, manufacture and sell the recently designed device in rural Vietnamese communities, a company which would later become **HappyTap Inc**.

In Ho Chi Minh City, participants not only met management and staff from **HappyTap**, but also iCareBenefits (an innovative company selling consumer durables direct to factory workers), the Lifebuoy soap brand team from Unilever, representatives of the Vietnamese government, local businessowners and entrepreneurs, and potential customers for the device.





Scenes from the 2016 Vietnam Global Leaders Programme

Learning for Health, and Beyond

IN MAY 2016, the Review on Antimicrobial Resistance (AMR) released their summary report on the spread of bacteria with antibiotic resistance. The report came with dire predictions about the repercussions of drug-resistant infections. The report claimed that, by 2050, new strains of antibiotic-resistant bacteria could kill ten million people every year and cost the global economy US\$100 trillion (equivalent to US\$10,000 per person alive today).¹

The report called for "a return to the attitudes of the pre-antibiotic era, when infection prevention was recognised as a priority, because cures were limited." Before the discovery of antibiotics, modern societies made great strides preventing infection: outbreaks of cholera, for example, were mitigated by the construction of modern sewage and sanitation systems. However, these gains have slowed in recent decades, concurrent with a greater focus on distribution of medication and antibiotics. Pharmaceutical research has also not focused on new antibiotics given the relatively larger profits to be made on other drug categories. While access to treatment has had important benefits for public health, it is now time to return to a focus on prevention, particularly in regions which have not achieved even the basic foundation of clean water and sanitation systems.

There is a simple and straightforward method to improve hygiene, which can be done in any setting and level of development: handwashing with soap. Many international health institutions, such as the World Health Organisation (WHO), have emphasised proper handwashing as an important element in any public health programme. Handwashing is inexpensive, requiring only a source of clean water and access to soap, and has had a significant positive impact on reducing disease and infection transmission. The WHO has launched several global campaigns, such as their "Global Handwashing Days" and their "Save Lives: Clean Your Hands"² campaign, to encourage greater rates of handwashing with soap.

However, there remains a significant gap between awareness and consistent

behaviour. While public campaigns have done much to teach people about the importance of handwashing, many people still do not wash their hands with sufficient thoroughness and frequency. Surprisingly this is true even amongst people who the public expects would know better. A study by the Santa Clara Valley Medical Centre found that medical professionals had handwashing rates as low as 22% when not observed by Infection Prevention nurses.³

Fundamentally, this is a problem of behavioural change: how to encourage widespread adoption of regular, proper handwashing – a problem common to both developed and developing countries alike. Conventional wisdom suggests it is the government's role to improve public health by building new sanitation and hygiene infrastructure. And indeed clean water and sewerage infrastructure is critical. But what about regions where the government has yet to expand this infrastructure, such as rural and remote areas, or even in rapidly expanding informal settlements in and around mega-cities where government spending has not kept up? A dedicated low-cost handwashing device facilitates positive habit-formation for those with poor or no access to indoor plumbing. This is the *raison d'être* of **HappyTap**.

Yet a new problem emerges: how to sell a product tailored for "base of the pyramid" consumers, the hundreds of millions of low-income people with poor or no access to basic needs and social services and who, by definition, have limited spending power? Or, perhaps more importantly, how can a company design and sell products to meet a social need that is most acutely felt by the poor? And for a completely new product category, how to generate consumer demand quickly?

The refined **HappyTap** business model provided focuses on the company's continued growth and expansion, and is based on principles that could be replicated by other enterprises producing or marketing products serving a socially-oriented objective. The model provides a framework for reducing sales and marketing costs for a low-cost, low-margin product. Customisation serves to broaden the product's appeal as Vietnam's middle class grows, while data collection on consumer behaviour is expected to both encourage behaviour change as well as provide an additional source of revenue.

The model furthermore proposes a formal separation of the "for-profit" and "non-profit" entities within the organisation. This approach enhances the clarity and integrity of **HappyTap**'s social imperative – promoting access to

handwashing in poor and rural communities – as distinct from its commercial objectives. Fulfilling **HappyTap**'s social goals is expected to require support from public institutions and development agencies, who are often averse to funding or working with "for-profit" entities. The "non-profit" arm of **HappyTap** would steward development aid towards public education efforts. This also supports the business objectives by defraying the marketing costs for **HappyTap**'s products. While the two arms are aligned around a common purpose, such a reorganisation provides clarity for investors who are seeking return on investment and donors who are looking to achieve measurable progress towards a social goal. This element of the model may be applicable to enterprises or initiatives that rely upon resources from the public and quasi-public sectors.

Vietnam and Ho Chi Minh City

Vietnam is one of the world's last remaining Communist countries. In 1986, Vietnam's government launched a campaign of market-driven reforms, which combined state planning and free-market incentives. Vietnam also opened its borders to international investment, leading to an increase in low-cost manufacturing and a greater integration into global supply chains.

These measures have helped the country recover from the devastation of decades of colonial dominance and war for independence and its subsequent isolation. After opening its borders to the outside world, by 1995, Vietnam had joined ASEAN and normalised its relations with the United States, its former enemy.

Over the past several decades, Vietnam has made great progress in reducing poverty, from rates of 60% in the early 1990s to about 20% today. Vietnam's poor today consist largely of its ethnic minorities — about 15% of its population. Like many developing countries, the wealth gap between Vietnam's urban and rural populations is growing: average monthly incomes for urban Vietnamese are around US\$100, while rural workers may make only US\$30 to \$40 each month.

Ho Chi Minh City (HCMC) is Vietnam's largest city, with a population close to nine million. The city is Vietnam's economic growth engine. It contributes 20.2% of Vietnam's GDP (Hanoi, Vietnam's capital, contributes 12.6%) and the city's economy grew at a rate of 9.5% in 2014.

Saigon (the former name of HCMC) was Vietnam's capital when it was the French colony of Cochinchina. It was then the capital of the Republic of South Vietnam when the country was partitioned after the Geneva Conference of 1954. Even after unification in 1975, HCMC remains the economic centre, due in large part to its relatively more liberal commercial outlook and its connections with the international business community.

Hygiene, Health and Handwashing

THE WORLD HEALTH ORGANISATION estimates that 2.5 billion people still lack proper access to sanitation. While sanitation and hygiene are different concepts – "sanitation" refers to the removal of waste and "hygiene" refers to overall cleanliness – lack of access to one is usually correlated with lack of access to the other.



Handwashing rates in Vietnam remain severely low. Only 3% of Vietnamese mothers reported washing their hands with soap before preparing food. Only 9% did the same before feeding a child. This is despite widespread access to soap and water.

Poor access to sanitation has had numerous and severe effects on public health, sometimes beyond increased rates of diarrhoeal and waterborne diseases and the associated loss of productivity. India's high rates of malnutrition (higher even than Sub-Saharan Africa, which has a significantly lower GDP per capita) have puzzled public health researchers, but recent research has pointed to India's poor access to sanitation.⁴ Open defecation in India's countryside has encouraged the spread of infection, meaning that children spend more energy fighting infection rather than on growth, leading to malnourishment and physical stunting.

Another less recognised effect of poor sanitation and hygiene is the overuse of antibiotics. People living in these environments can suffer from diarrhoea, as contagious illnesses are transmitted from person to person. Patients are often given antibiotics as treatment, despite the fact that "the significant majority – 70 percent by some estimates – of episodes of diarrhoeal illness are caused not by bacterial infections but by viruses, against which antibiotics are not active."⁵ This overuse encourages the mutation and proliferation of drug-resistant bacteria. However, better sanitation would prevent people from getting ill in the first place,from either bacterial or viral illnesses. The Review on Antimicrobial Resistance predicted that improved sanitation could save 300 million doses of antibiotics in just India, Nigeria, Indonesia and Brazil.⁶



Millions of rural Vietnamese do not have dedicated washbasins, and sinks are often out of reach for small children.

Improved sanitation is an effective investment in public health. The United Nations estimates that every dollar spent on sanitation returns nine dollars through lower health costs and greater productivity.⁷ The Review on Antimicrobial Resistance references literature on public health and sanitation

which shows that, on average, increasing access to sanitation by 50% improves average life expectancy by nine years.⁸

Yet the most immediate and cost-effective method to improve hygiene is regular handwashing with soap, which can reduce disease, faecal and infection transmission. These impacts can be significant: Programma Saniya in Burkina Faso, which encouraged mothers to wash their hands after changing diapers, averted 9,000 diarrhoeal episodes and 100 deaths, at a cost of US\$0.30 per participant.⁹ The World Bank's Water and Sanitation Programme states that "washing hands with soap... is frequently referred to as among the most effective and inexpensive ways to avert child deaths. It has been called the 'do-it-yourself' vaccine, yet despite its low cost and proven benefits, rates of handwashing with soap are very low throughout the world."¹⁰ And yet regular and consistent handwashing dramatically reduces the risks of transmitting a wide array of communicable diseases, from H5N1 to Ebola, and others which have not yet exploded onto the world stage.

Origins of HappyTap Inc.

HAPPYTAP INC. emerged from the Global Scaling Up Handwashing project, led by the World Bank and USAID in 2009. As a result of the project, the World Bank's Water and Sanitation Programme (WSP) and WaterSHED commissioned the award-winning design firm IDEO to develop a simple, inexpensive device that could be a cost-effective tool to facilitate behaviour change around handwashing. This was based on the recognition that an "enabling environment," or the confluence of all the necessary factors for handwashing – water, soap, wash basin – at the right places and times throughout the day was a critical success factor for achieving the health outcomes they sought.



HappyTap's history from 2010 to 2016.

Well before it became known as **HappyTap** the objective of launching the device was to support positive behaviour change amongst rural families, especially those without indoor plumbing in their homes. However, the company soon found that selling to this market proved difficult. Initially the messaging and positioning of the device focused on the convenience of handwashing. However, most rural consumers did not immediately see the benefits, and so the product was unable to displace the cheaper options: washing hands using a bucket and a ladle or (more often) not washing hands at all. HappyTap then moved away from a message based on "convenience" to one based on "aspirations," targeted at upwardly mobile families with small children. HappyTap's device was pitched as a vital part of any newly middle-class Vietnamese home, to be used in kitchens, bathrooms, gardens or bedrooms. The branding was tailored to its new target audience of children: bright green colour, a brand name of "Labobo" (derived from the French word for sink, "lavabo") and prominently featuring a frog mascot to capture the imagination of children.



HappyTap was the project partner for the Global Institute For Tomorrow's 2010 Vietnam Global Leaders Programme. Participants worked with the World Bank and WaterSHED NGO to develop a plan for the design, manufacture and distribution of a dedicated handwashing device.



A 1964 poster from the US Center for Disease Control (CDC)

The Business of Behaviour Change

HANDWASHING MAY BE an "easy" solution to improve basic hygiene, as its benefits vastly outweigh its costs. However, handwashing is also an activity that people engage in only when it is exceedingly convenient. Even when people are well aware of its role in reducing the risk of infection, a significant number by default choose an increased risk over spending a few minutes to properly wash their hands. When handwashing is ever slightly more inconvenient — a few steps further away, or insufficient washbasins — even greater numbers "choose" to forgo handwashing.



"Wash germs away," Virginia Tuberculosis Society, Christmas Seals Campaign, 1965. Historical Collections & Services, Claude Moore Health Sciences Library, University of Virginia.

Indeed even healthcare professionals report universal rates of handwashing when asked, but demonstrated rates as low 40% when actually observed.¹¹ This is not to say that healthcare professionals are insincere. It is likely that they wash their hands in some, perhaps even most, instances. But they do not practice proper handwashing at all times, and this highlights the gap between awareness and action. Healthcare professionals, more than any

other group, know the importance of handwashing and yet even they do not act unfailingly.

Most handwashing campaigns have failed to drive sustained action. The latest wave of public campaigns around handwashing – launched in the aftermath of the 2003 SARS outbreak – were focused on medical professionals. A 2008 hand hygiene promotion campaign in Hong Kong Baptist Hospital for example increased actual compliance rates from 41.4% to 58.5%. However, over the next three years, compliance regressed to between 50% and 55% as "campaign fatigue" set in.¹²

Campaigns focused on the general public had the same difficulty in turning awareness into action emerged. The Water and Sanitation Program conducted a study about the effectiveness of their campaigns in rural Vietnam, which specifically targeted Vietnamese mothers and the health benefits for their children. The WSP did find that their efforts succeeded in spreading awareness: an overwhelming majority of Vietnamese mothers knew the health benefits. However, this near universal awareness had little effect on actual practice, even at the key times highlighted by the campaign (e.g. before cooking, when handling children, etc.).¹³

Handwashing, it seems, requires extreme convenience. In more developed countries, this is accomplished through indoor plumbing. Sinks are located in regular places to provide near universal coverage. This cannot be done in places where infrastructure is poor and unlikely to improve in the near future. Many rural Vietnamese homes, for example, still have limited or no indoor plumbing. The handwashing device would make handwashing easier and more convenient.

Developing products that are affordable and useful to the millions of people in the developing world should, in theory, offer significant returns for companies. However, few products targeting the "Base of the Pyramid" (BoP) have been successful. The two most prominent examples – the US\$2000 "Tata Nano"¹⁴ and the US\$100 laptop promoted by the "One Laptop Per Child" NGO¹⁵ – have failed to achieve broad adoption.

Perhaps the most successful "Base of the Pyramid" product – the feature phone – was never specifically designed for the poor. A combination of competition, technological change and growing preference for smartphones suddenly created a massive stock of feature phones, reducing the cost such that even the very poor could afford them. The success of the "feature phone" compared to products explicitly designed for the poor is illustrative: product designers must validate their assumptions against the realities and specific demands of impoverished communities.

Traditional marketing has proven ineffective in impoverished communities. For one, such consumers lack access to the mass media channels used in traditional marketing given scattered and less dense communities. Thus, according to the Harvard Business Review, "customer acquisition and retention for new products often demand unusually intense – and costly – levels of high-touch engagement."¹⁶ Poorer consumers have much less disposable income than the middle class, and so are more discerning with how they spend what little money they have. This also means they may be less likely to take a risk on an untried or untested product. Physical demonstrations are typically more effective marketing tools to poorer consumers. However, it is time-consuming and more resource-intensive than other forms of marketing.

This was a problem faced by the "One Laptop per Child" movement, which made little effort to explain why and how an inexpensive laptop would help with education in developing countries. As one supporter argued: "OLPC has always maintained distance from actual implementation, claiming it was the country's responsibility to integrate the XO laptop [the name of the laptop provided] into their educational system. That might work for Uruguay, a stable, advanced country. But it's irresponsible in less-developed countries. OLPC has the responsibility to educate countries on what they are buying – an XO laptop should be one small part of a whole educational system change. Just handing over the XO laptop like it's a self-installing app leads to [situations like] Ethiopian teachers banning them from classrooms as a plague on education."¹⁷

There is also the additional need to design a product that is affordable yet attractive to both lower- and middle-class consumers. The danger with designing for the poor is that the product can get a reputation for being of lesser quality – as the Wall Street Journal noted when writing about the Tata Nano, "it turns out that those climbing into India's middle class want cheap cars, but they don't want cars that seem cheap."¹⁸ Incomes in the developing world will by all accounts increase, meaning that products designed for the very poor would eventually lose their market. Product designers must seek to ensure a extended life-cycle as incomes improve.

The problem faced by **HappyTap** adds an additional wrinkle. Unlike the Tata Nano or the feature phone, **HappyTap**'s handwashing device was designed to serve a specific social need: increasing rates of handwashing. Handwashing has positive spill-over effects in society by reducing rates of infection. In contrast, many BoP products only serve private needs (and, in cases like the Tata Nano and its effects on pollution and traffic congestion, may actually have negative effects on the rest of society).



The "Labobo" was targeted at young children in order to promote handwashing habits at a young age.

HappyTap's product is not exclusively targeted for the poor, though they are most in need of an "enabling environment" for handwashing. The device was not designed a "low-cost" version of a washbasin, but rather to be an aspirational product for Vietnam's upwardly mobile population. HappyTap also needed to ensure the device was priced properly – if it were given out for free, or subsidised by development aid, customers were likely to undervalue and underutilise the product. This phenomenon has plagued products like household water purifiers around the region for years. India's continued campaigns to provide free toilets to rural communities has not significantly reduced rates of open defecation, as many rural Indians instead use the free toilets as storage space.¹⁹

Driving the next phase of HappyTap expansion

THE RECOMMENDATIONS for **HappyTap Inc**'s expansion fall into three broad categories: sales and distribution channels; new sources of revenue including customisation and data collection; and reorganisation of **HappyTap** into "for-profit" and "non-profit" entities.

The new framework for potential sales and distribution channels includes: "standard distribution partners", "channel service partners", and "institutional clients."

- 1. "Standard distribution partners" are retail outlets consumer product stores, but also companies like iCare Benefits, an organisation that sells consumer products to low-income consumers, primarily factory workers, in interest-free instalments guaranteed by their employer.
- 2. "Channel service partners" are companies that would offer the handwashing device as an additional product alongside their own services or products, for example health providers or insurers. The insurer may offer the device in a promotion which also supports a healthier lifestyle, fewer doctor visits and fewer insurance claims.
- 3. "Institutional clients" are public entities or agencies purchasing handwashing devices in bulk, for deployment in schools, clinics and hospitals. These may also be used in educational activities.

The primary objective of the new approach was to reduce the marketing and sales costs for the low-margin device eliminating the need to develop new distribution channels from scratch. In addition, a bundle of products leverages the principle that the "total value is greater than the sum of the parts."²⁰ Working with partners with their own products, such as consumer goods or insurance packages, can approximate these bundles and support or make partner products more attractive. Health insurers, for example, will







> 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.

- 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.
- Data on consumer behaviour and handwashing practice is sold to data consumers.
- 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.

expect to see improved hygiene as a way of reducing disease and promoting greater health, reducing claims.

The handwashing device may be customised in order to better serve the needs of its "channel service partners". Partners may alter the facade of the device to align with their own branding, which could be as simple as altering logos and colours. Adding additional features though changes to the plastic mould would increase the production costs.

Adding variance to the product line allows **HappyTap** to target different segments of the population — especially as incomes improve. The upgraded version of the device could include a mirror and liquid soap dispenser essentially replicating a low-cost vanity station. Whereas the light green colour and frog mascot of the "Labobo" may appeal to children, a handwashing device with a mirror and added product holders could appeal to young upwardly mobile men and women in rural communities. A version with a larger basin and liquid soap dispensers could serve in the food and beverage industry, especially street vendors where handwashing facilities are non-existent.

One innovative proposal was the addition of a basic sensor, which would collect data on handwashing behaviour, and communicate it to **HappyTap** users' phones and, from there, to **HappyTap**'s servers. Growing rates of smartphone penetration allows users to monitor handwashing rates for themselves and others. A mother could monitor the handwashing habits of her child. A restaurant owner could measure handwashing frequency of the kitchen staff. Data could be "gamified", providing rewards to encourage positive behaviour change. Health providers or insurers will be interested in data aggregated from handwashing devices. "Data" therefore becomes a way to encourage higher rates of handwashing (again, turning awareness into action), but also to develop a new source of revenue for the handwashing device.

Organisational restructuring was recommended for **HappyTap**: separating out the for-profit company focused on selling the device, and a non-profit foundation with the goal of spreading awareness about handwashing. The benefits of creating a non-profit organisation are twofold. First, it provides a channel for official development aid to work with **HappyTap**. Second, by pushing education and awareness to a non-profit **HappyTap Foundation**, the company can reduce its direct marketing costs, especially among difficult-to-reach scattered rural communities. Too often when BoP products have struggled, companies respond by quietly folding these efforts into their corporate social responsibility programmes.²¹ Thus, the objective of commercial viability gives way to a cross-subsidy from the core business. Sadly, innovative new products and business models may become marginalised in CSR or sustainability reports.

A non-profit **HappyTap Foundation** will be more effective in stewarding donor funding toward awareness, education, and facilitating give-aways of the device. It is expected that governments, international institutions, and other quasi-governmental organisations will "trust" a non-profit organisation more readily than a for-profit enterprise. Some may even have formal rules preventing them from working with for-profit enterprises.

As a lean, socially-oriented start-up company, **HappyTap** cannot afford to spend liberally on mass market campaigns. Leveraging donor funding, and connecting it to educational and awareness campaigns about handwashing, **HappyTap** can drive demand for its products with far greater efficiency.



The three distribution channels for HappyTap's dedicated handwashing device. From top to bottom:

1. "Standard distribution channels", or those entities selling the device directly to consumers.

2. "Channel service partners," who would offer the device as part of a larger bundle of products or

services.

3. "Institutional clients," such as schools and hospitals.

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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 provides an additional revenue source for HappyTap. Incentives will encourage users to wash their hands and useful indicators will be aggregated. Collected data will be useful to both public and private clients.



A HappyTap Foundation can channel official development aid towards education campaigns about handwashing amongst Vietnam's population. This would help to drive demand for HappyTap's products.

Conclusion: Balancing commercial and social goals

THE **HAPPYTAP** MODEL was developed in response to public health challenges, and also holds lessons relevant for companies or initiatives with social goals. When it comes to consumer behaviour, awareness is not the same as action. The knowledge that handwashing helps prevent the spread of infection and disease is widespread, yet actual rates of practice remain stubbornly low. Behaviour change is paramount. The "enabling environment" is critical as it facilitates regular habits that improve public health.

Although affordable products developed by the private sector could help create that "enabling environment," selling them to lower-income consumers remains a challenge, and doubly so if the product targets an under-appreciated social need for which there is no existing demand.

The **HappyTap** model could be applied for enterprises that do not have the revenue and resources available to large corporations. But it could be equally relevant for corporate ventures seeking to innovate new products at the "Base of the Pyramid," particular those involved in meeting basic needs like clean water, sanitation, healthcare and education. Separate, but connected, "for-profit" and "non-profit" entities offers the advantage for small socially-oriented companies to enhance clarity for investors and donors alike. Investors may frown upon non-revenue-generating social goals, even if they sympathise with the expected outcomes. In contrast, donors may be unsure about supporting a "for-profit" enterprise, especially when restricted development aid is involved.

Significant returns could be gained from social enterprise and impact investing. But such an approach may not be appropriate for all organisations and products. The organisational structure may be best applied in situations with a low-margin, low-price product or service – like **HappyTap's** dedicated handwashing device. The mission of spreading awareness, and getting the

device into the hands of Vietnam's poor, may never be a profitable exercise,but such a model allows **HappyTap** to pursue profitability and social good, without undermining the efforts of either.

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