CROSS-CUTTING INCLUSIVE INNOVATIONS

Managing Last-Mile Distribution to Low-Income Consumers

Distribution models that reach low-income consumers in remote areas need to consider innovative, cost-effective, local solutions

HIGHLIGHTS

- It is challenging to distribute products and services cost-effectively to low income consumers in remote and hard-to-reach areas.
- Inclusive businesses use different approaches to cover the last mile, such as village-level entrepreneurs and local sales agents, piggybacking on existing networks of partner organizations, and upgrading existing retail networks.

Summary

One of the distinctive challenges of Base of the Pyramid (BoP) markets is the logistics of reaching low-income customers. Whether the product is a solar home system, a toilet, a low-cost school, or a health clinic, the entrepreneur faces the question of how to get the product to the consumer, or the consumer to the service, without incurring such huge costs that the initiative is not viable.

BoP consumers are hard to reach for many reasons, and not just because of their low-spending power. Markets are fragmented and thin, with few players. Conventional low-cost distribution options, such as large central stores, are irrelevant. BoP consumers lack transport to travel far, and taking goods and services[1] to them can be expensive (for distant rural areas) or impractical with usual means (trucks cannot travel far in informal settlements). Purchase may depend on high-touch marketing and demonstration by people they trust, people like them. Many businesses have tackled the challenge of covering the last mile in recent years and a number of solutions are being used, including local sales agents and piggybacking on existing networks that reach the BoP.

Challenges

Innovative products and services designed to meet the specific needs of low-income customers and underserved markets will only be successful if they reach end-consumers. Setting up distribution systems to reach poor consumers who often live in areas with weak infrastructure is costly and challenging and often not part of a companies' core expertise. Enterprises across Asia, Africa and Latin America consider weak distribution channels to low-income consumers as a significant barrier to growth.[2]

There are different types of challenges that companies have to address:[3]

Absence of conventional distribution chain: Markets often lack the presence of distributors and distribution infrastructure such as warehouses, cold storage, logistics and transport infrastructure, and retail outlets. Narrow and/or poor quality roads are not able to accommodate standard delivery vehicles and retail shops not big enough to take on lots of additional inventory.

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Fragmented and decentralized demand: Consumer groups in these markets are heterogeneous. Demand is also fairly decentralized, in that there are no mechanisms to aggregate demand from many small customers (no equivalent to the superstore or online outlet) across regions and segments. There are cultures where it is also difficult for people (mainly women) to leave the home or village in order to procure goods and services that they need.

Reverse logistics are crucial but difficult: After-sales support is crucial for durables (e.g. water filters, pumps, solar home lighting kits, etc.) that tend to be costly purchases. However, it is challenging for manufacturers to provide product training, servicing and part replacement services in remote geographies.

Irregular and unreliable cash flows: Consumers are usually cash-poor and cash flows depend on external factors such as weather and harvest cycles. Consumers are unable to make single large payments and require financing assistance. This is a particular challenge faced by distributors of durable goods and means that distribution also needs to be combined with availability of end-consumer financing.

Demand for basic services is latent: While there is a clear need for basic services (water, sanitation, health, education and energy), it does not translate into demand. Converting this latent demand into real demand requires building in mechanisms such as awareness-building programs and free product trials into the distribution chain and often adapting the roles of sales and distribution staff.

Demand is fairly elastic: Cash-poor consumers are price-sensitive yet highly cautious to compromise on quality. This means that increased end-consumer prices to cover costs of decentralized distribution is not possible. At the same time, cutting costs through lower quality also does not work. Hence, efficiencies in distribution systems are needed.
Businesses need to find cost-effective distribution methods that are suited to the nature of the market, local infrastructure availability and other challenges described above. The 'last mile distribution challenge' is not exclusive to a particular sector, but different types of products will face different challenges and distribution systems need to be adapted accordingly.

Distribution is insufficient on its own
This report covers key issues relating to making products available to end-consumers. However, distribution of any product or service requires careful consideration of consumer awareness, acceptance and affordability, too. In fact, recent innovations in rural distribution models have expanded the role of distribution and the distribution partners respectively. The distributor role is no longer restricted to physical distribution of products and services alone, but also covers provision of several other inputs, which influence a consumer's purchase decision, such as credit and post-sales service.[4] As Table 1 shows, awareness creation and issues around making products affordable to end-consumers are covered in detail in separate cross-cutting reports.[5]

Table 1. Key elements of a BoP value proposition

Element of value proposition	Awareness	Acceptance	Availability	Affordability
Detail	How aware is the population of certain products and services and their potential benefits?	To what extent consumers accept a certain product and service?	How readily available are products and services to local populations?	Can consumers afford products and services and/or have access to financing?

Innovative Approaches

Table 2 summarizes some distribution approaches that are used across sectors. Each model is explained in further detail below.

Table 2. Summary of innovative approaches to last mile distribution

Model	Detail	Examples
Village Level Entrepreneurs	Identification of leaders and entrepreneurs in the community to play the role of sales agents, working as micro-entrepreneurs or franchisees.	• JITA's consumer goods venture in Bangladesh, with 4,000 women distributors ('aparajitas') selling door-to-door in rural areas and earning US$12 - US$38 per month.[6] • The Healthstore Foundation's network of 48 basic medical clinics in Kenya owned and operated by franchisee nurses.[7]
Proprietary distribution	Manufacturer/producer owns all or most intermediary levels to the end-consumer, e.g. distribution via company's own branch or outlet run by employees.	• Solar Now's branch distribution of solar home systems in East Africa via their own network of sales employees. • Oando's sales of low-cost gas cooking stoves and provision of cylinder refill in Nigeria via the companies' gas stations.
Piggyback on networks of partner organizations	Establishment of hybrid partnerships with MFIs, NGOs, self-help groups[8], government networks, cooperatives that are well established in the local scene and can provide a direct network of targeted communities.	• Hindustan Unilever's partnership with MFIs in India for distribution of their low-cost water filters. • d.light's engagement with savings groups in Northern Kenya for the distribution of solar products.
Enter and upgrade existing retail networks	Leveraging existing retail channels. Upgrading local value chains, integrating new products in traditional production and sales channels rather than building separate retail chains.	• Hapinoy's work with 3,000 Sari-Sari stores in the Philippines supporting them to offer higher value products and services in their existing stores.[9] • Selling Sanitation Program working with national plastic manufacturers in Kenya on development and distribution of affordable sanitation products.

Rarely will one solution on its own address the challenge of last mile distribution. Companies often adopt multi-channel strategies. For instance, Project Dharma is a social enterprise, which aims to serve the needs of rural households at the BoP by creating a rural retail network providing products and services sold at an affordable price point. The company's distribution model includes direct sales via Village Level Entrepreneurs (VLEs) recruited and trained by Project Dharma, distribution partnership with MFIs, NGOs, and dairy cooperatives, as well as distribution through existing village retailers. Products currently offered include solar lighting, smokeless cook-stoves, water purifiers and nutritional drinks, mostly manufactured by large multinational corporations (MNCs).

Village Level Entrepreneurs

Also known as a rural or micro entrepreneur, a village level entrepreneur (VLE) is an individual selected from within a village who acts as a 'touch point' between a business and local customers for a certain set of products and services. The company supplies the product or service being sold and provides additional support to help the VLE succeed. Typically, the VLE sells the company's product, provides customer support, invests capital, earns commission, and takes risks. A VLE's role is important for sales, product promotion, product selection, field-testing and trials, as well as after-sales servicing. For the relationship between a company and VLE to work, the potential risks and rewards must be aligned for both stakeholders and, as Table 3 shows, different VLE models are suitable for different contexts.[10] Finding the right model depends on a number of factors, particularly strengths of pre-existing consumer demand, and level of financial risk for the VLE.

Table 3. Classification of VLE Models based on consumer demand and financial risk

VLE Model	Example
Pure Play VLE: the VLE is responsible for all capital expenditure and working capital, the risk lies with the VLE. This model is useful if there is high-market demand and low upfront investment required for the VLE.	Project Shakti was launched by Hindustan Unilever (HUL) in 2001. HUL sells fast moving consumer goods (FMCG) to the rural populations through women VLEs known as "Shakti Ammas" The project is designed to help these women set up a direct-to-consumer retail business.
Hybrid VLE: 'Employee model' where the company is responsible for capital investment and pays the VLE a base salary in addition to commission. This model is useful if there is low market demand and high market investment required.	BASIX, is a leading microfinance institution in India. The VLE division of Basix focuses on the government's CSC (Common Service Centers) program and employs local youths (VLEs) to run the kiosks on a fixed salary and commission.
Quasi VLE: The company is responsible for all capital investment. This model is useful if there is moderate to high market demand and high upfront investment required.	ITC, an Indian multi-business conglomerate, established the e-Choupal as a platform to connect with the rural farmers via the internet. The VLE or "Sanchalak" acts as an interface between ITC and the local farmers. The VLEs role is to aggregate produce demand for agricultural inputs and consumer goods, and he earns a commission for his services from ITC.

Some VLE models, in particular for complex products or services, are set up as franchise relationships. For example, Husk Power Systems has used a "micro-franchising model" to supply equipment and training to local entrepreneurs to set up and operate village power-systems in India. Similarly, Sanergy in Kenya is working with entrepreneurs operating their mobile fresh life toilets under a franchise agreement.

The VLE model seems a very attractive model and is being used by many organizations successfully. However, some key success factors should be noted:

- **Sales force retention:** Providing competitive compensation is a necessary condition for keeping churn below manageable levels. When compensation is sufficiently attractive, churn can be reduced to a manageable 30 percent, even with purely variable commission-based incentives. For products requiring customization (and thus a long lead-time, discouraging a sales force on commission only), providing a fixed compensation is key for sales force retention.[11]
- **Customer retention**: Due to relatively high costs of customer acquisition, channel 'loyalty' is a key success factor. Customer retention drives repeat or follow-on sales. Factors such as agent selection, training, motivation, continuity and status have an impact on customer retention.[12]

Proprietary distribution

In the case of proprietary distribution, the supplier owns all or most intermediary levels of the distribution chain. This model offers the opportunity to develop an independent, 'in-house' go-to-market capacity without involvement of existing market players. The supplier sells directly to customers, sets up a distribution system via the company's own branch or outlet run by employees, or employed sales agents. The advantages of this approach include high control, low risk, opportunity for branding, ongoing customer engagement, and the opportunity to create competitive barriers to entry in niche markets. Sales of new products can be easily piloted before offering the product to external distributor networks. Various companies in the energy sector adopt this model, such as Solar Now in Africa and Orb Energy in India selling solar home systems. Effective distribution and ongoing service and maintenance are integral to the success or failure of a business model in the off-grid energy sector. Branch distribution provides high control/low risk and enables a direct relationship with the end-consumer before and after sales.

Examples exist in other sectors too. Table 4 provides examples for innovative last mile product and service delivery in health and education.

Table 4. Last mile product and service delivery in health and education

Organization	Detail
Vision Spring	Vision Spring is a social enterprise selling affordable eyewear. It employs a retail component to its business in India through both stand-alone optical shops and shops located within partner hospitals and surgical centers. These optical shops serve BoP customers by providing eye tests and selling affordable prescription, reading and sunglasses.
Agastya Foundation	Agastya Foundation operates mobile labs (mini vans carrying hands-on science models) that visit rural schools in several Indian states several times a year to make interactive learning accessible to rural communities.
SevaMob	SevaMob provides services to low-income consumers in India through a subscription-based model in which doctors visit patients' homes on a monthly basis for regular checkups.

One of the main challenges of this model are the prohibitive costs related to channel development, staff, control, monitoring and management. Proprietary distribution is an expensive pursuit unless developed for funneling a suite of complementary products so that overhead costs are spread across a wide revenue base.[13]

Piggyback on networks of partner organizations

This distribution model is based on partnerships with non-governmental organizations (NGOs), micro-finance institutions (MFIs), cooperatives or government networks that are well established in local contexts, can provide a direct network of targeted communities and often have valuable knowledge of the market.

Typically network partners play one of four roles:[14]

1. Extend reach and penetration via their existing networks and unlock new markets
2. Make the product more saleable via bundling or awareness building
3. Finance the consumer's purchase where needed
4. Add trust and brand value to the product through their relationship with consumers

Different partnerships provide different advantages. For example, MFIs can offer financing but are unlikely to engage in extensive marketing activities or after-sales servicing. NGOs are likely to have good networks and sales can be integrated into existing awareness raising campaigns, but alternative financing options are required. Table 5 provides examples of different types of distribution partnerships.

Table 5. Examples of hybrid distribution partnerships

Model	Example
NGO partnership	E'pap is a South-African company that produces affordable, instant porridge fortified with micronutrients to fight malnutrition. The main share of their distribution goes through an **extensive network of NGOs** (such as CARE). E'pap

	now plans to expand through direct sales by leveraging on their brand awareness.[15]
MFI partnership	ekutir is an Indian company that provides market led sanitation for rural communities. The company's revenue model is based on sales of sanitation products, which are bought from local suppliers and national manufacturers and sold to local entrepreneurs, for onward sale to end-consumers. In two of the three states of current operations, their direct implementation partners are MFIs acting as 'ecosystem integrators' as described above and also **offering consumer financing**.[16]
Cooperatives partnership	Solar Sister works with women's groups to select **well-connected sales-agents** to distribute solar products in rural Africa. Azadi, AFRIpads, Ruby Cup, One Girl and Jayaashree Industries use partners to **identify women's groups in local areas** for distribution of sanitary pads

Piggybacking offers high potential for cost-savings because the product distributor does not need to create a new network and brand. However, it demands effort to find and create a partnership that works, and distribution will be limited by the partner's mandate and reach. MFIs, for example, have good reach in some areas, but limited geographic coverage to the BoP and have restricted mandates for promotion of consumer durables. Aspects like 'partner fit' and alignment of interests and incentives needs to be carefully evaluated to create sustainable partnerships.

Enter and upgrade existing retail networks

This distribution model leverages existing retail channels such as local retail outlets. Existing retail outlets not only have the advantage of proximity; they also have existing relationships with local consumers and may even offer them credit. Successful examples exist across a range of sectors.

Table 6. Examples for distribution via existing retail networks

Organization	Detail
Dialog Telekom PLC	Mobile telecommunications network operator in Sri Lanka, distributes phone cards and SMS-based airtime top-ups through nearly 40,000 mostly small-scale retailers across the country. The typical Dialog retailer operates a primary business, such as a grocery store, and stocks Dialog products among a range of others.[17]
Alquería	Dairy company, distributes UHT milk through 125,000 small-scale retailers in Colombia. Such retailers account for 75 percent of the company's sales, whereas supermarkets account for only 25 percent.[18]
GeReS	Development NGO in Cambodia, trained existing cook stove manufacturers in making improved cook stoves, while organizing the value chain so that each player would make more money than with traditional stoves.
Selling Sanitation Program	Selling Sanitation is a joint IFC-WSP initiative that aims to catalyze the market for household sanitation in Africa by - amongst other things - working with existing large plastic manufacturers to develop new affordable sanitation products and distribution channels to reach underserved consumers.

One of the key challenges of this model is consumer demand. If there is not explicit demand for the good or service, distribution via existing retail networks will not work. If demand doesn't exist, investment in capacity building for retailers to engage in awareness raising and demand creation is needed. Retailers will need a sufficient margin in order to make it worthwhile for them to invest in marketing and consumer education, otherwise they are unlikely to be interested in stocking a particular product.

Emerging Lessons, Drivers, and Constraints

There has been, and continues to be, considerable experimentation with distribution channels that cross the last mile. Lessons are emerging about strengths and weaknesses of different channels, relevance to different situations, and the need for multiple strategies either concurrently or over time. Table 7 summarizes some of the key strengths and challenges across the four models detailed above.

Table 7. Strengths and challenges across different distribution models

Model	Strengths	Challenges
Village Level Entrepreneurs (VLEs)	Deep market penetration, personal relationships and close contact with customers, trust and after-sales service	Sales force and customer retention, making it commercially viable
Proprietary distribution	Low company risk, branding, close customer relationship, suitable for complex products requiring consumer education, after-sales services	Limited ability to reach very remote consumers, high set-up and staff costs
Piggyback on networks of partner organizations	Extended reach and penetration via existing networks, depending on type of partner integration of awareness building and consumer finance	Alignment of partner interests and incentives
Enter and upgrade existing retail networks	Extended reach and penetration via existing networks	High set up and training costs. Sufficient product demand is needed

Some channels are more suited to certain types of products, volumes of sales or stages of business. Within any sector, different companies adopt different solutions. Finding the 'right' distribution approach can be challenging, time consuming and costly. Some companies spend years piloting different models for sales, distribution and payment. A single company can shift from one channel to another, either because a channel did not work well, or because market size and brand awareness create new parameters. For example, a business in Kenya selling consumer durables such as cook stoves, solar energy products and mobile phones piloted direct sales, kiosk sales, and business-to-business sales before identifying distribution through Savings and Credit Co-operations as the most viable option.[19]

For many start-up businesses that often face working capital constraints, extensive trials are not possible without external support. And even if distribution can be successfully set up in one particular region, it does not mean that replication and scale up will not require additional research and investment.

Over the medium to long-term, as products become widely known and customers more affluent, more traditional retail channels (e.g. supermarkets or other retail shops) are likely to become more important,[20] or new adaptations of last mile channels will be needed.

SunnyMoney: Adapting the distribution model based on market maturity

SunnyMoney is a social enterprise selling solar lights from various brands in Africa. The company has adopted a two-stage distribution model depending on maturity of the target market. Initial market outreach and distribution is done by head teachers - trusted community leaders - who are trained and incentivized with free lights to promote lights to the parents of students. This community-based model enables SunnyMoney to reach large numbers of people without visiting every village and is most appropriate at an early stage, when trust, demand and market penetration are low, and it is vital to reach out to early adopters. Once SunnyMoney's model has catalyzed the market in a certain area, other distributors such as VLEs are more likely to be able to profitably enter the market using other distribution models, creating the ecosystem to service the early adopters and late adopters who will be more willing to invest after witnessing early adopter success.[1]

SolarNow and d.light: Contrasting solutions

SolarNow initially sought to set up a VLE franchisee model for distribution of solar household systems. Independent franchisees provided direct sales and installation while SolarNow provided training and support. But due to a lack of quality consistency from franchisees, in 2014 the management decided to switch to a branch model where the company actually employed its own staff to distribute the product (branch distribution). In contrast, d.light which to date has focused more on single and more affordable solar products, came to the conclusion that full-time sales agents exclusively selling d.light products are not a viable distribution option. The company now works with existing retail outlets selling d.light products alongside other products.

The driver of innovation in last mile distribution channels is the need for a cost efficient approach suited to the demands of the product or service and the consumer. Amidst a host of products and services targeted at the needs and pockets of low-income consumers, scale is only possible if the appropriate distribution channels are found.

Hence establishment of a strong business case and attractive margins for all stakeholders is crucial to sustain successful distribution and partnerships. Incentives should be proportional to the effort and investment by each partner and should be constantly reviewed and revised to reflect 'fair' compensation for services. For example, distributors of consumer durables (such as water filters) expect margins of 8-15 percent while retailers of fast-moving consumer goods (FMCG) products expect 5-10 percent margins. Mobile-based information service companies that complement other products are likely to be in revenue share arrangements with partner organizations.[21]

Other lessons have been learnt about what makes an effective local sales force[22] highlighting the value of good coaches (local managers), use of mobile technology for tracking customers and sales force activity, and a local network of "lead generators", commission-based local individuals who inform the sales agent that it is worth coming to a village and aggregate orders.

Technology plays an increasing role in successful last mile distribution.[23] For some businesses the use of mobile technology is an intrinsic part of their model, hence also features as part of product or service distribution. Mobile health and money are obvious examples but other sectors also leverage new technologies to maximize availability and keep distribution costs low, and manage post-sales services, monitoring and tracking. In the health sector, for example, at the same time that products reach end-users, logistics data needs to flow in the reverse direction so that suppliers understand how much is being consumed in order to plan for procurement and future deliveries. In education, ICT allows companies to develop e-learning products that provide a certain standard of education no matter where the learning is taking place.

Roles and Implications for Government

Distribution is a crucial but often challenging and costly part of providing products and services to the BoP. To some extent distribution networks are a public good. While the individual company

needs a distribution channel for its products, the testing of what works, and the development of multiple channels and thicker markets, generate positive externalities for others.
Organizations struggle to commercially cover the costs and risks of developing routes to market. There are several ways of how this can be achieved with help from government and/or development agencies. Philanthropic support in the form of grants, soft loans and guarantees can often play a catalytic role, e.g. in helping companies to pilot different distribution models in order to find the best approach.

In addition, the government can also help to facilitate innovative distribution partnerships or can be a distribution partner itself. Local government officials can support distribution, e.g. through aggregation of demand for toilets by village chiefs in the sanitation sector or local education authorities helping to promote products that have positive education outcomes.

Project Last Mile - Better access to medicines in Tanzania and Ghana

Project Last Mile is a public private partnership that applies Coca-Cola's logistic, supply chain, distribution and marketing expertise to help African governments maximize the ability to get medicines and medical supplies to remote communities in Tanzania and Ghana. Through Project Last Mile, the government agencies managing the procurement and efficient distribution of essential medicines and medical supplies benefit from private sector expertise, learning how to forecast demand for medicines and vaccines, better market the availability of such commodities, and ensure the cold chain equipment is maintained properly for storing certain medicines and vaccines. In Tanzania, the Medical Stores Department (MSD) previously delivered medicines to approximately 150 district warehouses with limited sight of distribution to the last mile. As a result of the project, the MSD has expanded its distribution network to service over 5,500 clinics (from an initial 500 delivery points) and improved the availability of medicines, reducing stock replenishment lead times by up to two-thirds.[24] The project was first piloted in Tanzania in 2010 and expanded to Ghana in 2012. It is executed in collaboration with Yale's Global Health Leadership Institute, Accenture Development Partnerships (ADP) and Global Environment & Technology Foundation (GETF).

National health insurance, pension, postal service and government assistance schemes are all possible distribution routes providing the advantage of existing technology and infrastructure to support operations at scale. Gramin Suvidha Kendra, for example, is a public private partnership model between the Multi Commodity Exchange of India Ltd. (MCX) and India Post, in which MCX leverages the multi-tiered structure of the India Post to provide information services to Indian farmers. Government-led BoP service provision also exists. India's Common Services Centers (CSC) are providing official government services (video, voice and data content and services) for residents living in remote areas to access services in agriculture, health, education, and utility through local village kiosks. In addition to providing access to public and private services for local residents, the Centers create employment through rural micro-enterprises. Finally, investment in transport infrastructure, whether to remote rural areas or crowded urban settlements, helps the logistics of distribution.

Endnotes

[1] In this document the term 'product' or 'good' can apply to both a product or a service for low-income customers
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[6] JITA, "JITA Bangladesh," JITA http://www.jitabangladesh.com

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[8] *A Self Help Group (SHG) is a group of micro-entrepreneurs, typically 10-15 local women, with similar social-economic backgrounds, who voluntarily come together to save regular small amounts of money individually, while also contributing to a common corpus to meet their emergency needs on the basis of mutual understanding.*

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[12] The Global Social Benefit Institute (GSBI®) serves social entrepreneurs around the world who are developing innovative solutions that provide a sustainable path out of poverty

[13] Sachin Shukla and Sreyamsa Bairiganjan. 2011. *The Base of Pyramid distribution challenge: Evaluating alternate distribution models of energy products for rural Base of Pyramid in India.* IFMR Research: Chennai. http://web.mit.edu/idi/idi/India-%20The%20Base%20of%20Pyramid%20distribution%20Challenge

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