Overview

At present, half of the global population is not connected to the internet and broadband access for low-income households grew by a mere 0.8% in 2018.\(^1\) This is a major global issue that threatens to worsen existing inequalities faced by those at the base of the pyramid. However, it also provides opportunities for those willing to invest in innovative technology and new business models that target underserved communities.\(^2\)

BLUETOWN is a global internet service provider that strives to make connectivity accessible and affordable for everyone by connecting underserved communities using solar-powered, off-grid Wi-Fi solutions. To fulfil its vision of connecting the unconnected and enabling higher standards of living, BLUETOWN has gone beyond simply providing access and has built a business model that breaks down key barriers that keep people offline.

Since 2014, BLUETOWN has provided internet access to more than a million people in communities across Ghana, Rwanda, Mozambique and Tanzania, and to four Indian states. The company has planned installations in Ghana, India, Nigeria and Brazil that will cover more than 5 million people in 2023.

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Key Stakeholders

BLUETOWN has identified three types of underserved communities, in which the majority of the world’s unconnected and underserved people live: (a) the remote, (b) the rural, and (c) the semi-urban.

<table>
<thead>
<tr>
<th></th>
<th>Remote community</th>
<th>Rural community</th>
<th>Semi-urban community</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>1,500-3,000</td>
<td>3,000-10,000</td>
<td>10,000-100,000</td>
</tr>
<tr>
<td>Existing connectivity</td>
<td>2G</td>
<td>Weak 3G</td>
<td>Congested 3G/4G</td>
</tr>
<tr>
<td>Electricity</td>
<td>No grid</td>
<td>Unstable grid</td>
<td>Unstable grid</td>
</tr>
<tr>
<td>Yearly incomes</td>
<td>500-800 USD</td>
<td>500-1,000 USD</td>
<td>500-2,000 USD</td>
</tr>
<tr>
<td>Smartphone penetration</td>
<td>10-20%</td>
<td>20-30%</td>
<td>Up to 40%</td>
</tr>
</tbody>
</table>

Table 1: Key characteristics of the three types of underserved communities

In BLUETOWN’s current markets, internet penetration currently stands at 32.5% in Ghana and 22.6% in India. For women, these figures stand at 20% in Ghana and 8% in India, highlighting a substantial gender gap.²

1. Assessing Readiness and Capacity

In collaboration with UNDP Denmark and Monitor Deloitte, BLUETOWN has recently conducted several impact measurement studies and developed an SDG impact framework as part of the UNDP’s SDG Accelerator programme.³ This experience motivated the company to design an even more extensive and structured approach that will allow deeper insights to be gained on how its operations directly and indirectly impact communities.

BLUETOWN joined BCtA’s Impact Champions Programme to establish a baseline in the Ghanaian village of Asumura and assess changes in the lives of customers over time.

At the beginning of the Impact Champions Programme, BLUETOWN was found to have an advanced capacity for undertaking impact measurement and management. This is because managers at BLUETOWN viewed social impact management as an important activity and were willing to allocate time and resources for its proper implementation. Moreover, BLUETOWN had prior experience with using web-based tools, smartphones and laptops for collecting and managing data. The company also has some experience of collecting and reviewing non-financial data. BLUETOWN’s field staff also has experience of collecting and using data for their daily operations.

Companies can have an initial, medium or advanced level of impact management capacity

BLUETOWN is systemizing impact management as it allows them to:

- Build effective services that create value for users, which is key to attracting new customers as well as retaining existing ones;
- Better understand customer needs;
- Evaluate constraints for internet adoption beyond access and affordability; and
- Understand market opportunities and risks.

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5 Global System for Mobile Communications, Mobile Coverage Maps, Retrieved from https://www.mobilecoveragemaps.com/
6 Averages computed from data collected at current sites and income estimates from Michael Bauer Research GmbH.
7 BLUETOWN estimates based on observation and informal data collection.
8 The Economist, The Inclusive Internet Index, Retrieved from https://theinclusiveinternet.eiu.com/
2. Planning For Impact

I. Impact Value Chain

The Impact Value Chain is a visual map of how an organization’s strategy and operations contribute to its business value and the Sustainable Development Goals (SDGs). The Impact Value Chain allows the organization to understand the effects of its inclusive business activities on different groups and the planet.

BLUETOWN operates in underserved communities that lack access to affordable internet. A significant share of potential users in these communities have limited ICT skills and lack information on the digital products and services that can be accessed using the internet, which ultimately limits their potential benefits from services.

Leveraging this market gap in its target communities, BLUETOWN installs solar-powered connectivity infrastructure (i.e. Wi-Fi internet hotspots) and offers affordable data bundles priced at less than 2% of the average monthly income for each GB. BLUETOWN upskills local retailers to become micro-operators by training them to build ICT capacity among their peers. This is achieved through informal trainings, which include analyzing and showcasing relevant local connectivity use cases.

In addition to internet access, BLUETOWN makes local digital content and services available on its Local Cloud platform. The platform enables users to access digital content and services, such as eLearning courses, agricultural training videos, critical health information and selected ‘edutainment’ content without incurring data costs. This makes essential content available for even the lowest earners.

As a result of BLUETOWN’s activities, community members have improved their ICT skills and are able to access green, affordable, and high-quality internet connectivity. This availability, coupled with the outreach activities of the micro-operators, results in an increased awareness of the relevant digital content, products and services available online and on the Local Cloud. In addition, community members save money by being able to access more affordable data packages.

In the medium term, BLUETOWN’s activities in these communities lead to higher adoption rates of connectivity services across demographics (i.e. across gender, educational level, profession and age). This improves access to information, digital products and value-added-services within education, health, finance, agriculture, commercial activities and government services. As BLUETOWN infrastructure is solar-powered, the communities avoid carbon emissions and air pollution that would otherwise be emitted by diesel generators.

In the long run, BLUETOWN contributes to bridging digital divides and ultimately improve the standard of living in its target communities.

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10 This definition of affordability is set by the Alliance for Affordable Internet (A4IA).
BLUETOWN’s Impact Value Chain

<table>
<thead>
<tr>
<th>Problems &amp; Opportunities</th>
<th>Inputs/Activities</th>
<th>Outputs</th>
<th>Outcomes</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient ICT capabilities</td>
<td>Micro-operators are trained to be local digital change agents</td>
<td>Micro-operators run ICT capacity-building training sessions</td>
<td>Inclusive adoption and use of connectivity services</td>
<td>Bridging digital divides</td>
</tr>
<tr>
<td>Lack of affordable connectivity services</td>
<td>Offer affordable internet data bundles</td>
<td>Underserved communities are connected to green affordable and quality connectivity services</td>
<td>Improved access to information, products and services</td>
<td>Enabling higher standards of living</td>
</tr>
<tr>
<td>No access to quality connectivity services</td>
<td>Local digital content and services made accessible on LOCAL CLOUD</td>
<td>Increased awareness of relevant digital information sources, products and services</td>
<td>Air pollution and CO2 emissions avoided</td>
<td>Reducing carbon footprint of connectivity</td>
</tr>
<tr>
<td>Limited awareness of relevant digital information sources, products and services</td>
<td>Solar powered connectivity infrastructure deployed in underserved communities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High CO2 emissions and local air pollution caused by diesel-powered connectivity infrastructure</td>
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</table>

**Decision-Making Questions**

- Are these really the barriers keeping people unconnected?
- Is there a demand for connectivity services from low-income segments in underserved communities?
- Are these inputs and activities effectively addressing the barriers that prevent people from adopting and benefiting from connectivity services?
- Are enabled access to affordable and quality internet services leading to inclusive adoption and usage?
- Are users representative of the population in the connected communities?
- Are relevant digital information and services available?
- How are adoption and use patterns changing over time?
- Are users able to find relevant digital information and services?
- Are users able to effectively utilize information, products and services?
- Are users able to effectively utilize information, products and services?
- Is improved access to information, products and services leading to improved health, better education, higher incomes and better jobs?

**Indicators**

<table>
<thead>
<tr>
<th>Internet penetration rate</th>
<th>Number of micro-operators trained</th>
<th>Price per GB as a percentage of local monthly income</th>
<th>Number of content and services made available on the LOCAL CLOUD</th>
<th>Number of hotspots deployed</th>
<th>Number of direct full-time jobs created</th>
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<tr>
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<table>
<thead>
<tr>
<th>SDG</th>
<th>BLUETOWN Impact Management Case Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 NO POVERTY</td>
<td></td>
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<tr>
<td>3 GOOD HEALTH AND WELL-BEING</td>
<td></td>
</tr>
<tr>
<td>4 QUALITY EDUCATION</td>
<td></td>
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<tr>
<td>5 SUSTAINABLE GROWTH</td>
<td></td>
</tr>
<tr>
<td>7 AFFORDABLE AND CLEAN ENERGY</td>
<td></td>
</tr>
<tr>
<td>8 DECENT WORK AND ECONOMIC GROWTH</td>
<td></td>
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<tr>
<td>9 INDUSTRY INNOVATION AND INFRASTRUCTURE</td>
<td></td>
</tr>
<tr>
<td>10 REDUCED INEQUALITIES</td>
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</tr>
<tr>
<td>Are enabled access to affordable and quality internet services leading to inclusive adoption and usage?</td>
<td>Number of hotspots deployed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are users representative of the population in the connected communities?</td>
<td>Number of direct full-time jobs created</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are relevant digital information and services available?</td>
<td>Number of individuals connected</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How are adoption and use patterns changing over time?</td>
<td>Number of healthcare facilities connected</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are users able to find relevant digital information and services?</td>
<td>Number of schools connected</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are users able to effectively utilize information, products and services?</td>
<td>Number of government offices connected</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is improved access to information, products and services leading to improved health, better education, higher incomes and better jobs?</td>
<td>Number of SMES connected</td>
<td></td>
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</tr>
</tbody>
</table>
II. Understanding and Describing Impact

Business Call to Action adopts international standards on impact measurement and management with guidance from the Impact Management Project (IMP)\(^1\).

\(^1\) The Impact Management Project (IMP) is a forum for building global consensus on how to measure and manage impact. Through a series of consultations and conventions across the world between thousands of practitioners, IMP has developed shared fundamentals on how to describe and understand impact through the lens of the 5 dimensions of impact. These 5 dimensions are: WHAT, WHO, HOW MUCH, CONTRIBUTION and RISK. More information in https://impactmanagementproject.com/
3. Monitoring Performance

BLUETOWN has been measuring its performance by conducting studies at project sites in Tanzania and India. With the support of the Impact Champions Programme, BLUETOWN conducted a baseline study by surveying 100 inhabitants in the archetypal remote village of Asumura, Ghana before it was connected by BLUETOWN. Asumura is a farming-dominated economy one hour away from the nearest location with internet access. Asumura was connected as a partnership project with SES Networks, the Ghana Investment Fund for Electronic Communications and CARE.  

12 BLUETOWN, BLUETOWN in Asumura, Retrieved from https://www.facebook.com/BLUETOWNwifi/videos/1150531855145524/

PROFILE OF ASUMURA BEFORE BEING CONNECTED

- Inhabitants: ≈1,500-3,000
- Yearly income (census): 3,532 CEDI = 640 USD
- Average spending on connectivity services every month: 2.10 USD

Internet penetration (survey):
- Male 83%
- Female 33%

Highest educational attainment (survey):
- Higher degree 9%
- Post-secondary / vocational 6%
- Secondary level 20%
- Primary level 65%

Employment (survey):
- Non-farming trades 26%
- Formal employment 14%
- Other 21%
- Farming and trading 39%
**What**

BLUETOWN is enabling a higher standard of living by providing access to affordable internet and reducing the digital divide in underserved communities. The importance of affordable access to the internet to individuals and organizations is well-documented, and underlined by BLUETOWN’s own experience at its project sites.

BLUETOWN contributes to the SDGs in three ways: (a) providing inclusive access to connectivity, (b) improving access to information, products and services; and (c) avoiding contribution to air pollution and carbon emissions. To measure the effects of its business initiatives, BLUETOWN mapped 15 SDG targets. As a result of this exercise, BLUETOWN mapped its impacts as well as actionable insights for monitoring and improving performance.

**Who**

The key impact stakeholders are individuals living in underserved communities that are connected by BLUETOWN. The baseline survey conducted in Asumura, Ghana, confirmed that the community had poor internet access before BLUETOWN. Moreover, the survey showed that 61% of individuals had access to a smartphone but could not use it within the village. BLUETOWN also found that the rate of internet penetration was considerable: 55% individuals had used the internet within the last three months, but only a third were frequent internet users as the nearest access point was an hour away.

The results also indicated a significant digital gender divide in Asumura: 80% of the men surveyed indicated that they owned a smartphone, whereas only 55% of women owned a smartphone. The divide in internet use was even greater, with just 33% of women reporting that they were internet users compared to 83% for men. Moreover, significant gaps in terms of “awareness of online content” and “the application of online content to livelihoods” were found.

**How Much**

Beyond Asumura, BLUETOWN has established 100 sites in Ghana as of December 2019 and will operate in more than 1,200 sites in Ghana in 2020. This will provide 800,000 Ghanaians with access to affordable internet.

Providing access to affordable connectivity enables a community to access digital information, content and services that raise the standard of living in multiple ways and provide sustained change through the following mechanisms:

- **a) Education**: Connectivity enables access to world-class education at a reduced cost, by facilitating access to quality eLearning content. It ultimately improves the educational outcomes of underserved areas with a chronic lack of qualified teachers.

- **b) Health**: Connectivity brings down the unit costs of healthcare delivery and provides economies of scale for health resources. It is estimated that internet access can reduce the provision of inappropriate medication by 80%.

- **c) Income**: Connectivity is estimated to produce a yearly individual income increase of 450 USD by enabling access to relevant information on best practices, market linkages and prices. This improves productivity, efficiency and product quality.

- **d) Finance**: With connectivity, those without bank accounts can access mobile money, micro-insurance and financial services, thereby increasing productivity and raising incomes.

- **e) Government services**: Providing underserved communities with internet services increases transparency and promotes access to information on rights and entitlements, as well as on government schemes and programs.

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14 BLUETOWN, BLUETOWN and GIFEC Connects the Unconnected in Ghana, Retrieved from https://www.youtube.com/watch?v=AqERoJFeQNU


16 Ericsson

17 McKinsey

18 Deloitte
**Contribution**

- **78%** of those surveyed reported that the quality of internet available to them was poor before BLUETOWN brought their services to the community.
- Inhabitants of Asumura previously had to travel for an hour to access the internet through dense forest and on poor roads.
- **17%** of BLUETOWN’s customers in India have integrated internet services directly into their main income-generating source, thereby lowering transaction costs, opening up markets and increasing incomes.
- **45%** of BLUETOWN users in Tanzania used the internet for the very first time through BLUETOWN’s services.
- The global growth rate of broadband access for low-income households of **0.8%** in 2018 demonstrates that the underserved communities that BLUETOWN operates in would likely not have been connected without BLUETOWN.¹⁹

**Risk**

- BLUETOWN’s impact is contingent on the model effectively breaking down barriers to the adoption of internet services. However, as the model has been tested in several markets, this risk is deemed as low.
- There is an execution risk that the digital services made available do not provide quality information, products and services exists. However, this risk is low as such services have already proven themselves to be impactful in well-connected semi-urban and urban areas.

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²⁰ The average price of 1GB data in Ghana is 1.56 USD. BLUETOWN offers 1GB for 0.36 USD (https://www.cable.co.uk/mobiles/worldwide-data-pricing/).
Lessons Learned

Impact measurement and management is essential for connecting the unconnected

“Impact data,” explained BLUETOWN’s Impact Manager, Mr. Emil Damholt, “has helped BLUETOWN grasp the complexity of the digital divide and learn how best to address it.” The baseline study in Asumura found that while awareness of digital content and services were quite high, usage was relatively low. This suggest that awareness-raising may not drive adoption alone. Upon learning this, BLUETOWN has decided to put further emphasis on training its local micro-operators to actively analyze and showcase concrete use cases for its customers. This is being done in collaboration with the NGO CARE, whose expertise on rural livelihoods and technology will be leveraged. The effect thereof will be monitored as part of the impact management and used to create a report on best practices.

Engaging stakeholders at all stages is paramount

From the beginning, BLUETOWN has been conscious of the fact that impact measurement is complex, such that it teamed up with competent partners to develop its approach – notably UNDP Denmark and Monitor Deloitte. According to Mr. Damholt, “working with BCtA under the Impact Champion Programme has helped BLUETOWN refine its methodology and BLUETOWN’s partnership with CARE has added further detail and competence on data collection and analysis.” This underlines that leveraging partners is critical to improving frameworks and producing the best possible results.

Building an impactful business is an iterative process

BLUETOWN realizes that its impact management approach cannot be static as the conditions around the organization constantly change and evolve as do its context, geographies and people impacted. Mr. Damholt noted that “the company sees it as vital that it does not only monitor and evaluate [based] on the results produced by the model, but also the effectiveness of the model itself, and pursue further improvements.”

Way Forward / Next Steps

BLUETOWN is committed to impact measurement and management and has decided to roll out the approach for all its activities, whilst using the metrics for measuring performance against both commercial and impact targets. The Asumura study will work as a model, but the envisioned scale requires an automatized and lean approach with established core indicators. BLUETOWN will integrate core indicators of the impact data collection and data analytics with its regular customer surveys and outreach campaigns to continuously monitor progress in its regular operations. This will allow the company to “understand how effectively BLUETOWN’s model addresses these barriers across geographies and segments to adjust when necessary on a well-informed basis and bring it closer to our goal of connecting the unconnected and improving standards of living,” said Damholt.

Contact the Business Call to Action

✉ bcta@undp.org ️ BctaInitiative in Business Call to Action

Written by: Rabayl Mirza — January 2020