BLUETOWN

Impact Management Case Study

BUSINESS CALL TO ACTION

Location *Ghana, India, Mozambique, Tanzania and Rwanda*
Sector *Internet, Communications and Technology*
BOP Stakeholders *Customers*
Total Reach *more than 1 million people*

BLUETOWN
Connecting the unconnected

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.
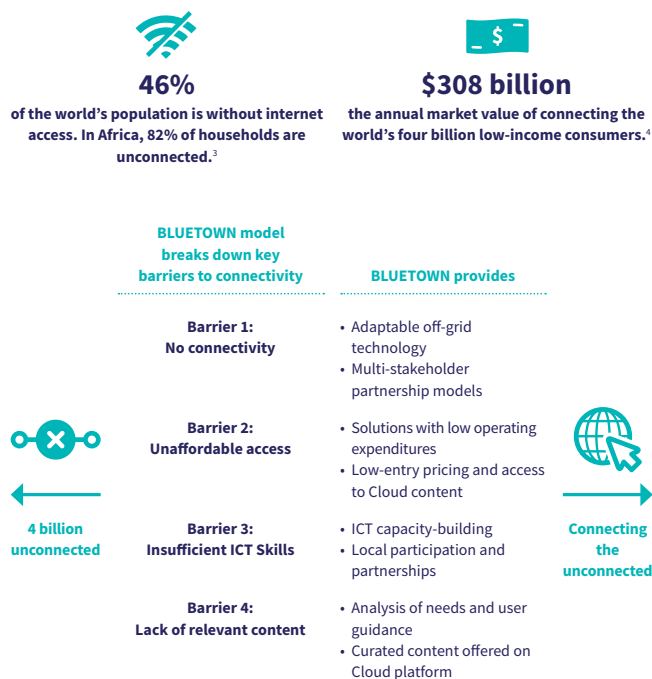
46%
of the world's population is without internet access. In Africa, 82% of households are unconnected.[3]

$308 billion
the annual market value of connecting the world's four billion low-income consumers.[4]

BLUETOWN model breaks down key barriers to connectivity

BLUETOWN provides

Barrier 1: No connectivity
- Adaptable off-grid technology
- Multi-stakeholder partnership models

Barrier 2: Unaffordable access
- Solutions with low operating expenditures
- Low-entry pricing and access to Cloud content

4 billion unconnected

Barrier 3: Insufficient ICT Skills
- ICT capacity-building
- Local participation and partnerships

Connecting the unconnected

Barrier 4: Lack of relevant content
- Analysis of needs and user guidance
- Curated content offered on Cloud platform

Figure 1: BLUETOWN's model to connect the unconnected

1. International Telecommunication Union, Global internet growth stalls and focus shifts to 'meaningful universal connectivity' to drive global development (2019), Retrieved from https//www.itu.int/en/mediacentre/Pages/2019-PR16.aspx
2. USAID, Closing the Access Gap (2017), Retrieved from https://www.usaid.gov/documents/15396/closing-access-gap
3. International Telecommunication Union, Measuring digital development: Facts and figures 2019, Retrieved from https://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx
4. USAID, Scaling Last-Mile Connectivity Solutions (2018), Rrtrieved from https://mstarproject.files.wordpress.com/2018/04/usaid-last-mile-connectivity-initiative.pdf

Asumura, Ghana: An archetypal remote community connected by BLUETOWN

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.

	Remote community	Rural community	Semi-urban community
Population	1,500-3,000	3,000-10,000	10,000-100,000
Existing connectivity [5]	2G	Weak 3G	Congested 3G/4G
Electricity	No grid	Unstable grid	Unstable grid
Yearly incomes[6]	500-800 USD	500-1,000 USD	500-2,000 USD
Smartphone penetration[7]	10-20%	20-30%	Up to 40%

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.[8]

---

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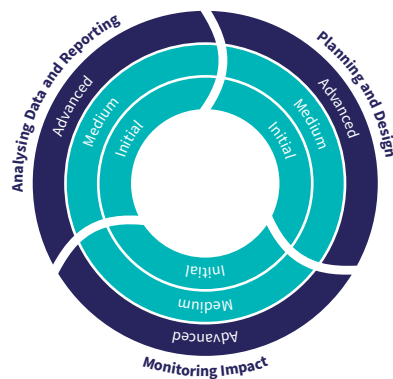
Companies can have an initial, medium or advanced level of impact management capacity

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.[9] 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.

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.

---

9   United Nations Development Program Denmark, New Business Solutions with the Sustainable Development Goals (2018), Retrieved from http://www.sdg-accelerator.org/content/sdg-accelerator/en/home/about/

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.[10] 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.
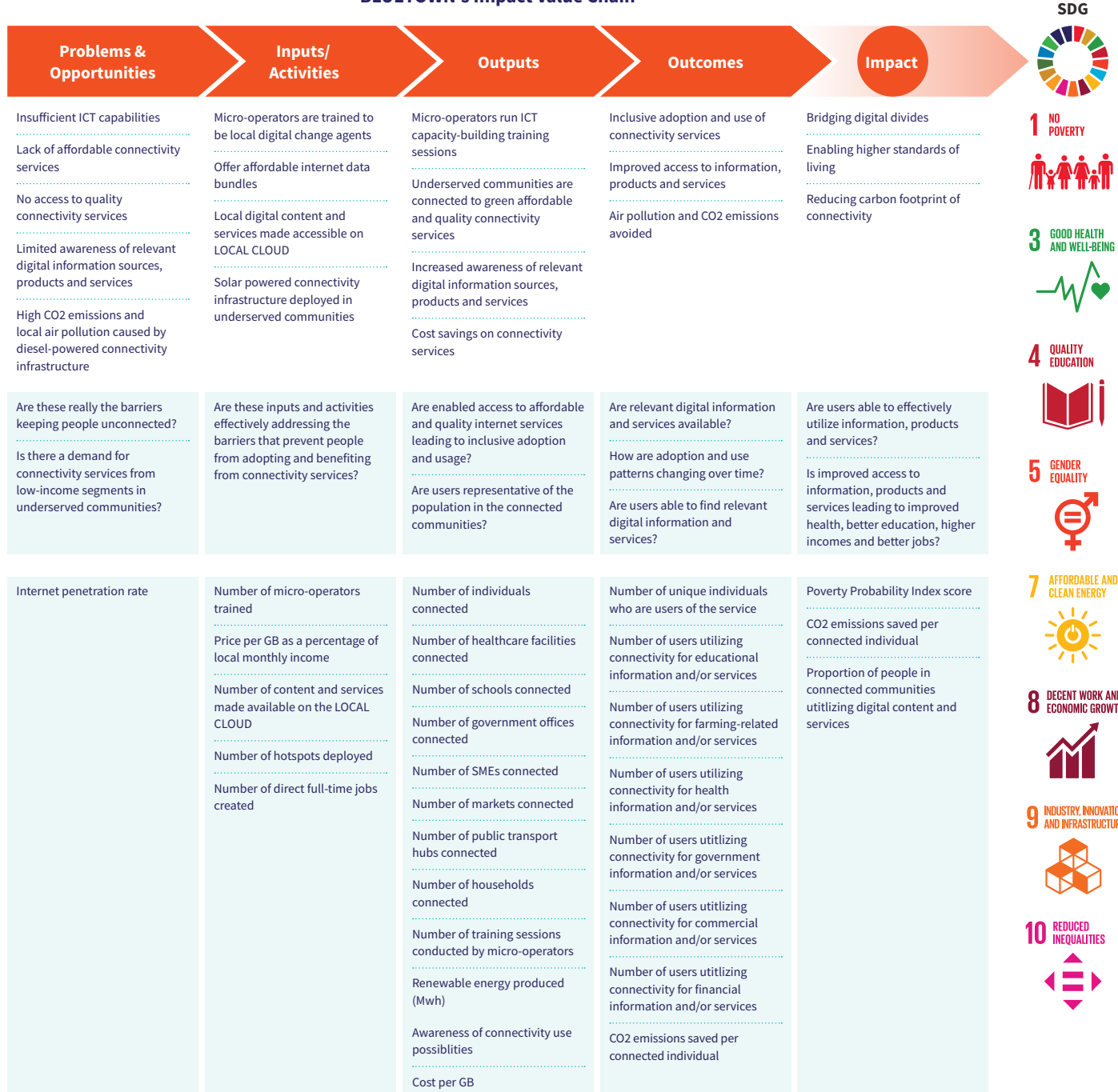
In the long run, BLUETOWN contributes to bridging digital divides and ultimately improve the standard of living in its target communities.

---

10 This definition of affordability is set by the Alliance for Affordable Internet (A4IA).

BLUETOWN tracks its performance using its goals, activities, and short- and long-term outcomes using the following framework.

BLUETOWN's Impact Value Chain

	Problems & Opportunities	Inputs/ Activities	Outputs	Outcomes	Impact	SDG
	Insufficient ICT capabilities	Micro-operators are trained to be local digital change agents	Micro-operators run ICT capacity-building training sessions	Inclusive adoption and use of connectivity services	Bridging digital divides	1 NO POVERTY
	Lack of affordable connectivity services	Offer affordable internet data bundles	Underserved communities are connected to green affordable and quality connectivity services	Improved access to information, products and services	Enabling higher standards of living	
	No access to quality connectivity services	Local digital content and services made accessible on LOCAL CLOUD		Air pollution and CO_2 emissions avoided	Reducing carbon footprint of connectivity	3 GOOD HEALTH AND WELL-BEING
	Limited awareness of relevant digital information sources, products and services	Solar powered connectivity infrastructure deployed in underserved communities	Increased awareness of relevant digital information sources, products and services			
	High CO_2 emissions and local air pollution caused by diesel-powered connectivity infrastructure		Cost savings on connectivity services			4 QUALITY EDUCATION
Decision-Making Questions	Are these really the barriers keeping people unconnected?	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 relevant digital information and services available?	Are users able to effectively utilize information, products and services?	
	Is there a demand for connectivity services from low-income segments in underserved communities?		Are users representative of the population in the connected communities?	How are adoption and use patterns changing over time?	Is improved access to information, products and services leading to improved health, better education, higher incomes and better jobs?	5 GENDER EQUALITY
				Are users able to find relevant digital information and services?		
Indicators	Internet penetration rate	Number of micro-operators trained	Number of individuals connected	Number of unique individuals who are users of the service	Poverty Probability Index score	7 AFFORDABLE AND CLEAN ENERGY
		Price per GB as a percentage of local monthly income	Number of healthcare facilities connected	Number of users utilizing connectivity for educational information and/or services	CO_2 emissions saved per connected individual	
		Number of content and services made available on the LOCAL CLOUD	Number of schools connected	Number of users utilizing connectivity for farming-related information and/or services	Proportion of people in connected communities utitlizing digital content and services	
		Number of hotspots deployed	Number of government offices connected	Number of users utilizing connectivity for health information and/or services		8 DECENT WORK AND ECONOMIC GROWTH
		Number of direct full-time jobs created	Number of SMEs connected			
			Number of markets connected	Number of users utitlizing connectivity for government information and/or services		
			Number of public transport hubs connected	Number of users utitlizing connectivity for commercial information and/or services		9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
			Number of households connected	Number of users utitlizing connectivity for financial information and/or services		
			Number of training sessions conducted by micro-operators	CO_2 emissions saved per connected individual		10 REDUCED INEQUALITIES
			Renewable energy produced (Mwh)			
			Awareness of connectivity use possiblities			
			Cost per GB			

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)[11].

---

11 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/

What	tells us what outcomes the enterprise is contributing to and how important the outcomes are to stakeholders.
Who	tells us which stakeholders are experiencing the outcome and how underserved they were prior to the enterprise's effect.
How Much	tells us how many stakeholders experienced the outcome, what degree of change they experienced, and for how long they experienced the outcome.
Contribution	tells us whether an enterprise's and/or investor's efforts resulted in outcomes that were likely better than what would have occurred otherwise.
Risk	tells us the likelihood that impact will be different than expected.

Goal 1: Bridging digital divides

□ What
What is the importance of your goal to your stakeholder?

Customers

Not Important ————————— Important

○ Who
How underserved are your stakeholders in relation to the SDGs?

Customers

Underserved ————————— Well-served

+ Contribution
How does the impact compare to what is likely to occur anyway?

Because of our efforts, our stakeholders' access to SDGs is:

Likely Worse ——— Same ——— Likely Better

☰ How Much
How significant is the impact that occurs in the time period?

Scale: Did the outcomes happen at scale?

Small Scale ————————— Large Scale

Duration: Do the outcomes last for a long time?

Short Term ————————— Long Term

Depth: Is your organization a deep driver of the outcome for these stakeholders?

Marginal Change ————————— Deep Change

△ Risk
What is the risk that the impact is not achieved due to external or internal factors?

Risk

Low Risk ————————— High Risk

SDGs: 5 Gender Equality, 9 Industry, Innovation and Infrastructure, 10 Reduced Inequalities

Goal 2: Enabling higher standards of living

□ What
What is the importance of your goal to your stakeholder?

Customers

Not Important ————————— Important

○ Who
How underserved are your stakeholders in relation to the SDGs?

Customers

Underserved ————————— Well-served

+ Contribution
How does the impact compare to what is likely to occur anyway?

Because of our efforts, our stakeholders' access to SDGs is:

Likely Worse ——— Same ——— Likely Better

☰ How Much
How significant is the impact that occurs in the time period?

Scale: Did the outcomes happen at scale?

Small Scale ————————— Large Scale

Duration: Do the outcomes last for a long time?

Short Term ————————— Long Term

Depth: Is your organization a deep driver of the outcome for these stakeholders?

Marginal Change ————————— Deep Change

△ Risk
What is the risk that the impact is not achieved due to external or internal factors?

Risk

Low Risk ————————— High Risk

SDGs: 1 No Poverty, 3 Good Health and Well-Being, 4 Quality Education, 8 Decent Work and Economic Growth

Goal 3: Reducing carbon footprint of connectivity

☐ What
What is the importance of your goal to your stakeholder?

Planet

Not Important — Important

○ Who
How underserved are your stakeholders in relation to the SDGs?

Planet

Underserved — Well-served

✛ Contribution
How does the impact compare to what is likely to occur anyway?

Because of our efforts, our stakeholders' access to SDGs is:

Likely Worse — Same — Likely Better

☰ How Much
How significant is the impact that occurs in the time period?

Scale: Did the outcomes happen at scale?

Small Scale — Large Scale

Duration: Do the outcomes last for a long time?

Short Term — Long Term

Depth: Is your organization a deep driver of the outcome for these stakeholders?

Marginal Change — Deep Change

△ Risk
What is the risk that the impact is not achieved due to external or internal factors?

Risk

Low Risk — High Risk

---

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]

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

PROFILE OF ASUMURA BEFORE BEING CONNECTED

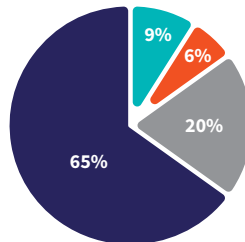**Inhabitants:**
≈1,500-3,000

$$$

Yearly income (census):
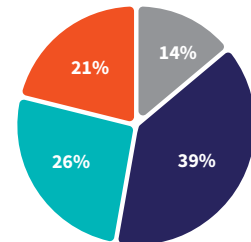3,532 CEDI = 640 USD

2.10 USD

Average spending on connectivity services every month
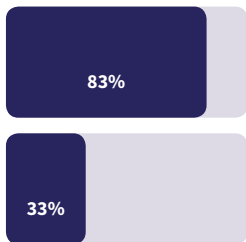
Internet penetration (survey):
Male 83%
Female 33%

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%
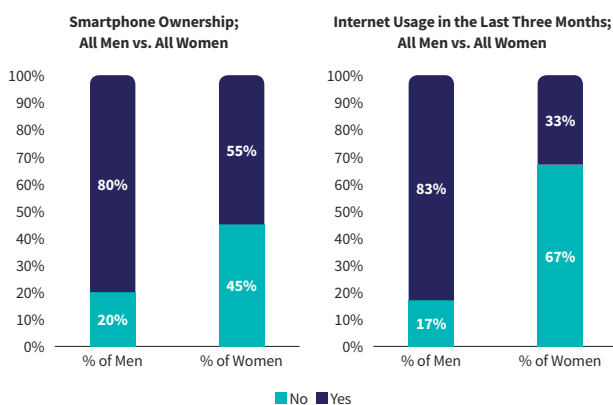**Farming and trading 39%**

☐ 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,[13] and underlined by BLUETOWN's own experience at its project sites.[14]

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.

**Smartphone Ownership;
All Men vs. All Women**

	% of Men	% of Women
Yes	80%	55%
No	20%	45%

**Internet Usage in the Last Three Months;
All Men vs. All Women**

	% of Men	% of Women
Yes	83%	33%
No	17%	67%

■ No   ■ Yes

☰ 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.[15]

b) **Health**: Connectivity brings down the unit costs of healthcare delivery and provides economies of scale for health resources.[16] It is estimated that internet access can reduce the provision of inappropriate medication by **80%**.[17]

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.[18]

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.

13 World Bank, World Development Report (2016) 42-46, Retrieved from http://documents.worldbank.org/curated/en/896971468194972881/310436360_20160263021502/additional/102725-PUB-Replacement-PUBLIC.pdf
14 BLUETOWN, BLUETOWN and GIFEC Connects the Unconnected in Ghana, Retrieved from https://www.youtube.com/watch?v=AqERoJFeQNU
15 World Bank, World Bank Report: Digital Dividends (2018), Retrieved from http://documents.worldbank.org/curated/en/896971468194972881/pdf/102725-PUB-Replacement-PUBLIC.pdf
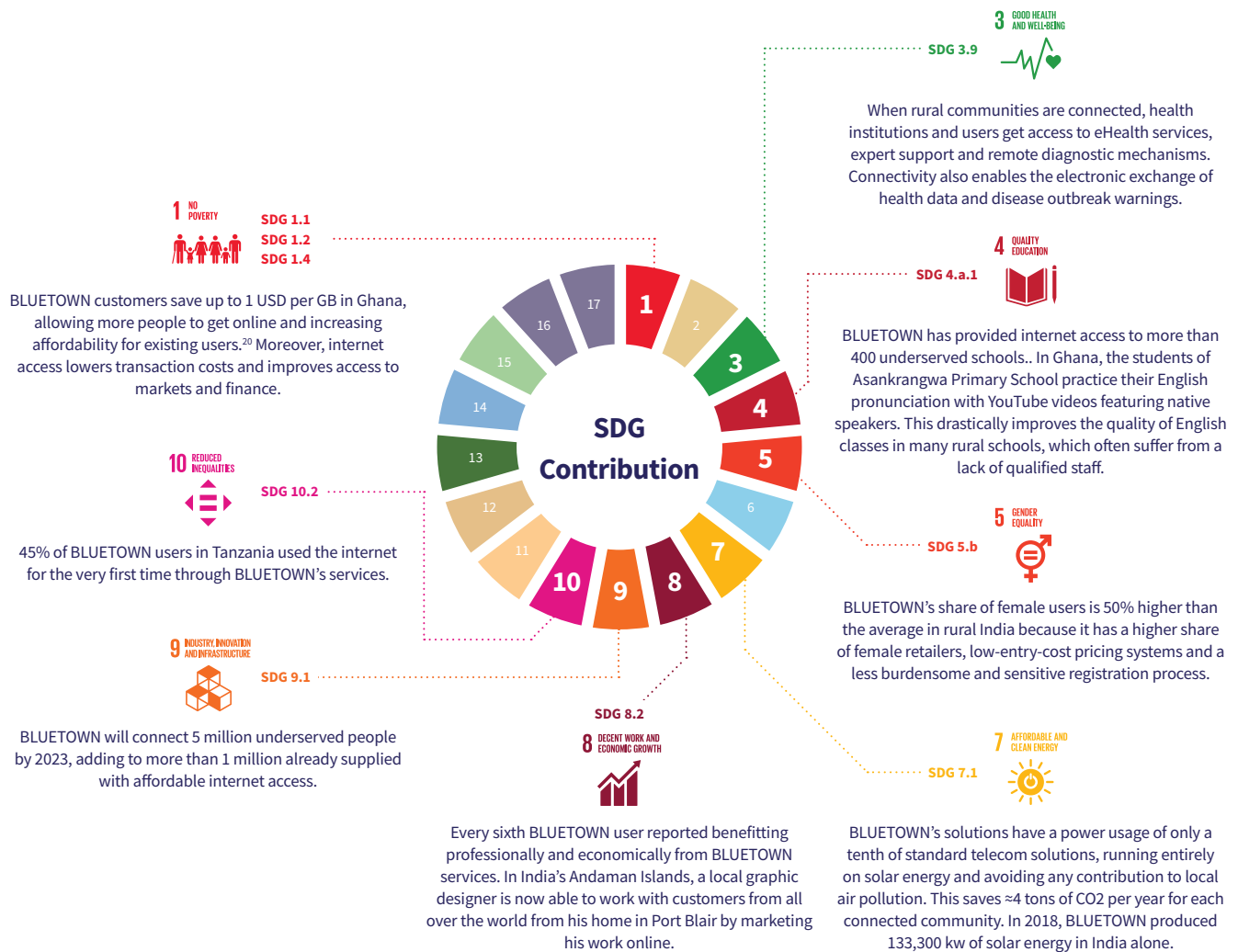16 Ericsson
17 McKinsey
18 Deloitte

+ 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.

3 GOOD HEALTH AND WELL-BEING · · · · **SDG 3.9**

When rural communities are connected, health institutions and users get access to eHealth services, expert support and remote diagnostic mechanisms. Connectivity also enables the electronic exchange of health data and disease outbreak warnings.

1 NO POVERTY **SDG 1.1 SDG 1.2 SDG 1.4**

BLUETOWN customers save up to 1 USD per GB in Ghana, allowing more people to get online and increasing affordability for existing users.[20] Moreover, internet access lowers transaction costs and improves access to markets and finance.

4 QUALITY EDUCATION · · · · **SDG 4.a.1**

BLUETOWN has provided internet access to more than 400 underserved schools.. In Ghana, the students of Asankrangwa Primary School practice their English pronunciation with YouTube videos featuring native speakers. This drastically improves the quality of English classes in many rural schools, which often suffer from a lack of qualified staff.

SDG Contribution

10 REDUCED INEQUALITIES · · · · **SDG 10.2**

45% of BLUETOWN users in Tanzania used the internet for the very first time through BLUETOWN's services.

5 GENDER EQUALITY · · · · **SDG 5.b**

BLUETOWN's share of female users is 50% higher than the average in rural India because it has a higher share of female retailers, low-entry-cost pricing systems and a less burdensome and sensitive registration process.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE · · · · **SDG 9.1**

BLUETOWN will connect 5 million underserved people by 2023, adding to more than 1 million already supplied with affordable internet access.

SDG 8.2
8 DECENT WORK AND ECONOMIC GROWTH

Every sixth BLUETOWN user reported benefitting professionally and economically from BLUETOWN services. In India's Andaman Islands, a local graphic designer is now able to work with customers from all over the world from his home in Port Blair by marketing his work online.

7 AFFORDABLE AND CLEAN ENERGY · · · · **SDG 7.1**

BLUETOWN's solutions have a power usage of only a tenth of standard telecom solutions, running entirely on solar energy and avoiding any contribution to local air pollution. This saves ≈4 tons of CO_2 per year for each connected community. In 2018, BLUETOWN produced 133,300 kw of solar energy in India alone.

---

19 International Telecommunication Union, Global internet growth stalls and focus shifts to 'meaningful universal connectivity' to drive global development (2019), Retrieved from https://www.itu.int/en/mediacentre/Pages/2019-PR16.aspx

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."
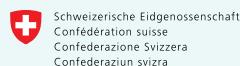
Way Forward / Next Steps

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 automized 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.