BUSINESS CALL TO ACTION

Impact Measurement Case Study

CENTURION SYSTEMS

CENTURION SYSTEMS — Technology Transfer & Training for Innovation in Industry

Target Beneficiaries: Industrial-sector workers

LOCATION: Nairobi, Kenya

Sector: Industrial

Business model: Centurion is a technical service company that provides consulting, engineering, repairs, and spare parts to the East African industrial sector. Its inclusive business initiative is a training programme that builds the skillsets of industry professionals and students, empowering them to obtain better jobs, increase their productivity, efficiency, and innovation, and pursue entrepreneurship.

THE OBJECTIVE

Centurion is seeking to quantify the programme's value and communicate the amount and types of training required to achieve the desired results. The company also aims to demonstrate to government and development partners the capacity of its business to create social impact.

HOW IT WORKS

1 ASSESSING READINESS

Centurion's training programme is at the mature stage and staff have high technical capacity. However internal monitoring systems are disconnected and paper-based, indicating a medium level of readiness.

60% of trainees received a salary increase post training;

92.5% were very satisfied with the training relevance

95% of managers reported some improvement in trouble-shooting and maintenance.

Over **90%** reported increases in productivity, efficiency, and motivation, and reductions in downtimes and breakdowns, resulting in significant savings.

4 ANALYSING DATA AND REPORTING

2 PLANNING AND DESIGN

3 MONITORING IMPACT

Centurion's key impact and outcome metrics for measurement are:

1 productivity,

2 efficiency,

3 entrepreneurship,

4 employment, and

5 livelihood.

Centurion developed four surveys:

1 a course review survey for new graduates;

2 a longer-term survey for programme graduates 3-12 months after training

3 a survey for client-engineering managers who supervise graduates in the workplace; and

4 a survey for Centurion's university partners.

RESULTS

Centurion will use the initial sample to review its effectiveness and relevance, and the resulting impacts on trainees and their employers. The company will also use these data to promote its services to partners and potential clients. In addition, Centurion is assessing its alignment with the SDGs and plans to reach out to the broader business ecosystem, using the BIMS methodology and related SDG guidance to improve the industrial sector's overall impact.

About Centurion

Centurion Systems Limited (CSL) is a technology and skills transfer organization registered in Kenya since 1989. The company seeks to enhance technical skills development and provide technical engineering solutions within various industrial sectors in East Africa through continuous technical skills, training, research and development, systems integration, and equipment repairs and maintenance. These services focus on advanced industrial automation, motion control, pneumatics, and hydraulics serving a range of sectors including utilities, mining, manufacturing, transportation, communications, pharmaceuticals, paper and metal.

Centurion's inclusive business[1] model involves a technical training programme that has been operational since 2000. Through the programme, the company sustains itself by maintaining and cultivating a high volume of trainees. Trainees comprise: individual professionals who pay for the service themselves; working professionals who receive training through employer-sponsored professional-development programmes; and

university and vocational students supplementing their degrees with practical skills facilitated through Centurion's partnerships with universities, Technical and Vocational Education and Training (TVET) programmes, and Work Integrated Learning (WIL) programmes.

The training programme's primary focus is on improving productivity, efficiency, and innovation for its clients. In doing so, the company also aims to impact the livelihoods of its graduates by improving their employment and entrepreneurship – allowing them to achieve upward mobility, increase their incomes, start businesses and create jobs.

Centurion hopes to demonstrate how the private sector can drive economic development through Work Integrated Learning (WIL), and to show how its work is contributing to Kenya's national transformation goals. To support these efforts, Centurion engaged BIMS to establish quantitative evidence of its impact.

Step 1: Assessing readiness

Effective impact measurement[2] begins with determining the reason for measuring impact. A wide variety of tools are available for businesses to measure, manage and report on their social impacts. Approaches range from those generating quick feedback to those requiring longer timeframes for showing systemic impact. It is important for companies to choose the right approach that meets their business needs given the available resources.

Assessing the company's readiness for impact measurement is a critical first step in determining what social impact data to collect, how to collect it and how to use it. In assessing a company's

readiness to measure its impact, BCtA considers its maturity and capacity, which are determined based on the company's clarity of purpose, data-driven culture and resources for monitoring and collection.

Prior to involvement with BIMS, Centurion's data collection comprised paper-based trainee feedback surveys conducted immediately following training. This allowed the company to compile trainee contact information and measure immediate impressions of its training, but not to measure long-term impacts on trainees' livelihoods or their employers.

---

1   Inclusive businesses are commercially viable business ventures that engage people living at the base of the economic pyramid – people with less than USD 10 per capita per day in purchasing power parity (2015) – as consumers, producers, suppliers, distributors of goods and services, and employees.

2   In this case study, 'impact measurement' refers to the measurement of inclusive businesses' social, economic and environmental performance.

Centurion's trainees are spread out across Kenya and the entire region, and Centurion does not track location or job changes. However, Centurion has a highly technical staff, substantial institutional knowledge and a modern IT infrastructure. Thus while no technology-based systems previously existed for impact measurement, the company still had the capacity to integrate new impact-measurement activities into its operations.

Centurion is a **mature business**. While scaling up its business at this stage, it has the resources and capacity to integrate social-impact measurement into the business's expansion. It is therefore that Centurion has **medium readiness** for measuring impact (see below the figure).

Centurion's Impact Measurement Readiness
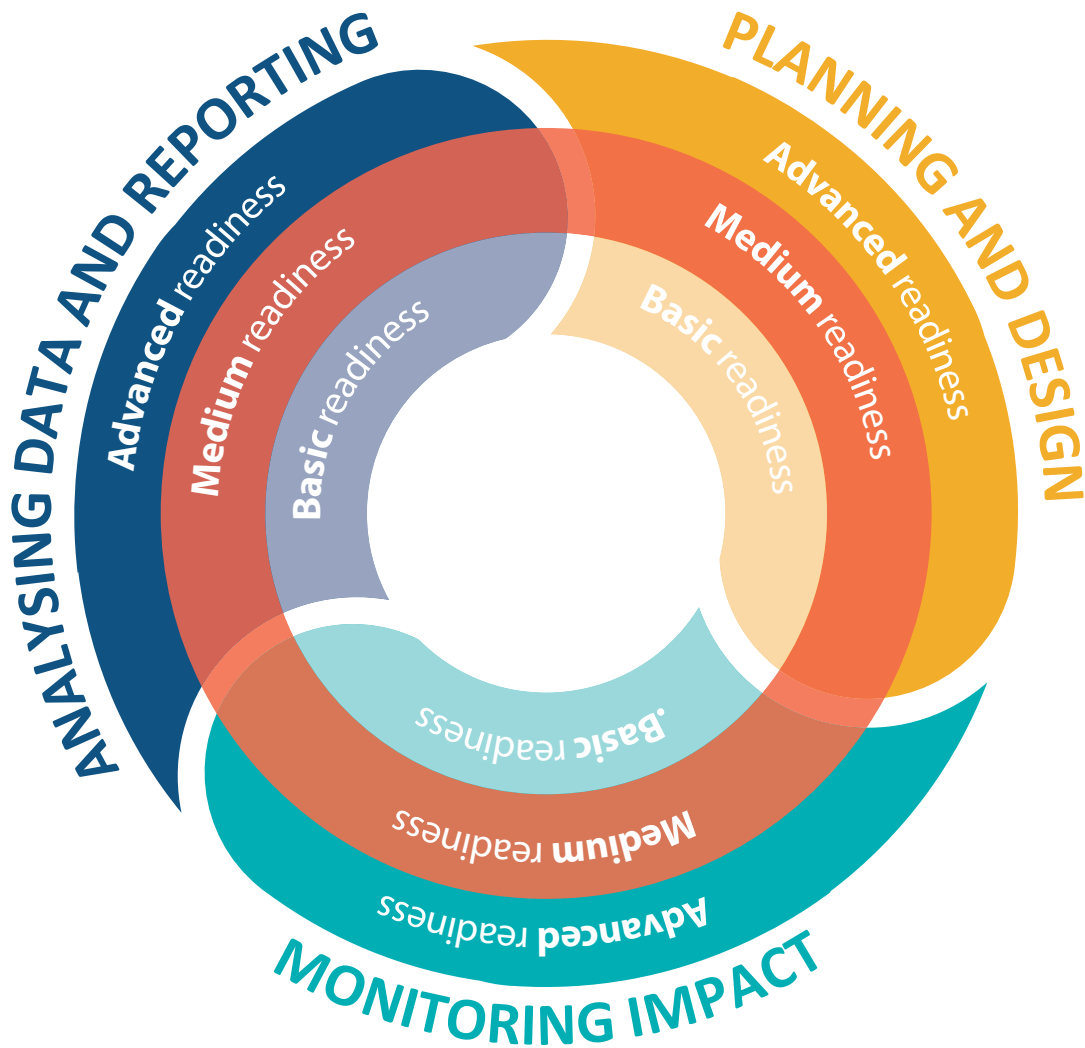
Step 2: Planning and design

The planning step involves developing a Social Value Chain[3] that links business goals, strategies and operations to outcomes and impact related to the Sustainable Development Goals (SDGs).[4] The Social Value Chain is the basis for developing social-impact indicators that address the needs identified in the previous step.

Social Value Chains guide companies in determining what to measure and where to collect data by mapping business goals, strategies and operations against outcomes related to the SDGs. In the words of Kevit Desai, Centurion's founder, social impact measurement is needed because "the kind of questions we ask and the interactions we create will lead to more collaborative engagement with our clients, as a company and from the perspective of the SDGs".

An abridged version of the Social Value Chain, with a limited number of social impact metrics, is presented here:

Centurion's Social Value Chain
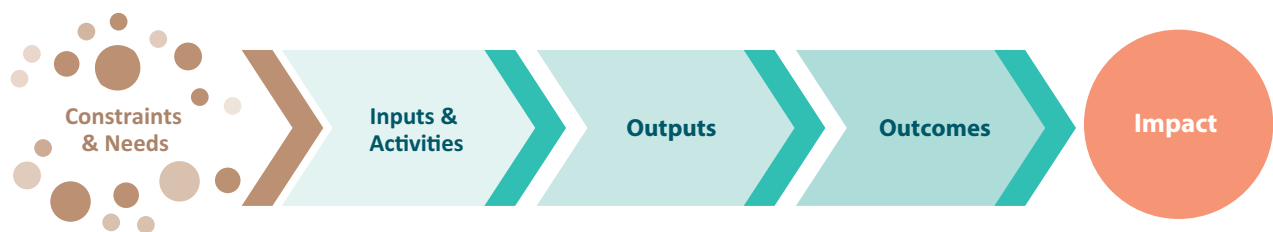
Constraints & Needs	Inputs & Activities	Outputs	Outcomes	Impact
In industrial automation, motion control and lean manufacturing: • Early and mid-career professionals often lack the skills and training to impact productivity, efficiency and innovation, limiting individual and institutional growth. • There are few affordable and relevant skills-development resources for employers and professionals • There are limited job opportunities and upward mobility • University and vocational schools do not emphasize entrepreneurship or the skills required for innovation and improvement	**Outreach** • # corporations contacted • # universities/ TVETs contacted **Training module delivery** • Quantity of new training materials/ modules developed • # trainings provided	**Partnership development** • # corporate partnerships • # university/TVET partnerships **Trainees recruited** • # graduate students and corporate clients trained • # return graduate trainees and corporate clients **Trainees graduated** • # trainees who complete modules	**Increased productivity, efficiency and innovation** • % employers reporting efficiency/ productivity/ innovation increases from trainees **Graduates are satisfied with relevance and effectiveness of training** • % graduates reporting skills improvement • % graduates reporting contributions to productivity and efficiency **University satisfaction** • University clients satisfied with supplementary training • University/TVET graduate employment	**Improved employment** • % unemployed trainees who find employment post-training **Improved livelihoods** • % employed trainees who receive promotions post-training • % graduates who receive salary raises post-training **Increased entrepreneurship** • % graduates who start/scale their own business • Jobs created by graduate entrepreneurs
Decision-making questions:	How can the relevance of and demand for Centurion's training be maximized?	What are the greatest corporate, university, and professional needs for training, and how can clients be satisfied and retained?	What factors have the greatest impact on trainee productivity, efficiency and innovation?	Is the programme having the intended impact?

---

3   The Social Value Chain integrates multiple approaches such as Theory of Change, Results Chain, logframes and business value chains.

4   Adopted in September 2015 by all United Nations member states, the SDGs are a set of 17 global goals and 169 targets related to key development issues facing society today. Countries will aim to achieve them by 2030.

Step 3: Monitoring impact

To monitor social impact, BIMS recommends that companies collect data on their operations and social performance on an ongoing basis. Businesses can receive data from primary and secondary sources such as invoices, inventories, customer registrations, market-research reports, social media, surveys and polls.

Identifying data sources is critical for developing data-collection plans using the Social Value Chain. Many companies have already collected data that can be used for social impact measurement. BIMS suggests that companies first determine if they can analyse the data they already have. Only if this is not possible should they plan to collect new data.

For Centurion, the core need was to understand whether, how and to what extent the training has impacted the productivity and efficiency of its corporate clients and the livelihoods, employment and entrepreneurship of its trainees. Its team developed four different data-collection tools for deployment on the 'ODK Collect' application via the Echo Mobile platform:

1. A digitized course critique survey for completion by trainees (including corporate clients, university/TVET students, and individuals) immediately following completion of a module. While the initial intention was to survey 100% digitally, a limited number of tablet computers delayed the process. Instead, a random selection of trainees was given tablets to complete an extensive feedback survey, while the remainder received paper forms.

2. A graduate survey was completed over the phone with former trainees (including corporate clients, university/TVET students, and individuals). This tool was initially piloted with graduates who completed training over one year ago, but due to poor record-keeping and outdated contact information, the focus was narrowed to graduates who had completed training between 3 and 12 months ago.

3. An engineering manager survey was completed with corporate engineering managers responsible for overseeing their corporation's Centurion graduates.

4. A university manager survey was given to Centurion's university partners who manage the programmes from which students are sent for supplementary skills training.

Survey implementation

While Centurion planned to conduct representative sampling, the surveys were done by cold calling graduates over the phone, meaning there was a selection bias for those willing and able to respond. For university and engineering managers, Centurion sought to integrate surveys into regular weekly field visits. During preliminary data collection however, the field team was downsized, so some surveys were conducted by phone and others delivered during client gatherings; this meant that data did not represent continuous monitoring. During the pilot:

*   324 new graduates completed the course critique survey

*   121 former graduates completed the graduate survey

*   21 engineering managers and 39 university managers who completed the two employer surveys

Step 4: Analyzing data and reporting

While the purpose and usability of social-impact data vary for each inclusive businesses, the outputs of social impact measurement are used to answer one or more of the following questions:

1. Who is being impacted?
2. How are they being impacted?
3. What are the drivers contributing to or limiting this impact?
4. How can this impact be scaled up and linked to the SDGs?

Who is being impacted?

Centurion's training programme specifically targets university/TVET students and early to mid-year industrial-sector professionals. Indirectly, it targets industrial-sector employers and universities to reach the direct beneficiaries. Training modules are designed to improve trainees' livelihoods by increasing their skills so that they are able to drive productivity and efficiency for their employers or start their own businesses. As part of the graduate survey, income levels were measured using the Progress out of Poverty Index, which determined that 33% are living at the bottom of the economic pyramid, measured as USD 8.44/day in 2005 purchasing power parity.

How are they being impacted?

From the preliminary sample of the Graduate Survey, which was administered to corporate clients, individual trainees, and university/ TVET students, Centurion found that 84% of all graduates believe their skills are improved and 97% consider the training to have improved their livelihoods. This was validated by the employment outcomes: 58% had received a promotion or salary increase since training and 91% of those respondents felt that that Centurion had helped them attain that increase.

Specifically, for university /TVET students surveyed under the Graduate Survey however, it was identified that they face challenges in finding jobs. Of those who had been university/TVET students prior to training, 81% reported being unemployed, although many reported going on to continue higher education. Those in the workforce cited a lack of opportunities in the market rather than a lack of training. It is likely that the sample was heavily skewed toward unemployed student graduates who – unlike employed graduates – had time to participate in the survey. Centurion did not track how many older employed graduates turned down the survey request.

What are the drivers contributing to or limiting this impact?

All graduate respondents reported that they were at least somewhat satisfied with the relevance of the training they received, and an overwhelming majority were very satisfied, while none reported dissatisfaction. Engineering and university managers validated these reports. Over 95% of engineering managers reported at least some improvement in their trainees' productivity, efficiency or motivation; 75% reported at least a 30% reduction in downtime among trainees; and 95% reported cost savings to the company as a result of their employees' training.
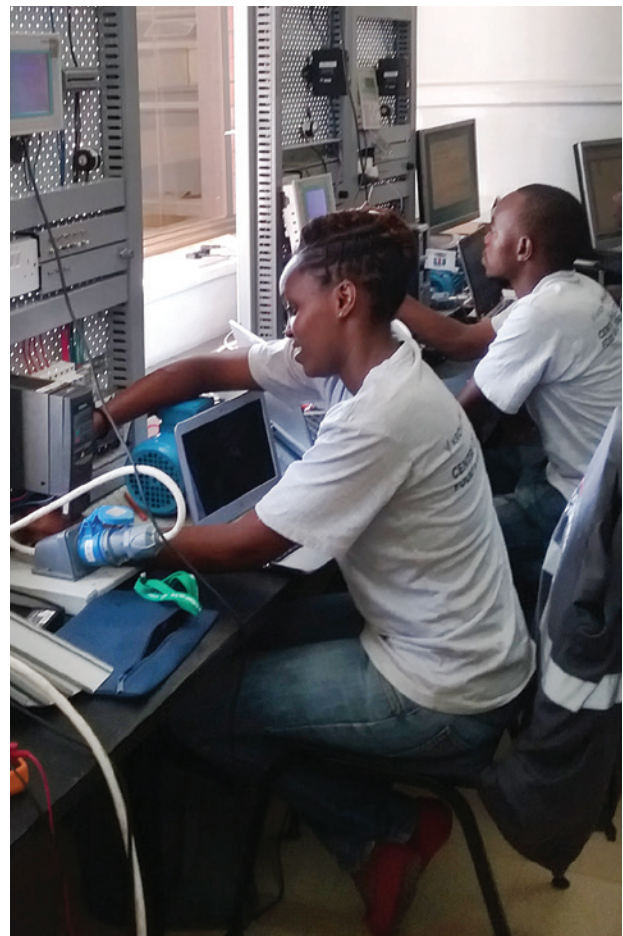
How can this impact be scaled and linked to SDGs?

BIMS supports inclusive businesses in adopting impact-measurement practices that help them to plan, monitor and deliver social impact, and contribute to achieving the SDGs. As part of the Social Value Chain, Centurion identified the following SDGs that are aligned with the business's intended impact:

SDG 1 ZERO POVERTY

Centurion's focus on improving and scaling its training programme using robust impact data will help to reduce poverty by increasing employment, entrepreneurship and incomes among trainees – and the productivity of their employers

SDG 4 QUALITY EDUCATION

Lifelong learning and vocational education are a critical aspect of SDG 4. The Centurion training programme directly focuses on this type of education within the industrial sector

SDG 9 INNOVATION AND INFRASTRUCTURE

SDG 9 promotes resilient infrastructure, inclusive and sustainable industrialization, and innovation. Among Centurion's graduates who are working, 73% reported increased innovation in the workplace.

SDG 8 DECENT JOBS AND ECONOMIC GROWTH

This SDG promotes inclusive and sustainable economic growth, full and productive employment and decent work for all. Centurion seeks full and productive employment for all its trainees, and increased productivity for their businesses and employers, resulting in economic growth.

Lessons learned from Centurion's technical training impact measurement

Measuring impact can have indirect benefits to the business beyond the data.

In interviews with Centurion following preliminary data collection, Centurion's Managing Director Kevit Desai explained that "By engaging in this process, we're directly and indirectly enhancing the relationships with our clients". Dr. Desai noted that the impact measurement findings might empower Centurion to look beyond its own clients towards improving the region's science technology engineering and mathematics (STEM) education ecosystem. The team also noted that data collection could contribute to sales in its other business lines since surveys targeting existing clients could be restructured to understand companies' training needs. Similarly, the successful piloting of data collection and impact measurement within one business line enables the collection of data on other services – including technical projects, repairs, and maintenance – in order to assess the business's impact on cross-sector productivity and efficiency.

Human-based mobile data collection may be less efficient for impact measurement when respondents are geographically disbursed.

BIMS is provided for human-based data collection using mobile-enabled surveys. In most cases, participating companies work with discrete populations that tend to be geographically condensed and accessible. However, when the majority of Centurion's trainees complete their training, they are dispersed across the region,

and Centurion does not track changes in their contact information. This provides few human touch points, and makes visiting graduates individually a highly inefficient and logistically challenging prospect. Instead, Centurion conducted telephone surveys, entering responses into the application from the office. As the company improves its data collection, more representative sampling should be sought to improve measurement of employment outcomes, perhaps by utilizing multiple survey channels. These could include brief email-based surveys of corporate professional graduates or SMS surveys.

Attributing employment outcomes to programs can be difficult without representative sampling and carefully controlling for lurking variables such as market forces.

Centurion's primary interest is in improving the livelihoods of its graduates through employment and entrepreneurship. However, the company found a higher unemployment rate among its graduates after training than before, but this resulted almost exclusively from university/TVET student graduates who have been unable to find work since completing training and university. In Kenya however, one in six young people are unemployed, with an even higher rate in Nairobi.[5] Within this environment, where market forces have an outsize impact on employment outcomes for young people, it is hard for Centurion to measure the impact of its training programme without a controlled, representative sample of its graduates.

---

5   https://www.standardmedia.co.ke/business/article/2001230740/kenya-s-economy-groans-under-weight-of-its-jobless-youth

Business Call to Action (BCtA) aims to accelerate progress towards the Sustainable Development Goals (SDGs) by challenging companies to develop inclusive business models that engage people at the base of the economic pyramid – people with less than US$10 per day in purchasing power parity (2015) – as consumers, producers, suppliers, distributors of goods and services, and their employees.