SystemOne

Executive Summary
Clinical effectiveness and operational returns from the billions spent on global health investments annually are near-impossible to measure and many stakeholders question the value and can't see what works and what doesn't. SystemOne connects these new diagnostic machines in difficult-to-reach, bandwidth-constrained geographies rife with infectious disease. They have created an Internet of Things (IoT) of diagnostic devices that enables rapid response to outbreaks and visibility into performance, inventory management, user training and more. To date, SystemOne has connected over 2,2000 devices and processed over 5.3 million results.

Website
www.systemone.id
In his book, “Thinking, Fast and Slow,” Daniel Kahneman refers to the automatic, fast, intuitive approach to decision making as “system 1,” which he juxtaposes to slow, thoughtful, sometimes-painful decision-making, executed by “system 2.” SystemOne chose the name because they intend to deliver technology solutions that require very little intellectual effort from users, and that also deliver “obvious” impact. Their initial technology thrust, to process and move data from medical diagnoses throughout the health system as rapidly as possible, is a “no brainer” when it comes to impact: if information can move faster than infection, humanity will win. In other words, if we know about infectious disease the moment it is diagnosed, then resources have a chance of moving faster than the infection. Without this knowledge, the fight cannot be won.

CHALLENGE

Developed countries pour billions of dollars annually into Global Health - $22.3bn in TB and HIV alone - to manage infectious diseases and avert the next pandemic in lower and middle-income countries (LMICs) with increases requested by most organizations fighting TB and HIV. Clinical effectiveness and operational returns from these investments are near-impossible to measure and many stakeholders question the value and can't see what works and what doesn't. New diagnostic devices that generate data are rapidly being deployed in LMICs. They consume thousands of dollars in cartridges (tests) each month, and require training, maintenance and service. This growing wave of devices is the future of diagnostics: faster and more accurate than cultures, slides and microscopes. Yet once they are placed in the field, they can’t be monitored for performance and efficacy, nor is their data leveraged for clinical and programmatic improvements.

SOLUTION

SystemOne has “turned on the lights” in a globally critical, expensive and opaque system through their IoT of diagnostic devices, creating the ultimate platform for response and monitoring and evaluation (M&E). While they gained traction by doing the hard work of connecting devices, the primary value is in the software platform that moves and interprets the data: Aspect.

Aspect allows for:
- rapid linkage of diagnosed patients to treatment;
- ongoing validation and evaluation of investments in equipment;
- unique visibility into disease hotspots; and
- rapid adjustment of health investments

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1 $19.1 billion in 2016 based on multiple sources, including: https://www.avert.org/professionals/hiv-around-world/global-response/funding. $3.2b on TB, as noted by the WHO and others. https://www.who.int/tb/WHO_GF_TB_financing_factsheet.pdf?ua=1
OPERATING AND BUSINESS MODEL

SystemOne has done more than dream about its solution: Aspect already connects over 2,000 devices in 40+ countries. More than five million diagnostic results have been transmitted through the platform. The platform has sent over 1 million instant notifications to inform about diagnoses, machine status, inventory issues and more. SystemOne intends to connect over 100,000 devices in the next four years.

SystemOne has initially sold to global funders who pay for its systems & training in 1-to-3-year increments. They have also sold to device makers and private-sector groups worldwide.

Key customers include:
- Public/Non-profit: USAID, WHO, CDC, FIND, KNCV, Global Fund, ASLM, CHAI, Abbott Fund,
  Bill and Melinda Gates Foundation
- Private: BD, ChipCare, Cepheid, WITS Health Consortium

While SystemOne operates on low margins, with each iteration and new country, they are more efficient. In addition, they have not yet leveraged one of their most important assets: their ability to access and commercialize the data they are processing. SystemOne already has inquiries for this from global players interested in those data sets.

IMPACT

Output metrics:
- Number of devices connected: currently 2,218
- Number of diagnostic results processes: currently 5,328,860
- Number of near real-time notifications: currently about 50k/month

Outcome metrics:
- Reduction in time from test to result: 95% in Malawi, based on ability to get results back to remote clinics
- Reduction in loss to follow-up: working on stats for this, but it should be a major outcome.
- Reduction in time to treatment: working on stats for this, but also a major outcome

Impact metrics:
- A major impact will be an increase in people who get a test also getting a diagnosis (currently many samples get tested, but the results do not find their patients after the test is completed)
- Another significant impact is an increase in proper utilization and maintenance of diagnostic machines and networks.