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IDEA TO IMPACT

A Guide to Introduction and Scale of Global Health Innovations

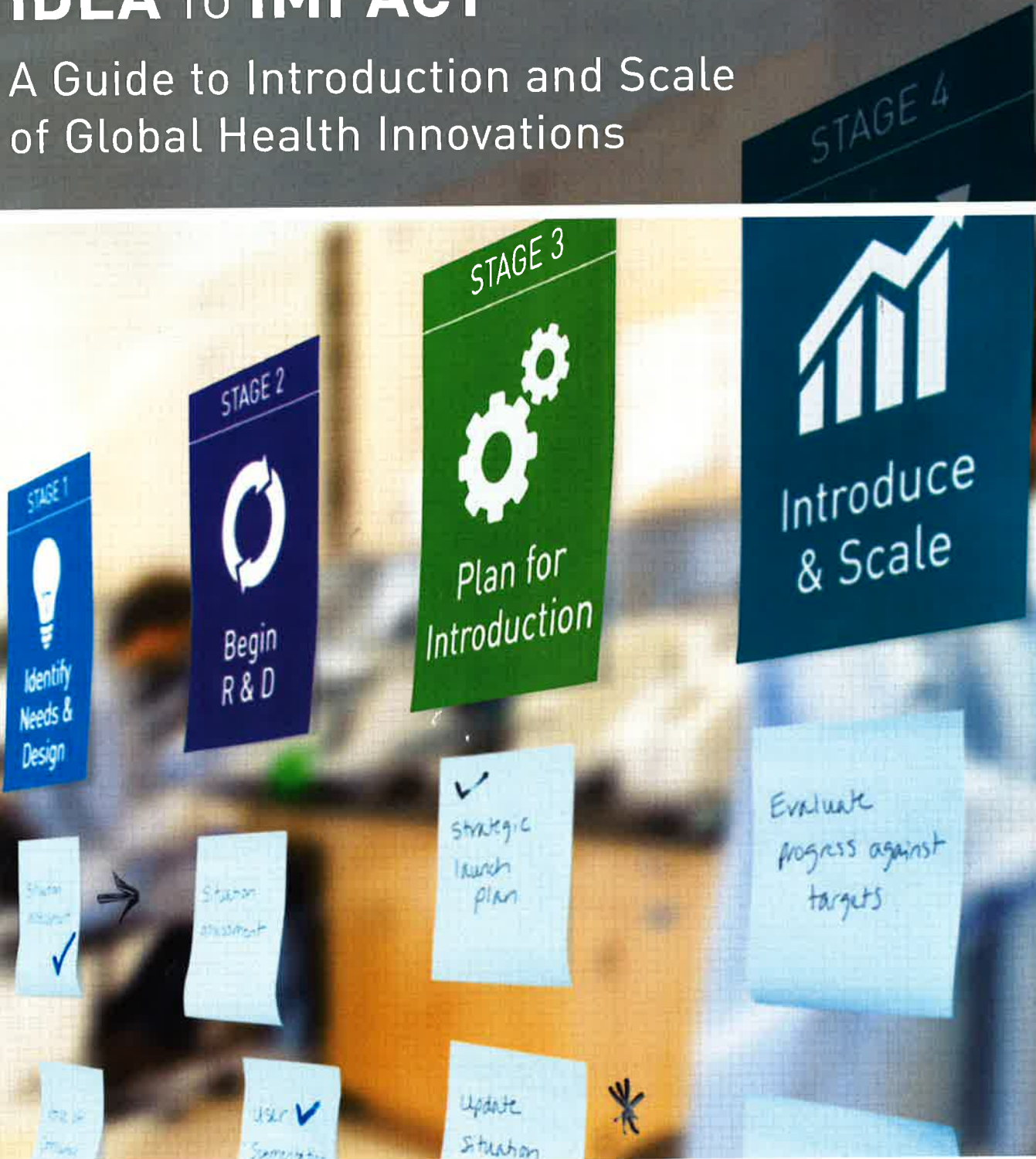




Photo: Design that Matters

Designing a medical device for use in rural clinics

Why Design that Matters began viewing end-users as part of a larger ecosystem of stakeholders

SITUATION

Design that Matters, a nonprofit design firm in Boston, Massachusetts, wanted to design a health product that made a difference in the world. Their first product, an infant incubator, was designed to help the nearly 2 million babies, mostly in developing countries, who die from lack of warmth during their first weeks of life. Design that Matters invested months interviewing and observing low-income families and rural doctors and nurses. They developed and tested dozens of prototypes with these users, sought input from local repair technicians, and proudly revealed the final product: the NeoNurture infant incubator. The product won many design awards and was featured in numerous magazines. However, it was difficult to

manufacture and the actual sales prospects in the competitive hospital equipment marketplace were unclear. Design that Matters was unable to convince a manufacturer to take the risk of scaling up production without strong sales prospects, so the product never became commercially available.

While they spent considerable time with users, Design that Matters neglected to understand the needs of the broader customer ecosystem, including manufacturers, distributors, hospital administrators, regulators, ministers of health, and foreign donors—all of whom play critical roles in the ultimate success (or failure) of global health products.

SOURCES (full citations pg. 71)

Design that Matters 2012
Prestero 2012

ACTIONS TAKEN

Timothy Prestero, CEO of Design that Matters, began anew by building relationships with a manufacturer of medical equipment and a successful medical product distributor, both of which had operations in Vietnam. He asked them for their insights into the needs and opportunities in their marketplace, and they suggested newborn jaundice. Technologically, newborn jaundice is easy to treat by shining a bright blue light on the infant for a certain period of time. Existing equipment was not designed for resource-constrained environments and was often misused or abandoned for lack of spare parts. Applying their formidable design expertise, Design that Matters met with manufacturers, distributors, hospital administrators, donors, users, and ministries of health, and developed a product that balanced the needs and constraints of all of these stakeholders.

In field studies, mothers, who were worried that their newborns were not warm enough, often placed blankets on their infants receiving phototherapy, effectively preventing the light from reaching the newborn. Design that Matters designed around this practice by placing lights above and below the infant, rather than trying to change the habits of mothers.

RESULTS

Design that Matters' Firefly phototherapy device is highly effective—requiring 40 percent less treatment time than competing devices. It is also cost-effective—as low as \$1.50 per infant. The double-sided lighting, compact size, high-tech aesthetic, and lack of moving parts, meets the needs of infants, mothers, doctors, nurses, and repair technicians alike.

While still early in its introduction, Design that Matters and partners, Medical Technology Transfer and Services (MTTS) and the East Meets West Foundation, have installed Firefly and treated more than 5,000 newborns in ten developing countries across Southeast Asia, sub-Saharan Africa, and the Caribbean. The company expects to sell an additional 1,000 devices in the coming years and aims to reach 500,000 newborns with effective phototherapy.

LESSONS LEARNED

- Good design must consider the needs of a large number of stakeholders, including but not limited to users. Stakeholders also include manufacturers, distributors, administrators, government officials, regulators, foreign donors, maintenance workers, nurses, and patients.
- Hypothetical use is no substitute for actual use. Design that Matters took prototypes to Vietnam and watched users interact with the device. Observations from these field visits led to significant design alterations that made the device more effective in real-life scenarios.
- An innovative product that cannot be efficiently manufactured will not succeed in saving lives. Design that Matters worked with MTTS to identify areas of competency and potential growth, which enabled MTTS to expand their capabilities and manufacture a better Firefly. By expanding a local manufacturer's capabilities, Design that Matters was able to keep costs low and avoid manufacturing setbacks.
- Manufacturers can be unwilling to take risks in new markets, so it is important to engage a willing and committed manufacturing partner from the beginning of the design process to foster commitment to the product vision. Usually, a manufacturer will radically change a product in order to make it less expensive and easier to make. However, in this case, MTTS was involved from the early stages of the design process, which brought the co-designed product vision to life.



Photo: Design that Matters

PRIORITY ACTIVITIES HIGHLIGHTED

- Develop value proposition
- Understand end-user needs through market research and/or human-centered design
- Perform manufacturability assessment and landscape