## Introduction

D-Tree International is a non-profit organization founded in 2004 by Marc Mitchell, MD, MS. The mission of the company is to "(..) provide health workers who live in rural areas with the tools they need to effectively diagnose and treat their patients".[1]

## Value Proposition

D-Tree aims to leverage technology usage in healthcare in order to improve patient diagnosis and treatment. They achieve their goal in three steps by (1) acquiring diagnosis and treatment protocols from specialized medical agencies (e.g., World Health Organization), (2) customizing and preparing the protocols for mobile platforms, and (3) training and equipping the healthcare workers with electronic protocols. The direct beneficiaries of D-Tree are healthcare workers and patients. The healthcare workers receive easy-to-use electronic medical protocols that help in patient triage, diagnosis, and treatment. In turn, the patients receive better and more accessible healthcare.

D-Tree is not a software company and its main goal is to improve the healthcare delivery process.[2] The technology side of the company is developed in collaboration with software companies (e.g., Things Prime). D-Tree also relies on existing wireless and mobile phone infrastructures available in rural areas for delivering its medical protocols.

The company focuses on three healthcare areas: child health (i.e., neonatal care, nutrition and acute malnutrition, prevention of mother-to-child transmission of HIV/AIDS), reproductive health (i.e., antenatal care, labor and delivery, postnatal care, and family planning) and chronic diseases (i.e., HIV/AIDS, tuberculosis, diabetes, hypertension). [1] Currently, D-Tree operates mainly in Malawi and Tanzania.

## Partnerships

D-Tree relies on a partnership model, where it collaborates with local NGOs and existing healthcare systems. The company aims to improve the healthcare delivery process, but it relies on partners for taking the developed medical protocols to the field and using them during patient interactions. The partnership model also allows for wider coverage and helps increase the company credibility. Prime collaborators are the World Health Organization, UNICEF, Harvard, mHealth Alliance, and Things Prime.

## Funding

D-Tree is non-profit company and its business model depends on donors, grants, and partially on revenue produced by its technology.[3] The company does not have involvement with venture capitalists, and to date it has been funded from sources like the

Innovative Funding Group, the IWG catalytic mHealth grant, and private donors via Global Giving Inc.

## Challenges

There are several short- and long-term challenges that D-Tree needs to address. Part of the short-term challenges regards the need for a scaling strategy in order to emerge into other countries, the need for a well-defined business and revenue model, and a more diversified medical focus in the target areas. The company relies heavily on the availability of mobile infrastructure and usable mobile phones, and there does not seem to exist a well-defined backup plan in case one of the two is unavailable. This can be a significant drawback in remote areas without mobile infrastructure, or in case the mobile phones get damaged or run out of battery. Long-term challenges include balancing rapid growth given the company's capacity and capabilities, developing a sustainable revenue model, developing secondary tools that can be used in case mobile infrastructure is not readily available, developing management plans for the collected patient data.

## Future Strategy

D-Tree has an objective potential for future growth. The company could emerge into other fields where protocol usage can help develop a more efficient and robust outcome (e.g., manufacturing industry). The company can also expand into creating comprehensive medical records that are populated by the health workers and can be transferred across medical institutions. The medical records could be designed to collect more patient data that can in turn be used in outcomes research and to evaluate the company impact on healthcare quality.

In order to be more sustainable, D-Tree should seek further funding sources. This could entail partnerships with companies in the private sector (e.g., insurance companies, pharmaceutical companies) and public sector (e.g., local health ministries, the Center for Disease Control and Prevention).

## References:

1. D-Tree International. http://www.d-tree.org/
2. Center for Health Market Innovations.  http://healthmarketinnovations.org/program/d-tree-international
3. Guidestar. http://www.guidestar.org/organizations/65-1217703/d-tree-international.aspx

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