

ACARA D-PRIZE CHALLENGE

2015-2016 Academic Year

Map & Monitor Road Infrastructure Projects

Improved road infrastructure reduces transport costs and lowers trade barriers, resulting in high social returns for local communities. In three months, demonstrate proof-of-concept for a road-construction monitoring system to help engineers oversee the quality and efficiency of road infrastructure projects. The system should increase road completion rates by 25% and be capable of scaling nationally within two years.

The Problem: Transportation infrastructure is a necessary component of development, yet transport costs are especially high in sub-Saharan Africa.¹ Transportation on dirt roads can be two times more costly than on paved roads, and only 19 percent of roads in sub-Saharan Africa are paved. This impacts everything from the costs of goods being exported to local food prices. Poor transport infrastructure also makes intra-continental trade far more expensive – the cost of trucking a 24 ton container from Maputo to northern Mozambique is nearly 2.5 times higher than shipping the same container from Dubai.²

The Proven Solution: Roads are a proven building block of economic growth and enable trade and human movement within and across countries. Over the past 50 years, World Bank infrastructure projects have generated a higher social rate of return in transport than in any other sector.³ Paved roads are a proven solution, particularly in Africa, where road travel is the dominant mode of transportation.

Your Challenge: We will award up to \$20,000 to a social entrepreneur who can create a simple road-construction mapping and monitoring system. You should have a vision to scale to an entire country within two years and realize a 25 percent improvement in high-quality road completion. A three-month pilot should establish proof-of-concept protocols for just a few roads.

Additional Information:

- The monitoring system would use a small number of local engineers to a) establish target road completion calendars, b) potentially improve the procurement process, c) verify the existence and quality of road construction, and d) correct problems when discovered.
- Every year, tens of billions of dollars are spent by developing world governments and international donors on road-building. Lack of transparency about how funds are used leads to the misuse and disappearance of resources, resulting in extremely low road completion rates. Oftentimes, the companies responsible for the road construction cut corners in order to lower costs and boost profits. This results in poor road construction quality and necessitates frequent rebuilding, sometimes after as little as one year.

¹ <http://www.csae.ox.ac.uk/conferences/2006-EOI-RPI/papers/csae/Bryceson.pdf>

² <http://www.oecd.org/investment/investmentfordevelopment/41775855.pdf>

³ Ibid.

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