

Bringing Information, Education, Employment, & Medicine to Disadvantaged Rural Communities through Cloud Computing

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1. Problem Statement

In rural communities in Alaska there is a lack of general resources, funding, and people with secondary education. In the state of Alaska the majority of communities are snow-bound and therefore isolated from the rest of the state. Although there has been some technological development in these communities, the community members have not been adequately trained to sustain the use of said technology. This prohibits the community from taking full advantage of these aides.

“This extreme isolation makes it hard for people living in these remote rural areas of Alaska to obtain valuable information, health care, employment, and education.” - David Boston

2. What needs to be done

Provide remote communication services which would give the disadvantaged people of rural Alaska access to resources not physically present in their communities. Training programs and incentives need to be established to ensure the technology is both being used to its full potential as well as autonomously sustainable. Through the use of technological developments we intend to overcome the difficulties posed by the geographical and environmental isolation currently present.

3. What has been done

There have been limited donations from government, corporations, schools, and other organizations which include things like personal computers, telephone lines, and Internet services. There have been studies to determine the effectiveness and utility of the existing infrastructure in some communities connected to the University of Alaska network. The Obama Administration has written and proposed a Draft National Educational Technology Plan, that strives to transform American education, “Learning Powered by Technology”. In July, 2010, Chatham School District in Angoon, AK received a grant through this technology plan where they will implement a Virtual School Project as a pilot project under the Alaska Department of Education & Early Development.

4. What should be done

A full survey of the existing technology needs to be done in order to fully understand the background of these places. Though there have been aides provided to the community there has not been proper training to utilize these aides to their fullest. In locations where the communication lines cannot support daily educational, medical, and psychological needs there will need to be an installation of higher bandwidth lines. This also relates to existing power solutions, where some communities may need to have updated power sources.

5. What we plan to do

We want to have video live streaming, and 24/7 healthcare support utilizing existing technology infrastructure. We intend to leverage the advantages of Cloud Computing to help provide state-of-the-art technologies which were previously unavailable to these disadvantaged communities. We also want to determine the level of community involvement for classrooms with this new system. In order to promote good education, we would like to have presentations on how a classroom in a larger city works and this may simply be accomplished by hosting a live conference call between a class at Purdue or University of Alaska Fairbanks and a rural community like Teller, Alaska. In order to bring these issues into the public eye, we would like to publish a research paper.

6. What we have done

We have started to research the NSF papers related to rural education and medicine in remote communities. We have also looked into what the community demographics are for a number of smaller rural locations. This will help us determine which communities have been a focus of such technologies in the past. We have also contacted the head of Technology Education (Title II D & Erate) at Alaska Department of Education & Early Development to discuss the Virtual School Project as a pilot project and the current state of technology usage in all of Alaska's school districts.

References:

ICE: Investigations in Cyber-enabled Education

<http://nsf.gov/awardsearch/showAward.do?AwardNumber=0918340>

Poverty Rates in Alaska: Alaskan Cities Prosper, but Native Alaskans are Left to Freeze

<http://www.suite101.com/content/poverty-in-alaska-a61078#ixzz0zmkJrKHb>

Alaska State Educational Technology Plan

http://www.eed.state.ak.us/EdTech/pdf/AK_Ed_Tech_Plan.pdf

Division of Community and Regional Affairs: Facilities, Utilities and Services

http://www.commerce.state.ak.us/dca/commdb/CF_BLOCK.htm

University of Alaska Fairbanks ASSERT UA Resource Analysis

http://assert.uaf.edu/geni/UA_Resource_Analysis.htm