

Apangea in Mexico

Technology for International Development

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Introduction

This non-traditional business plan attempts to promote the idea that by placing Apangea's computational technology into primary and secondary schools throughout Mexico, that economically disadvantaged students can acquire a dramatic increase in basic mathematic skills. I will use a for profit business model which attempts to transfer the social bottom line to its product's end users by commercializing and distributing to scale Apangea's products across Mexico, to both public and private schools, at little or no cost to public school students. This plan is not meant to be exhaustive; it will only provide important key insights into the possibility of a partnership between Apangea and my company FACM, LLC. As such, I will not provide market analysis, financial strategies, or any sort of dollar figures in this medium. And, I will only address those issues which are relevant to the readings on which I have chosen to bolster my arguments and suppositions. In reality, if and when Apangea responds to my proposal for partnership, a full scale plan will be created by means of collaboration by me and my partners.

Who is Apangea?

Apangea, which was formed in 2003, is a company who sells educational software for tutoring in math, science and writing for elementary, secondary and high school education. The Pittsburgh based company in 2009 had sales upwards of seven million dollars. Apangea has won several prestigious awards in the educational retailers community including 'Best Tech 2009, Scholastic Administrators' as well as 'Top 100 Educational Products 2007, Readers Choice'. Their clientele consists of a diverse number of school districts across the United States including Idaho's entire public school system. Among the five members on their board of directors sits

Mark Desantis, who is the owner of MobileFusion, former mayoral candidate for the city of Pittsburgh and adjunct faculty member of the Heinz School for Public Policy and Management at Carnegie Mellon University. On their website and array of social media pages, Apangea markets themselves as a tutoring company who can produce important improvements in individual student abilities and test scores.

Apangea's business model differentiates from that of other software-based tutoring companies in three important ways. First, Apangea's proprietary technology allows for individualized student machine learning. The program is continually adaptive to the student's demonstrated track record. This is done through a series of algorithms created by the Air Force Research Laboratory which contribute to the software's artificial intelligence engine. Because of this important feature, a student will only practice the key areas of a principle which he has not yet mastered. And, based on performance tendencies, the algorithm will generate meaningful exercises focusing on a student's weaknesses. Second, in conjunction with the artificial intelligence engine, online tutors provide for instantaneous response and aid when a student needs help. This aid is effective because of the use of an integrated whiteboard tool which allows the tutor to provide detailed graphic explanation, as if it were a live board.

The Apangea business model works as follows: 1) The customer's software needs are assessed and sold accordingly depending upon number of installations, end-users and budgetary restraints 2) Apangea's tutoring software is either downloaded or manually installed on the customers machines 3) Education instructors are trained on location by Apangea employees on how to use the software and best practices for efficacy in use for teaching 4) Each student creates their own individualized learning program 5) Instructors reinforce core principles taught by the program in classroom instruction 6) Online tutors who are certified and available remotely

7 am to 10 pm assist students through the use of an online whiteboard 7) Contests are held on a school-wide level and prizes such as Wii's and gift cards are awarded to winners who show the most improvement 8) Automated reports are created for parents, educators, and administrators detailing a students, or a group of students progress as needed.

The Socially Innovative Model

In creating any socially innovative business it should be recognized that simply providing a service or product to an underprivileged base is not enough to fully qualify the business as being socially innovative. To be socially innovative, the product or service must provide a benefit to its users in such a way that they receive a substantial benefit from its use, and that such use is easily obtainable. In the case of commercializing Apangea's educational products in Mexico, simply placing the product in some schools is not sufficient to meet these criteria. This model attempts to be socially innovative by widely distributing the software product all across Mexico, while providing the necessary infrastructure for its proliferated use. And, above all other priorities, to do so at little or no cost to the economically disadvantaged and underserved communities who will be most affected by its' implementation.

The model itself consists of two elements: 1) to sell Apangea's products to wealthier private primary, secondary, and high schools, and then in turn use a large portion of the revenues to subsidize sales to public primary, secondary, and high schools and 2) to use market contacts to place products and their supporting necessary infrastructure across the country through municipal, state, and federal government programs and funding.

Adjusting for Cross Cultural Market Conditions

For the commercialization of Apangea's products in Mexico to be effective, FACM cannot simply copy the business strategies of Apangea in the United States; rather, to be effective FACM must operate as a Mexican company, within the context of an American/Mexican partnership. This has profound implications for the success of such a commercialization.

Politics

Fortunately, Apangea's products are meant for tutoring purposes only. This means that upon adoption in most cases a resource is added rather than replaced. In Mexico, the Teachers Union is very strong, very political, and very auto-protective. In order for any project regarding public education to be scalable, it must not negatively affect the teachers union or its members. This project quite possibly averts any negative political consequences because adoption of machine learning for tutoring purposes will likely bolster the teacher's classroom effectiveness. Endorsement by the union would be even better.

Sales and Revenue Stream

Under the Apangea sales model, the client pays a monthly fee for use. It is speculated that a month –to-month mechanism will not work in Mexico because the client will not likely commit to any term of sustained use which will seriously hinder the ability to retain clients. This is because in order that a client can see the benefit of the use of the product, the product must be used for a sustained period of time so that clearly identifiable benchmarks might be met in terms

of user improvement or accrual of skills. Instead, three month, six month or 12 month contracts will be used with proportional down payments. This will guarantee a minimal time of use.

Language and Culture

Apangea's products were designed for an American user operating in an American educational context. For Mexican marketplace integration, the product currently benefits from an available Spanish Language platform. An seemingly small change that would be made is to offer local trips or parties to students rather than prizes of high value. This is because of the high level of corruption as a result of low income levels. Making this small change will avoid many problems. After a partnership with Apangea is reached, the product must be carefully analyzed and adapted to adjust for any culturally nuanced product characteristics that may inhibit the product's efficacy. It is important that the product be effective as possible so that individual client results convince stakeholders of the value of the product. Also, it is anticipated that many unexpected issues relating to culture may arise. Those must be dealt with meticulously on a case by case basis as they present themselves. The takeaway from this section is to recognize that change must be made without hesitation when necessary, and that the American Apangea model will not work unaltered in a Mexican context.

Implementation of Technology

This is quite possibly the most difficult aspect of the entire project. The question arises, 'is the product scalable, taking into consideration that most public schools in Mexico do not have computers and even some do not have electricity?' It is our belief that the Apangea's products are scalable. In comparison to Apangea, a much more critical focus element of our business

model would be the development of the necessary infrastructure for product sale and usage. The ability to acquire low cost computer equipment for sale of low or nearly zero profit would enable sales to lower class private schools. Also, these low inputs would aid in the sale of product to certain sectors of the government such as municipalities as well as participation in government programs. As the business grows, the cost of inputs will be reduced as products are brought to scale thereby allowing for larger orders with suppliers to be placed.

Initial customer base in the start-up phase will largely be determined by cost of inputs for infrastructure building. Until the cost of important inputs are reduced, the customer base is limited to four groups: 1) schools selected by a government entity, serviced through government contracts 2) private schools who can afford to pay 3) a limited number of schools who receive low cost product and service through subsidization from other revenue sources and 4) schools which already have the necessary infrastructure or require a lesser degree of infrastructure development.

Sustainability and Profitability

The model aims to be sustainable. A need exists in the market for high-value educational resources. And, by selling software usage rights to private schools whose need for positive results in student learning of mathematics private schools will believe that our product is crucial to their own business success. Private schools also have the necessary revenues in order to justify such a marketing proposition, which makes sustainability on this regard a question of strategy and differentiation. As for product sale to government entities, sustainability is much more difficult to maintain when market contacts are the force behind government contracts. This

is an important consideration which must be dealt with over time as new market opportunities present themselves to allow for broader independence in the marketplace.

The model is meant to be profitable, although it is difficult to determine whether this is so because of two reasons. First, In part profitability will largely be determined by the cost of inputs (which we could estimate) and the equilibrium price of sale for a service that does not currently exist. Because of this we cannot estimate its value in the Mexican marketplace. Second, critical to this assumption of profitability in a partnership with Apangea is the ability to negotiate with Apangea the cost at which services will be offered. It is logical to assume that royalties in some amount will be accrued to Apangea on a per sale basis. These must be low enough to create the necessary economic incentives for investment by FACM partners. In addition, the product must be offered at culturally acceptable and reasonable price points to customers near the Mexican market equilibrium, not to be confused with the American market equilibrium. The net result of both of these considerations, both of which are at the hand of Apangea, must result in a positive balance sheet after adjusting for all implicit costs of providing service of product.

Application of the Literature

For this project I used two articles to support my conclusions about the effectiveness of Apangea's technology and the educational needs in Mexico. I will address each individually. The first, Multi-Year Large-Scale Field Studies of the Fundamental Skills Training Project's Intelligent Tutoring Systems, by Meyer, Steuck, Miller and Kretchmer, is a 15 year study covering 40 schools, 10 states, 50 teachers and 3000 students. The study analyzed the effectiveness of adaptive learning software for enhancing critical thinking skills. The system

was designed to ‘enhance, not replace, traditional classroom instruction.’ The results conclude that machine-learning ‘tutors have been instructionally effective in real-life educational settings,’ and that ‘a key factor in the success of technologies is the support of the [school] administration.’

Seven critical variables are delineated in the article. These must be controlled for if the system is to be effective. They are: 1) learning outcomes, 2) teacher variables 3) administrators 4) external requirements 5) technology variables 6) student variables and 7) project staff. Apangea’s products and accompanying methodology and approach to an educational based learning system appear to fall directly in line with all seven of these critical variables. In fact, this is their market differentiation. And, in addition to all of this, their system is based on an adaptive learning/artificial intelligence engine.

In the second article I evaluated, *The Education Challenge in Mexico: Delivering Good Quality Education to All* by Stephanie Guichard, a broad perspective critical analysis is made of the Mexican education system as a whole. Relevant to my proposal for partnership with Apangea are several critical insights made by Guichard. First, and although this was undoubtedly known by my Mexican business partners, it was not known by me, that in 1992 education was decentralized and taken from the purview of the federal government and the states were given primary stewardship. Secondly, allocation of funds for education to lower levels of government is determined by the states as well as training and curricula. An understanding of this finance structure and allocation of resources is critical to any education based proposition. Guichard also notes that ‘private schools attract mainly high income groups who turn to private services in response to low quality of services in public education.’

Guichard states that ‘there is an important backlog of all types of investment from basic equipment to ICT.’ But one of the most important details revealed by Guichard in terms of development opportunities is that ‘several states are now developing systematic evaluation at the state level (The Distrito Federal, Nuevo Leon, Quintana Roo, Jalisco, Guanajuato, Sonora and Chiapas among others)...’ For development this means that as states struggle to assess improvement among student populations an Apangea FACM partnership could create opportunities to capitalize on monitoring of student assessment through tutoring. This is insightful as well in determining where to first market Apangea products in the start-up phase.