Interactive Software in 3D (IS3D, LLC)

Investment Summary

Marketed as:

Cogent Education™

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Executive Summary

Business Description: Cogent Education™ (legal name: IS3D, LLC) is a science education software company founded on technologies developed at the University of Georgia (UGA). Cogent Education develops products that meet the new demands of the education market, namely to improve the problem-solving and critical thinking abilities of students. All across the US, States are revising their science standards to shift their focus from rote memorization of facts to learning and applying critical thinking skills. This shift is due to increasing pressures on the US education system to improve science education as the US is currently ranked 25th in the world in science education.

Background: Since winning $50K in seed money from the Georgia Research Alliance (GRA), Cogent Education has won more than $5M in Small Business Innovation Research (SBIR) grants from the National Institutes of Health and the National Science Foundation. UGA, GRA, NIH, and NSF hold no equity in the company (UGA receives a 2.5% royalty on sales). Cogent Education's technologies are the result of 6yrs silo'd research and development at UGA and Cogent Education. These technologies include a software authoring system that enables the company to efficiently develop new products for any science course at any grade level and a patent-pending data analysis platform (provisional patent filed March 2014; full patent submitted March, 2015).

Tom Robertson, Co-Founder & CEO
2012 GBBC Entrepreneur of the Year
20 yrs Medical Research
15 yrs Educational Technology

Tyler Wood, President & CMO
17 yrs Ed Tech Industry Experience
9 yrs at Apple Education

Bank: Athens First Bank and Trust

Law Firm: Founders Legal

CPA Firms: Jameson and Co.; HA&W

Grants: $5.4M; **Tax Credits:** $838K

Current Investors: Oak Fund ($150K), AT&T ($100K)

Debt: $110K loan (Georgia Research Alliance)

The Cogent Education Solution: Current science education products do not meet the needs of schools to improve students' critical thinking abilities. Cogent Education's products are different. They are designed by a team with a combined experience of over 170 yrs in science, game design, digital art and instructional design. Cogent Education's flagship products are "Interactive Case Studies" in which students have to solve real world problems (e.g., a calf is having a seizure, can you find out why and help save the calf's life?). As students work through a case, they apply the scientific method, which is the universal process needed to solve ***any*** problem. Each step in the method is the execution of a specific skill, namely: understanding key concepts, collecting and analyzing data, interpreting data, forming and testing hypotheses, and communicating findings. Student performance at each step is sent, in real time, to our cloud-based data analysis system (called "SABLE", patent pending), which allows teachers to immediately identify areas in which students may be having difficulty via a heat map of skills. For the first time, teachers are "in the moment" with their students, can "see" how their students are thinking, and quickly intervene when needed. Independent research by the College of Education at UGA summarized the effects of Cogent Education's products on student learning as "staggering". Cogent Education's first wave of products are a suite of cases for High School Biology courses, and the company intends to apply its technologies to bring to market similar suites for high school chemistry and physics. Once the high school suites are complete, the company will then address the middle school and elementary school science education markets.

Market Opportunity: The new market drivers in education have resulted in school districts looking for new products to supplement, and improve, their science curricula. With hardware becoming ever more affordable for schools, these customers are looking to software as a cost-effective way to achieve their aims. While many education start-up companies have appeared over the past few years, very few focus on content, even fewer on science content, and virtually none on high school science content. Why? Because high school science is difficult and a company needs a high level of science expertise to make effective products for this market segment. As such, there is a significant opportunity in the high school science education market for Cogent Education as: 1) there is a significant technological barrier to entry for future competitors, 2) the products have been proven to work over 6 years of independent research with more than 4,000 students (research data from a respected university is a huge benefit in the sales process), 3) the products are coming to market at the right time to meet the new market demands, and 4) Cogent Education's products are highly scalable.

Current Needs: Cogent Education has launched its first products and acquired its first customers (schools), and the company has more than 200 schools on trials of the products. Since the company cannot use the Federal grants for sales or marketing, the company raised $250,000 in angel investment (Athens Cambridge Oak Fund LP and AT&T) in 2016 and supplemented this with proceeds from selling State tax credits. This enabled the company to hire its President and 2 support personnel. We now need to expand this team to capitalize on our leads generated and efficiently convert trials to paying customers. Cogent Education is now raising capital to support these efforts. By re-investing sales revenues, Cogent Education aims to quickly become a leader in science education with a targeted exit of 2020. The exit will likely be via an acquisition by one of the major players in education as these companies have a history of acquiring technology rather than try and develop their own in house solutions.

Business Description

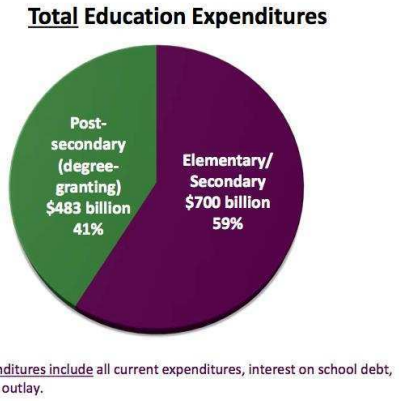
IS3D LLC (Cogent Education™) was formed in the State of Georgia in 2010 by 7 faculty and staff members from UGA (for this business plan IS3D LLC will be referred to as "Cogent Education"). This team was led by scientists and clinicians who have built their careers by solving real world problems. This experience, coupled with in-house programming and digital art expertise, enables Cogent Education to develop products that enable students to act like scientists and solve real world problems by practicing and applying critical thinking skills. The real world scenarios provide relevance for the student and the products have the look and feel of the technologies that today's students readily engage with, namely modern videogames. A key differentiator for the products is the inclusion of real time data reporting for teachers that allows teachers to immediately identify needs for each student and intervene "in the moment". This system also enables teachers to track student performance across the entire course as they complete more cases. This latter feature, called a *formative assessment system*, also meets a new market demand in that schools are required to demonstrate the effectiveness of their teaching strategies through yearly student academic portfolios.

Current State of the Industry and Market

Market Need: For decades, the US education system has measured success in science classes with multiple choice tests that focus on the ability of students to rote-memorize facts and formulas. However, this situation is changing as schools are being challenged to raise standards and the new tests require students to practice critical thinking and problem solving skills. In other words, there is a shift from "Know What?" to "Know *How*" to measure academic success.

Schools are looking to technology as a cost-effective way to engage their students and raise standards. While established education companies have attempted to leverage software to meet this need, their efforts have been confined to re-packaging textbooks as "interactive textbooks" and investing in technologies aimed at improving student scores on multiple choice tests (aka "adaptive curricula"). As such, the market lacks effective software that meets the new purchasing criteria of schools, which is driven by calls to produce a more ***skilled*** workforce for the US economy.

Market Size: The US market for education is approximately $1.3 trillion, which is segmented into K-12 education ($700B) and post-secondary education ($483B). With respect to discretionary spending by schools, *The Complete K-12 Report 2011*, (Robert Resnick, President of Education Market Research), sized the 2009-10 K-12 market at $16.4 billion and projected 2010-2011 spend to be around $17.3 billion, a 5.3% increase. Resnick projected average growth across all segments of about 5% per year through 2020.

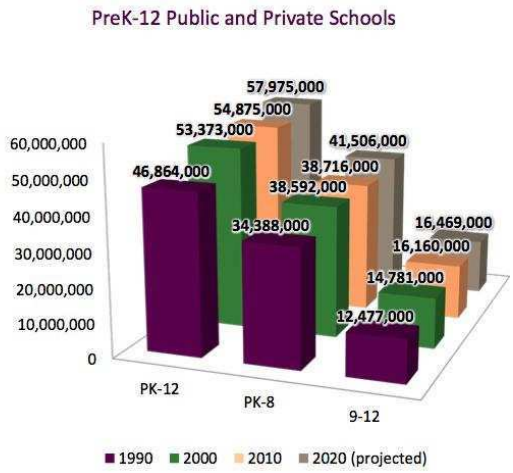


Breakdown of school spending:

Total K-12 Market Size Estimates (2010-2011)

Technology Products (Hardware, Software, Internet)	$8.1 billion
Instructional Materials: Textbooks	$3.5 billion
Instructional Materials: Supplemental	$2.4 billion
Other: Trade Books, Periodicals, Tests, etc.	$3.3 billion
Total	**$17.3 billion**

Market Growth & Trends: Public school enrollment is projected to set new records every year from now until 2020. One of the most prominent trends is the growing popularity of mobile computing devices, with schools and universities exploiting students' reliance on mobile devices to enhance their learning. [A key advantage for Cogent Education is that its products can be used on any platform, namely, PC, Mac, Web browser, and iOS or Android tablets].



Currently there are 132,183 K-12 schools in the US. The initial target for Cogent Education will be the 27,207 high schools (24,275 public and 2,932 private) in the US. Of the 24,275 public secondary schools, 19,399 (80%) are traditional schools, 3,361 (14%) are alternative schools serving students at risk of failure, 1,187 (5%) are vocational schools and 328 (1%) are special education schools. While the initial target market resides in the US, there are significant opportunities for Cogent Education in international markets. STEM-based industries are central to virtually all industrialized nations, and the need to improve STEM education is not confined to the US. Moreover, Cogent Education's solution can be applied to **any grade level**, and **any subject** within a curriculum. This market analysis is confined to Cogent Education's initial target: the US high school market.

Market Segments: The high school science market is segmented by discipline (e.g., biology, chemistry, physics) and by course level (e.g., introductory, honors and advanced placement [AP]). Cogent Education's first products are aimed at introductory and AP Biology courses. The College Board recommends that college-bound students take at least 3 years of high school science, including one year of biology, and 30 states require 3 years of science education. In 2007, 25% of all high school students took AP classes, up from 16% in 2000, and AP biology accounts for 5.7% of all AP classes offered.

In addition to the number of students enrolled in science and AP courses in schools, the home school market is also expanding. From 2003 to 2009, the percentage of students being homeschooled increased from 2.2% to 2.9%. In 2010, there were approximately 501,000 homeschooled high school students. Cogent Education's products can be used by anyone wishing to homeschool their children as its products can be installed on any home computer.

Industry Overview: The dominance of the market by large publishing companies is under increasing threat as their market share continues to be eroded. In 2010, Houghton Mifflin Harcourt had to recapitalize, which resulted in $3.5B of equity holder investments being written down to zero. McGraw-Hill suffered falls in revenue in 7 out of 8 quarters in the two years prior to selling its education division to Apollo Global Management in 2012. In response to declining textbook sales, Pearson announced in 2012 that it was "pivoting further toward digital" and that the "pivot is companywide".

One major problem for these publishers is that their business models do not encompass technology-based solutions. To address this situation, they are "buying-in" these competencies. McGraw-Hill Education recently acquired the ALEKS Corporation, which produces online learning tools, for $105M, and Area9 Aps (price not released). In 2012, John Wiley & Sons purchased Deltak for $220M and Efficient Learning Systems for $24M

In 2013, Houghton Mifflin Harcourt acquired Tribal Nova, to increase its in-house videogame expertise, and established a $100M innovation fund for technology investments. Pearson Education spent $1.6B on acquisitions in 2012 in an effort to become an "Electronic Arts [videogame company] for education" (Luyen Chou, chief product officer for Pearson's K-12 technology group), including: GlobalEnglish ($90M), EmbanetCompass ($650M), Grupo Multi ($721M), Certiport ($140M); 2013 acquisitions (terms unknown): Virtual Nerd and Learning Catalytics.

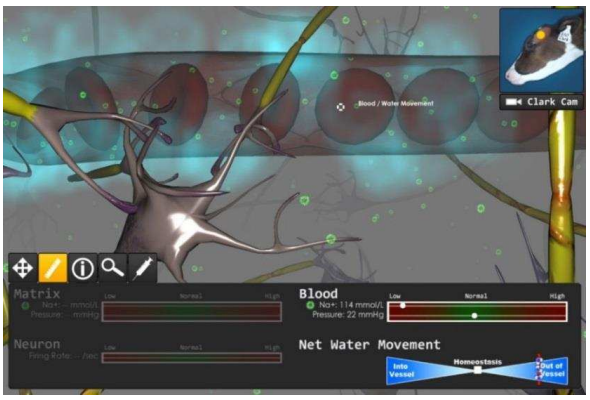
This trend of acquiring technologies will likely continue, and Cogent Education's technologies and product pipeline will likely make Cogent Education an appealing acquisition target.

The Cogent Education Solution

Approach: Scientists solve real-world problems by applying the scientific method to move step-wise through making observations, collecting and analyzing data, forming and testing hypotheses, and communicating their findings. Students need to experience this process firsthand. For example, in art class, students practice being artists, in music class, they practice being musicians; Cogent Education enables students in science class to practice being scientists.

Technology: Interactive Cases

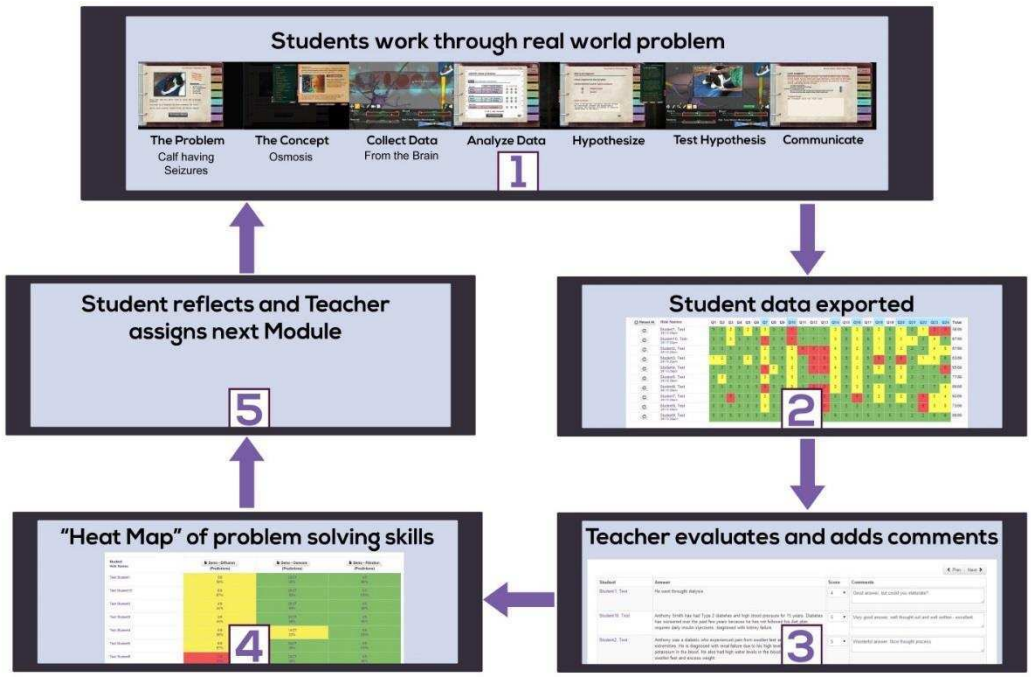
These products were developed during a National Science Foundation SBIR grant: "Skills and Assessments-based Learning Environment (SABLE)", which developed a modular software system that is underpinned by a unique data analysis platform. Each module (Case Study) centers on a key science concept that is placed in the context of solving a real world problem. This screenshot is from Cogent Education's Interactive Case for osmosis (the screenshot is the inside of a calf's brain that is having seizures). The ethos behind each case is that problem-solving is a skill, skills can be developed and honed through practice, and the key to solving science problems is mastery of the scientific method.



In each case, students play the role of a scientist trying to solve a real-world problem. As one teacher put it, "The best thing about these case studies is that they teach the '*So what?*' of science." For example, osmosis is usually taught using labs involving slices of potato or dialysis tubing, which is not a particularly compelling motivation to learn about osmosis. In contrast, the case enables students to learn about osmosis and its real world relevance by trying to save the life of a calf that is having seizures. In the diffusion case, students learn by helping a patient who has been exposed to chlorine gas following a train wreck, and in the homeostasis case the students learn by helping a patient with kidney failure due to type II diabetes. These real world narratives effectively engage students in their learning, and the virtual environments allow students to see the "invisible", namely cells, ions and molecules in a dynamic and interactive format.

Real-Time Data Analysis: The analysis of student performance is enabled by Cogent Education's cloud-based system that analyzes the data based on the specific ***skill*** being practiced. As students work through the problem, they are assessed at each stage and their performance is exported to the analysis platform in real time. Teachers can see where every student is within the case and can view a "heat map" of the performance of each student at each skill, and intervene immediately where needed. Teachers can identify areas of need for each student, and provide specific comments to help the student focus on these issues. Students can reflect on their performance and review comments from the teacher. An overview of the modular system is shown below. As a student completes a case, they receive feedback from their teacher, and reflect on their learning prior to moving on to the next case.

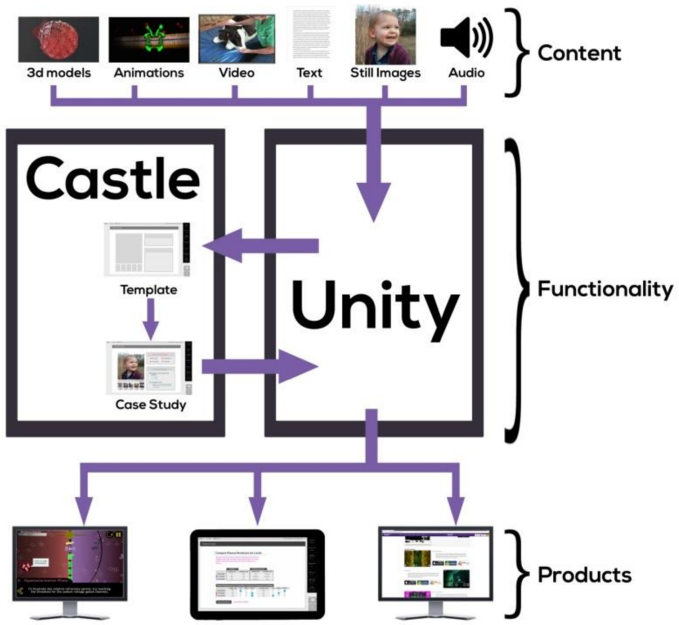
SABLE Modules & Analytics



Production: Cogent Education has developed proprietary authoring software ("CASTLE") that works in harmony with a videogame engine (*Unity 3D*, software used to create videogames) to produce software that works on any hardware. The CASTLE system allows artists, scientists, and programmers to work independently on assets (art, text, code) that then populates a case study "template". The completed case is then exported as versions for each platform. Currently, CASTLE produces case for PC, Mac, and iOS or Android tablets, and will produce required for "streaming" on Chromebooks between Spring and Summer 2017.

The development of the CASTLE system has greatly reduced the time required to produce new interactive cases. The first case study took more than 2 years to develop, whereas the latest case took just 6 weeks. CASTLE also contains the coding required for data to be sent from any case to the data analysis system. Over the past 5 years, the company has built a library of 3D digital art assets (e.g., anatomy assets such as lungs and muscles, molecular assets such as enzymes and molecules) that has also reduced the time to produce the case studies.

All Cogent Education's products are developed in-house at its Athens offices.



100% of the development and programming required for the products is performed in the USA.

Scalability

The scientific method is universal, it does not change by discipline or grade level. CASTLE effectively "templates" the scientific method into discrete steps. As such, the only things that change are the topic (e.g., chemistry) and the real-world scenario. By having **one** system that authors new products for any market segment and reports to the same data system (SABLE), Cogent Education has a distinct advantage over its competitors. This system took 4 years of R&D to complete, which presents a significant barrier for others to overcome.

Scalability and the Customer

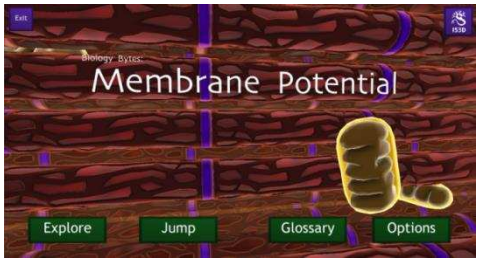
Similar to CASTLE, the data analysis system does not change by subject or grade level – it is also aligned to the scientific method. Once Cogent Education completes the products for other science courses, schools will have one system for all their science teachers. By having just one system, schools will be able to save time and money on teacher training and professional development. Training for the real time data system and the Interactive Cases takes approximately 40 minutes and can be done remotely via video conference or webinar, which reduces the need for Cogent Education's staff to visit schools.

The system has been developed ***with Teachers and Schools*** to ensure that the system delivers the data they need and that it is easy to use. For example, the CTO of Georgia School District told the development team "We have a lot of technology, so we get software to review all the time. The first thing we do is open the software and if it takes more than 3 clicks of the mouse to do something, we don't take the time to review it – because we know that teachers will never use it." Cogent Education's real time data system was, therefore, designed as a two-click system.

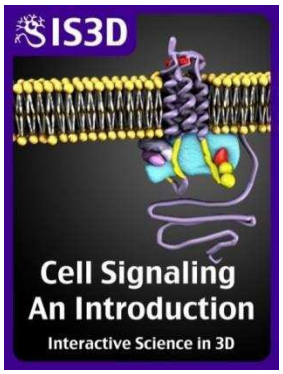
Ensuring the Products meet the needs of Teachers

The topics for each case study are chosen to address the perennial "pain points" in science curricula. Specifically, Cogent Education asks teachers "What concepts do your students always struggle to master?" This feedback is then compiled into a "top pain points list" and cases are developed to address each concept. For example, Cogent Education worked with 53 chemistry teachers with a combined teaching experience of 980 years to compile its list of topics for the forthcoming chemistry cases. This ensures that when Cogent Education presents a list of cases to teachers, they immediately recognize the value that that products can bring to their curricula.

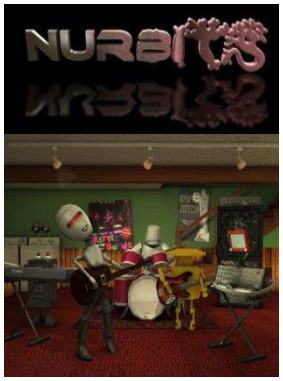
Other Products



Interactive Guides ("**Bytes**") help students learn key concepts in 15-20 minutes, and allow students to experiment with cellular and molecular systems to learn through inquiry rather than rote memorization of facts. These products were developed during an NIH-funded SBIR project in 2014 and compliment the Interactive Cases. However, customers have shown far more interest in the Interactive Cases, and Cogent will focus on those products unless demand becomes apparent from customers for more supporting materials, such as the Bytes and Cogent Education's **Interactive Books.**



Recently, publishers have adapted their physical textbooks into "interactive textbooks" (electronic versions). However, they have done little more than paste in the text from their books and add a few 2D animations. Cogent Education took a different approach and incorporated 3D animations, rotatable 3D models of molecules and interactive assessment items into its first **Interactive Book** ("Cell Signaling"). This led the marketing divisions of Apple US and Apple Europe to request permission to distribute the iBook to Apple employees for the purpose of demonstrating great content for student learning. Cogent Education has since developed tools that enable rotatable 3D animations and rotatable 3D assessment items to be included in its iBooks. Cogent Education has developed a tool set within CASTLE to enable its iBooks to be used on any platform, not just iOS devices. Once again, the iBooks were developed as part of an SBIR grant, but Cogent does not foresee these products as being big "winners" in the market.



Science Education Games: Educational games have received much attention recently to engage students in their learning. Cogent Education's games are very different from current games on the market. When a student plays the game, they learn science by *applying* the science concept to beat the game. This new approach led to an SBIR grant (phase I: $500K over 2 years, Sep 2012 and $980,000 over two years April 2015) to develop "Nurbits", a music-making game focused on learning neuroscience principles. Students must help the members of a robot band by solving puzzles to connect the "chips" in their brains. This involves connecting musical notes using the same principles by which nerve cells communicate in the brain. The prototype of Nurbits was a winner of the National Apps for Class Challenge in 2015 and is scheduled for worldwide release for mobile devices in May 2017. **Note:** Revenues from games are **not** included in this business plan. This is because revenues from games are virtually impossible to predict with any degree of confidence. For example, *Rovio* made 51 games before it made the hit game *Angry Birds*.

Effectiveness of the Products

Research has been conducted for more than 5 years by Dr. Georgia Hodges of The College of Education at UGA (details available at http://www.cogenteducation.com/research). In the words of Dr. Hodges, the effect of the Interactive Cases and SABLE on student learning was "**staggering**".

Dr. Hodges conducted interviews throughout the process to determine teachers' attitudes toward the cases, and their use of the real time data. 100% of the teachers explained that students intuitively *knew* how to navigate the cases. Jessie (teacher) explained, "The students fully recognize that we are in this together. I am *in* this experience with them, so they give it their best. SABLE allows me to give my gifted kids room to breathe, room to think, while still examining what they are doing, where they are going."

When surveyed, 100% of the teachers believed that the student's learning experience was deep and rich. As Suzanne (teacher) explained, "I am confident telling you that the SABLE intervention worked because I managed the learning environment throughout. When a student had a problem, I saw it and I addressed it, immediately. My students did not spend two weeks waiting for me to find time to grade the material. I answered them in the computer lab. SABLE enables me to teach the way I want to teach."

A summary of the research findings is as follows:

1. SABLE modules [Interactive Cases] engage students in their learning
2. Teachers value the SABLE modules in their instruction
3. SABLE modules increase student learning
4. Students use critical thinking skills when using SABLE modules
5. Teachers used and valued the real time data concerning critical thinking
6. The delineation of skills was valuable to teachers
7. SABLE effectively helped teachers differentiate instruction
8. The real time data improved student performance when using SABLE modules
9. PD related to SABLE can be effectively implemented in-person or remotely
10. There are no technological barriers to deploy SABLE in schools and schools districts
11. Security requirements relating to student data have been successfully implemented
12. Teachers would like more SABLE modules in their biology curricula

Awards

The Interactive Cases won 3 of the 4 awards at the Software & Information Industry Association's Education Business Forum in December 2014 (Most Innovative, Most Likely to Succeed, and Faculty Choice Award). In Jan 2015, the cases won the Future of Educational Technology Conference's Innovation Competition by being voted by teachers as the product that they would most likely use in their classrooms, and Cogent Education's first case for chemistry won the same award at their Jan 2016 conference. Cogent Education won the International Society for Technology in Education "Most Likely to Succeed" in July 2016, and the Interactive Cases were chosen by Digital Promise (an organization founded by an act of Congress to research and promote digital tools for learning) as the best research-based product of 2016. SABLE also won the "Cool Tool Award for Assessment" from Ed Tech Digest in 2016.

Competition

The initial market segment that Cogent Education will target is supplemental materials for high school biology. The competitors in this segment offer software that is "content-driven" as they typically focus on a single science concept, such as osmosis. This has been an advantage for these companies as they have been able to produce a broad content library. However, the recent switch in standards (from content-driven curricula to skills and practices-based curricula) has meant that this (content) strength is now a ***weakness,*** as their materials no longer match the purchasing criteria of schools. By focusing on the scientific practices that characterize successful scientists, and by working in partnership with our customers, Cogent Education intends to exploit our competitors' weaknesses to market the cases.

Direct Competition

Adaptive Curriculum, Simbio and Explore Learning offer products with varying degrees of interactivity. Adaptive Curriculum offers a wide range of products via its web-based portal that includes class management tools for teachers. Adaptive Curriculum's content is delivered exclusively by *Flash*. Simbio offers several software packages for biology that also require plug-ins (Quicktime and Flash). Explore Learning's capabilities and platform is almost identical to Adaptive Curriculum, except that they focus on short introductory/review pieces, called *Gizmos*. Of these 3 companies, Explore Learning has been very successful as it states that *Gizmos* are used in 50 states and reported more than $20M in revenue in 2015.

Indirect Competition

Textbook publishers have dominated the market for decades. These companies continue to update their content and made much of it web-accessible. In recent years, they have added animations to their products in an effort to keep pace with customer expectations, and also licensed content from science education software companies, such as ADAM.

Future Competition

We expect our major competition to come from new start-up companies like ourselves that can use modern tools, such as 3D game engines. However there will be a significant *barrier to entry* for these companies as the development of science education materials needs an array of competencies. The SABLE system is the result of more than 6 years of research at UGA and Cogent Education and is the subject of a patent application. To develop products that could rival SABLE, a company would have to invest heavily in content experts, researchers, programmers, digital artists, and web developers, an endeavor that would take years of development to clear the hurdles we have already addressed.

Competitive Analysis

There are no products on the market of comparable quality, in terms of technology and educational efficacy, to the Interactive Cases. The current market leader in biology education, Pearson, hosts "Lab Bench", a website that purports to help students learn the concepts underlying AP Biology experiments. However, Lab Bench is lacking in many areas with respect to the visual quality and interactivity that today's students encounter in their everyday lives. The most comparable competitor product is Explore Learning's *Gizmos*, which has experienced success in the marketplace, and has a similar approach of providing modular software as a supplement to biology courses (and other science courses). The success of Explore Learning validates our approach to the market as a company that produces supplemental materials for science curricula.

To determine customer attitudes regarding the cases versus *Gizmos*, a survey of 43 science teachers from a large school district in Georgia was performed. This district currently spends ~ $40,000 per year across ten high schools for *Gizmos*. The teachers completed an anonymous survey about how they currently teach osmosis, whether their students master the concepts of osmosis, and if they can apply these concepts to other scenarios. After working through the osmosis case, these teachers completed a second anonymous survey that asked whether the case would change how they teach osmosis, help students develop higher order thinking skills, help teach difficult concepts, and how the modules compared to *Gizmos*.

Using a Likert Scale (Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree): **98% of teachers** either strongly agreed (85%) or agreed (13%) that the case would improve their ability to teach osmosis; **98%** either strongly agreed (85%) or agreed (13%) that cases would improve their ability to teach difficult concepts; **98%** either strongly agreed (85%) or agreed (13%) that cases would help students develop higher order thinking skills; **96%** either strongly agreed (83%) or agreed (13%) that cases would help students translate the key concepts to new scenarios, and **98%** either strongly agreed (85%) or agreed (13%) that our products offered better learning experiences than *Gizmos*. Representative answers to open-ended questions are listed below:

Comments on module design	The textbooks' coverage of osmosis is confusing for students. What's important is for students to be able to apply the concepts of osmosis to real-world situations. This case study will allow me to delve into osmosis in an interactive way that was impossible before. This module provides a real-world scenario that involves the scientific method and problem solving. The way the case study leads a student through the scientific method is a strength.
Comments on scaffolding and learner levels	The case study anticipated all questions and provided lots of background information. Can take a beginner with no knowledge to full understanding of the concepts in a short time. Accessible to all learner levels, and allows students to go at their own pace. This approach allows advanced students to interact at a greater depth. The program would be beneficial for students with special needs because it provides them with easy to follow visual information rather than a teacher lecture. The ability to go back and forth and at one's own pace will improve student learning. Case study is scaffolded to allow gradual release of knowledge and responsibilities to students
Comments on student engagement and teaching	This approach will be exciting for students, keep their interest, and motivate them to learn. This case study provides a great way to teach osmosis. It provides interactive opportunities along with allowing students to improve their thinking and writing skills. This allows students to see the process and its effects while interacting in a trial and error format that traditional labs do not allow – amazing! The pictorial examples of the brain and water movement are phenomenal. The simulations and 3D effects are a great way to engage the students. The case study requires them to think critically. The case study will be great to use as an assessment of student knowledge. I really want to use your software in my class. Your materials are truly remarkable and will definitely be a hit with educators worldwide.

Competitive Analysis of 3 Primary Competitors:

	Cogent Education	*Gizmos*	Adaptive Curriculum	Lab Bench
Platform Agnostic (Can be used on any hardware in schools)	Yes	Yes	Yes	Yes
Real time performance data from students	Yes	No (requires printing of paper worksheet)	Limited (no text from students)	No student data
Research on efficacy for the new science standards	Yes	No	No	No
Tracking of standards-aligned scientific practices over time	Yes	No	No	No

Intellectual Property

Cogent Education has sole licensing rights to all of the initial technologies developed at UGA. The IP is copyright-protected and the UGA Research Foundation employs an expert legal team that aggressively pursues cases of copyright infringement. The IP generated in Cogent Education projects is the sole property of Cogent Education and will be similarly copyright-protected. Should Cogent Education license any of its products to other educational companies, clauses will be included in the contracts that stipulate the responsibilities and liabilities of the licensee pertaining to both IP protection and to pursuance of third parties that are in violation of Cogent Education's copyrights.

The SABLE data analysis system was the subject of a full patent application in March 2015. The application seeks a patent covering the methods developed to analyze problem-solving skills in real time within learning environments. As a UGA start-up company, Cogent Education worked with UGA's Technology Commercialization Office to pursue this patent, and Thomas Horstemeyer, LLP was retained to prepare the patent application. Thomas Horstemeyer, LLP is the largest Atlanta-based intellectual property law firm, and has expertise in education-based patent applications. Prior art search was completed in December, 2013, and a professional patent search was completed in January, 2014 to confirm that Cogent Education has the freedom to operate, and a provisional patent filed in March 2014. Cogent Education does not anticipate the need to acquire any IP from outside sources.

Licensing Agreement

Royalties of 2.5% to UGA are included in the cost basis from revenues in accordance with Cogent Education's licensing agreement. Patent costs will be covered by UGA through their Technology Commercialization Office, and the patent has been added to our licensing agreement.

Go To Market Strategy

Barriers to Entry: The main hurdle to overcome is brand awareness, and the company will adopt two main strategies to grow the Cogent Education brand via 1) Direct Sales, and 2) Indirect Sales.

Direct Sales Strategy

To begin building brand awareness, Cogent Education has begun exhibiting at major educational conferences. In November 2015, Cogent Education took a booth and was a bronze sponsor at the National Association of Biology Teachers. This conference had ~1,250 attendees and generated more than 200 leads. The company used this opportunity to do a "soft launch" of its initial case studies by offering free trials of the products. This enabled the company to receive feedback from potential customers and identify and fix any bugs in the software. The suite of 10 cases for biology (now expanded to 15 cases) was launched at the National Science Teachers Association conference for the 2016/17 school year, and the company has now acquired approximately 100 customers (schools) with more schools and school districts currently trialing the products.

Independent Sales Representatives

As a small company, Cogent Education does not currently have the resources to employ full time inside sales representatives. To address this issue, the company has recently begun building a network of independent sales representatives and consultants. These representatives (6 currently under contract) consist of experienced sales people,

science curriculum advisors and supervisors and instructional specialists that receive between 5% and 25% commission on sales (determined by how far along they take the sales process before handing off to Cogent Education personnel). This commission only model will help build brand awareness and customer adoption without requiring upfront capital expenses associated with recruiting and maintaining an in-house sales team. The company plans to establish an inside sales team once it secures sufficient capital investment.

Sales Cycle

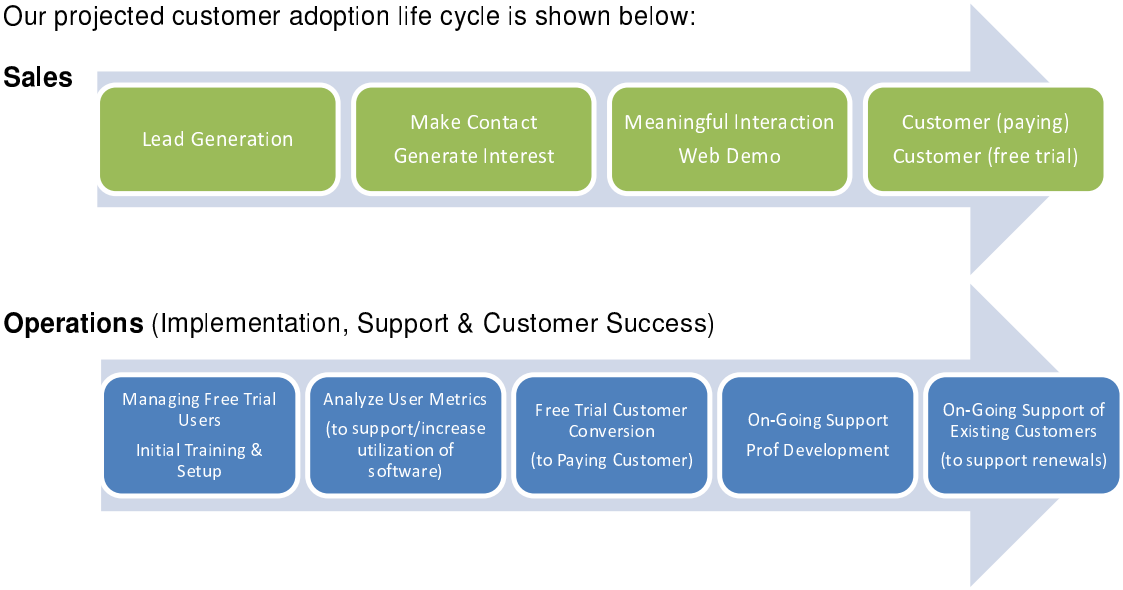
Within the market, sales cycles vary depending on the type of school and also the size of the sale, as shown below:

Table 7. Correlation of sales price, cycle, typoe of product, customer and direct sales channel (all figures are rough approximations).[39]

Sales Channel	Field Sales	Inside Sales	Telesales	Mail Order/Web
Customer	Superintendent	District and Site Admin	Principal/ Teacher	Teacher
Type of Product Sold	Enterprise/ Integrated	Single Solutions	Packaged Products	Packages Products
Sales Cycle	18 Months	6–12 Months	90 Days	30 Days
Typical Sale	$50,000+	$5,000 to $25,000	$1,000 to $2,500	$100 to $500

Source:http://www.joanganzcooneycenter.org/wpcontent/uploads/2013/01/glpc_gamesforadigitalage1.pdf

Our projected customer adoption life cycle is shown below:



Individual Schools & Teachers: The typical sales cycle for these customers is 30-120 days with a purchase price between $100 and $2,000 per customer. Cogent Education purchases School/Teacher contact lists from a leading source for educational contacts (Agile Education). Cogent Education produces ongoing email campaigns to reach teachers to engage them on a trial or to gauge interest in a purchase. Science teachers are given $300-$500 for supplemental materials and the Interactive Cases qualify for these funds. In addition, they can request additional funds through their science department head or the District Science Supervisor. AP Teachers receive a larger budget and often purchase 10-15 Interactive Cases for their AP level classes.

School District Strategy: Throughout the nation, states are re-writing their science curricula standards to improve critical thinking content. School District sales cycles are usually 12-18 months due to the size of the purchase and schools preference for extended trials of the product. Cogent Education has met with the STEM coordinators of 4 Georgia and Florida School Districts that collectively have 52 High Schools. One school district has inquired about purchasing a 6 or 7 year subscription in one transaction. This is because, at the district level, “subscriptions” are often drawn from their “consumables” budget, which is capped at certain dollar amounts. However, multi-year subscriptions are drawn from their “capital” budget, which is uncapped. This is common practice in large school districts, and the company provided on-site training for teachers in these counties in 2016, with the aim of converting these districts to paying customers in the Fall of 2016 or Spring of 2017.

In addition, Cogent Education received the Digital Promise Top Award in the Research-Based Products Category in November 2016, which has led to conversations with their "League of Innovative Schools" to discuss Beta sites for Chemistry and district implementations for Biology. These districts have the desire for research-based proven technologies and have the technology infrastructure to easily adopt the Interactive Cases. For their participation in the Chemistry project, these districts will receive a 35% discount on the Biology suite and will help us penetrate the market across the U.S. Details regarding the award: http://digitalpromise.org/sharing-the-results-of-the-2016-research-based-products-campaign/

College Sales: Originally, Cogent Education did not expect to enter this market until the High School product was established. However, approximately 30% of our leads to date have been 2 and 4 year colleges. In talking with these customers, they face the same challenges as High Schools and our products fit their needs. As such, we expect to enter this market much sooner than originally anticipated. EdSurge, an educational technology company that publishes newsletters and operates databases to share educational technologies to schools and universities, plans to include Cogent Education in its upcoming College products launch.

Indirect Sales Strategy

The company has negotiated non-exclusive distribution deals with the 2 largest distributors of science education materials in the US: Ward's Science and Carolina Biological. Ward's Science is one of the oldest and largest science education supply companies with over 200,000 customers in 86 countries. It has the largest science education sales team in North America, and has existing contracts in place with school districts. Carolina Biological reaches ~75% of all biology teachers in the US and also offers science education products for Chemistry and Physics. Historically, Ward's Science and Carolina Biological's main product categories have been science kits for hands-on experiments in classrooms. However, in recent years, they have expanded to offer digital products due to demand from their existing customers for supplemental software for their classrooms.

Education Publishers - Cogent Education has targeted the top (10) education publishers in the market, and will explore opportunities with Pearson, Reed Elsevier, Random House, McGraw-Hill Education, Scholastic Corp, Cengage, Houghton Mifflin Harcourt, Simon & Schuster. Additionally, Cogent Education is evaluating a number of science app distributors, learning games distributors, and mobile learning products distributors.

Market Scale: Cogent Education will scale its revenue momentum by increasing headcount in the direct sales and sales support to increase the rate of penetration and introduce new products to schools in the US. Cogent Education will use sales revenues, or seek another round of capital funding, to achieve these objectives.

New Markets: Once we have achieved sufficient scale in the US high school education marketplace, Cogent Education will release products for the elementary and middle school markets and explore markets outside of the US. Cogent Education will explore international markets for distribution starting with all English and Spanish speaking countries around the globe. STEM-based industries are central to virtually all industrialized nations, and the need to improve STEM education is a global issue.

Senior Management Team

Dr. Tom Robertson (CEO) is responsible for the day-to-day operations of Cogent Education. Dr. Robertson was an Associate Professor in the Departments of Physiology and Pharmacology and Large Animal Medicine at UGA. Working with Dr. Jim Moore for the past 10 years, he has developed interactive curricular materials for science education. Dr. Robertson was responsible for setting up all the logistical aspects of the business (accounting practices, business insurance, payroll, state and federal tax compliances, etc.). Consequently, Dr. Robertson knows every aspect of the business. Dr. Robertson's efforts in establishing Cogent Education resulted in him winning the Georgia BioBusiness Center Entrepreneur of the Year award in 2012 and a Georgia Bio Innovator Award in 2015. Dr. Robertson took a year's leave of absence without pay from UGA from Aug 1 2013 to July 31st, 2014, and resigned from his tenured faculty position at UGA effective August 31st, 2014.

Tyler Gerhart Wood (President & CMO) is responsible for leading the marketing, sales and support teams, recruiting and hiring key personnel, defining the product value proposition, developing and driving business strategy and processes, creating marketing plans and programs, managing the teacher advocate community, understanding on-going market trends, and establishing key relationships with third party companies, affiliations and distribution channels. Ms. Wood began working with Cogent Education in 2010 as a consultant, providing guidance and expertise on product development, marketing, and the commercialization strategy to move the 3D interactive learning concept through prototype to a market-ready solution for the K-12 market. Prior to that Ms. Wood worked for Apple where she held positions in their legal and education divisions. Working in Apple Computer's Products Law Group, she was responsible for drafting and coordinating all Apple's End User

License Agreements and negotiating Software Distribution Agreements with third party counsel and business representatives for Apple's licensable software. In the Apple Education Division, Ms. Wood managed the Curriculum segment of the K-12 Market which included managing third-party curriculum developers, bundles and curriculum development. Her most notable accomplishments included creating, launching and managing the first laptop mobile cart classroom solution on the market (iBook Wireless Mobile Lab), which is one of the most widely-adopted solutions to date and was highlighted in Steve Job's keynote address at the National Education Computer Conference in 2001. She also created and managed the *iLife for the Classroom* educational curriculum project, which featured educator lesson plans incorporating Apple's iLife digital and received the 2003 Top Winner Award of Excellence from Technology & Learning Magazine.

David Ducrest (CTO) worked at a nationally-renowned Virtual Reality technology development center (The Louisiana Immersive Technologies Enterprise) where he worked on their Immersive Virtual Learning Environments project. Mr. Ducrest joined Cogent Education in 2011, and since that time has made significant improvements in Cogent Education's technologies. These include the streamlining of the development process for the software modules through his creation of the CASTLE system, and the successful development of the SABLE analysis system.

Financials

Funding to Date

Grant Funding to date: In 2008, a research team at UGA won a $1.3M grant from the NIH to develop new methods for teaching biology in high schools. IS3D LLC was formed in 2010, licensed the UGA technologies, and won $50K seed funding from the Georgia Research Alliance (GRA). This seed funding enabled the Company to compete for federal Small Business Innovation Research (SBIR) grants.

In Sep 2011, Cogent Education won a Phase I SBIR from NIH ("SYNAPSE"; $539K over 2 years), and hired its first 2 employees. This triggered a $100K match from GRA. In Oct 2012, Cogent Education won a second Phase I SBIR ("Nurbits"; $500K over 2 years). In July 2013, Cogent Education won a Phase I SBIR from NSF ("SABLE"; $150K over 6 months), and a Phase II award from NIH (SYNAPSE; $1.8M over 3 years). In Sep 2014 Cogent Education won a Phase II award from NSF (SABLE; $750K over 2 years). In May 2015, Phase II of Nurbits ($992K over 2 years) was funded, and a Phase I (Chemistry, $150K) was funded by NSF. In Sep 2015, Phase I of "Bee Tees" (middle school product, $150K) was funded by NIH. In July 2016, NSF funded Phase I of our engineering education project for undergraduate engineering ($225,000). To date, Cogent Education has won approximately $5.4M in State and Federal grants to support its R&D initiatives.

Funding the Initial Sales and Marketing Efforts: The Federal grants **cannot** be used for sales and marketing expenses. To build an initial sales and marketing team, Cogent Education qualified its R&D project for State of Georgia Tax credits (Interactive Gaming Tax Credits), which it then sold for 86c on the dollar. Revenues from these sales ($500K from years 2011-2014) were received in Q2 2015, which allowed Cogent Education to hire its first two support staff and Tyler Wood (President and Chief Marketing Officer), establish its customer relations management system and support its R&D projects. Revenues from tax credit sales in 2016 were $338K and are estimated to be a similar amount in 2017.

Equity Investments: In late 2015 and early 2016, Cogent Education secured $150,000 investment from Athens Cambridge Oak fund LP. In 2016, Cogent Education applied to AT&T's Aspire Accelerator initiative and was chosen as one of 6 winners (from more than 340 education technology company applicants) and received $100,000 investment from AT&T Media Inc. in May 2016. http://about.att.com/story/att_kicks_off_aspire_accelerator_with_6_leading_ed_tech_startups.html

Funding Needs

Cogent Education has developed and refined its technologies such that new products can be more efficiently brought to market. For the Company to capitalize on its technological advantages, external funding is needed to support sales, marketing and R&D efforts to establish a beach head in the market. In the short term, the aim for this funding will be to establish revenues that make the company an attractive investment opportunity for institutional investors and secure additional growth capital.

Crowdfunding Campaign

Over the past year, Dr. Robertson and Ms. Wood have traveled extensively to meet with potential institutional investors. The main criteria for these firms to invest in education companies is that the company should have annual revenues of between $1M and $3M. The company's management team and advisors estimate that $1M in funding will be required to meet this revenue target and consider crowdfunding revenue sharing (authorized by the SEC) as an excellent opportunity.

Crowdfunding Revenue Sharing: A significant portion of the Company's current revenue is derived from federal grants which are ineligible to be shared with third parties or to be used as a repayment source in connection with the security being offered. Consequently, for purposes of determining the pool of revenue that is available for repayment of the obligations set forth in the Revenue Share Agreement, all grant revenue is excluded from such pool and only the remaining revenue shall be used to repay such obligations (sales, rent and tax credit revenues).

Revenue Model

The primary revenue stream is via subscriptions (SaaS) with the first product being Biology. By working with UGA, the products have been rigorously tested to the highest research standards. This is a key differentiator from competitors that rely on anecdotal evidence and have little in the way of empirical data to prove that their products actually work. Since the biology product has been proven to work, Cogent Education expects high adoption rates for this and subsequent Interactive Case products.

The business model (SaaS) has been validated by our competitors and our pricing strategy has been based on the current subscriptions paid by schools for competitor products. Currently, Cogent Education's competitors charge schools on an annual subscription basis of between $3 and $7 per student per year. Based on these figures and the fact that our competitors are established, and accounting for the quality of Cogent Education's products, the subscription price for the biology product will also be between $3 and $7 per student per year, depending on the volume purchased.

Product Roadmap and Revenue Inflection points

Chromebooks: Google Chromebooks have gained wide adoption by schools in the past 2 years. These computers are relatively cheap to purchase (although PC computer prices are reaching similar levels) but require everything to run in a web browser and to stream via school WiFi networks. This presented a development problem as it required our team to optimize the way in which the Interactive Cases are downloaded to Chromebooks. These optimizations are currently underway and we anticipate releasing Chromebook versions of the products between the Spring and Fall of 2017. The company currently has more than 300 schools in its CRM that have expressed interest in purchasing Chromebook versions of our products. As such, the release of the versions will likely provide an inflection point (sharp increase) in our sales revenues. Once we have BETA versions available, we plan to reach out to all Chromebook leads to initiate free trials with the aim of converting these users to paying customers for the next school year.

Chemistry: The founders believe strongly that science curricula should never be completely "virtual", and that the curricula should always include hands-on experiments. As such, Dr. Robertson has designed a new product category that will "mix" the real and virtual worlds. These products will involve the blending of physical experiments with the engagement and real time data afforded by the Interactive Cases and real time data analysis system. These products will be designed such that they can be used as Interactive Cases (no hands-on experiment to provide maximum flexibility for the teacher) or in conjunction with hands-on experiments. Development of the first Chemistry products is scheduled to begin in February 2017 with the aim of bringing these products to market in 2018.

Physics: In the summer of 2015, UGA paid for a prototype module to help teach fluid mechanics to UGA Engineering students. This pilot was turned into a Phase I SBIR submission to NSF (awarded July, 2016). Our aim is to develop an undergraduate engineering suite of products that we can adapt for Physics education in High Schools. Since Engineering is a physics-based profession, we envision a High School product wherein students learn Physics by acting like Engineers to solve real world problems. We aim to bring these products to market in 2019, which will be another inflection point for revenues, as this will complete the High School Science Suite.

Middle School Life Sciences; Elementary School Science: In the Fall of 2015, NIH funded a Phase I project ("Bee Tees", $150K) that enables students to learn life science by playing the role of a beekeeper looking after a virtual beehive. In doing so, students must keep the hive healthy by balancing energy brought into the hive, and energy used. This is akin to diet and exercise of people and, as such, helps young people learn about the importance of a healthy lifestyle. Phase II was submitted in May 2016 with a decision due in Q1 2017. We have a large amount of middle school leads from our conference exhibits that are interested in the Bee Tees product due to the focus on problem-solving and because of the strong environmental content relating to bees. This product will be a suite of modules that address key middle school learning objectives, such as genetics, environmental cooperation and cell function. Versions of these products will also be made for Elementary Schools that also include the Math and Literacy Standards for these grade levels. The company will also develop suites for Earth Science (middle school) and for science classes in other elementary grade levels.

Complete K-12 Science Solution: The largest inflection point for the company will be upon completion of suites for all grade levels. Since all products will report to the same data system, this will enable school districts to track the development of their students' science skills through their school careers.

Projections and Assumptions

All projections and assumptions presented below are subject to the risk factors detailed in the Crowdfunding campaign.

R&D Revenue: Grant revenues are based on the company's applications for SBIR funding being successful in 2017. Tax credit revenue estimates for 2017, 2018 and 2019 are based on prior years (subsequent year estimates are not included as it is not known whether these credits will be authorized by the Sate beyond 2019).

Sales Revenues & Required Funding: These estimates are based on securing $1M in funding in 2017 and a subsequent equity investment of $3M in late 2018. These funds will be used to expand the sales and marketing initiatives and support the R&D division to accelerate product development.

Renewal Rates are set at 75% (i.e., 75% of prior year customers renewing subscriptions) as there are many factors that can affect renewals such as school budgets, re-allocation of technology resources and movement of teachers between schools.

Average Subscription Prices per Customer are based on customers purchasing an average of 6 of the 15 cases in their first year, and then increasing the number of cases for subsequent years. The company is already seeing this purchase pattern with schools asking for more cases for the next school year. This is common practice in the market as schools want to try extended trials of products to make sure they are effective prior to expanding their adoption.

Products assumes that the company is able to bring products to market in line with the aforementioned timeline.

Costs are based on the company's experience for the past 5 years. The R&D team is expected to peak at 25 personnel and the sales, marketing and support team at 80 personnel. Both estimates will require the company to meet its revenue and investment goals. It is expected that approximately 70% of the latter staff will be in sales with the remainder being customer support personnel. 5 year projections are shown on the following page.

Revenues	2017	2018	2019	2020	2021
R&D Revenue					
SABLE Phase II	$ 112,500				
Bee Tees Phase II (pending)	$ 450,000	$ 600,000	$ 150,000		
Engineering Phase II (pending)	$ 125,000	$ 375,000	$ 250,000		
Tex credit sales	$ 280,000	$ 442,801	$ 611,670		
Total R&D Revenue	**$ 967,500**	**$ 1,417,801**	**$ 1,011,670**	**$ -**	**$ -**
Sales Revenues					
Products (High Schools)	*Bio*	*Bio, Chem*	*Bio, Chem, Phys*	*Bio, Chem, Phys*	*Bio, Chem, Phys*
Number of New Customers (Schools)	350	750	1,500	2,200	2,500
Average Subscription Price (new customers)	$ 1,600	$ 3,200	$ 4,800	$ 4,800	$ 4,800
Total Revenue (new customers)	$ 560,000	$ 2,400,000	$ 7,200,000	$ 10,560,000	$ 12,000,000
Customer Renewals (75%)		263	759	1,695	2,921
Average Subscription Price (renewals)		$ 1,990	$ 3,980	$ 5,970	$ 5,970
Total Revenue (renewals)		$ 522,375	$ 3,022,313	$ 10,116,352	$ 17,437,764
Total High School customers	350	1,013	2,259	3,895	5,421
Total High School Sales Revenue	**$ 560,000**	**$ 2,922,375**	**$ 10,222,313**	**$ 20,676,352**	**$ 29,437,764**
Products (Middle and Elementary)			*Mid and Elem Science*	*Mid and Elem Science*	*Mid and Elem Science*
Number of New Customers (Schools)			500	1,500	2,500
Average Subscription Price (new customers)			$ 2,750	$ 2,750	$ 2,750
Total Revenue (new customers)			$ 1,375,000	$ 4,125,000	$ 6,875,000
Customer Renewals (75%)				375	1,406
Average Subscription Price (renewals)				$ 2,750	$ 2,750
Total Revenue (renewals)				$ 1,031,250	$ 3,867,188
Total Middle and Elementary School customers			500	1,875	3,906
Total Middle and Elementary School revenue			**$ 1,375,000**	**$ 5,156,250**	**$ 10,742,188**
Total customers	350	1,013	2,759	5,770	9,327
% market penetration (of 113,420 US schools)	0.3%	0.9%	2.4%	5.1%	8.2%
Total Sales Revenue	**$ 560,000**	**$ 2,922,375**	**$ 11,597,313**	**$ 25,832,602**	**$ 40,179,951**
Total Revenue	**$ 1,527,500**	**$ 4,340,176**	**$ 12,608,982**	**$ 25,832,602**	**$ 40,179,951**

Costs	2017	2018	2019	2020	2021
Sales Associated Costs					
Royalties (2.5% to UGA)	$ 14,000	$ 73,059	$ 289,933	$ 645,815	$ 1,004,499
Sales Commissions (blended average of 8%)	$ 44,800	$ 233,790	$ 927,785	$ 2,066,608	$ 3,214,396
Revenue Sharing Pool (begin 2018, cap $2M)		$ 3,365,176	$ 12,208,982	$ 25,832,602	
Revenue Sharing		$ 168,259	$ 610,449	$ 1,221,292	
Total Sales Associated Costs	**$ 58,800**	**$ 475,108**	**$ 1,828,167**	**$ 3,933,715**	**$ 4,218,895**
Total Cumulative Revenue Sharing		$ 168,259	$ 778,708	$ 2,000,000	
R&D					
Personnel (incl. Robertson, CEO)	*13*	*20*	*25*	*25*	*25*
Cost per employee	*$ 83,700*	*$ 89,559*	*$ 95,828*	*$ 102,536*	*$ 109,714*
Total presonnel cost	$ 1,088,100	$ 1,791,180	$ 2,395,703	$ 2,563,402	$ 2,742,841
Average Hardware & Software per person	*$ 2,000*	*$ 2,140*	*$ 2,290*	*$ 2,450*	*$ 2,622*
Total Hardware & Software	$ 26,000	$ 42,800	$ 57,245	$ 61,252	$ 1,793,232
Other (office rent, data costs etc.)	$ 69,485	$ 110,460	$ 355,702	$ 891,820	$ 1,722,449
Research Costs (UGA subcontracts)	$ 125,000	$ 125,000	$ 50,000		
Total R&D expense	**$ 1,308,585**	**$ 2,069,440**	**$ 2,858,650**	**$ 3,516,474**	**$ 6,258,521**
Sales, Marketing & Support					
Sales & Support personnel (incl. Wood, President)	4	15	40	60	80
Average Cost per person	*$ 82,000*	*$ 87,740*	*$ 93,882*	*$ 100,454*	*$ 107,485*
Marketing	$ 60,000	$ 150,000	$ 300,000	$ 600,000	$ 1,200,000
Total Sales and Marketing cost	**$ 388,000**	**$ 1,466,100**	**$ 4,055,272**	**$ 6,627,212**	**$ 9,798,822**
Other Personnel (CFO, HR, office personnel etc.)	$ 1	4	5	8	10
Average cost per person	*$ 82,000*	*$ 87,740*	*$ 93,882*	*$ 100,454*	*$ 107,485*
Total (Other Personnel)	**$ 82,000**	**$ 350,960**	**$ 469,409**	**$ 803,628**	**$ 1,074,853**
Indirect Costs (G&A)					
Accounting	$ 65,000	$ 69,550	$ 74,419	$ 79,628	$ 85,202
Insurance (incl workers comp)	$ 19,167	$ 27,250	$ 45,542	$ 48,500	$ 53,667
Legal & Corp Fees	$ 7,500	$ 18,750	$ 46,875	$ 117,188	$ 292,969
Total Indirect	**$ 91,667**	**$ 115,550**	**$ 166,835**	**$ 245,315**	**$ 431,837**
Total Costs	**$ 1,929,052**	**$ 4,477,158**	**$ 9,378,334**	**$ 15,126,345**	**$ 21,782,928**
EBITDA	**$ (401,552)**	**$ (136,982)**	**$ 3,230,649**	**$ 10,706,257**	**$ 18,397,023**
Investment	**$ 1,000,000**	**$ 3,000,000**			