FEASIBILITY STUDY

For

EDUCATIONAL GAME

By

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Identification of Product

Educational Game X, copyright TXu1-###-###, was initially designed as an educational board game by Edward J. Dwyer, career educator, in 2006. The game, which teaches math and geography simultaneously, is defined by the instructions written for the original design which are as follows:

Educational Game X

Educational Objectives:

1. Develop math skills
2. Increase knowledge of the states and capitals

Game Objectives:

1. Reach space #100
2. Prevent opponent from reaching space #100

Format:

1. Play board with 100 spaces
2. Game cards – 50, one for each state
3. Markers – transparent colored plastic

Set Up:

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Marker Movement:

The object of marker movement is to reach space #100 with one of your three markers before the other player(s) does. Each player has three markers.

The Cards in Play:

To move a marker, select a card, then move whichever one of your three markers the total number of spaces allowed per the option you chose.

Scoring:

Three markers to space #100 = game
Three game wins = set
Three set wins = match

Business Founder

Designer X graduated from the University of Colorado in June 1949. After working in the business community for nine years, in 1958 he contracted with the Bureau of Indian Affairs to teach at Tohatchi, New Mexico. In 1961 he continued his teaching career in the Gallup, New Mexico public school system as a 6th grade teacher; he then moved to the Albuquerque Public School System where he taught 6th grade for 30 years, retiring from there in 1993 to return to his roots, teaching math for another seven years on the Navajo Reservation. In 2006 he completed the design of the original Educational Game X.

Designer X has a passion for educating, and a powerful desire to launch Educational Game X into the mix of tools adults of influence use every day to teach young minds. His 51 years as an educator has taught him the value of making teaching and learning fun: the combination of entertainment and enlightenment is a win-win for both pupils and their instructors, and the best formula for success in education.

In his 90s, Designer X has a sense of urgency to select a format for the game and business model for production and distribution as expediently as possible. It is his fondest desire to see his design successfully enter into the educational game market.

Because of Designer X's advanced years, he recognizes that the legwork required for launching a business would likely have to be done by someone or agency retained for that purpose. This individual or team would be 100% responsive to his vision, while offering the business savvy and acumen required to make the product successful and profitable.

Intended Audience

Educational Game X is first and foremost a teaching tool, albeit a fun one. It is designed to appeal to both the individual young player as well as adults with influence in the young person's education: teachers, parents, tutors, nannies and babysitters.

In its original format per the preceding pages, Educational Game X is geared towards 10-12 year olds. Permutations of the game expand the potential audience through older youth demographics to adults, and offer the possibility of editions that are purely for entertainment as opposed to primarily educational.

Permutations of Product

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Identification and Exploration of Business Scenarios

Educational Game X and its permutations can be:

- Manufactured as a board game, packaged and retailed
- Retailed online as a do it yourself (DIY) Kit, download
- Programmed as a computer game, packaged and retailed
- Programmed as an online game, accessed via the internet

The product(s) can be marketed to:

- Educators
- Consumers
- A combination of both

Business Model: Packaged and Retailed Board Game

Type and Quality of Product(s): Utilizing the expertise of a company such as Grand Prix International (http://www.grandprixintl.com) to manufacture the board, playing pieces, cards and packaging, the final product would be a high-quality, mainstream game-board product which conforms to choking hazard laws, country of origin labeling, etc. (there are numerous national and international regulations governing game manufacturing, distribution and retail which is why an experience game manufacturer would be best suited for production). The product would be designed to be packaged for individual/family play, as well as for "bulk" educational sales.

Changes to Existing Design Required for Success: The current game will require one specific change to make it sustainable – playable more than once or twice: a considerable increase in number of geographic locations. As is, any player would be able to remember what choices to make for best results because the same cards would be in play in practically every game. Suggested additions: largest river in the state, state bird, state flower, state color, and any other geo/political features. In any format, the rules of the game need to be refined and completed.

General Business Model: This business can be a Sole Proprietorship or Partnership, but is best suited to be a Limited Liability Company (LLC) so that the sole proprietor/partner(s) does/do not carry 100% of the liability and risk; because the primary end-users of the game are children, lawsuit risk is higher in the event of any manufacturing error that causes injury or death. (See Appendix A for legal structures of businesses.) Furthermore, the company may want to develop permutations of the game and an LLC with good financial records would be readily fund-able. In this model, Management, design, and accounting would be done in-house with manufacturing, distribution, marketing and legal handled by independent companies/individuals under contract. (Read Appendix B and B-2 for one board game designers tips for going into the board game business.)

Industry Description (scope, nature, future): The U.S. board games sales in 2007 were $802 million (NPD Group, New York, NY). In the consumer category, the top five best selling board games of all time are Trivial Pursuit, Cranium, The Game of Life, Monopoly and Scrabble. All five offer elements that educate, but not all were developed for that purpose. In the education category, the top games are Rumis, Blokus, Passport to Culture, Brain Quest Geography Game, and Cranium (there is some crossover between categories). These games were developed specifically with education in mind. There are no statistics available on board games developed by scholastic materials publishers specifically for use as educational tools in school, but the consensus of the global community of educators is that board games help students learn. In the past decade, board game sales have increased up to 65% a year in some years; industry analysis predicts continuing board game popularity, although sees a steady decline in board game sales attributed to increasing sales of video games. (see Appendix B-1 for US Department of Commerce Industry Outlook.)

Industry Competitors and Competitiveness: The board game industry is monopolized by Hasbro which produces about 65% of all board games on the market; Hasbro was valued at $648 million in 2007. There are estimated to be between 200 and 300 producers/manufacturers of board games in the U.S. with 20 employees or less; these manufacturers control less than 5% of the board game market. The vast majority of board game manufacturers, large and small, produce educational games for children to use as learning aids in conjunction with instruction from and interaction with teachers and other adults. The large competitors such as Hasbro and Mattel are competitive with each other; small competitors cannot compete with them because of manufacturing and distribution costs which benefit from economy of scale. Domestic manufacturing has decreased markedly in the last decade with 25,000 toy/game production jobs going overseas; manufacturing in Asia continues to be more cost-effective in most instances than manufacturing in the U.S. despite increases in shipping/distribution costs; it is to be seen what impact oil/gas price increases will have on this equation, but domestic production may become more favorable as a result of fuel cost increases.

Market Structure and Potential: The retail model for board games is part of the toy and hobby store industry which includes about 12,000 stores with combined annual revenue of almost $20 billion. Major companies include Toys "R" Us, Michaels, KB Toys, and AC Moore. The industry is highly concentrated: the top 50 companies hold 85 percent of the market. The market also includes the mega stores such as Wal-Mart and Target. Games account for 20% of sales in toy, hobby and mass-retail sales in this category of merchandise: toys, games, hobby and craft. These stores buy from manufacturers, distributors and wholesalers with highly competitive volume discounts resulting in ample mark-up margins. An internet ecommerce model indicates there are 230 million e-shopping/mail order sites in the U.S.; 4.1 million of them sell toys, hobbies and games. Ecommerce is increasing between 16% and 21% annually. Shipping costs may have an impact on this growth but there is currently no hard data to indicate what the impact could be. The bulk packaging and marketing to school systems model focuses on 3.2 million full-time equivalent teachers in the U.S. elementary and secondary school systems; roughly 200,000 teaching in the age range demographic of the product. All three models could be expanded to include English-speaking countries worldwide (and other countries if the product were developed in additional languages).

Barriers/Ease of Entry Into the Market: In the retail model, entry into the market is difficult; the competition is stiff because it includes the mega-producers, the mass-retailers require extensive inventory which may be difficult to produce by a small manufacturer, and the distribution costs are significant, a potential cash flow barrier. Conversely, if one mega-retailer were to become a buyer, the product could become an overnight success. The ecommerce model offers relatively low cost for retail presence requiring only an ecommerce web site and the ability to process credit cards; its challenges are warehousing and drop shipping costs, and the marketing challenges of being one of $4+ million presences on the internet within the game category. The direct-to-schools model represents the same challenges of the retail model minus the competition with mega-scale producers, but its most effective format includes an ecommerce site and the costs of drop-shipping to schools versus bulk shipping to stores must be considered. A Google search for “educational board games” returns 16,400 sites. Of those, the vast majority are retailers of toys, games and teaching aids. One of the largest commercial sites boasts 4,000 educational games; none are digital. In all three scenarios the marketing and sales component is challenging, requiring an aggressive marketing campaign and an effective direct sales program.

Technical Processes (Manufacturing and Distribution): A packaged board game requires a number of manufacturing components: design and production of packaging, engineering and manufacturing of playing pieces, printing of cards and instructions, design and creation of playing board. In order for the product to be viable and competitive as a retail item at a price point that is ultimately profitable, its quality/production standard must be comparable to the products manufactured by the mega-players. In this case, working with an experienced game manufacturer is desirable because they would manage the subcontracting of the printing, plastics molding, packaging, etc. The designer could, alternatively, choose to manage each of the vendors required to bring all the components to fruition and compile them into the final product. In the former scenario, production would happen at an existing facility with an experienced staff. In the latter, a production facility would be acquired and staffed by the designer or officer designated by him who would oversee the various vendors through each stage of production. In another model, the designer could choose to buy or build a factory and have it tooled for production, but this model best suits a scenario wherein the designer has multiple products to introduce to the market on an ongoing basis. In all scenarios, a warehouse is required and a distribution vehicle must be in place. Because these models address a single product production, utilizing common carriers such as UPS, FedEx, USPS, and others is the most likely choice as it anticipates relatively small shipments to numerous locations.

Materials and Resources Required: If the manufacturing is done by an experienced game manufacturer, materials need only be chosen by the designer – the manufacturer and its subcontractors will have the responsibility of acquiring production materials. If a manufacturing facility were developed for this purpose, the designer or his officer would be responsible for obtaining all of the required elements, including but not limited to: raw materials (paper, plastic, packaging), tooling and equipment, furnishings, computers, palettes, forklifts, and a facility to house all of it as well as the finished product.

Location of Business and Accessibility to Resources: Ideally, the manufacturing facility should be in or near a major transportation hub for ease of egress for incoming materials and outgoing product. The less distance both have to travel, the greater the profit margin. Considerations must be made as to where the most concentrated sector of the market is, what the distribution method is (for example the FedEx primary hub is in Memphis, TN – if the greatest customer base were in the south, then Memphis might be the best location), and where the designer wants to spend his on-site time. Conversely, if the designer were to select the experienced game manufacturer option, then distribution would be planned according to the location of their facility.

Facility Requirements: The facility requirements are a manufacturing hub, warehouse, and business management facility. All can be in one location or separate locations, but this decision should be predicated on what is the most cost-effective. If an experience game manufacturer is retained, the designer can readily work out of a satellite office and make periodic pilgrimages to the manufacturer. In a perfect scenario, all of the essential facility components are housed in one location for ease of hands-on interaction. Beyond the manufacturing components previously listed, the office facility requires computers and phones for team members, internet, intranet, work space, furnishings, parking and all the other office accoutrements necessary for maximum productivity.

Staffing Requirements: By utilizing a contracted experienced game manufacturer, staffing requirements are limited to management, sales, marketing and bookkeeping with manufacturing and distribution staff maintained and managed by the manufacturer. The most time intensive sector of the staff responsibility will be sales and marketing (the latter of which can also be contracted out if desired). Essentially, once the target market is identified and the sales process defined, the rate of sales depends on the number of people dedicated to fulltime sales. In this scenario, assuming the school systems are the first target market followed by other emerging markets, two full-time sales people should be sufficient. A single manager should be able to coordinate with the manufacturer, manage bookkeeping and human resources, and manage the sales staff.

Timeline: In this scenario, it should take four to six months to identify the manufacturer and contract with them, secure funding with a comprehensive business plan, identify and retain staff, and develop the complete sales and marketing plan. The sales staff should then pre-sell a pre-determined number of units in order to ensure the investment in the manufacturer. Once this number has been reached, the manufacturer should be able to tool up within a couple months and then begin production. By the end of the first year, the company should be in full production and have fulfilled all pre-sold and ongoing sales on a timely basis (one-week turnaround from factory to door).

Economic Impacts (local and through-market): In this scenario economic impact is felt primarily by the contracted manufacturer and distributors; as they are already established businesses, the impact is primarily to their individual business' profits and workforce. Because the management office for the company is small, its impact regionally is as well.

Price Points: For the individual game, in the original format, each boxed set would retail at a top price of about $11.00. For a classroom set which would include five game boards and sets of cards and playing pieces, the retail would be about $50.00.

Branding: The branding of the board game will emphasize the "fun learning tool teaches math and geography at the same time!" It should include a logo that ties the 1-2-3-I-O-U theme/name to geographical graphic: perhaps the numbers and letters in a circle that is globe-like with the United States in relief for the original game design. There are many board games on the market for every student level that help with the teaching and learning of math, reading, geography, etc. But games that combine both are in short supply, and there doesn't appear to be one that is similar to Educational Game X.

Sales Projection: (See Appendix 1): Appendix 1 tables are based on an original production of 100,000 units and a guesstimate of potential sales assuming that the figures on the expenses for the first year are made. The resulting potential is break even at the end of the third year. Profitability could occur at a higher price point or increased sales; decreasing sales due to market saturation are considered in these estimates.

Capital Requirements (See Appendix 1): $477,400 is the estimated first-year expense, requiring roughly a half million dollar investment up front; second year expenses would reduce roughly by half. Grant money may be available for this model, but other models are more likely to be grant probable.

Business Model: DIY Download Kit Game

Type and Quality of Product(s): In this model, Educational Game X would be formatted to be downloadable from the internet and the recipient would "manufacture" the game his/herself using the instructions that download with it. In this format, the game board would be printed on the end-users printer, as would the cards; the instructions would suggest readily available items to use as the game pieces. The quality of this product would be very do-it-yourself (DIY) and it is anticipated that game board (11x17 sheet of printed paper) and hand-cut cards would be disposed of after just a few games. Though twould have to be given to the quality of design of the DIY parts as many educational game purveyors on line offer only high-quality educational products.

Changes to Existing Design Required for Success: As a disposable, low price point, downloadable DIY board game, few modifications to the current design would have to be made. Because the DIY materials used to play the game are readily disposable, the assumption could be made that the game would only be played a few times, so using just state capitol cards may be sufficient. The major modifications to the game are the instructions for DIY manufacture, and the refinement and detailing of the game rules.

General Business Model: In this model, the game could be added to an existing site for teaching tools and games; there may be a fee required by that site, and negotiations would have to be made if the game has a retail price. It's likely that such a site would demand some of the proceeds from the sale of each game. For example, http://funschool.kaboose.com/ offers digital and printable educational games on-line;

the company is managed by a number of educational company's worldwide and has a global audience with its primary audience residing in the world's three largest English-speaking countries. The quality of the educational games they offer is quite high; the company has advertisers/corporate sponsors and the ability to get a product into the hands of parents and teachers (their primary audience is parents). Another option is to affiliate with a site such as http://www.Learningplanet.com which offers online, downloadable, and printable educational games. This site appeals to teachers, parents and children and is part of the parent company of Planet Interactive Inc. which has the ability to design a downloadable version (both print and digital) that would be very good quality. The other option for this business model is to put it on its own website and use a service like PayPal (https://www.paypal.com/us/cgi-bin/webscr?cmd=_home) to accept funds for a license to download the game: it would be a license to use the designer's intellectual property because the purchaser actually has to manufacture the play components. In all models, the largest staffing/cost component is marketing the game: just because it is readily available on the internet does not mean it will be a success; a marketing program must be in place to create demand for the product.

Industry Description (scope, nature, future): The potential for offering products on the internet is limitless. There are hundreds of thousands of educational games available via the worldwide web, many are rudimentary DIY products, and others require purchase of special consoles and joy sticks, still others can be played on-line and downloaded to end-user PCs for a price or for free. The success of a product online is based on the marketing effort put into it. While educators will search out new and useful products for teaching, they have limited time to do so, and will show the highest response when informed that a new product exists that will augment their teaching process and that it is readily available: only one click away. There are approximately 75,000 elementary schools in the United States, and approximately 200,000 educators in the demographic of Educational Game X. Ideally, all of these teachers would use the product; assuming a 5% retirement/replacement annually, potentially 10,000 new buyers would come on the market each year. Assuming that the product is marketed on an ongoing basis to these new customers, its sales could be sustainable. In this model, there would also be an undetermined number of parents purchasing the game because many of the sites on which it could be advertised have a crossover market between parents and teachers. A conservative estimate of total potential annual market would be 20,000-50,000 units.

Industry Competitors and Competitiveness: Specific statistics on the use of board games in education are not available; however, there is a documented general consensus amongst educators that children learn many skills from playing board games with their families and each other. Skills learned go above and beyond, for example math and geography as in the case of this product, and include sportsmanship, problem solving, communication, strategizing, etc. The business model marketing scenario chosen will determine what sector of the industry Educational Game X competes in. If the game is further developed and offered by a team such as Funschool/Kaboose, it will be in competition with that company's other offerings, but positioned in a highly regarded market sector by parents and teachers. If the game is marketed through a stand-alone site, there is opportunity to market it through hundreds of web sites teachers and parents' access, which puts it into competition with countless other resources available through these sites. Alternatively, direct marketing done by the

designer's staff or contractor could serve to give the product an advantage over the competition because of the "one click" to purchase approach. Regardless of which business model is chosen in this scenario, the product potentially competes with hundreds of thousands of educational games. Although there doesn't appear to be another game on the market that teaches math and geography at the same time in the way Educational Game X does, there are books of math games that are DIY (need pencil, crayons, etc.), and there are math board games that take the player on a journey through dinosaur land, a country, etc. The latter are graphically interesting; to compete this product will have to be as well.

Market Structure, Potential and Feasibility: The online DIY educational game market has three major components: educational toy/tool sites that retail DIY items, Sites compiled by organizations and individual that offer up DIYs for free, and individual sites that feature their own design of game(s). In a Google search for "download educational board games" no results are returned, without quotes 357,000 sites are returned; one in 10 have an element of DIY, the rest are digital/computer games. In short, the DIY educational game market is not structured on the internet.

Barriers/Ease of Entry Into the Market: That there is no structure of sites specifically marketing downloadable DIY board games on the internet is an indication that no mass market ever developed for same. Finding a web site that is the definitive go-to location for educators that offers the DIY format would be essential if that business model were chosen; this site (or perhaps handful of sites) would have to be advertising directly to educators to make this a viable business model. If the business model of an individual site were chosen, it would need to have links on resource site for teachers that feature DIYs; again there is no structured market sector available on the internet for this. Although a low-priced, or even free, download internet option is the logical way to distribute a DIY game, this market represents an uphill battle because it doesn't exist as a cohesive market.

Technical Processes (Manufacturing and Distribution): Once the game board and cards have been re-designed for visual interest, they can be saved as PDF files on a protected e-commerce server. When the purchaser buys or qualifies for the intellectual property license, PDFs (Acrobat Portable Document Format) will download that can be printed for the instructions, rules, game board and card. Production in this scenario is virtually eliminated.

Materials and Resources Required: Secure web site server, payment method, graphic artist for redesign, ability to process credit card payments, and computer are the only resources required for the manufacturing and distribution process. The additional requirements are the tools for sales and marketing: computer, phone, some printing and mailing services.

Location of Business and Accessibility to Resources: As an internet-based business, it can be located anywhere, even home-based. Sales and marketing can be contracted out.

Facility Requirements: Minimal. Small office space for each staff member, equipped with telephone, computer and peripherals, high-speed internet, relevant software.

Staffing Requirements: Fulfillment of the product orders would be automated through the e-commerce and payment gateway software, so one person should easily be able to manage the business of the company: accounting, payroll, etc. Sales and marketing are a critical component of the success of the product in this model, and could be done by one or two people on staff or contracted for the purpose.

Timeline: The effective redesign of the board and cards, acquisition of URL (web address) and e-commerce server, and design of the web site could all be done in three-five months; then the marketing and sales would begin in earnest. By the end of the first year, sales should be in full swing. Whichever business model is chosen in the DIY scenario, marketing and selling would be ongoing with extra pushes before the holidays and at back-to-school.

Economic Impacts (local and through-market): The economic impact of the market and local area are barely traceable in this scenario. Productions costs and price point are low, and staffing and contracting minimal. In any of the three business models for this scenario, a mere three jobs might be created, and the sales of each unit would generate only a small profit.

Price Points: As a downloadable DIY game, the price point would be close to $5.00.

Branding: The branding of the board game will emphasize the "economic learning tool teaches math and geography the fun way at the same time!" It should include a logo that ties the Educational Game X theme/name to geographical graphic: perhaps the numbers and letters in a circle that is globe-like with the United States in relief for the original game design. Web sites should show the game in play.

Sales Projection (See Appendix 1): Sales for this model do not appear to be able to outweigh expenses because of the price point. At $5 per unit (which might well be too high of a price point and have to be reduced) the guesstimate of monthly downloads generated from marketing efforts does not indicate that this model could be profitable.

Capital Requirements (See Appendix 1): Per Appendix 1, it is guesstimated that the start-up investment for this model is about $177,300; second and subsequent year expenses would decrease to roughly $80,000 per year because manufacturing is a one-time cost and marketing efforts could be drawn back somewhat. It would be essential to obtain grant money to make this model break even or profitable.

Business Model: Programmed and Packaged Computer Game

Type and Quality of Product(s): As a packaged computer game Educational Game X could feature a number of in-play options: various backgrounds/themes, play piece characters, assorted voices. A player could play against other players, or against the computer. In this scenario, links could be created to additional information about the

locations on the game “card.” The game could also feature levels from mid-elementary school and beyond. The quality of the product would be extremely high, with complexity of look and feel advancing with each age group of players.

Changes to Existing Design Required for Success: In order for the game to have sustainability, and be played many times by various age groups, it would need extensive programming and a significant increase in “card” options. Because the game could be played against the computer, the capitols of 50 states would be run through very quickly, so geographic features, and political and social icons would have to be added. This would result in a game that could be enjoyed by many age groups, multiple times adding value to the game.

General Business Model: This business model is similar to the manufactured board game model in that an individual/individuals or company would be contracted to program the game, package and distribute it, and a sales and marketing staff or contractor would be required to generate ample sales. Again, the designer could choose to develop a facility and hire a staff to do all of the above. The latter option would have a very steep learning curve and greater investment required at start-up. Because of the scope and competitiveness of the industry, this model would require sales to both the private and educational sectors, and the use of a manufacturer and sales/marketing group familiar with and successful in the industry would be the ideal scenario. The product should be packaged for retail and downloadable from the internet.

Industry Description (scope, nature, future): The snapshot of the video game industry is as follows (Entertainment Software Association: http://www.theesa.com/) –- U.S. computer and video game software sales grew six percent in 2007 to $9.5 billion – more than tripling industry software sales since 1996; sixty-five percent of American households play computer or video games; the average game player is 35 years old and has been playing games for 13 years; the average age of the most frequent game purchaser is 40 years old; forty percent of all game players are women; Sixty-three percent of parents believe games are a positive part of their children’s lives; eighty-five percent of all games sold in 2007 were rated "E" for Everyone, "T" for Teen, or "E10+" for Everyone 10+ (for more information on game ratings: http://www.esrb.org). The video game industry appears to be recession proof. Educational game sales make up only 7 percent of the software market for console games. Educators are increasingly recognizing the impact of entertainment software and utilizing games as a teaching device in a growing number of classrooms and business settings. In doing so, they are embracing the cultural and technological shifts of the 21st century and expanding the use of a favorite leisure activity, computer and video games, into a critical and still-emerging educational resource. More than just play, entertainment software is now being used to impart knowledge, develop life skills and reinforce positive habits in students of all ages. Educators emphasize that video games must enhance what is being taught – give students a way to practice what they are learning – that they do not replace teaching. (See Appendix F for snapshot of video game users.)

Industry Competitors and Competitiveness: A relatively young industry, development of educational video games is currently monopolized by Microsoft, the Digital Media Library (http://www.dmc.utexas.edu), and assorted small companies like Morphonix

(http://morphonix.com/). With vastly diverse budgets, and a relatively untried market, there is no competition so to speak in educational video games at this time. The platform available for educational video games is the PC platform using CDs/DVDs although the federal government is reviewing 10 different gaming platforms to ascertain whether one should be put into the public school system as a standardized educational gaming device. The Federation of American Scientists "Harnessing the Power of Video Games for Learning" Summit report describes the market in depth (attached as Appendix E).

Market Structure, Potential and Feasibility: What exists of this market utilizes the sales vehicles of catalogs, e-commerce, and direct sales to schools and e-commerce and storefront retail to the general public. It is considered by experts in the fields of education and video gaming that the future of entertainment and education lies in video/digital, and that utilizing video games in education is inevitable. The market is, for all intents and purposes, wide open. Entry into the market is currently without rules and formulas; the sales process into the market for all competitors is an organic one: try it and see if it works. The potential is virtually unlimited. Public school systems alone employed 3.3 million teachers in 2008. Sales into the school system is feasible at this juncture if the product is DVD/CD based to be utilized on the PC platform. The most recent home schooling statistics (2003) report 1.1 million children are home schooled; there are numerous home schooling resources on the internet where this population could be reached for sales of Educational Game X. It is impossible to determine at this time what the off-the-shelf retail market to the general public could be.

Barriers/Ease of Entry Into the Market: The most obvious barrier to the market is that the market is undefined. As such, the company would have to invest resources in finding out what the market potential is and what is the best way to capture the lion's share of it. As such, it is a dichotomous market: on one hand, authorities agree the market potential is vast; on the other hand, it hasn't actually developed into a market yet. Newly developing markets can be very lucrative and sustainable; they can also be expensive to develop.

Technical Processes (Manufacturing and Distribution): There are currently 80,000 video game developers in the U.S. employed by development companies in 31 states; their average salary is $92,000/year. These development firms are accustomed to programming, packaging and distributing video/digital games and well suited to developing Educational Game X. In that there is ongoing development of and changes to video game regulation, a firm accustomed to staying abreast of the rules is desirable. Identifying a video game producer that specializes in educational games is also a plus; they may well have some entre into the sales and marketing realm of this industry sector as well, and could act as advisors to the marketing staff/contractor or even be contracted for the purpose of sales and marketing.

Materials and Resources Required: It is not advisable for the game designer to attempt to manage a manufacturing facility in this scenario as the process of programming the game is complex and should be managed by someone with experience in the high tech programming market. The purchasing of materials and management of development

staff is ideally the responsibility of an experienced educational video game developer contracted for that purpose.

Location of Business and Accessibility to Resources: The video game developer contracted for manufacturing would ideally be in an area easy for the designer to access in person for frequent progress review – a major metropolitan area within reasonable driving distance would work well. Depending on the sales and marketing model chosen, the staff or contractor could work from their own facility or one established by the designer as the management offices; this facility could be anywhere, but again it would be most convenient to have it nearby for ease of monitoring by the designer.

Facility Requirements: In this model, it is highly likely that manufacture and sales would all be done by one game developer because the market is specialized and young, and a team with previous experience in it would be likely to be more successful. Furthermore, if sales and manufacturing worked in the same facility, they could be more responsive in reacting to sales trends, increasing and decreasing production as the market demands. This could avert potential problems such as overstock or inability to fill orders in a timely manner.

Staffing Requirements: The best scenario for this model is for the entire staff to be under the roof and employed by the programmer/manufacturer of the product. The only exception is an independent bookkeeper who protects the interests of the designer. In any model, the manufacturer is a contracted and experienced company; sales and marketing staff could be supervised by the designer as a contracted group or on staff.

Timeline: Development time to add the essential elements to the game to make it attractive to a wide range of audience (children, adults, teachers and home schoolers) would likely take a year. An additional year would be required for programming and manufacturing. During the second year, a sample version of the game would be created for pre-sales so that, when the game became fully available at the end of two years, a market was well under development. Continuing sales and marketing would be in place for as long as the product showed a reasonable profit.

Economic Impacts (local and through-market): The economic impact would be primarily felt by the manufacturer and its vendors and distributors. In that this model utilizes an established digital game developer, the start-up impact will be relatively minor as it would be diluted through existing channels.

Price Points: One license for $25-$29 with school/bulk discounts.

Branding: Key messaging: “The wave of the future – the best educational video game – have fun learning about the world – a learning tool you’ll play just for fun.” In this model, the branding approach emphasizes that video games in education will be everywhere soon, and this game is the greatest yet, combining math and geography/political science. Because it is somewhat a beta tester of a new market, an emphasis on bulk introductory pricing would also be desirable.

Sales Projection (See Appendix 1): Because of the high price point and enormous video game market, sales in this model indicate break even by the fourth quarter of the second year and profits of roughly $80,000 in the third year and $125,000 in subsequent years assuming the game retains its appeal in the competitive mix.

Capital Requirements (See Appendix 1): The initial investment in this model would be about $800,000, with second and future year expenses reduced to about $250,000 per year. There are grant funds available for developing digital education from organizations such as Digital Opportunity Investment Trust (DOIT http://www.digitalpromise.org/newsite/).

Business Model: Programmed Online Game

Type and Quality of Product(s): In this model, a programmer would be retained to work with the designer to develop a digital game that could be played on-line. This service would be free. The game would be high quality in order to compete with the tens of thousands of free games available on the internet (most of which are relatively low quality). Because it is designed to be used in teaching, the quality needs to be high even if using it is free. As in the retail version of Educational Game X, this version should have levels of playing for children and adults; however, because there is no revenue generated by use of the game, this may be cost prohibitive.

Changes to Existing Design Required for Success: Two directions can be taken with the game in this model: it can be highly interactive and sophisticated like the version described in the retail video game model above, or it can be quite simple in design and programming like many of the games available on http://www.theproblemsite.com. Because the game is designed to be a teaching tool, used by instructors and parents to enhance children's learning experience, it would be best received by the teaching establishment if it has a number of interface designs, game levels and play options (play with others to play against the computer). (see Appendix G – why geography games software).

General Business Model: In this model the designer could simply choose to work with the programmer to create the game and get it online. If it were added to sites that are already used by educators, no marketing would be required. If it is on a standalone site, then a marketing person would be required to inform the education community of the games existence and value. This business model assumes that no revenues will be generated by the use of the game, and that all expenses incurred to develop the game will be the responsibility of the designer. In this scenario, it is highly advisable to pursue grant and/or investor funding to support the development, posting, marketing and hosting of the online game. The game can be formatted as either a simple play on line and/or free download.

Industry Description (scope, nature, future): The online educational game "industry" consists primarily of hundreds of web sites that are supported by advertisers and feature dozens of games in assorted categories. In some cases the sites are targeted to educators, others are targeted to the end-user: the children themselves (these

downplay the educational message and emphasize having fun). There is no limit on the potential or audience for online game-playing. A designer could have his/her game integrated on one or many existing sites, or launch their own site for the purpose of making the game accessible. In either scenario, any revenues generated come from advertising on the site as playing and downloading the game is free. The sustainability is also limitless as a new audience of gamers begins to play on the internet every day.

Industry Competitors and Competitiveness: A Google search of "free educational games online" returns 354,000 web sites, most of which host games that can be played on the site or downloaded to the user's PC. The industry is monopolized by those sites that pay for advertising and prominence in the search engines (Google, Yahoo, Alta Vista, etc.). Some web sites charge you only for the ads when they are clicked on (someone goes to your site through the search engine link), others charge a flat rate. The rates range from dollars per click, to thousands of dollars per click based on where you want to be in the search engine rankings. For the most part end-users utilize the first one to three pages of a search before starting a new search.

Market Structure, Potential and Feasibility: A free online/downloadable game on the internet has the potential to reach millions of people every day. It is not often a lucrative market unless the product is extremely attractive to big money internet advertisers. The market is evolving constantly, and has its share of flash-in-the-pans, games that are wildly successful for a brief time, and are then replaced by another interest. The nature of freeware on the internet is this: it is not particularly sustainable because, as a free item, it is not perceived to have great value – so its attractiveness is transient. On the other hand, sites that feature freeware are always looking for fresh new items, so finding sites to showcase Educational Game X should not be terribly difficult.

Barriers/Ease of Entry Into the Market: The only barriers into the freeware market are subscription fees to some sites. Those sites that advertise in search engines to increase their rankings need to support that expense and often do so with fees; others utilize advertising dollars and allow affiliates free access. Finding sites that are suitable for Educational Game X is a research project. Creating a site and driving business to it is a lengthier process including research, web development and negotiation of internet advertising.

Technical Processes (Manufacturing and Distribution): The technical process for this model is the actual programming of the game which would be done by a contracted programmer; as this model utilizes the less extensive digital version of the game, it could probably be done in six months or so by a single programmer. A version with levels through to adults would require a greater investment in programming, likely one or two programmers over a year. Additional technical process could include the development of a standalone web site to host the game.

Materials and Resources Required: The designer would need to be able to monitor and test the game as it evolved and would need a computer terminal with high-speed internet access to do so. Other requisite equipment would belong to the contracted

programmer(s). Beyond the internet access component, the remaining resources are the intellectual property of the design and research.

Location of Business and Accessibility to Resources: Because the game in this model is destined to be played online, it should be managed and tested online as well. In this scenario, the programmers could be anywhere in the world, and the development progress and testing could be done by the designer on a home PC. If the game is hosted on a standalone site, then some marketing would be required; in this scenario contracting a marketing firm is one option, or the designer could do the internet research and advertising himself, or have a staffer do so; in any case, this would not require extensive office facilities just telephone and high-speed internet access.

Facility Requirements: The programmer's facility and designer's office are the only facility requirements for any version of this business model. An additional work station for marketing may be desirable.

Staffing Requirements: Contracted programmer(s) would be responsive to the designer. In this model, it is possible for the designer or someone designated by him to perform the monitoring, testing, accounting and marketing functions which would likely add up to one fulltime position.

Timeline: If the game is kept to a 4^{th}-6^{th} grade level, it should be able to go live in six months of programming. A multiple player level game would take longer to program, perhaps a year or a year-and-a-half. Once competed and approved, the game could go live on many or just one site in a matter of days.

Economic Impacts (local and through-market): Because this game is free to use, the economic impact will be minimal. The programmer(s) and web sites that host the game will benefit somewhat financially. A standalone site might be able to generate some advertising which could impact the designer.

Price Points: Free.

Branding: "have fun while you improve your math and geography skills – for FREE!" is the primary branding message. Additional selling point is that other games just exercise you brain in one area at a time, Educational Game X improves your math and geography (or political science) skills at the same time.

Sales Projection (See Appendix 1): This model generates no revenue.

Capital Requirements (See Appendix 1): This model indicates an initial start-up investment of approximately $188,000. Subsequent year investment would reduce to about $70,000 per year. Grant money and advertising revenues from a standalone web site may be available and were not factored into the calculations in Appendix 1.

Comparison of Product Version/Business Models

Four Product/Business Models Compared				
	BOARD GAME	**DIY DOWNLOAD GAME**	**PACKAGED COMPUTER GAME**	**FREE ONLINE GAME**
Initial Investment	$477,400	$177,300	$790,800	$188,300
Subsequent Year Investment	$230,000	$80,000	$250,000	$73,300
Profit First Year	none	none	none	none
Profit Second Year	none	none	none	none
Profit Third Year	none	none	none	none
Manufacturing Expense 1st Year	$200,000	$75,000	$250,000	$90,000
Marketing Expense 1st Year	$50,000	$50,000	$150,000	$50,000
Established Market Available	Yes	No	Yes	Yes
Ease of Entry Into Market (1-10, 10 is the easiest	3	5	7	9
Permutation of Game Required	Yes	Yes	Yes	Yes
Contracted Labor Required	Yes	Yes	Yes	Yes
Timeline to Business Open	1 year	1 year	2 years	1 year
Price Point	$11	$5	$25	$0
Ultimately a Profitable Venture	Yes	No	Yes	No