

## Team Leader: Logan Chernicky

Where technology meet practicality. Incorporating Drone Technology and engineer modeling into an easy to use system to enhance construction workflow and infrastructure assessment.

### 1. Executive Summary

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**Q:**

Provide a Venture Concept that effectively describes your business.

**A:**

Enhanced Visual uses and integrates drone technology along with cutting edge software platforms to revolutionize industries. Inspections processes are expedited by leveraging drones while data storage/analysis is simplified using cloud based software platforms. Construction site managers and engineers can monitor site progression and compare actual versus planned progress by overlaying AutoCAD blueprints on top of drone generated digital reconstruction surveys, keeping projects on track and under budget. Enhanced Visual uses a combination of software platforms, both inspection and digital reconstruction clients are provided with custom log-in information to view and analyze their data.

2. \*

**Q:**

Provide a short summary of your business plan below.

**A:**

Enhanced Visual will provide digital reconstruction services to construction sub-contractors, general contractors, and aggregate/mining companies by providing drone based survey data, gathered in hours rather than weeks with centimeter accuracy. Enhanced Visual then uploads the data to the client's custom login page, allowing them to monitor multiple sites simultaneously. Clients blueprints (DXF, DWG, RINEX, PDF files, etc.) can be overlaid or integrated with reconstruction models, keeping projects on track. Revenue is based on conducting drone surveys during strategic times throughout the project as well as from monthly login subscriptions.

Enhanced Visual also offers drone based inspection services. Data is gathered using magnification and thermal imaging cameras. This substantially reduces costs when compared to alternative manual/helicopter inspection means. This data is uploaded and shared to a separate data subscription network. Enhanced Visual generates revenue through both the subscription log-in and the drone flights themselves. Mr. Chernicky has already conducted inspection operations for Central Electric Cooperative and has been invited to speak at Touchtone Energy Cooperatives annual I.T/Engineer meeting in March of 2018.

Mr. Chernicky is planning to obtain a drone retail license along with different software licensing to do consulting work, helping integrate drone technology into the workflow of agriculture, public safety and other industries. Along with generating revenue from consulting fees, Enhanced Visual generates profit from hardware and software sales. Mr. Chernicky has been communicating with equipment and software suppliers about retail license options. For the time being, Mr. Chernicky will purchase hardware items at retail and forward this cost on to the customer with no mark-up.

Additionally, Enhanced Visual offers interactive 3D model embedding on websites and social media platforms along with a Virtual Reality (VR) and Augmented Reality (AR) platforms for clients to view 3D models in new ways.

### 3. Industry Analysis

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**Q:**

**Provide an Industry Description, Industry Outlook, and Industry Trends** (size, growth rate, structure, and trends of the market sector that you will operate within).

**A:**

Enhanced Visual is a part of the surveying and mapping services industry (NAICS 541370). The following information on the surveying and mapping services industry is from the IBISWorld Industry Report 54137 dated October 2017. Operators in this industry perform surveying and mapping services of the surface of the earth, including the sea floor. These services may include surveying and mapping areas above or below the surface of the earth, such as the creation of view easements or segregating rights in parcels of land by creating underground utility easements, which give certain rights to real property without possessing it. The surveying and mapping services industry provides a wide range of technical services. Clients use the industry to determine property lines, to aid in subdivision layout and design and for building and amenity layout. Operators also offer many specialist services, such as geospatial imaging, which is the statistical analysis of remotely sensed imagery, and nautical mapping services.

Demand for industry services largely depends on the performance of downstream construction industries. The industry's primary markets are building and construction companies; government departments and agencies; land development companies; professional service operators; and various utility and mining operators. The past five years have been defined by increased demand from downstream construction markets, both residential and nonresidential, leading to increased demand for much of the surveying and mapping services necessary for these projects. Consequently, revenue is expected to increase an annualized 3.6 percent to \$7.7 billion over the five years to 2017, including three percent growth in 2017 alone. Over the five years to 2022, IBISWorld forecasts that revenue for the surveying and mapping services industry will increase at an annualized rate of 1.5 percent to \$8.3 billion, including growth of 1.2 percent in 2022. This growth will largely be driven by continued, but steadier growth across key downstream construction markets. Additionally, external competition is projected to intensify over the five years to 2022, as engineering operators and construction contractors increasingly offer value-added services, such as in-house surveying. While this factor will dampen industry growth over the next five years, the negative effect of increased competition will be partly offset by the public-sector agencies' increasing tendency to outsource surveying, mapping and data information services to industry operators. In general terms, the industry is classified as mature. With recent developments in drone technology combined with Mr. Chernicky's experience, training and education, Enhanced Visual sees a great potential for growth. Most businesses (and potential clients) operate with time constraints and budgets. The products and services that Enhanced Visual provides help to shorten time tables for clients' projects while at the same time offering great accuracy and detail.

#### 4. Competitive Analysis

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**Q:**

**Please provide the following:**

**Competitor identification and assessment** (identify the direct/indirect competition, what the competitor offers, as well as their strengths and weaknesses; what threats do top competitors pose against your company?)

**Competitive Advantage** (describe what advantage you have and what differentiates your business from others; what are your opportunities?)

**Barriers to Entry** (discuss any barriers that restrict others from entering the market).

**A:**

According to InfoUSA, there are 40 surveying companies located within a 50 mile radius of Clarion, Pennsylvania. These are traditional land surveyors that do not use and/or underutilize drones. There are also several businesses within Clarion and the surrounding areas that offer drone photography and videography services. However, these businesses do not expand upon these services to include the mapping, surveying, inspection, data management and consulting services that Enhanced Visual provides. Enhanced Visual competes directly with other drone imaging and mapping companies that are located and/or travel to Western Pennsylvania to provide their services. Since these services are still new to the industry, the competition is not always easy to identify. Mr. Chernicky has identified Measure, based out of Washington, DC and Steel City Drones based out of Pittsburgh, PA as main competitors. Both companies are Strictly drone oriented, and do not combine software packages to provide services comparable to Enhanced Visual who has several strengths when compared to its competition.

As a drone service provider and consulting company, Enhanced Visual helps both large and small companies take advantage of drone technology, especially those companies that aren't necessarily ready to adopt new technology. Enhanced Visual uses state of the art platforms to gather, analyze, store, and share data - providing powerful insight to engineers, inspectors, and project managers. The business's experts work with an expanding array of industries, keeping clients on the cutting edge of drone technology and data management. The biggest disadvantage is that the industry is so new that competitors are all putting their own spin on regulations; however, new waivers are being developed to expand operation regularly. The biggest barrier to entry in this industry includes maintaining compliance with the standards set forth by the FAA. Mr. Chernicky has already obtained his license to operate an unmanned aircraft. Other barriers to entry include capital formation and experience. Mr. Chernicky will need to grow his construction and inspection services in order to generate the capital required to enter into the retail market for drones. With drone surveying and inspections services being relatively new to the market, it may be difficult to find experienced employees that will not require extensive training upon hire.

## 5. Target Market

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### Q:

**Please provide the following:**

**Size of the overall market** (local, national, or international)

**Size of your addressable market** (customers you plan to reach and are available to your company).

**Consumer segment(s)** (description of the customers you are targeting with your business – demographic and geographic information, attitudes; identify whether purchases are *rationally* (e.g. basic food items) or *emotionally* (e.g. jewelry) based).

**Consumer demand** (level of demand that exists with these customers).

**Market penetration goals** (quantified % of addressable market or volume goals that you have for achieving a certain level of market share).

### A:

Target Industries include construction, utility infrastructure, communications, agriculture, and public safety. The pilots and equipment can be flown on a commercial plane, allowing nationwide operations. There is an extremely high demand rate as industry leaders struggle to adopt this new technology. Gathering drone industry information has proven difficult since the industry is still in its infancy. Mr. Chernicky purchases drones from DJI, and plans to obtain a retail license that will provide a 20 percent discount on equipment resulting in increased revenues for Enhanced Visual. DJI is an industry leader in drone manufacturing and sales, dominating over 70 percent of both recreational and commercial drone markets. By affiliating himself with DJI, Mr. Chernicky will only solidify his business's reputation as both a commercial drone retailer and service provider. Below is a table indicating potential market growth for commercial drones including the market share projected for DJI.

## 6. Product/Service Overview

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### Q:

#### Please provide the following:

**Description** (description of your product /service offering and why there is a need; what problem does it solve for the customer?)

**Uniqueness** (what makes your product unique or special?)

**Pricing** (describe your pricing structure and strategy)

**Suppliers and Vendors** (identify your suppliers/vendors; describe your distribution requirements to deliver the product to the customer)

**Intellectual Property** (identify any existing or planned intellectual property for your products/services)

### A:

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## 7. Marketing Strategies

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### Q:

#### Please provide the following:

**Promotion strategy** (description of the full range of planned communication efforts with your business customers or clients)

**Distribution & Logistics strategy** (description of your distribution system/supply chain and how this creates value; how do you get your products/services to customers or clients?)

**Sales strategy** (description of the process for selling your product/service: the direct interaction you will have with the customers)

### A:

Enhanced Visual will use Google Ads to promote on-line search results and direct viewers to the website. Facebook advertising will be used to advertise to the target market. Mr. Chernicky will attend trade shows in order to promote his business and to build a marketing database. He will utilize email, flyers and brochures to communicate the products and services provided by Enhanced Visual.

Mr. Chernicky has already established connections with several construction companies in western Pennsylvania as well as a couple of energy suppliers. Mr. Chernicky will contact potential customers directly via phone, email or in-person to promote his construction and inspection services. Once the retail side of operations is established, Enhanced Visual will hire salespeople to sell products directly to customers.

## 8. Human Capital (Leadership, Management, and Personnel)

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### Q:

**Please provide a description of your management team** (summary of the founding members, titles and their roles; describe gaps in the key management team, such as a position that is open, e.g. Sales Manager)

**Legal structure** (describe the form of ownership – sole proprietorship, partnership, corporation or variation of one of these). Describe individuals and percent of equity ownership in the company both for the student(s) and external equity owners.

**Personnel** (description of your personnel requirements in the non-management team members that you envision requiring, e.g. clerical personnel).

Outside mentors/advisers/consultants (identify any support relations you have to include **university based advisors**, and **Small Business Development Centers \*(SBDC)**, external professional advisors and mentors to include Attorneys, Lawyers, Bankers, Industry specialists, etc.). \* **SBDC Centers are located at Clarion, Indiana, Kutztown, Lock Haven and Shippensburg Universities.**

### A:

The owner, Logan Chernicky, will continue to supervise all aspects of operating the business. Mr. Chernicky will graduate in May 2018 with a dual bachelor degree in geology and environmental geology as well as a minor in geography. He also has several years of experience in operating drones and providing computerized mapping services. For more information on his background, refer to Attachment 2 for Mr. Chernicky's resume. He will withdraw a total of \$50,000, \$60,000 and \$70,000 in years one through three, respectively.

Mr. Chernicky will employ one employee initially to assist with piloting drones and help with consultation services. This employee will be paid \$25/hour. As time goes on he will supervise employees and help out as needed to ensure smooth operation of the business.

## 9. Operations

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### Q:

**Please provide the following:**

**Location** (description of the physical location of your business)

**Facilities, machinery, equipment, technology** (description of your plans/needs in each of these areas)

**Production/Operations or service procedures**

**Production/Operations or service capacity** (description of your business capacity to meet demand)

### A:

If the client needs Digital Reconstruction, Enhanced Visual breaks down their workflow to schedule strategic mapping dates after generating a quote for each package. Map accuracy is guaranteed and

negotiated within the service contract. Pilots are then assigned to conduct mapping operations on the given dates and times after payment, flight scheduling, and flight clearance is granted.

If a client needs an inspection, the inspection type must be determined (transmission & distribution, bridge, roof, tower, etc.) after meeting with the client.

If a client requests consulting services, a consultant first determines if the client is already using drones and what for. Workflow is broken down to identify applicable solutions. Whether it be incorporating drone operations or enhancing existing operations. Pros and cons are then weighed out in collaboration with the client to reach an agreed consulting package. Two-three separate training dates are then set following initial payment. A trained consultant then meets with the client and conducts training on equipment, software, and regulations.

Finally, if a client requests a 3D model to be generated and embedded for marketing purposes, employees follow all standard mapping procedures.

## 10. Financial Analysis

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**Q:**

**Please list funds required and their uses** (identify and discuss your start-up costs, how they will be used, and the assumptions you are making)

**Business Model** (highlights of the revenue model, financial statement, and/or financial forecast).

**A:**

Mr. Chernicky is estimates a total project cost of \$60,000 to grow his business. He is seeking a micro loan of \$50,000 and will be personally contributing \$10,000. The funds will be used for the purchase office equipment (\$5,000), office furniture (\$5,000) and for working capital (\$50,000) for operating expenses.

Years Ending May 31: 2019 2020 2021

Projected Sales \$365,000 \$401,500 \$441,650

Break-even Sales . \$328,075 \$364,262 \$401,498

Break-even Sales Buffer . \$36,925 \$37,238 \$40,152

Projected Sales Growth . 10.00% 10.00%

Net Income \$94,642 \$113,140 \$134,184

Ending Cash Balance \$53,863 \$64,517 \$76,560

Long-Term Capital Needs . \$60,000 \$0 \$0

Personal Investment \$10,000 \$0 \$0

Micro Loan \$50,000 \$0 \$0

11. **Q:**

A place for an extra supporting file.

**A:** [Featured Article From Scopito.pdf](#)