



## Idea Generation (Business Planning)

Components (Understand, Audience/Identity, Message, Accounting & Finance, Funding)

Provide detail of what the problem needs to address and a general idea of who the solution is aimed at. Beyond this information, participants will have to narrow in and create a profile for their ideal audience. This first step will be the business and planning stage of the project, where participants are required to create a comprehensive business statement and plan that identifies:

- Their target demographic/audience
- Projected cost
- Preliminary Budget
- Proposed solution/product

Each step must be completed, described, notated and explained in as detailed a manner as possible. The business plan will be used to base the design; build and logistics around, so the more detail provided the better. Each bit of information will be passed along through the modules that follow.

Before each group passes their information along, each is required to deliver a quick presentation that will outline the parameters of their product. This presentation works to simulate the kinds of pitches that entrepreneurs would do to people in the early stages of their product. The presentation also sets the stage for each group to have a little bit of foundational knowledge of each project going forward.

At this point each team will pass their business plan to the next team

## Design

Components (Design, Build, Test, Logistics, Funding)

Students will take the designs that are delivered to them and begin blueprinting and creating a spec sheet which includes:

- What material will be used?
- What are the dimensions?
- What are the tolerances (if applicable)?
- What are the operating details (What is the distance from the factory to the consumer?, How fast can mass quantities be created and shipped?)
- What is the power source?

The spec sheet will allow the group to begin building, testing and establishing the logistics of:

- Production Location (See Location Profiles)
- Production Type (See Production Type Profiles)

With these details in mind the group will create the spec sheet and build a prototype to accompany the spec sheet, compile a logistics report that answers the above questions and business plan. Once the spec sheet, prototype and business plan are created, then a funding profile can be selected that fits the project’s business plan.

After funding plans are selected, the Business plan, spec sheet, logistics analysis, prototype and Funding profile are passed to the last group. This information package is referred to as the Design Report.

## Research and Marketing

### Components (Message, Medium, Branding, Design, Test)

Once the design package has been delivered to the new group, it is their responsibility to execute an effective marketing and promotion campaign to promote the product and encourage consumer sales and further investment. The marketing team is responsible for compiling the following:

- The message or slogan for the product
- The medium that best reaches the target demographic
- Branding material (logo)

2 different ad campaigns (TV, Radio, Internet, Newspaper, Direct Mail, Billboard, Magazine/Monthly Periodical)  
[satisfies the Design and test components]

Type	Size/Duration	Cost	Audience	Yearly Cost	Yearly Exposure	Cost/Expos. Por.
<b>Newspaper</b>	2" x 2"	\$1300/week	1,200,000	\$67,600.00	62,400,000	0.001
<b>Television</b>	30 seconds	\$500 million/year	4000000	\$500,000,000.00	800,000,000	0.625
<b>Direct Mail</b>	4" x 6"	\$1500 per 1000	1000	\$1,500.00	1,000	1.500
<b>Radio</b>	30 seconds	\$100/week	10000	\$52,000.00	520,000	0.100
<b>Magazines</b>	full page colour	\$750000/issue	150,000	\$600,000.00	1,800,000	0.333
<b>Billboard</b>	320" x 120"	\$13000/month	10000	\$156,000.00	2,600,000	0.060
<b>Internet</b>	Banner 728 x 90	\$1000/year	100	\$1,000.00	36,500	0.027

Once each of the objectives is completed, the team is responsible for documenting their model and expected reach in a Research Report that incorporates each objective and can be handed to sponsors to show progress towards breakeven, expected timeline for profit and anticipated payback period. Keep in mind that Advertisement costs and reach need to be calculated and included.

# Presentation

In order to facilitate a comprehensive understanding of the product, plan, implementation and outcomes the teams are required to create a short presentation that will use their expert knowledge to describe the path of their product from the idea and initial business plan straight through to the complete prototype, funding profile and marketing plan. The presentation is the culmination of the project and offers a chance for teams to reflect on the successes, challenges and complexity of moving a product through each sequence.

Each presentation will in essence become a pitch for the product explaining:

Where it will be made

What is the total value of the company/product? (estimated income per year multiplied by an industry multiplier)

How much it costs to produce

How much it will be sold for/ how much profit per unit

How much logistics will cost

Reach (aka how many people will you make contact with via advertising)

How long until debts are paid off

Addressing each of these points in a short PowerPoint presentation allows for groups to have a clear idea of how they would go about bringing their product to market.

Ideally the presentation will allow for feedback from a panel of experienced judges who can offer insight and ask questions about specifics of each plan.

# Profiles

## Location:

<p><b>Canada</b>            Type: Handmade (Domestic)            Quality: 4/5            Trade off: High quality, expensive, low shipping cost and time cost.</p>	<p><b>China</b>            Type: Hybrid (CNC/Assembly Line)            Quality: 3/5            Trade off: High numbers, cheaper production, mediocre quality.</p>
<p><b>United States</b>            Type: Assembly Line            Quality: 3/5            Trade off: high cost, high numbers, shipping + duty, mediocre quality</p>	<p><b>India</b>            Type: Handmade (international)            Quality: 4/5            Trade off: Good build quality, bigger time cost, less volume, expensive shipping.</p>
<p><b>Waterloo</b>            Type: High End CNC w/ Hand finishing            Quality: 4.5/5            Trade off: high build quality, high numbers, expensive, locally made.</p>	<p><b>Europe</b>            Type: Handmade Artisan Grade            Quality: 5/5            Trade off: highest quality, expensive production, limited shipping options</p>

## Production Type:

**Hybrid (CNC/Assembly Line)** – High volume, lowest cost per unit, no human contact/finishing, low quality and durability, higher scrap/waste percentage (10%)

**Assembly Line** – High volume higher cost per unit, little human contact, low quality and durability, high scrap/waste percentage (8%)

**Handmade (International)** – Stable volume, high quality output, low scrap/waste percentage (5%)

**Handmade (Domestic)** – Stable volume, high cost, high quality output, low scrap/waste percentage (5%)

**High End CNC w/ Hand finishing** – High volume, high quality output, low scrap/waste percentage (2%)

**Handmade Artisan** – Low volume, highest quality output, extensive human labour, lowest scrap/waste percentage (1%)

# PROFILES OF MAJOR MEDIA TYPES

Medium	Advantages	Limitations
<b>Newspapers</b>	Flexibility; timeliness; good local market coverage; broad acceptability; high believability	Short life; poor reproduction quality; small pass-along audience
<b>Television</b>	Good mass market coverage; low cost per exposure; combines sight, sound, and motion; appealing to the senses	High absolute costs; high clutter; fleeting exposure; less audience selectivity
<b>Direct mail</b>	High audience selectivity; flexibility; no ad competition within the same medium; allows personalization	Relatively high cost per exposure; "junk mail" image
<b>Radio</b>	Good local acceptance; high geographic and demographic selectivity; low cost	Audio only, fleeting exposure; low attention (the half-heard" medium); fragmented audiences
<b>Magazines</b>	High and demographic selectivity; credibility and prestige; high-quality reproduction; long life and good pass-along readership	Long ad purchase lead time; high cost; no guarantee of position
<b>Outdoor</b>	Flexibility; high repeat exposure; low cost; low message competition; good positional selectivity	Little audience selectivity, creative limitations
<b>Online</b>	High selectivity; low cost; immediacy; interactive capabilities	Small, demographically skewed audience; relatively low impact; audience controls exposure

Average Costs for Advertising\*:

Newspapers – \$1,300 per week for 2” x 2” ad

Television – \$200,000 for one 30-second commercial (during prime-time)

Direct Mail - \$1,500 for 1,000 4x6 postcards (includes postage)

Radio - \$90 to \$120 per week on a rotator (prices higher if time slots for ad are selective)

Magazines - \$1,200 to \$5,000 per month or per issue (depends on ad size and demographics)

Outdoor (billboard) - \$3,000 to do artwork and install media on billboard; rates depend on impress level, ranges from \$5,000 to \$500,000 (the higher the quality of the artwork and the larger the demographic group, the higher the price); minimum contract is 16 weeks

Online - \$0.60 pay-per-click or \$1,200 - \$1,800 a month for aggressive campaigns (does not include search engine optimization) or \$200 to \$1,200 per year per banner ad on websites

*\*Note: Prices reflected are negotiated prices for a 12-week campaign*

# Setup:

All participants split up and begin the session with a game of Monopoly or Life as an icebreaker. While playing these board games, each player needs to keep track of their own finances. Allow the games to get beyond just the introductory roles and into some serious gameplay. Through this activity, participants will be able to chat with the people they are playing with while also getting into a business mindset. Once players have had 30-45minutes to play, ask them to tally up their money.

Once each player has tallied their money, multiply those results by 100. This establishes the money that each player earned from their last entrepreneurial endeavor.

Introduce the game by arranging participants into groups, once in their group participants will decide on an amount that all team members can afford and then will put that into the group pot. After doing this, each member may have money left over from their monopoly game, this is money that they can invest later if they so choose. By setting the scenario this way, the whole game process is grounded in reality that the money they need to start their new business either needed to be earned through previous projects, or will need to be procured from investors, grants or banks.

Now that teams have been assembled and their starting pot is defined, begin by explaining the root problem that the participants are looking to solve. Some examples that could be used or modified might be:

- Create a product for consumers who are just about to retire.
- Create a product that meets a need in the healthcare sector.
- Develop a music based product for the 10-25 aged demographic.
- Take product *X* and make it better.

Ideal size is 3 groups of 3 participants.

Arrange students into teams of three (3). These teams will function as a business and will all create a plan, design, prototype and marketing plan. The following table outlines how each project will circulate through each team before being returned to it's original team for the presentation component.

	<b>Business Planning</b>	<b>Design</b>	<b>Marketing</b>
<b>Team 1</b>	Project A	Project B	Project C
<b>Team 2</b>	Project B	Project C	Project A
<b>Team 3</b>	Project C	Project A	Project B

The point of each team working on the others project is that it simulates the movement of a project to different departments that are responsible for only part of the sequence. Furthermore it requires players to adapt to the new information that is being passed to them from the previous team. The better the notes and description, the more likely project will be able to work within constructs that we established during the planning and design process. This type of rotation also requires teamwork to present effectively. Once each project has culminated the initial team needs to collect information from the other teams to outline the full scope of the process in order to be able to accurately present and report on.

## Suggestions For ESQ:

-Outline connections between Engineering Thinking and Entrepreneurship Thinking.

-Figure out the problem → Collect data → Analyse the data → Create a solution based on analysis.

-Use an existing activity (ESQ Classic...e.g. Slime) and have campers create a market for it.

-Give campers the market or problem and have them design the solution

-Outline the difference between:

Commercialization → solution searching for a problem

And

Entrepreneurship → Starting with a problem and tracing out a solution.