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TSA 3D-Print Lab

Brand Value Creation

Business Report and Proposal

by

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PURPOSE

The goal of this business research report and proposal is to help establish a value driven purpose and a purpose driven brand for TSA's 3D-Print lab. The Additive Manufacturing (AM) market is growing at a 15% compound annual growth rate from \$12 billion in 2020 to \$51 billion in 2030 (Metal-AM, 2021). As a new startup at University of Oregon's Knight Campus, TSA 3D-Print lab must possess a unique position in this growing market in order to be relevant. The following report includes extracts about the trends of the industry and how TSA 3D-Print lab could position itself to take advantage of its resources and hold a unique value-added positioning in the minds of its clients.

This document is inspired by the works of prominent business and strategy leaders including Simon Sinek, Prof. David Aaker, Prof. Nader Tavassoli, Boston Consultant Group, Dr. Michael Porter, M&C Saatchi and the works of Laura and Al Ries.

WHO ARE WE?

As a new Knight Campus startup, the TSA 3D-Print lab lacks its own unique identity within the AM industry that distinguishes it from others in the field. It is essential for TSA 3D-Print lab to have an identity not just in the minds of its clients, but it also within its own employees. It is when a crystal-clear identity (brand identity) is established, employees internalize the ideology within themselves, which in turn can be detected by outside clients.

BRAND IDENTITY – THE JOURNEY

To quote author Simon Sinek – “People like Martin Luther King Jr., Steve Jobs, and the Wright Brothers had little in common, but they all started with WHY. They realized that people won’t truly buy into a product, service, movement, or idea until they understand the WHY behind it.” (Sinek, 2009)

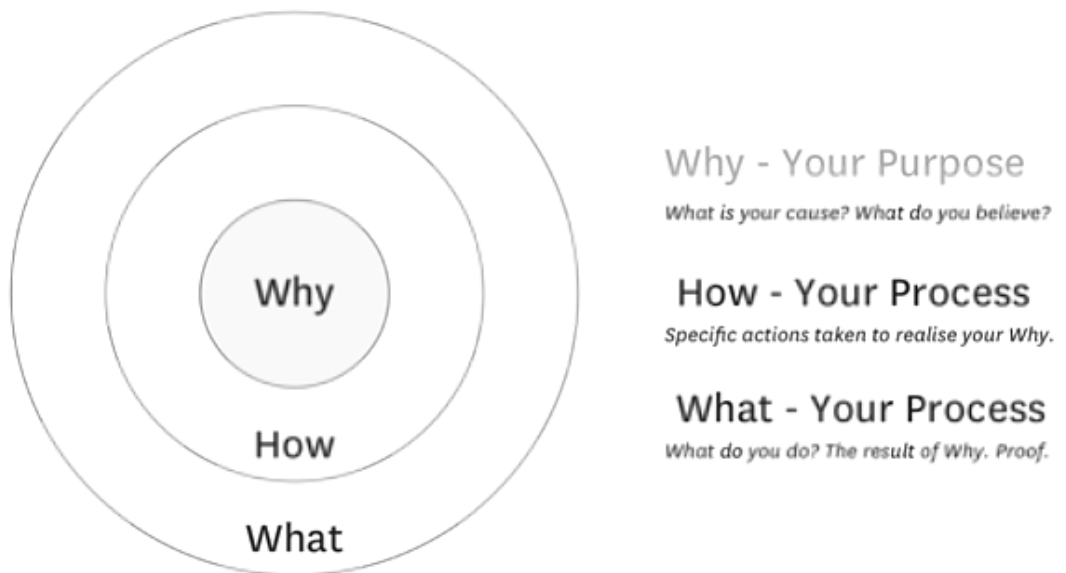


Fig. 1: The Golden Circle (Sinek, 2009)

TSA 3D-Print lab's current operation is to provide 3D-printing service to internal and external clients; which is similar to other institutions in this business. The goal is to answer the **rationale** behind the service the lab provides. **The “why” behind the purpose to find the identity.**

BRAND IDENTITY – THE JOURNEY



Fig 2: Identity Exploration

TAKING INSPIRATION FROM THE BEST.

The first approach to finding brand image and purpose is to distill the mission until its easily understandable. – David Kershaw, CEO M&C Saatchi (Kershaw).

When Glaxo Smith Kline merged into one company, they approached M&C Saatchi to help GSK find their brand purpose (Kershaw). To this problem, M&C Saatchi had a two-part distilled solution approach:

Part 1: Identify a **generally acceptable truth/fact** within the industry domain.

+ Part 2: Identify **operational truth** for the company.

= Brand **Identity** Statement

In the case for GSK:

<i>Generally Accepted Truth</i>	+	<i>Operational Truth</i>	=	<i>Brand Identity</i>
<i>Everyone is... scared of diseases.</i>	+	<i>GSK spends more money in R&D than any other company on the field.</i>	=	<i>No one fights disease more than GSK.</i>

TSA 3D-PRINT LAB'S BRAND IDENTITY

In the case for TSA 3D-Print lab and the industry it operates in:

Generally Accepted Truth

- Education is important.
- Skilled workforce is necessary.
- Research is expensive.
- Learning new technology is difficult.
- Education of Industry 4.0 is lacking in the current market.

TSA 3D-Print Lab Operational Truth

- Focused on education.
- Provides experiential learning.
- One of the few universities with nano-to-macro scale fabrication.
- Invested on next-gen manufacturing and research tools.
- Aids scientific research.
- Access to imaginings and material validation tools.

TSA Brand Image ideas:

- Enabling next generation of manufacturing research.
- Academic research on manufacturing.
- Enhancing smart manufacturing.
- **Enhancing Manufacturing Intelligence.**

THE NEXT STEP – THE “ING” ACTION.

The next step in the journey to find TSA 3D-Print lab’s brand identity, the focus should be placed on finding the core action (the verb) distilled to one word that the lab undertakes.

As stated by Prof. Nader Tavassoli, Marketing Professor at London Business School, the purpose of the brand should consist of “ing”. This gains more relevance for the brand and helps to align operations and staff to be on board.

An example is a case study (Tavassoli, 2016) done by Prof. Tavassoli, where he discusses about an utility company that supplies gas to stovetops in Hong Kong called HK Gas. Instead of focusing on better quality gas, cheaper rates, etc., they took a different approach to increase their branding, hence in their marketing effort. Their consumers use their services to cook, therefore, their purpose or existence is for **cooking**. Understanding their purpose enabled them to have meaningful reach within their consumers and they shifted their marketing efforts to cooking. They invested to create an app that shares recipes, created a website with tips on washing cookware utensils and created the whole “value package” around cooking; instead of the traditional “buy gas from us because we are better, cheaper and faster” approach.

Similarly, the P&G Brand Pampers, took a similar approach to their branding and positioning to compete with Huggies. Key customer insight from Pampers market research showed that babies show development and growth while they are asleep. They took this customer insight and promoted their brand to focus on sleeping. They now own the majority market share in the nappies industry and every Pampers package contain symbolism related to sleeping. In other words, their “value package” revolves around **sleeping**.

TSA 3D-PRINT LAB'S PRIMARY OPS.

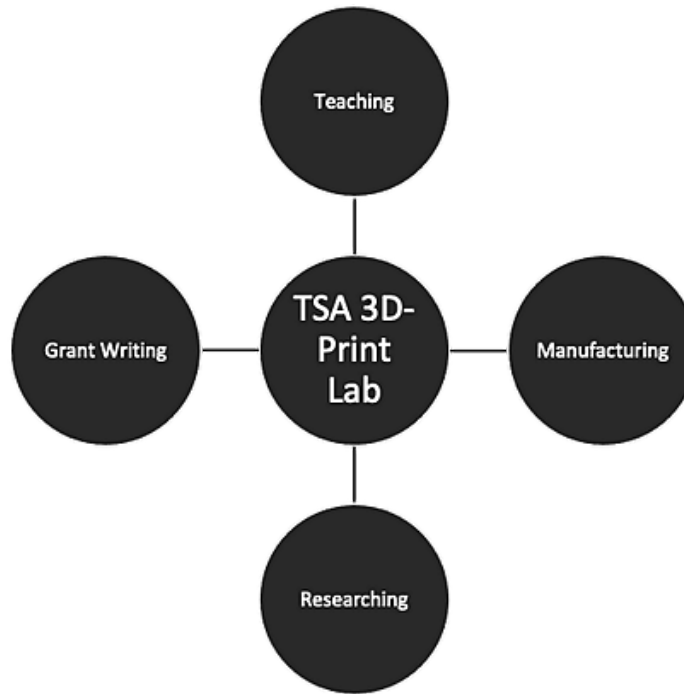


Fig 3: TSA 3D-Print Lab's Action Words

The key attribute around which TSA 3D-Print labs value package is centered is: **Educating**.

NEXT GOAL: OWN A (UNIQUE) CATEGORY

The next step would be to utilize **educating** and owning an operational category using this value package.

According to business brand strategist and author of the Reis Report, Al Reis promotes businesses to own a category in consumer's mind. For example, Safety = Volvo; Magical = Disney.

Since TSA 3D-Print lab's core action revolves around educating and it has access to advanced manufacturing resources, to follow Al Reis notion - TSA 3D-Print lab's brand image shall be **experiential learning**.

WHY EXPERIENTIAL LEARNING?

Because of the skills gap problem.

The TSA 3D-Print lab could utilize its advanced manufacturing resource and to tackle the skills gap problem current present in the U.S. There is a disconnect between college education and learning the skills necessary to be successful in real-world jobs. Practical knowledge must compliment theoretical understanding that is being taught in classrooms to produce a marketable university graduate those which employers wish to hire.

TSA 3D-Print lab being part of the manufacturing industry (Additive Manufacturing to be specific), it would position itself to be in the forefront of enabling experiential learning to solve manufacturing skills gap problem.

The skills-gap problem as defined by Harvard Business School Review:

“There’s a direct disconnect between education and employability, where employers view universities and colleges as the gatekeepers of workforce talent, yet those same institutions aren’t prioritizing job skills and career readiness. This not only hurts employers, but also sets the average American worker up for failure before they’ve even begun their career, as new employees who have been hired based on their four-year educational background often lack the actual skills needed to perform in their role. To create change as an industry, we must provide greater credibility to alternate education paths that allow students to gain employable skills.” (Hansen, 2021)

An independent study by Deloitte pitches that higher education institutions should collaborate with employers to align educational offerings with the skills needed to perform jobs in the real world.

Deloitte’s recommendation includes:

- Create a stronger dialogue between businesses and institutions, rather than the blind trust we see today, to establish a workforce where people are prepared for their careers.
- Provide options for micro-credentials, badges, programs, and certificates as interest is rising among American students.
- Rather than focusing on the two- or four-year degree or credential as the output, help students identify and more easily demonstrate to employers what job-ready skills they’ve developed as part of their education and training.

PROBLEM CONTINUED.

US Manufacturing Skills Gap Could Leave As Many As 2.1 Million Jobs Unfilled By 2030, Deloitte and The Manufacturing Institute Study Finds
New projections suggest vacant positions could cost the U.S. economy \$1 trillion in 2030 alone (Staffing Industry Analyst, 2021).

If TSA support experiential learning opportunities using its manufacturing resources and expertise, it will own a category in the AM industry space and attract businesses to engage with them. This would make businesses feel like they are subscribed to a greater purpose by engaging with product development projects with the TSA 3D-Print lab.

GOING BEYOND JUST THE PRODUCT. THE NORM.

A thought may arise if TSA 3D-Print lab is producing 3D-Printed parts, why should it invest itself in providing experiential learning? Turns out, this is a trend seen at successful companies as well.

Apple – they sell phones, tablets and computers. They also positioned themselves as the go-to brand who supports creative and aspiring individuals. To deliver on their brand promise to support creative and aspiring individuals, they have an operational segment exclusively dedicated to empowering and teaching skills such photography, coding, music, business, art, etc. to customers subscribed to Apple.

COMPETITORS AND BARRIER TO ENTRY.

Prof. Michael Porter from Harvard Business School created “Porter’s Five Forces” that addresses threats to a company through competitors. A major **force** or **threat** is the barrier to entry for the business, in other words, ease of replicating the desired business.

TSA 3D-Print lab’s position in this matter would be as follows:

- 1) Position the TSA 3D-Printing brand in a quadrant (see perceptual mapping) that leverage’s its unique resources.
- 2) Not directly increase barrier to entry*, but become industry experts in the field.

BARRIER TO ENTRY AND TSA’S LEVERAGE

Barrier to Entry	Difficulty Level	TSA Leverage Goals
Replicating Academic Setting	High	Leverage this platform as a Unique Selling Point for Brand
Capital Purchases	Medium	Use this as baseline to generate content
Knowledge and Expertise	Low	Align operations to be first in field/category

Table 1: Barrier To Entry and TSA’s Leverage

*To increase barrier to entry for others to follow our brand would mean educational opportunities for communities would be compromised, which in turn, would downgrade the TSA 3D-Print lab’s brand promise.

TSA 3D-PRINT LAB'S PERCEPTUAL MAP

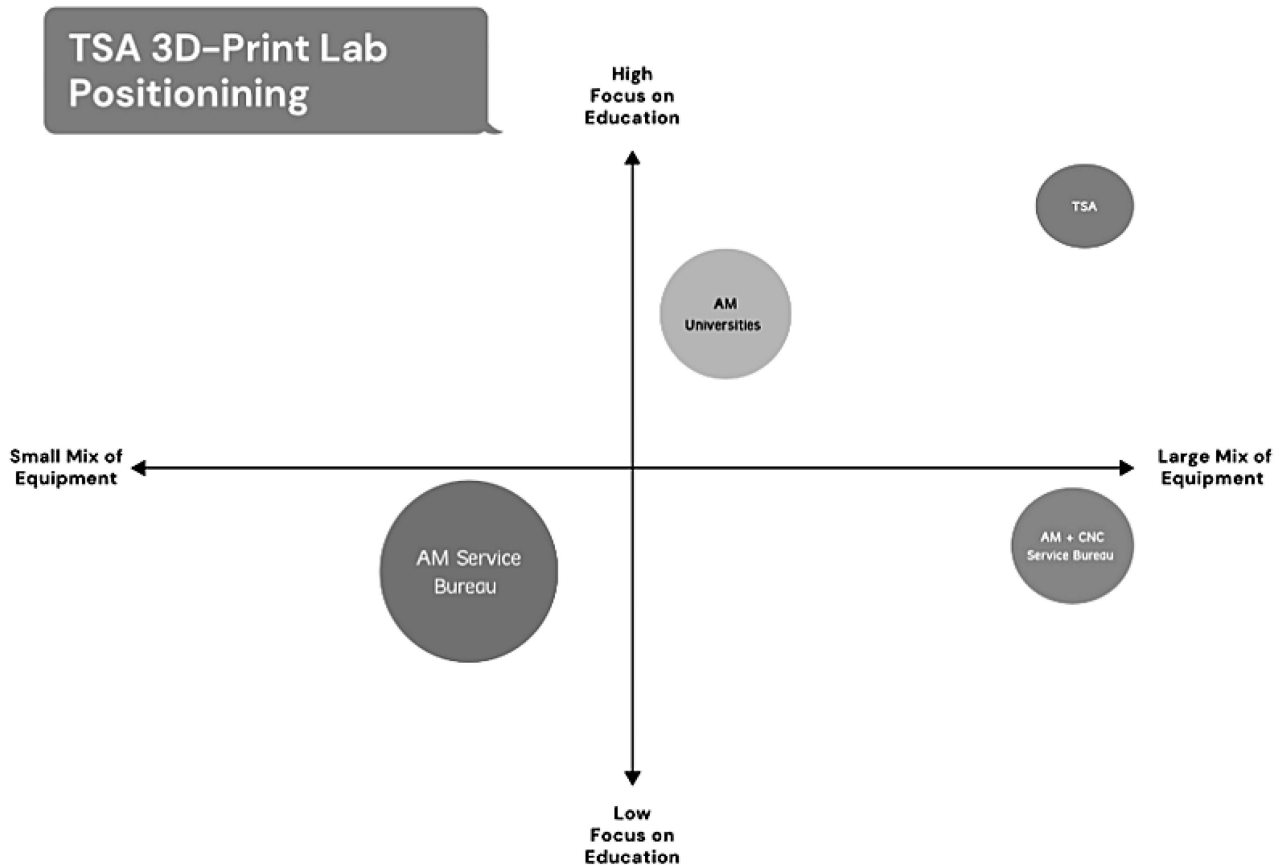


Fig 4: TSA 3D-Print Lab's Perceptual Map

To be successful and relevant, TSA 3D-Print lab would position itself in a completely **new** industry segment with high-focus on education while having a large mix of AM equipment.

The TSA 3D-Print lab could not have competed exclusively as service bureau due to restrictions placed by greater University of Oregon memorandums.

The current placement in the top-right quadrant enables TSA 3D-Print lab to not directly compete with area businesses, while remaining in an **area of uniqueness**.

STUDENTS AT THE CORE.

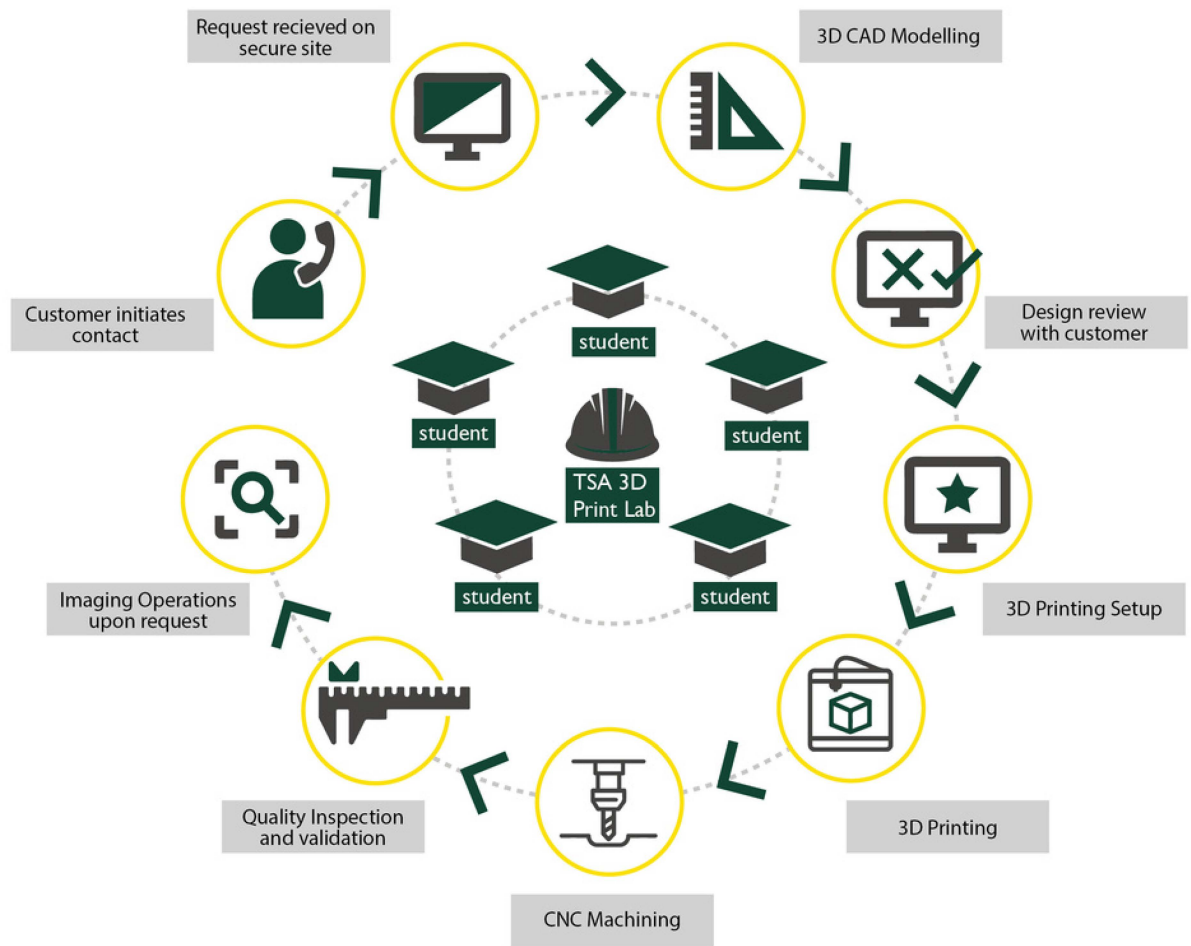


Fig 5: Students At The Core at TSA

Customer's product development projects would fuel the experience learning opportunity for students at the TSA 3D-Print lab.

Students would have access to every step of the above manufacturing process, which will enable them to gain knowledge regarding the different facets of technical skills and soft skills required to get the job done. Putting students at the center would make them a well-rounded individual upon graduation.

THE BRAND.

Brand Mission

To harness University of Oregon’s nano-to-macro level manufacturing resources to unlock and promote experiential learning opportunities for communities.

Brand Vision

To be the leaders in enhancing manufacturing intelligence.

MARKETING FOCUS AREAS.

The Boston Consulting Group established a matrix (called BCG Matrix) that takes a firm’s resources and segments them in quadrants with respect to growth potential and market share.

Following is TSA 3D-Print labs current BCG Matrix:





	High Yield	Low Yield
High Growth Potential	 DMG Mori	 Dragonfly
Low Growth Potential	 Fuse Markforged Form	 Exaddon GT2

Table 2: BCG Matrix – Modified for TSA 3D-Printing Needs

Key

Question marks: Products with high market growth but a low market share.

Stars: Products with high market growth and a high market share.

Dogs: Products with low market growth and a low market share.

Cash cows: Products with low market growth but a high market share.

The BCG matrix adapted for TSA 3D-Printing lab would serve as a tool to allocate marketing efforts in the **initial** phases for brand development. The marketing efforts would be primarily allocated for the STAR and Cash Cow fields of the BCG matrix, although the Question Mark and Dog would be mentioned to attract attention.

ADDITIONAL FOCUS AREAS TO HIGHLIGHT IN MARKETING EFFORTS.

In recent years, the AM industry is understanding its areas of strength and areas where they need to focus. Particularly, following are the two noticeable changes seen in the AM industry:

- 1) Increased desire towards **validating products** produced via AM with material characterization, metrology tools, imaging tools, etc.
- 2) Merging/Adding **subtractive manufacturing** (or hybrid) additions to an AM only service solution.

Market Research

Validating AM Products

When the shift from rapid prototyping to small-scale manufacturing was enabled via AM, companies are now focusing their attention to validating the parts produced through AM. According to the Additive Manufacturing Media magazine – “Measurement plays an integral role in the production cycle of 3D printed parts, so the need for testing these parts for validation grows” (Additive Manufacturing Media, 2015).

This notion of validating AM products is not only seen in the U.S, but globally. According to Richard Leach, professor in Metrology at University of Nottingham, “There is absolutely no doubt that inadequate metrology solutions able to cope with the specific characteristic of an AM produced part are a huge obstacle to overcome if AM is to be used as a viable production technology across industry” (Edwards, 2020).

ADDITIONAL FOCUS AREAS TO HIGHLIGHT IN MARKETING EFFORTS.

Due to the magnitude of this trend, the “standards industry” such as ASTM, now have dedicated research areas that focus on validating parts exclusively produced using AM.

“ We need to be sure that whatever is going to be produced is going to be consistent, safe, and of high quality. We need to be able to formalize the rules and the ways that we make things with additive manufacturing and that’s why standards are so critical.

— RALPH RESNICK, FOUNDING DIRECTOR OF AMERICA MAKES, AND
PRESIDENT AND CEO, NATIONAL CENTER FOR DEFENSE
MANUFACTURING AND MACHINING

Adding Subtractive Solutions

The AM Industry is adjusting its placement after the ‘hype-bubble’ right after 2010. It came to an understanding that AM could not truly replace traditional manufacturing processes – at least at its current state. Moreover, the general notion of AM’s role in the manufacturing market is widely known to be another tool in the toolbox. In recent years, there has been mergers between companies that exclusively housed either AM or Subtractive tools. One such case is the recent merger of Prototek – a sheet metal manufacturing and CNC fabrication company, merging with Midwest Prototyping – a key prominent player in the AM space.

“We recently acquired Prototek to support its growth prospects and expansion into digital and on-demand manufacturing. Merging the Midwest Prototyping team and additive manufacturing capabilities with Prototek’s already robust offerings is a great first step to advance this strategy,” said John Pless, Partner, TruArc Partners. “We expect this to be the beginning of significant additional investments in organic and inorganic initiatives that will position the company to capitalize on a dynamic industrial manufacturing market.” (Business Wire, 2021).

TSA'S POSITION

TSA already has validation tools such as a 3D-Scanner and has access to other Knight Campus cores where imagining technology and material characterization are available. It is already situated at the direction the industry is heading towards; therefore, it is a golden opportunity to be market leaders in this space. Moreover, TSA 3D-Printing lab has direct access to a state-of-the-art fabrication lab within its operational umbrella, which further reinforces TSA 3D-Print labs position to be sustainable market leaders in the industry. Such infrastructure and equipment must be highlighted within TSA's portfolio to position itself as a progressive market leader in the advanced manufacturing industry.

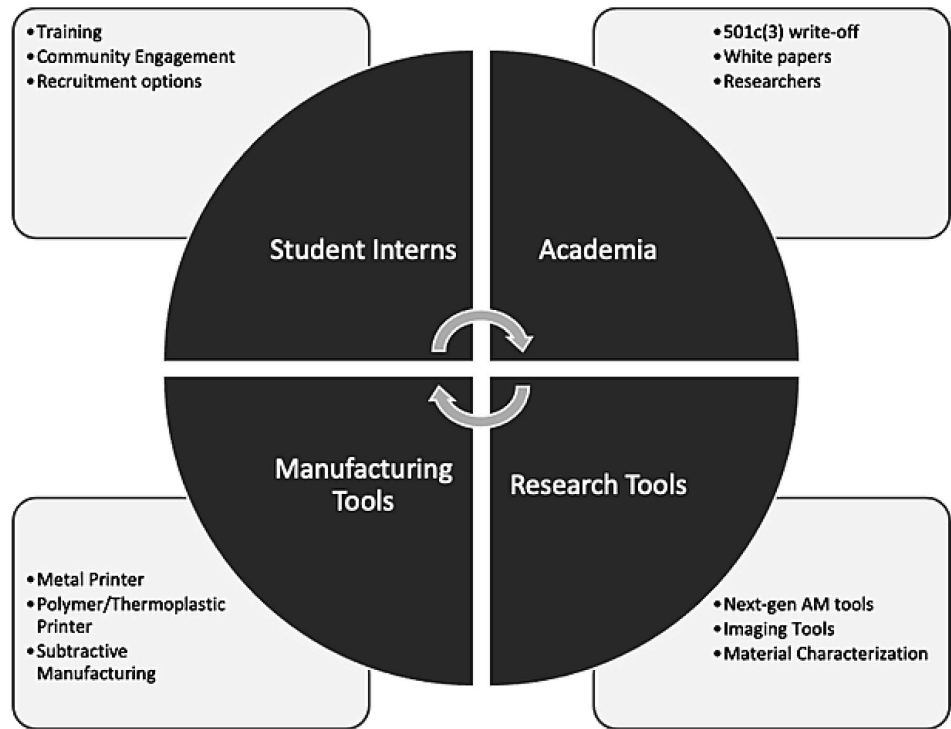


Fig 6: TSA's Core Areas for Operations and Marketing

Section Recap:

Use BCG Matrix to post contents mostly with high-yield components. Additionally, focus on TSA's access to additional Knight Campus resources when creating marketing contents.

REINFORCING BRAND POSITION.

To reinforce TSA 3D-Print lab’s brand position on education, it may benefit from associating with the United Nation’s Sustainable Development Goals. The Sustainable Development Goals developed by the UN are a universal call to action to end poverty, protect the planet and improve the lives and prospects of everyone, everywhere. The 17 Goals were adopted by all UN Member States in 2015, as part of the 2030 Agenda for Sustainable Development which set out a 15-year plan to achieve the Goals (United Nations, n.d.)



Fig 7: UN Sustainable Development Goals

THE SPECIFIC GOAL.

TSA 3D-Print lab would specifically participate in Goal# 4 Quality Education, since TSA 3D-Print lab would be providing experiential learning opportunities to communities.

To be more specific, TSA 3D-Print labs core mission would be under **Goal 4.4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.**

4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship (United Nations, n.d.).

There are only a handful of educational bodies who adapted the UN SDG goals to be part of their core operations. **TSA 3D-Print lab could be the first in the category to adapt one of the UN SDG goal within its operations who provide AM services.**

BENEFITS OF UNITED NATIONS

Benefits of joining (According to UN):

- Unprecedented networking access with UN Global Compact participants – representing nearly every industry sector and size, in over 160 countries
- Access to partnerships with a range of stakeholders – to share best practices and emerging solutions
- Best practice guidance – built on 15 years of successes
- Tools, resources and trainings
- Local Network support in 85 countries
- The moral authority, knowledge and experience of the United Nations

TSA 3D-Print lab specific advantages:

- + Open doors to international alliances.
- + Provides further value for businesses to affiliate with us.
- + Provides assurance customers are subscribed to a greater good.
- + Reinforces our brand stance and relevance.
- + Aids in Segmentation and Targeting phase of marketing efforts.

TOP 3 REASONS WHY COMPANIES PARTICIPATE

- 79% Increase **trust in the company** through a commitment to sustainability
- 59% Universal nature of **the principles**
- 56% Promotes **action** on sustainability within the company

Source: UN Global Compact Annual Implementation Survey

CEOs agree, SUSTAINABILITY MATTERS

- 93% Important to **the future success** of their business
- 80% A route to **competitive advantage** in their industry
- 78% An opportunity for **growth and innovation**

Source: UN Global Compact-Accenture CEO Study

Fig 8: UN Sustainable Development Compact Facts

NEXT STEPS – TO CREATE MARKETING PLAN USING BRAND POSITION

Client Segmentation & Targeting:

- a. Geographic:
 - i. Ideally within the US.
- b. Demographic / Firmographic:
 - i. Young professionals working in manufacturing.
- c. Psychographics
 - i. Values the importance of education.
 - ii. Holds appreciation towards UN SDG mission.
- d. Behavioral
 - i. Engaged in efforts to upgrade communities.
 - ii. Track record of participation in UN SDG efforts.

MARKETING GOALS

Stage 1: Create TSA 3D-Print lab's brand position.

Stage 2: Adjust operations to align with brand position.

Stage 3: Create multiple medium to display brand image.

Stage 4: Seek third party approval to reinforce brand image.

Stage 5: Use brand credibility to attract business and affiliations.

NON-MARKETING OPERATIONAL STEPS

- Create training curriculum for experiential learning using Additive Manufacturing.
- Intake UO students every semester to pilot run the program.
- Provide certification to students.
- Affiliate with educational bodies such as ASTM, SME Rapid, AMUG.
- Join the United Nations SDG Global Compact.

FUTURE REVENUE STREAMS

- Certification courses for greater UO community.
- Certification courses for corporations/customers.
- Manufacturing Education Seminar.
- Career Days with students with experiential learning.
- Request grants and donations using our brand position.

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