



fingerly

Business Development Report

Raj Oak

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Executive Summary

The report presents the work done under the Launch Academy program of Oregon State University as a part of Innovation-X program. It includes the background of the founder, mission statement, idea validation, product description, target customer, interviews and potential customer response, introspective analysis of business case and future plan.

Fingerly is a subscription based service that delivers one unique STEM toy each weekend for your young scientist. The report exemplifies the journey from the conceptualization to manufacturing of minimum viable product to product testing. The report mentions the story of the entrepreneur, how the brand was named, response received from the customers through in-depth interviews documented in the subsequent sections. Hypothesis testing analysis is carried out to ascertain the assumptions and hypothesis considered while building a brand and various ways to validate them.

This business idea secured first prize in OSU's Next Best Start-up Idea Competition and an honorable mention in Launch Academy Competition with a \$500 cash prize.

Founder Background:

Raj has completed B.E. in Mechanical Engineering from Mumbai University and is currently pursuing M.S. in Mechanical Engineering at Oregon State University with Design specialization and minor in Business and Entrepreneurship. He has attended several product design and business courses including Modern Product Design, Design For Manufacture, Technology Commercialization, Launch Academy (OSU business school's special topic under InnovationX focused towards Product Market Fit and Value Proposition). He is an active member of OSU's Entrepreneurship Club and has attended extensive 3 day entrepreneurship workshop at Boston and M.I.T. organized by VentureWell organization. He has done internships at Air India Base Maintenance Division and Mahagenco Power Plant, Uran. He is currently doing an internship at Oregon State University's Advantage Accelerator for launching technologies in the market giving him a strong technical as well as experiential background for taking the responsibility to be an active member of team.

Raj has a passion to make his own toys and play with them from his childhood which gave birth to '**Fingerly**' a STEM toys based business venture.

Mission Statement:

'We make your kids smart for real world situations by inspiring them with hands-on learning experience through fun projects'

Fingerly provides a subscription based service of interactive toys to inculcate the fundamental S.T.E.M. concepts through hands-on learning experience.

Idea Validation:

The founder has conducted several hands on workshops in primary and secondary schools in India as a part of social service organization 'Youth Expressions'. Getting an overwhelming response from the students as well as faculty with the same school calling over three times for conducting hands on workshop has made evident the importance of such STEM based projects.

Following are the images of the workshop conducted in Parle Tilak School





Product Description:

The product consists of a range of Science, Technology, Engineering and Math or STEM toys for young enthusiast to develop their analytical and cognitive abilities by providing them with hands-on learning experience with several Do It Yourself kits and models.

Hypothesis Generation

ASSUMPTIONS	TESTS
<p>1. My target customer is organization in which children from age group of 3 to 12 years spend maximum time of the day like elementary school, child care centers, and pediatricians.</p>	<p>a) TALK Validate the assumption by having a conversation with parents, school instructors and institution managers to find the daily schedule of children. Also consult a pediatric center on the waiting time for patients and the average time required for diagnosis</p> <p>b) RESEARCH Find the national metrics on the daily children schedule of an average American child.</p>
<p>2. These institutions where children spend their maximum time are interested in finding new ways to educate, entertain, inculcate skills and values and be a step ahead in their market competency from other similar institutions.</p>	<p>a)TALK This assumption can be validated by communicating with the management personnel heading these institutions. Knowing ways in which the daily proceedings are carried out can help design the toys better.</p> <p>b) RESEARCH Finding the existing ways that are being employed to cope the market demand and measures taken to provide excellent service over other organizations can be found and the assumption could be validated.</p>

	<p>c) FOCAL FOLLOW</p> <p>This is one of the ethnographic method used to determine the activities of an individual and its interaction with others people and environment.</p>
<p>3. The concerned staff in such institutions follows the regular activity schedule as determined by the management committee everyday which largely depends on academic training that may not always be favored by children as they are interested in novelty and hate monotony.</p>	<p>a) SURVEY</p> <p>Children can be briefly surveyed about their daily schedule and whether they are enjoying all the parts of their daily activity.</p> <p>b) INTERVIEW</p> <p>Brief informal one on one interviews can be conducted to know whether implementation of new toys which are iterative in their own design could fascinate them.</p>
<p>4. A solution that gives a hands-on practical experience in building something that works gives immense joy to children and inculcate the necessary know-how at a much deeper level which is the goal of any academic institution as well as providing a great source of entertainment which helps institutions like child care center or a pediatric center to spend valuable time and increase the value of such institutions in market due to value added service.</p>	<p>a) TALK-</p> <p>In order to validate the assumption a talk with the head of the school will be beneficial as it will help understand the main goal of any particular organization, how they are trying to achieve it and how much satisfied they are with their method. Also what methods are their competitors using to have an edge over market. Do they think that introducing STEM toys would increase the level of understanding of basic science and math concepts and will it in any way help them achieve their goal faster.</p> <p>b) DEMONSTRATION</p> <p>A practical demo can be arranged for a small group of children and faculty in charge to introduce them with these toys. Post</p>

	demonstration the reaction from the children as well as faculty can be observed which would successfully validate the stated assumption.
5. If a solution for introducing children to STEM – Science Technology Engineering and Math which is provided in a bulk quantity is made available then the customer would pay a sum of \$12-\$20 for each product.	<p>a) SURVEY</p> <p>An extensive survey with the help of goggle forms, phone calls, paper sheets can be carried out among the institution management staff and parents to make them understand the value of these toys and the benefits that they come with and ask about the cost they are willing to pay for the product.</p> <p>This could also potentially invalidate the assumption by either having a very positive response and parents find the value of such a service greater than the stated value and are willing to pay a greater sum for the product.</p>
6. Such STEM toys would encourage children to engage in more fun indoor and outdoor activities and would digress them from long time digital screen exposure which is increasing day by day, and this value addition would result in increased interests in buying such toys by parents as well.	<p>a)SURVEY</p> <p>Parents can be surveyed to find out how much time their kids are spending in front of the illuminated screen like television, mobile phones, tablet, computers and laptops. They will also be asked whether they know the potential harmful effects of radiations at early age and if provided a solution for engaging their toddlers in a fun activity based on STEM concepts will they be interested in learning more about it.</p>
7. Children like to engage in activities or toys that are different from the once they are used to playing for a long time. STEM toys offer a best chance to interact with the materials and building blocks and providing them a chance	a) SURVEY

<p>to build their own toy in the way they want to make and play with.</p>	<p>Informal surveys can be conducted to know the average time period a toy is being used by the child before storing it in a closet for long time.</p> <p>b) RESEARCH</p> <p>Some information regarding the statistic metrics developed by established toy companies can help to validate this.</p> <p>c)INTERVIEWS</p> <p>Informal practical one on one interviews can be conducted in which the children can be presented with a STEM toy kit and noting all the actions the kids perform while interacting with the kit. Also pilot studies can be conducted to see how much time are kids actually engaging in these toys.</p>
<p>8. The first toy or model that is planned to initiate the series is a rubber band powered air plane which can actually fly indoors or outdoors. This is developed unpinning the hypothesis that almost all children are fascinated by flying things may it be an eagle or a jet plane. The MVP could be developed in one week by utilizing the household materials like plastic wrap, rubber bands, plastic cans and metal clips.</p>	<p>a)DEMONSTRATION</p> <p>This assumption can be validated by a series of demonstration in front of children of different age group and noting down their reactions. It might occur that particular age group can be more fascinated by it than the other.</p> <p>b)TALK</p> <p>Having a conversation with parents about the feeling when the kids saw the plane in the sky and asking the enthusiasm the children show when any topic related to birds or planes are being discussed in classroom</p>

Target Customer-

1) Target customers include Pre-school and Elementary schools organizations, Child care and Day-care centers, Pediatricians, Child psychologist, Children gaming centers, Children Fun clubs and Parents.

2) Attributes that define the best customer are the following

a) Educational Organization

Institutions such as pre-school, elementary schools and private tutors are ideal customers for such STEM toys which share the common vision of imparting education in multidimensional domain of academics and extracurricular activities.

b) Care Centers

According to *Child Care- Center for American Progress* almost one quarter or 23.4% of children under age of 5 are in some form of organized child care arrangements and spend substantial amount of time in such centers which makes it a great market for STEM toys. Making such toys available can also provide an edge to the care centers over their competitors for having a value added overall care provided to the children and persuading parents to enroll in their organizations.

c) Medical Practitioners

These STEM toys could be specially designed for children suffering from Attention-Deficit/Hyperactivity Disorder (ADHD), such toys could be made available to Child psychologist to help children recover from the illness.

Also, Pediatricians could be a potential market where children would enjoy playing with toys while in waiting room or to relieve the anxiety being in an examination room.

d) Avid parents

Parents who are interested in involving their children in out of the box academic activities and engage them in hands-on experience will be yet another strong market. The products could also be an ideal gift for any occasion while rewarding children.

e) Children Fun Activities

Children birthday parties, parks, gaming centers, fun classes could be one of the potential markets which could engage children in the toys and hence could make the place more profitable thus increasing their interest in buying more products.

Tangible and Intangible Benefits-

Tangible benefits that the product would provide major educational, medical and entertainment institutions includes Increased Revenue by providing a value-added offer that could attract existing customers. Another benefit is the Resource Cost saving, the number of the personnel involved in child care could be assigned other functions or the roles could be made redundant if the toys are able to engage the children for longer period of time.

Intangible benefits would be most enjoyed by the parents as they could boast a sense of pride for purchasing a highly educational and fun product for their children or as a gift. It could provide them a sense of the worthiness of the product when they see kids enjoying and getting engaged in the toys. Children would enjoy working on and modifying their models which is not possible in the current market toys thus enhancing user experience and making them understand the basics of how things work. For major institutions like educational, medical and child care facilities the product would provide brand equity. Maintaining a brand name is one of the key objectives for such institutions and hence would benefit from the product by providing better service and maintaining or uplifting their standards.

Interviews:

The following interviews were taken in-person or over the call as mentioned and indicate the date of the month, reason for conducting interview and the insights gained from the interview which are mentioned as follows:

Interview no. 1

DATE: Jan 21st 2019

NAME: Patrik Sloma

REASON: He is the manager at 'The Toy Factory', a local toy store and has experience in specialty toy & baby products for 40 years

TYPE: In-person, actually visited the store

LEARNING: The most important thing that I learnt was the demand for these STEM toys with some of the children coming upfront and asking whether they have STEM toys in the shop. The next thing was the printed word STEM toy, most of the children prefer a product if it exclusively mentions 'STEM Toy' on the packaging. Also, children are interesting in not just playing with the toy but they are eager to know how it functions.

Interview no. 2

DATE: Jan 21st 2019

NAME: Customer 1

REASON: Before having a conversation with the manager from the store I encountered a lady and started asking her about the way she was selecting the toys as she was intending to buy something as a gift for her friend's children. I thought she being a middle aged lady would have a good experience in playing with toys buying for her kids and gifting toys to other children.

TYPE: In-person

LEARNING: She was interested in toys a lot and when she was a girl she liked a toy called 'Mechano' in which there were many metal strips with hole punched in them and nut & screw to hold them and make different machines out of it. The main aspect that she shared was the fact that children like something to make on their own just using simple materials. Also for stem toys she suggested me that while designing such toys it should be taken into account what is that we need to inculcate in children.

Interview no. 3

DATE: Jan 22nd 2019

NAME: Store Manager

REASON: The person I interviewed is the manager of a local hobby store 'Trump Hobbies'. The store has lots of premium toys including flying R/C plane, ships, robots and various do it yourself kits. The main reason to conduct interview was to know the popularity of the term STEM Toys among the store owners and the customers.

TYPE: In-person

LEARNING: I found the store owner was not very enthusiastic about stem toys and was unaware of exactly which toys are considered stem toys. But after taking a tour of the store I found that there were many Do It Yourself kits which were based on scientific concepts but they did not explicitly mentioned that thing on their packaging

Interview no. 4

DATE: Feb 9th 2019

NAME: Destiny Dawson

REASON: She is a great parent of three kids with different age group and was interested in having a conversation with me along with her three kids.

TYPE: In-person

LEARNING: The main thing that I was looking for was the mindset of a parent while shopping toys for kids. I enquired about the price range that she is comfortable to buy to which she replied that the price depends largely on the occasion and can spend higher for Christmas or birthdays. She would be willing to pay \$10-\$15 for any off the shelf toy that children demand all the way up to \$100 for special occasions.

Interview no. 5

DATE: Feb 9th 2019

NAME: Kid 1

REASON: This was the youngest kid that I interviewed and was around 4 years old girl. I wanted to know what exactly are the kids thinking about when considering or getting attracted to a particular toy

TYPE: In-person

LEARNING: I got an idea what small children like, that kid liked stuff toys and loved playing with them and was not much interested in stem toys in general. I need to survey some more kids in that age group to consider my target group.

Interview no. 6

DATE: Feb 9th 2019

NAME: Kid 2

REASON: The kid that I interviewed was around 7-8 years old boy and I wanted the way he is thinking about toys and how he chooses a toy in the shop or are there any particular toys that interest him

TYPE: In-person

LEARNING: This kid was interested in building stuff and loved the idea of the STEM toys and is excited to try them out. I asked him to play with my MVP plane and observed his behavior and interaction with the toy. I found out that the design of these toys should be made more intuitive as the appropriate way of holding the toy is to hold it from its tail but most of the time kids are not able to figure that out.

Interview no. 7

DATE: Feb 9th 2019

NAME: Kid 3

REASON: This was the eldest among the kids that I interviewed and he was 10-11 years old. The reason being the same as the previous one of learning the way the kids think.

TYPE: In-person

LEARNING: This kid wanted a toy in which he can make some product from a kind of mold and he wanted to make the mold for creating other parts.

Interview no. 8

DATE: Feb 18th 2019

NAME: Anjali

REASON: I interviewed one of my relatives who buys a lot of toys for her niece and nephew and gifts them on all special occasions. I was interested in knowing which are the key parameters that she is considering while selecting a gift.

TYPE: Phone

LEARNING: The main aspect that she is considering is the safety aspect of the toy as there will be some interaction with small parts and children might put something in their mouth or it could be harmful to their skin. Also she mentioned that a toy having multiple functionality is the one that she prefers. She was interested in the subscription based service for toys but would also like to buy a onetime premium toy.

Interview no. 9

DATE: Feb 19th 2019

NAME: A parent met at an informal meeting

REASON: It was not an intentional interview but I met a parent of two kids and he was having an engineering background so I thought it would be nice to hear what an engineer thinks for his kids.

TYPE: In-person

LEARNING: He was very excited about stem toys and wanted to buy a 3-D printer as soon as his kid starts typing on computer. He really appreciated the subscription based service and was excited to see the prototypes.

Interview no. 10

DATE: Feb 12th 2019

NAME: Muhammad Lukman

REASON: He is a parent of an infant who has just started crawling. I wanted to know which key factors is he taking into account for buying toys and has he ever heard of stem toys

TYPE: In-person

LEARNING: As his child is not of the age to play with big toys he is considering something that will help increase eye-hand coordination and help in developing motor skills. But he is familiar with the concept of stem toys and he had also gifted a stem toy bought from 'Baby Einstein' brand

Introspective Analysis:

Event – Feeling Chart

Event	Feeling
1) Seeing the product (toy) on the store shelf or posted on an online shopping site	Eager and excited to have the toy in hand and amused by the thought of owning it and playing with it.
2) Taking the toy in hand and starting to unpack the packaging with several layers of wrapping before reaching the final toy	Jubilant and furious to open the packaging as quick as possible in order to get the toy. Elated by the process of unpacking with increasing excitement to grab the toy.
3) Holding the toy in hand and figuring out how to operate it, not using the manual for instructions at first and trying to learn as much as possible by viewing it.	Delighted to obtain the toy and super inquisitive about its working and feeling joyous
4) Completely noting the working and operating of the toy and playing with the toy	Thrilled by the experience to interact with the toy and amused at the sight of toy coming alive as the user starts to assemble each part together. Having fun with the toy and learning the fundamental principles by interacting with the toy.
5) Having played with the toy eager to share the experience	Eager to call up friends and family and show the accomplishment of completing the assembly of toy and excited to share the new concept and principles learnt from the toy

The Plan

Marketing campaign can be launched at a small level such as a store or a school during parents teachers meet or during any function in which there are maximum number of viewers. The campaigning at a much bigger level can be conducted through social media channels in which along with having a special channel for brand advertisement, the product would be distributed among several online product reviewers to give an experiential feedback about the product thus marketing to a huge audience which are already following the host reviewing channel.

Channel

For small and initial campaigning local stores such as ‘The Toy Factory’ and ‘Trump Hobbies’ stores can be used. The Toy Factory has given a verbal confirmation about the potential display during the science project presentation with a scope to present it in front of potential customers.

For large scale campaigning the popular toy YouTube review channels like ‘Ryan ToysReview’ getting 727k views in less than 12 hours of video uploading, iDubbbzTV getting more than 11m views in a course of 2 years can be approached for posting their review. Such initiatives could be started once the product has a commercialization version ready.

Minimum Viable Products

I developed two STEM toys, one of which was given to kids for observing their reaction and noting other design modifications required. Following are the images of first MVPs. The packaging was made interactive so that children need not read the step by step manual to use the product.



Flight Master: Toy Rubber Catapult Plane with Do It Yourself modifications





Plant It: Study How Light Helps Growth of Plants

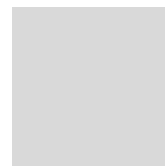
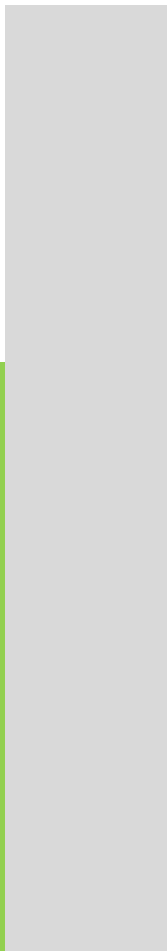


Future Plan:

Taking steps towards rapid prototyping and deploying the toys made in several schools and care centers and noting the response from the child as well as parent is the crucial step in further product development. Following are the identified key skill sets needed for business growth.

Skills needed-

- 1) The first being a graphic designer. Advertising and attention seeking quality can all be attributed to the way graphic designing is being carried out, may it be a view in a store room or on a screen.
- 2) The next one is a person involved in the manufacturing sector or has good contacts with mass manufacturers to produce the toy parts cheaply. The person with facility for plastic injection molding would be most appropriate.
- 3) One of the other most important factors that need to be taken care of is the internet presence. The person that is well suited is the one that should be well versed in online marketing and knows the protocols and the necessary skills to increase the website traffic.



Fingerly

Fun Delivered...

Opportunity

Screen time is an important growing concern for parents

Parents want their children to be engaged in STEM concepts



Solution

A set of interactive toys to inculcate fundamental STEM concepts through hand-on learning experience to:



BUILD



KNOW



SHARE

Validation & Inspiration



Business Model

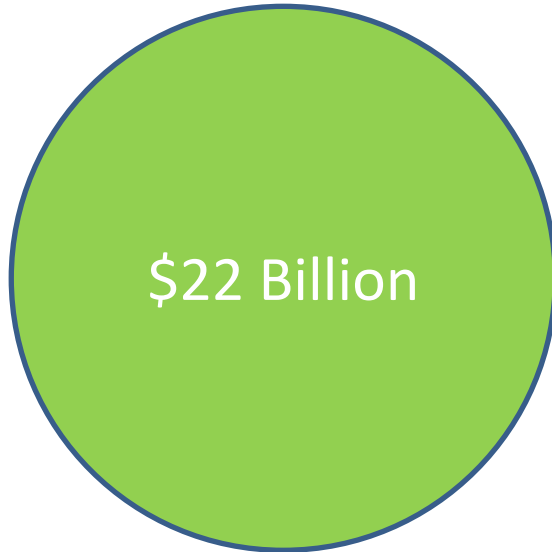
We deliver one toy per month for subscription based service with monthly (\$20) or yearly payments (\$90)

Cost- \$3-5

Price- \$15-25



Market Size



US Toy Market

Available Market



Building Sets

Serviceable Market



40 Million Children within
age group of 5-15 yrs

Target Market

Team

Founders-



Raj Oak
Toy Designer

**Graphic
Designer**

**Marketing
Expert**

Advisors-



Kristin Ratzlaff
Director of Business Development
- Formos



Nita Shah
Executive Director
- MESO

Achievements

Future Plans

Questions?