

Tell us of a problem with a product which bothers you.

- How would you use technology to solve the problem?
Propose more than one potential solution (max 3)
- Compare and choose the best solution for the problem
- How would you measure whether the chosen solution is working?
- What might be the reason for this chosen solution to fail ?

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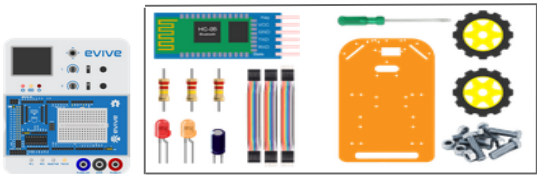
What is the Product?



Hey, I am Anshul. Let me guide you through my journey. Hop on!

What is the Product?

Do-It-Yourself Kits comprising of a central controller called **evive** and basic electronic & hardware components



What it Does?

- Provides a solid foundation in **robotics**, **electronics** and **coding** by creating various types of electronics & robotics project
- Eases prototyping and debugging process making it easy to create real life models, projects like Robotic arms, Robowar bots and what not!

Ultimately enhancing STEM (Science, Technology, Engineering & Maths) skills!



What is the scope?

- Global STEM Market : \$29B
India' STEM Market : \$235M, \$500M by 2020
- Global STEM Toys Market Growth \$914M by 2023
5% average CAGR
CAGR of 4.53% for 2019
35% of growth from APAC
Moderately fragmented with many players



Don't worry if you didn't completely understand the product, further slides will guide you

Who are the people of Interest?

- Customers
People: Parents & elder siblings
Need: Affordable & Kids learn and enhance STEM skills
- Consumers
People: School Kids of age group 10-15
Need: Can Create whatever they like
Should not be homework
Feels like a game

Who are the competitors?

- It looks like there are many competitors but we have only one competitor which most closely resembles our product & technology

Total Funding Amount ⓘ	\$79.9M
CB Rank (Company)	6,133



Makeblock

Makeblock is the ultimate robotics construction platform for makers and STEM learners to turn ideas into reality.
Shenzhen, Guangdong, China

Categories
Electronics, Robotics, STEM Education
Headquarters Regions
Asia-Pacific (APAC)
Founded Date
2011
Founders
Jasen Wang

What is the problem

Majority of the sales has been from the elders for the kids. Also, the global focus in this space is "learning - by - playing"

Elder's brother role has been performed by coachings (makerspaces) that gamifies the process

Same problem pointed out by various users, makerspaces, schools & distributors

Meet Rohan, a 14 year kid who enjoys smartphone games and is a target customer



Sense of Reading

Not Gamified

Not Engaging

The story is inspired from the real problems faced by users

Though learning the basics is tedious process but makerspaces are able to make it work with evive & their own components, implying **evive is okay** but the **offerings & instructions are inadequate**

Sense of Reading
Not Gamified
Not Engaging

Sense of reading

Playing involves very little or no reading especially from a manual, even in mobile games, instructions are supplied along the game and gradual advanced instructions come as game progress

Not Gamified

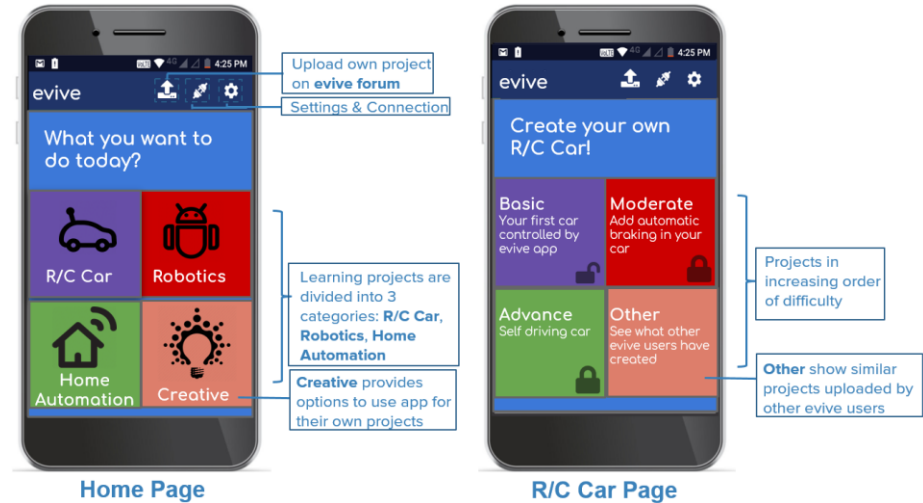
Gamification is beneficial in learning, especially when things are self-learning based. It involves gradually increasing levels of difficulty of concepts which encourages and engages the user to continue using it

Not Engaging

Not engaging like LEGO, Mechanix as they provide basic building to create whatever one likes

Solution 1 : App + Showcase Based Solution

Instructions are delivered like steps of a game, new components introduced as next level and coding is presented as challenges

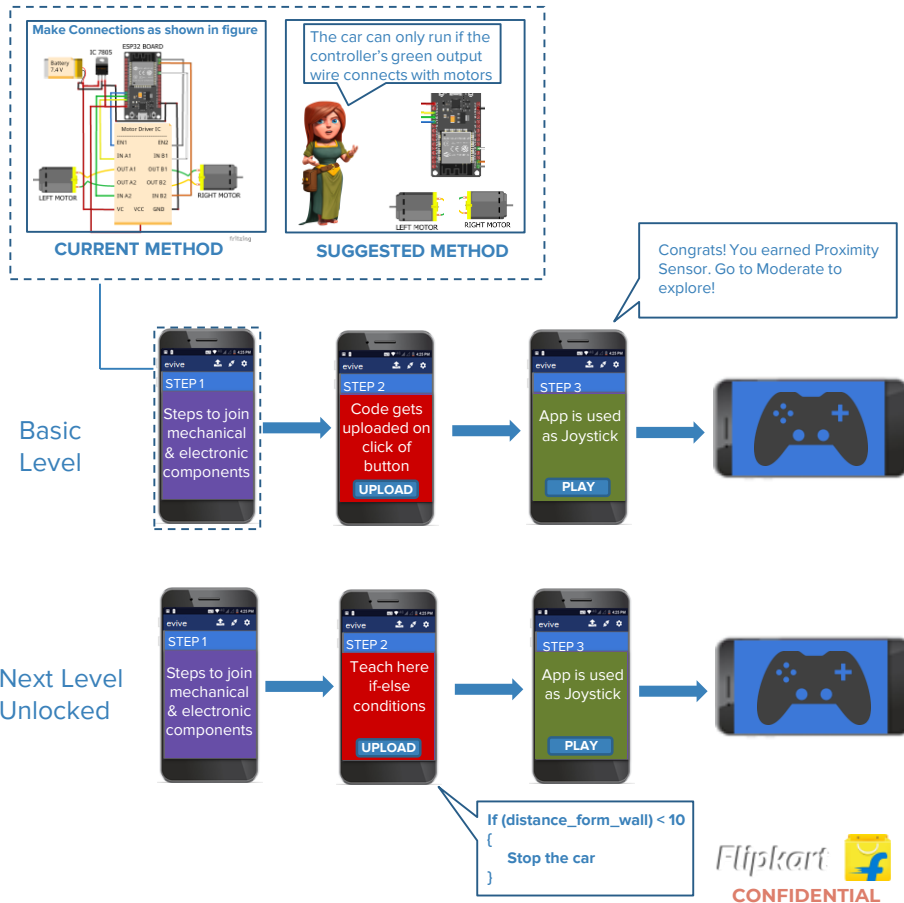


evive already has a forum for asking questions & needs to add a **SHOWCASE** section where users can showcase their projects, like this below:

Topic	comments & suggestions			Number of views and last activity
	Replies	Views	Activity	
Using your smartphone's built-in sensors	3	1.7k	Nov '18	Contains brief description of product & category
Car Projects android, video				
Tangobot (Android-based autonomous robot)	0	1.0k	Sep '17	
Robotics Robot android				

Forum

USER JOURNEY

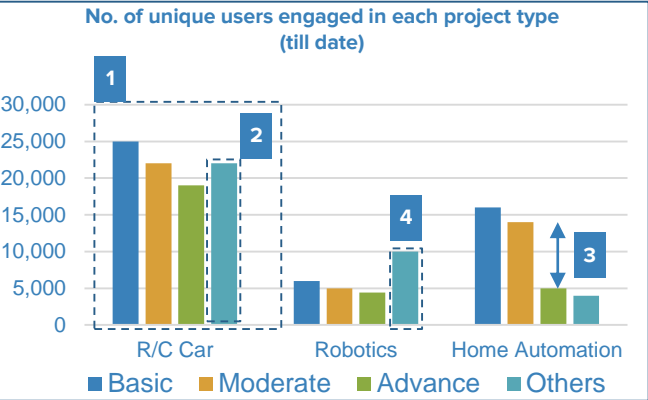


Solution 1 : App + Showcase



Though firm currently has an app but it is mainly for open source usage

APP USAGE INSIGHTS

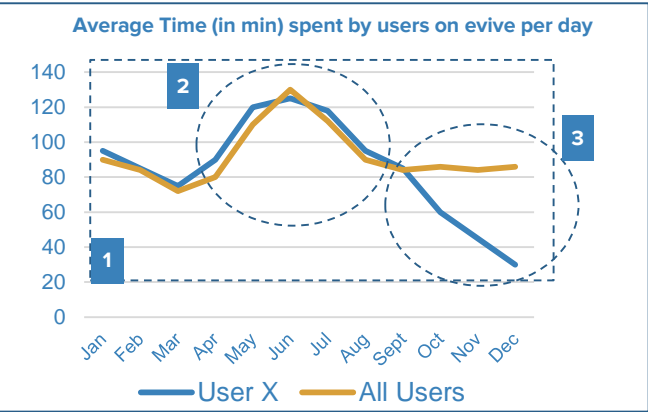


INSIGHTS

- 1 R/C Car has highest involvement
- 2 R/C Car has highest "Others" engagement implying that users are creating maximum number of car projects on their own
- 3 Home Automation has some issue with Advance level as there is serious dip in engagement compared to others
- 4 Number of users creating own projects in robotics is higher than users learning it, implies kids who have learnt robotics from elsewhere are migrating to evive

ACTIONS

- 1 Launch new kits & provide more resources for this category
- 2 Use Others data to gain insight on what is the reason for engagement and use it for other categories
- 3 Figure out if the Advance level is too tough or boring for kids or introduce a new level between Moderate & Advance
- 4 Highlight more robotics based projects in marketing and tie-up or organize robotics based robothons & competitions




INSIGHTS

- 1 User's time involvement through the year
- 2 Users involvement peaks in the summer months of May to July
- 3 User X engagement level is diverging significantly from other users since September & not returning back

ACTIONS

- 1 Identify when launching new products or advertising is most optimal
 - 2 Organize competitions & hackathons at this time, need more staff to clear doubts at this time
 - 3 Cluster users which are showing different behavior than average users using **Machine Learning based Algorithms** to identify the common factors and reason for it
- Maybe the user is stuck at a level and need a level 1.5 between level 1 and 2. Machine Learning can be involved to provide this **personalized experience**.

Solution 2 : App + Showcase + New Product






Solution 1 don't effectively solve engagement issue as offered kits don't provide enough mechanical components to create many new projects

WHY IT IS SO MUCH IMPORTANT?

Category for Showcase

Have you built a personal robot with Makeblock? Show it off here! Let's see what you've built to help inspire others. Picture and video are encouraged here. Try to give a instruction about your works (It's not necessar...

Makeblock compass drive		16	4.8k	Apr 2
Origami Night Lamp with Makeblock Halocode		0	111	Apr 22
Let Halocode choose your fruit!		3	114	Apr 11

Biggest Competitor makeblock® provides enough mechanical hardware & hence enjoys strong user engagement

WORLD ECONOMIC FORUM

Agenda Platforms Reports Events About

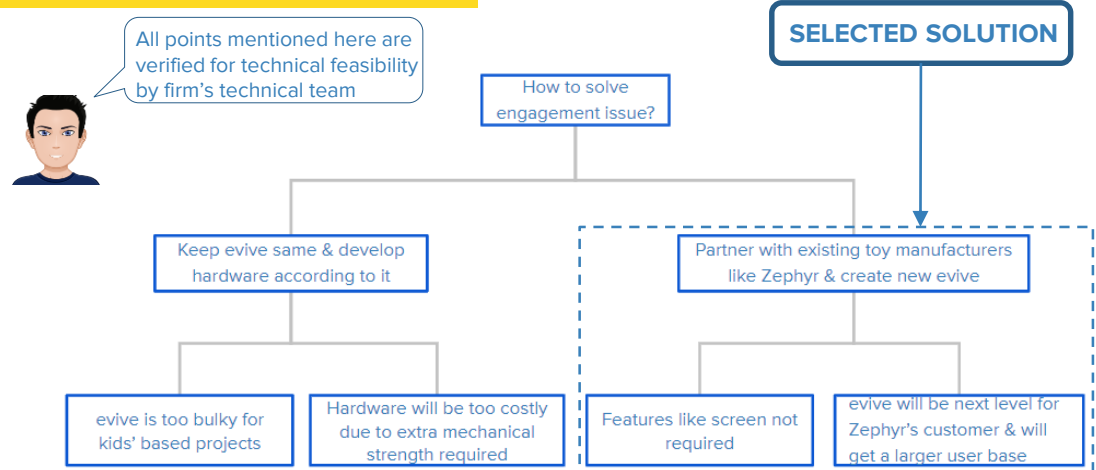
English TopLink

Global Agenda Media, Entertainment and Information Media and Entertainment Engineering and Construction


Lego is piloting audio and braille building instructions

The idea comes from Matthew Shifrin, a blind 22-year-old Lego enthusiast. He approached the company with the idea after he and a friend worked together to create instructions for kits that he could read.

Higher engagement leads to more product adoption which leads to higher profits & helps to come up with new products like in case of LEGO®



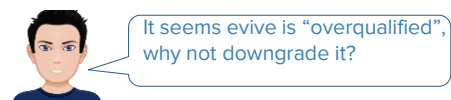
FACTORS	SOLUTION 1	SOLUTION 2
Skill Set	Building up a team/outsourcing as hardware is not their specialty	Have the people & experience for creating new product
Time to Build	Uncertain depending on legal agreement, costing, designing, testing	12-15 months including designing, prototyping & testing
Cost	Outsourced R&D & manufacturing cost for low quantity	In-house R&D facility & necessary tools & technologies
Sales & Product Adoption	Competitor products more kids-friendly	More kid-friendly & gain customer base of partner firm



Creating new evive won't reduce the technological benefits but just remove the redundant features and make it compact

So , anything created on older evive can be created on new evive too!

Solution 3 : App + Showcase + Downgrade Device + Kit



WHAT IT MEANS?

Remove the technological features which eases the process of creating advanced & real life projects, similar to our competitors

WILL IT SOLVE THE PROBLEMS?

The 3 problems are due to teaching of basic concepts that the competitors' don't teach

Sense of Reading

Evive become similar to competitor's device, requiring same level of instructions which is not an issue (makeblock's customer review below)

It was great for my son's science fair project
Bought this for my son's science fair project and it was great. The directions included were clear and easy to follow. The packaging kept everything in

Greatest Robot Kit I Have Bought Yet!!!


"Wow! what a nice kit!!
Anodized Aluminum Components
Stainless Steel Hardware
High Quality Electric Connectors
Excellent Step By Step Instructions

Not Gamified

Not required now as there is not much concepts to teach

Not Engaging

Develop **mechanical kits, showcase section in forum & app** to improve engagement like the competitors



Makeblock
xeecos

4.5 ★
1K reviews

66 MB

3+
Rated for 3+ Ⓢ

Install

Topic

Category

FAQ for mBlock 5 + Codey Rocky

mBlock 5 + Codey Rocky FAQ. The Bluetooth dongle failed to connect. What's the problem?

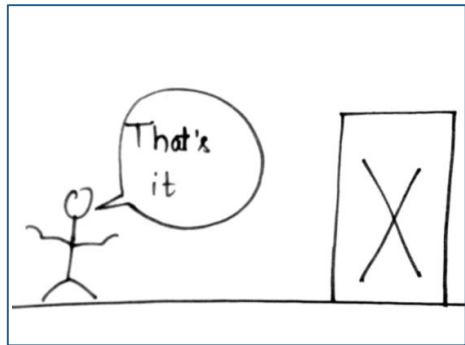
1) Put your Codey close to the Bluetooth dongle and it will automatically pair with Codey. When the dongle stops flashing, it mean... [read more](#)

mBlock

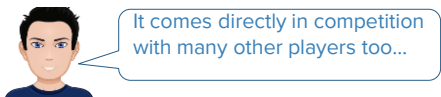
WHY IT MAY NOT BE A GOOD IDEA?

Price	Creating new device & kit pushing up price Competitive pricing from Competitors due to Economies of Scale
Competitive Advantage	Loses competitive advantage

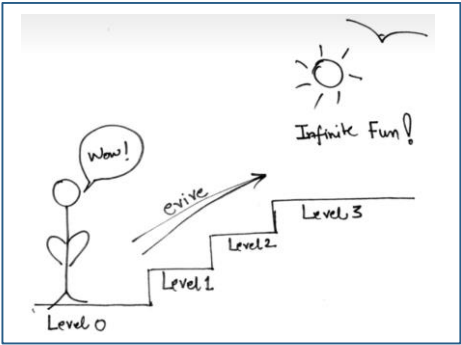
OTHER PRODUCTS



- Due to limited compatibility, can only create projects present in the kit with few variations
- Remain limited to the kit and couldn't level up to real life problems



evive



- evive can also be used with commonly available electronic components
- Makes prototyping & debugging easier which eases the process to create real life projects



COMPARING SOLUTIONS

LOW

MEDIUM

HIGH

FACTORS	SOLUTION 1	SOLUTION 2	SOLUTION 3
Sense of Reading	Solved	Solved	Solved though not a problem now
Not Gamified	Solved	Scope of improving further by introducing more levels in app because of availability of components	Solved though not a problem now
Not Engaging	Solved but not a long-term solution	Will improve engagement to peak level, monetizing the technological superiority of evive	Solved but not satisfactory as product will reach dead end in its usage life cycle
Cost to Implement (including opportunity cost)	Lowest	Need to create new kit and evive but the same app and showcase section of solution 1 can be used	Need to create new evive, kit & also different marketing (though small for firm currently)
Firm's Skill Set	Skillset for addition a section in forum & create requisite app is available	Firm has in-house R&D facilities for creating new evive & other skills is also available	Tough to create due to legalities and less experience in the required class of product
Time to Build	Probably 4-6 months	12-15 months including designing, prototyping & testing	Not certain due to low prior experience but certainly > 15 months for testing
Price Changes	Marginal	Nearly same owing to decline in evive's cost but increase due to additional components	Due to Economies of Scale & high R&D cost
Sales & Product Adoption	Improve but may stagnate due to limited engagement	Similar to solution 1 in short term but significant improvements in long term	Higher price offering & strong user base of customers
Short term Financials	Follows Lean Methodology & can't invest significant resources to develop a single solution	Can be developed as a side-product without devoting full resources which increases completion time	Require significant resources which may not be favorable for
Long term Financials	Basis for all proposed solutions	Unparalleled engagement and future revenue growth owing to strong customer base	A small piece of market share at max
Competitive Advantage	Enhanced	Significantly enhanced	Drastically reduced



In short, follow Solution 1 & 2 with consideration of short term and long term

- **Solution 1 is optimal in short term** considering more weightage of Time to Build & Short term Financials considering the firm's financials. It also fulfills solution 2 requirements of App & Showcase section
- **Develop solution 2 sideways** without committing all resources which will increase completion time
- Solution 3 is not optimal at all

ANALYZING THE SOLUTION

REVENUE & CUSTOMER GROWTH

Revenue for FY 18-19 = Rs 50,00,000
Since its first launch was in 2016, most of the sales would be of new evive (80%)
Revenue from new customers = **Rs 40,00,000**

Average cost of new kit (evive only/starters kit /iot kit) = Rs 10,000
Number of new users = 40,00,000/10,000 = 400
Assume 10% of old users bought the new kits without evive & average cost of new kit Rs 4,000
Number of old users = 10,00,000/4,000 = 250
Possible as revenue growth was 5x in FY 2018-19 compared to FY 2017-18
Total users = 650

Number of website downloads = 650 X 20 = 13,000
(Provided free and users bought such a new project)
Consider just 1 new user per 100 downloads, word of mouth from existing users, advertisement, reviews)
New customers due to app only = 130

Revenue = Rs 13,00,00
Growth in revenue from new customers due to app alone = **32.5%**

PRE-LAUNCH MEASURE : PREDICTION MARKETS

Relatively new concept to forecast the important figures, based on wisdom of crowds and is used by big firms like Google & Ford [\[LINK\]](#)

Firm can create a prediction market of various stakeholders (present users, retailers, business partners, tinkering enthusiasts) for assessing the impact even before creating an app or after creating a single feature

Market can run on **number of downloads, % of conversion of app downloads**. Prediction markets are known for better predictions than professional forecasters.

Plugging the values in above calculation can give a prior estimate of success!

ONLINE BASED MEASURES

N = Number of new customers
T = Total Number of App Downloads
U = Total users before App Launch
Y = Number of projects uploaded on showcase forum after app launch
R = Total Number of app referrals by existing users (if added referral feature on app)

Attractiveness: How attractive is app to convert non-customer app user to new customer
Attractiveness = $N / [T - U]$

beta : Impact of app popularity on projects counts
 $Y = \alpha + \beta * T$

User Utility = R/U

(SMP) Social Media Presence = [(Number of likes on fb post) + (Number of re-tweets) + (Number of hashtags mentioning evive) related to app launch]

Beta_likelihood: Impact of app enthusiasm on Number of Downloads
 $T = \alpha + \beta_likelihood * SMP$

REASONS FOR FAILURE

Technical Issues with App leading to decline in user ease	Parents not willing to give phone to kids for play and uploading projects
New evive projected as downgraded	Introduction of mechanical components increasing resemblance with competitors
Legal Issue with App Data usage	Considered not challenging by higher age target customers