
From Drawing to Drawing

Part I: Idea to Form

Waking up on a warm Bangkok morning, Chatchai Aphibanpoonpon, founder of Klongdinsor Co., Ltd., sits down in front of his computer and started his day going through his email. One specific email, dated July 9th, 2013, with the subject “Re: Quotation for Lensen production.” caught his attention immediately. Looking back over the past months of design modifications, Chatchai now has the relative information to move forward with the first mass production of LenSen, drawing pens for blind children. Reaching out to grab the prototype with the latest design of Lensen sitting next to his computer, he thought, “finally a design to move into the next phase of scale product.”. Hands on the keyboard, ready to hit send on the reply message to the email to give the production a green light, he paused with a slight hesitation, “is this the design?”.

Inspired for Impact

With a undergraduate degree in economics from Thammasat University, one of the more prestige public university in Thailand, he started his career with Tisco Bank as an analyst (check w/ Tor on his role at Tisco) right out of school. A year into his work life at Tisco Bank, the feelings of accomplishment and drive never really caught on. Thus he decided to leave that life and go back to help out with the family's auto part business, which has been around for more than 30 years. Not fascinated by the limited room for creativities and innovations in the business, he decided to make use of those energies and went back to Thammasat University for a graduate program with IMBA.

In his years at IMBA, the program has exposed him with its focus on innovation and impact (with International as the third I of the program's 3Is). Those exposures made him highly aware of the opportunities to contribute to Thailand's social challenges. Thus that has pointed him to many social business ideas and solutions to social challenges in different part of the globe. As a regular visitor to Bangkok School of Blinds to do social works to tutor blind kids on their school works, he started to have

great interest in look on how he might actually make a difference in blind children's educational experiences.

Just around the time he has decide to make helping with blind kids' education, he started to look search around the internet to find out what people are doing and hopefully, get further inspired by any innovative ideas. One idea that actually caught his attention was a drawing pen for blind children. The pen was made with a dissected plastic yogurt bottle a pen's outer tube with string of yarns threaded through. They are to be hold like a pen but instead of leaving inks on the paper, it leaves strings of yarn on velcro sheets. He decided to make one following the instructions provided on the designated website and bring it with him to the Bangkok School of Blinds and see how it actually play out with the actual blind kids.

Lensen, Playing With the Strings

Excited to know the pen is actually valuable to the blind kids, he took it to show it to a teacher at the Bangkok School of Blinds for her opinion of it. The initial comments from the teacher were positive and he took away from the meeting to a good number of recommendations for the built to make it more user friendly. With those comments in mind, he went back to put on his hobbyist hat and starting making 10 "improved" pens, R.2, so that he can get them actually used by the blind students at the school and get real users' feedback.

Considering how the blinds use their tough senses using these pens, the R.2, which are still built from pen tubes and yogurt bottles, lasted only an hour. Thus it is obvious to Chatchai that if he is to make these pens really beneficial to the blind kids, they have to be built better. Other than the pen's built quality, the actual usage by the students also bought to his attention the type of the velcro sheets to be used considering they are touch-felt by the drawers. These are all constructive learnings and he certainly have some great idea to move forward with. But the best learning from the session is that the blind students were all having great fun to actually "see" their own drawing for the first time.

With his experiences on competing in business plan competitions during his years at IMBA, he decided to put his pen idea into a social business plan competition hosted

by Banpu hoping he may come out of the competition with prize money to allow him to achieve his goal. A simple goal of how can he make these drawing pens accessible and widely available for blinds all over the world. The goal was simple yet convincing to the judging panels as he was selected through the semi-final round which gave him an initial prize of USD 1,600 (THB 50,000). With this money, Chatchai decided to seek out someone to get him a design that is beyond pen tubes and yogurt bottles. It was just one pen, but the process wasn't as easy as he imagined. After four months of searching and working with various professors at universities and designer students, he finally settled with a working form to be fabricated with wood along with the better size of yarn and velcro texture. Having came up with a drawing pen with yarn, he decided to call it LenSen, which means "playing with strings" in Thai.

Now that he is a step closer to his simple goal of making the pen widely accessible for as many blind children's as possible, he now needs fundings to put it into production. With that in mind, he turns his attention to Start Some Good, a crowd funding platforms hoping to bring in funds for the first batch of 40 units to give to a group of students at the school of blind. But the attempt of getting USD 6,000 wasn't a success for he only managed to pledge for less than USD 1,500 in the designated time. With the tipping point at USD 5,000, he wasn't able to actually get any money out to it. But Chatchai didn't come out of the process empty handed for through the platform, interested parties from the United States, Canada Belgium, Australia, and Indonesia reached out to him about his pen from seeing his pledge on Start Some Good. This tells him that funding is the only thing standing between the design and products to get into the hands of blind children.

Good news come just right on time. His journey through the competition by Banpu proceeded beyond semi-final round. His LenSen was one of the 5 winners of the competition bringing him a cash reward of USD 6,600 (THB 200,000). With that money, he is finally look beyond the 40 units he was initially shooting to have made. He is now capable of changing the life of 500 blind children by getting 500 LenSen pen sets into their hands.

Although not a big number, 500 is a rather significant number considering where Chatchai started his journey with. The most cost efficient in terms of unit cost of

product is definitely via plastic injection. But despite the fact that the current working design seems good enough for him to move forward with, he is aware of the opportunity to further improve it as more blind children start to use them. After looking around for his options, he settled with wood. With great challenges, he managed to track down a wood furniture fabricator to pick up his order for the 500 pens. It took the fabricator 45 days to get them ready at USD 3.00 (THB 100) per pen. The fabrication work doesn't end there though. Chatchai and his designer partner had to spend 2 months just to manually put finishing detailing of the pens. And that is only 300 of the 500 units shipped to them by the fabricator.

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Part I: Form to Scale

Klongdinsor Co., Ltd.

With the pen sets ready to ship to interested buyers at USD 20.00 (THB 600) per set , Chatchai incorporated an entity of Klongdinsor Co., Ltd. (Klongdinsor means “pencil box” in Thai.) With the establishment of a formal entity, he decided to reach out to corporates thinking they should be willing to put their CSR funding in buying these pen sets for blind children throughout Thailand. Through enough contacts with many corporate CSR managers, he realises his belief was a wishful thinking at that point. The concept of social enterprise is still something rather new to general Thais. Corporates have the preferences of working with NGOs rather than corporates when it comes to spending their CSR money. But he didn’t stop looking for opportunities to make things happen.

To help him get as many of these pen sets to the hands of the as many blind children as possible, he realises he need to get proper publicity. He looked through his friend contacts and with their helps, he was able to feature his story and idea on some of the most popular magazines and media such as A Day and Poo-Ying-Tun-Poo-Ying (Girls to Girls in Thai). And these exposures actually brought the corporate CSRs to him. Through continuous exposures of LenSen at events and media, he has managed to shipped out the last of the 300 LenSen sets his team has detailed to the intended buyer.

Designing Beyond Thailand

To fulfil the continuous attentions and inquiries of LenSen from all over the world, Chatchai saw the need to to push beyond 500 for his next batch of production. The experiences with making the pens from wood has taught him some annoying lessons

of how inefficient woods can be in terms of getting the details right. Although wood fabrications allows him greater flexibilities without being tied to a specific design, it was a rather painful and time consuming process. In fact he decided to give up on the remaining 200 units from the first production batch and decided to move on. But then moving on to what now that he needs to make further adjustments to the designs.

In order to make the presence of LenSen more well established in markets outside Thailand, he knows he needs to look into making proper exposures beyond where this all started. Europe being a well-educated market when it comes to social-related ventures and idea, Chatchai decided to formalised Lensen in that market through registering the design and the Pen as a toy to allow greater flexibility in terms of distribution. But with regards to the CE standard which is highly enforced, he needs to go back to the drawing table to make adjustments. LenSen comes with small knife edge in order for users to cut the yarn when they finished with the drawing. Now that LenSen is considered a toy, it is required that the sharp edges are being covered to protect the users from cuts. Thinking about the needed modifications on the pen tip and the annoying wood fabrication, he looks out for alternatives. Thanks to probably one of the greatest innovation for prototyping, he bought a 3-D printer to help him play around with designs.

Plastic or Woods?

3-D printing has certainly made the process much more enjoyable for Chatchai. Through many attempts and alteration on the design, he feels he is making great progress in getting the design he would want to move forward with for the next batch of production.

With regards to the learnings on woods, he decided to look at making the next generation of LenSen with plastic injections. Although this choice of process requires a greater initial investment into plastic moulds, the production unit cost will be brought down significantly. This would allow him to price the pen sets at the much lower cost thus making them more accessible to the ones who will benefits from it. But upon having the moulds made, any chances of alterations of the designs will be nearly impossible. If he is to pay back for the high initial investment of the mould, he would

need to have thousands of the units made and sold with regards to the saving per unit with plastic injections against making more with wood. In order for him to move forward with a decision, he went out and to seek out his options on plastics injection.

Through a great number of contacts and initial negotiations, he has secured a quotation from a potential supplier. The mould will cost him USD 10,000 (THB 300,000) which will take 2 weeks to make. Each LenSen will have a production cost of USD 0.30 (THB 10) with the production of 1,000 units every 3 weeks. With such cost, he will be able to bring down the selling price significantly of as low as USD 10 (THB 300). At this price, he supposed LenSen will be more easily accessible by a bigger group of targeted user. Is that price the optimum? He will only be able to find out when and if he will be offering LenSens at that price.

Procurement or Prototype

The discussions with the supplier has been fruitful. Going back and forth on email exchanges for a few weeks now, they have both agreed on the relative prices on plastic injections. Few days passed and the supplier has reminded Chatchai with an email asking for confirmation to procure the mould and commence the production for the first 1,000 units. When he thought he was ready to move forward into the first mass product of LenSen, he is being reminded of the numerous alteration and variations of the LenSen design. The latest design was only 2-week-old from its predecessor, the next one may just be 2 weeks away.

Appendix

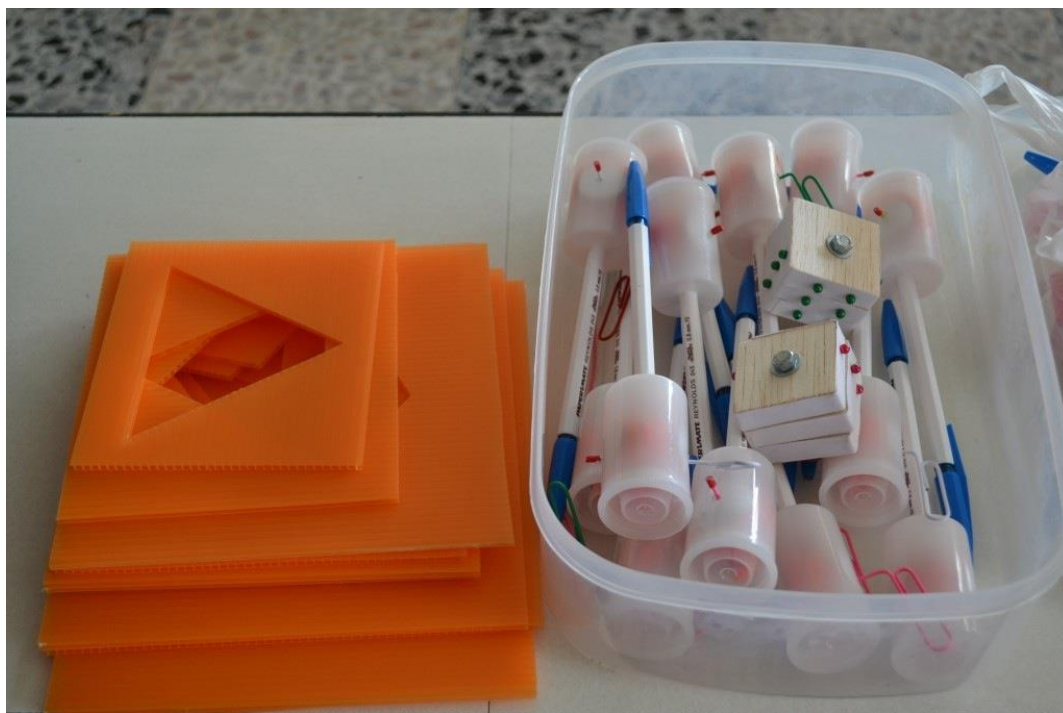


Figure 1. LenSen 2.0 *LenSen's second prototype Chatchai made to be tested with blind kids at the School of Blind*



Figure 2. LenSen made from wood.



Figure 3. LenSen's features in magazines.



Figure 4. LenSen's pledge on StartSomeGood. A crowd-funding platform for social causes.