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POLYTECHNIC UNIVERSITY
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Solution for NDP challenge

Group 1

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Green Education Playground

for young family, couples, Group of female



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1 Backgrounds

1.1. Design statement

1 Key concept of our design — Since NDP has a clear positioning for the project, we need to follow these concepts when designing: 1. Green education, 2. Roof farm, 3. Planting technology, 4. Biodiversity display.

2 Focus of our design — customer experience. Through our observation of NDP, it mainly focuses on service especially customer experience.

3 Special perspective: 1. “Mind of product operation” — Through intensive sharing in the social network, it is useful to make people closer and make a con-sense for their communication and then finally interaction will be created.
2.Design from the five senses of human beings

1.2. Initial ideas about two challenges

How to drive recurring visits (i.e. through utilizing the nursery space) ?

- 1.New concept that are popular recently,like Pokeman.
- 2.Unique experience for the customer,like photo shooting.
- 3.The interaction between the service and the customers,like awarded activities.
- 4.The crossover or cooperation of the other big brand,like cooperation with Lush.

How to develop a viral social media campaign?

- 1.Off-line poster and advertisement
- 2.Online social media platform - YouTube , Facebook , Instagram
- 3.Content should be clear,adequate and attractive information, with Kol/Hot topic/ Tag/Related link
- 4.Add more interactions with prepared reply timely through awarded activity ,keep in touch with old clients
- 5.Make use of data analysis tool,likeGoogle trend/ Simplymeasured.
- 6.Review comments (especially bad ones)and improve.

2 Research and Analysis

Step to research

Specialize the target group → confirm the place and time → Field trips and documentation → record the capacity /manner of customer → analysis the statistics → Target on the group → questionnaire for target group → collect all the comment and interest → Make a final image for NDP → Make some NEW value for NDP

2.1 Execution of observation

Journey map (As shown in Figure 1)

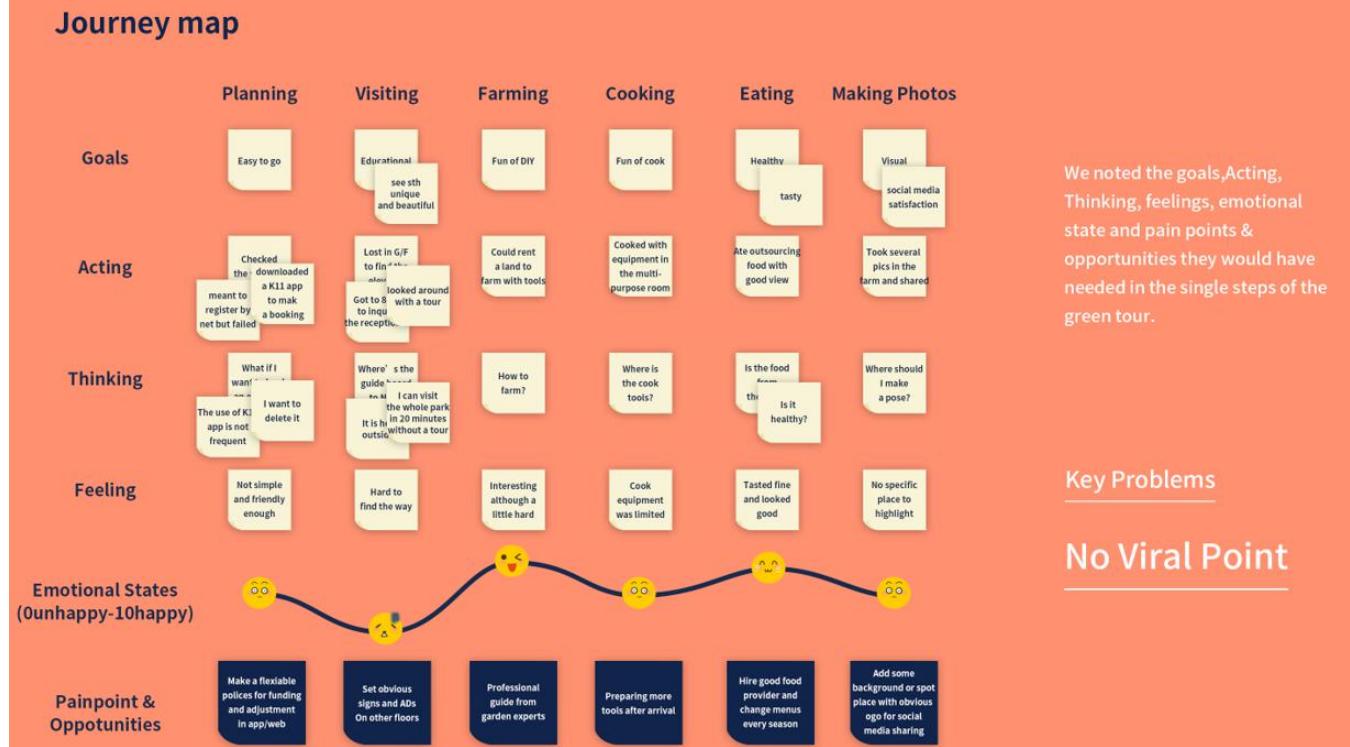


Figure 1

We choose the tool “Journey map” to record and analyze the original user experience as the step before the user research. This map is a complete and clear representation of the strengths and weaknesses of the user experience in the original project, which can help us understand the reasons behind the challenges and analyze the current situation.

This map contains user experience behavior: planing means behalf of the admission ticket booking process. visiting means the process of visiting the whole park. Farming means the workshop provided to users by NDP. Cooking means the interpretation of the future cooking kitchen equipment. Eating means the user's evaluation of the food or drink offered in the park (currently only water with vanilla is provided in the NDP), making photos means how willing the user is to take A photo in the NDP.

Conclusions from journey map:

Advantages: the advantages of NDP are superior geographical location and easy access for users. The environment is good for relaxing. Users have a high degree of agreement with the concept of green environment protection and biodiversity of NDP.

Disadvantages: the space layout of NDP is relatively compact, the site accommodating area is small, the user interaction experience is less, the physical exercise process lacks features (memory points), and there is no photo point suitable for sharing to social media.

Team members observed different customer groups of K11 musea in different time periods on different weekdays and weekends, and filled in the field visit record form. The observation record table contains contents: place, time period, number of different customer groups, behavior of different customer groups.

Our criteria for selecting target customers were: the most visits to k11 musea, the greatest interest in NDP or similar places, user preferences and needs similar to NDP concepts. (As shown in Figure 2)

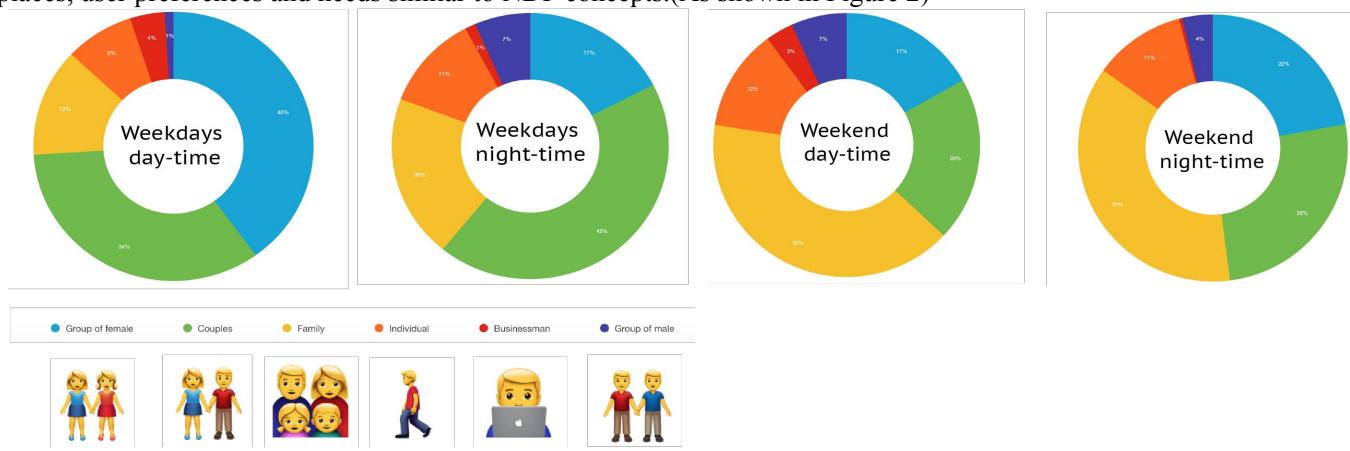


Figure 2

Summary (identify target customers) :

After collecting the observation tables of all members, our group obtained target customers through analyzing the data: young family, couples, and groups of females.

2.2 Execution of research

2.2.1 The making of questionnaire

2.2.2 Purpose: learn about target customers' preferences and how much they are willing to pay for them.

2.2.3 Execution process: first design the questions and then send the electronic questionnaire online. At the same time, different team members went to the mall with ipad at different times, selected target customers on the spot, and directly collected the questionnaire results. A total of 200 pieces of data were collected. The answers to the questionnaire were collected, screened and sorted through questionnaire star 1.

2.2.4 Conclusion: the preferences of different group members are workshop, study tour with DIY certificates and professional photography services.

2.2.5 Budget of target customer for consumption preferences As shown in Figure 3.

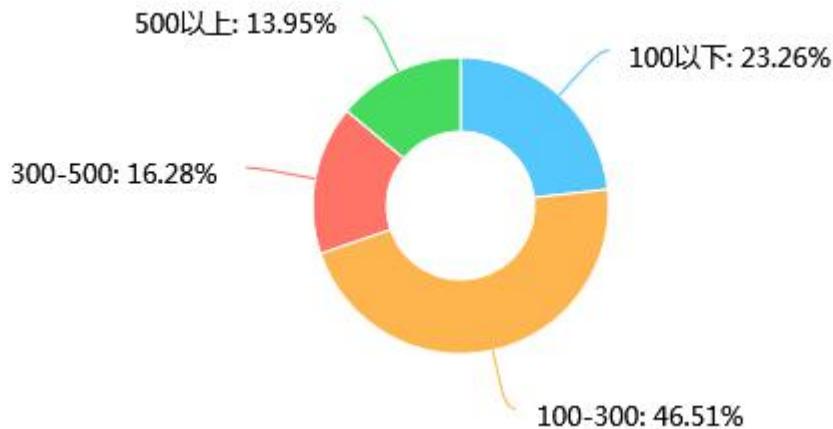


Figure 3

2.2.6 Interview : We selected 10 clients from our target group who filled in the questionnaire, among whom 5 were young families, 3 were groups of females and 2 were couples. From the interview, we have a deeper understanding of the needs of target customers, which are: 1. They hope to provide hosting services. 2. They like a quiet and comfortable environment. 3. They hope that parents can participate in the study tour. 4. They hope to have more interaction during the tour. 5. They hope to have environmental protection concept souvenirs that can be taken home, etc. (Figure 4) The conclusion of Interview is very helpful for brainstorming later.



Figure 4

Conclusion: In this stage of carrying out research, we completed the identification of target customers and the analysis of user portraits. These are the data bases for brainstorming.

(Questionnaire data collection and analysis website: <https://www.wjx.cn/app/survey.aspx>)

3 Insight & Ideation

3.1 Insight

1. There is an economic and safety limitation in AR technology.
2. Families wanted children to learn about nature knowledge in a funny way. They were willing to pay more if their children can get a certification or if they can leave children with someone's care.
3. Customer need something like photo album to help them remember good experiences and then can share.
4. The space of NDP is limited. But some spaces are allowed to change .

3.2 Ideation

The idea is a Green education playground which is separated from two parts - Certificate study tour and Creative workshop. A certificated Study tour is mainly considered by FIVE parts :

See , Hear , Taste , Smell , Touch

Firstly, the World Under Water & King of Mushroom

#See

Kids will see something and then ask the questions.

Secondly, the World butterfly

#See #Touch

Kids will see and touch each other in the butterfly role play .

Thirdly, Soil lab

#Touch # See

The kids can touch the soil, observe through microscopes, water the plants, then match with the suitable seeds.

Finally, World of Vanilla

#See #Smell #Taste

Kids will smell different tastes of vanilla and then ask some questions.

On the other hand, It is easy for client to handle or finish the DIY souvenir in creative DIY workshop which is including

DIY plant, DIY Flower ball and DIY planting border.

4 Solution Development

4.1 Develop ideas for new products and services

According to previous market research and user interviews, we found that the fundamental problem to increase the return rate is "how to rich the experience of customers". Therefore, we put forward the hypothesis, "If NDP provides

more diversified and richer products or services, users who have been to NDP will be able to purchase NDP tickets again and visit again." So, as for the question, "How to create more diversified and richer products or services for NDP?" We conducted a three-day brainstorming.

In the first two days, we sorted out the previous thinking documents and related data, and we went to find some opportunities to form HMW (How Might We...?). On the last day, we offered an unfettered opportunity to encourage the wild Ideas, and finally it was because of these wild ideas that created more possibilities. We made the opportunity



Figure 4.1 First round of brainstorming for NDP

4.2 Screening ideas

Our team conducted three screenings of Brainstorming's ideas, as follows.

First, members of the team voted for a limited number of times on Ideas. Through this process, teammates can understand each other's ideas, and also generate new ideas through others' ideas. At the same time, in order to deeply discuss whether these Ideas can create value for customers, we use Value Proposition Canvas to clearly describe the benefits customers expect from products and services, and to evaluate whether the products and services generated by our Ideas can generate customers. Work point, pain point, income matching pain point solution, income creation plan.

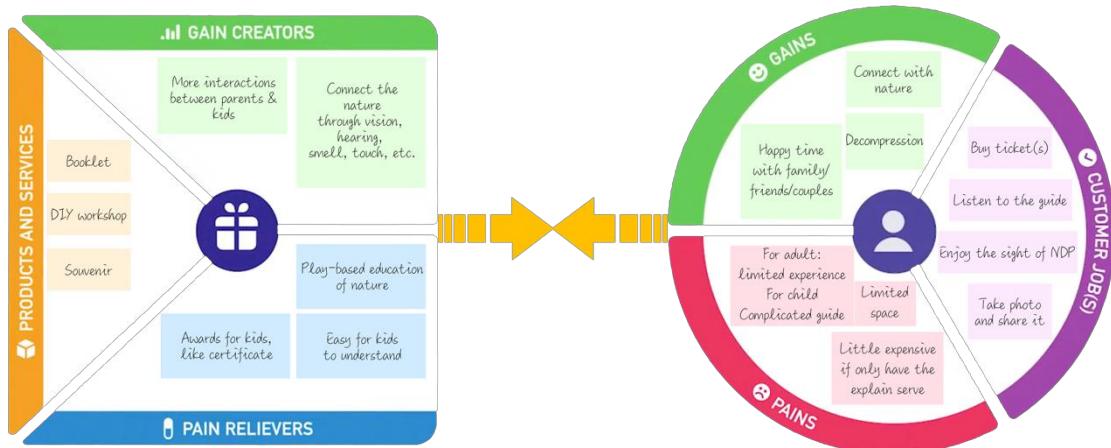


Figure 4.2 Value Proposition Canvas

Third, based on these Ideas, we designed a simple product solution for NDP. This step is to make a new round of Brainstorming for a more specific opportunity or scenario.(As shown in figure 4.3)

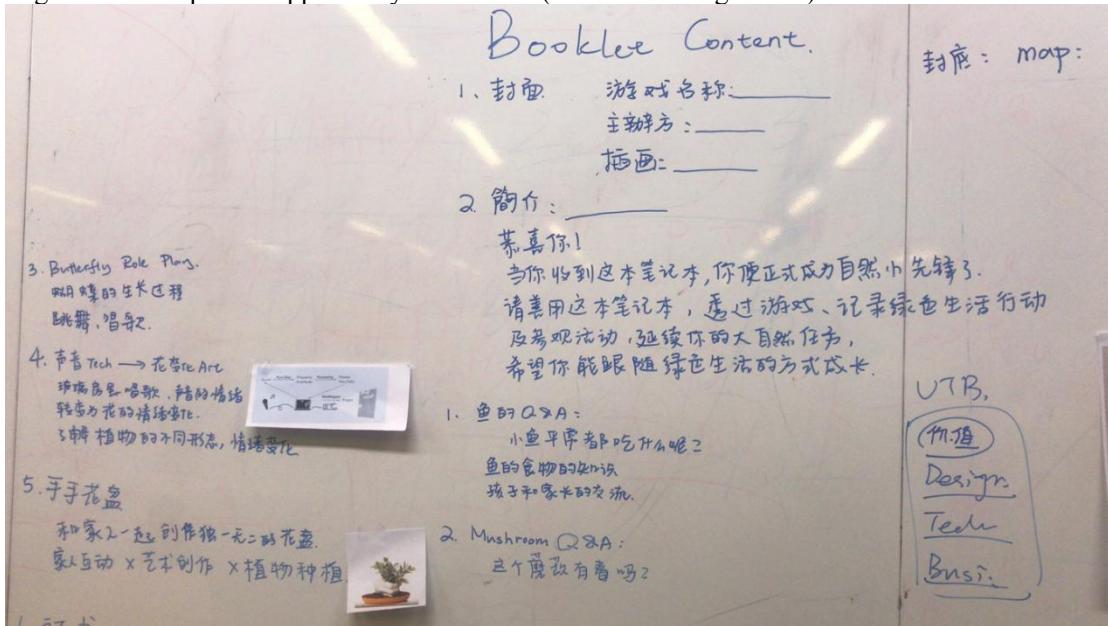


Figure 4.3 One of the simple product solutions designed for the NDP

Screening design ideas

According to UTB(USER, TECHNOLOGY and BUSINESS) Filter ---- design desirability, technological feasibility and business viability(As shown in Figure 4.4):

		(with DIY certificate)																				
		game-based study tour		DIY workshop		Child care playground		Theme park tour (change regularly)		Parent-child restaurant(need license)		Future food production experience (3d-printed food workshop)										
USER	Degree of Fun	-2	-1	1	2	-2	-1	1	2	-2	-1	1	2	-2	-1	1	2	-2	-1	1	2	
	Interaction between(children and parents)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	Unique identity	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	Ease of understand / completing	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	Enable sharing	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	Knowledge content	+10				+9				-4				+3				+8			+5	
		Game-based study tour		DIY workshop		Parent-Child restaurant		Future food exp.														
		-2	-1	1	2	-2	-1	1	2	-2	-1	1	2	-2	-1	1	2	-2	-1	1	2	
		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
		+5				+4				-5				-6								
		Game-based study tour		DIY workshop																		
		-2	-1	1	2	-2	-1	1	2	-2	-1	1	2	-2	-1	1	2	-2	-1	1	2	
		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
		+3				+0																

Figure 4.4 UTB Filter for NDP ideas

User side: We consider the design of the project to meet the expectations of the user, including fun, easy to understand, unique identification (unique elements in the NDP to let the customer's friends know that the customer is coming to the NDP), and the willingness to share

Technology side: Is the plan we designed easy to implement?

Business side: Do we design a plan that is consistent with the company's values? What is the return on investment?

After the above three rounds of screening, we determined that our solution was centered around the Play-based study tour (Game-based study tour) and DIY workshop.

5 Final Solution- Solution development and testing

5.1 What is the solution?

According to previous user research, our target users are young family, couples, and group of females.

We kept the original guided tour of NDP unchanged. And because the guided tour involves lots of knowledge, including geography, history, culture and so on. So we changed the target group of the original guided tour to a more understanding adult group: for couples and group of females, and a DIY workshop tailored for adults, to form a solution for couples and group of females.

For the young family, because they showed more interest in concepts of nature, education, and art from our survey results. So we created a family-based NDP adventure for them. (Play-based study tour + DIY workshop), this big adventure combines the natural education enlightenment of children aged 3-6 and promotes the interaction between children and parents, and finally awards the child certificate, which allows the family to Have a great time in NDP.

	Young Family	Couples	Group of Female
Storytelling	The Adventure in NDP		The Maritime Silk Road
Creative DIY workshop	Using kid(s) and parent(s) hand to make their unique flowerpot + unique certificate		unique flowerpot + hand—make flower book

Figure 5.1 Solution

5.2 How to drive recurring visits?

How to drive recurring visits for young family is as following:

- 1 We show an interesting story of adventures in the booklet to inspire children's curiosity and exploration of nature
- 2 Then we provide creative DIY workshop for family. So the connection between people & nature will go deeper by creating their own artistic flowerpot.
- 3 And there is a award certificate for kids.

- 4 Finally, if you like, you can stick photos in the booklet. And you can take it home. And use it as an "album".

In conclusion, these rich experience will not only increase brand favourability of NDP in your audience's eyes, it can also be up to 22 times more memorable than facts. It will drive recurring visits.

As shown in Figure 6.2 :

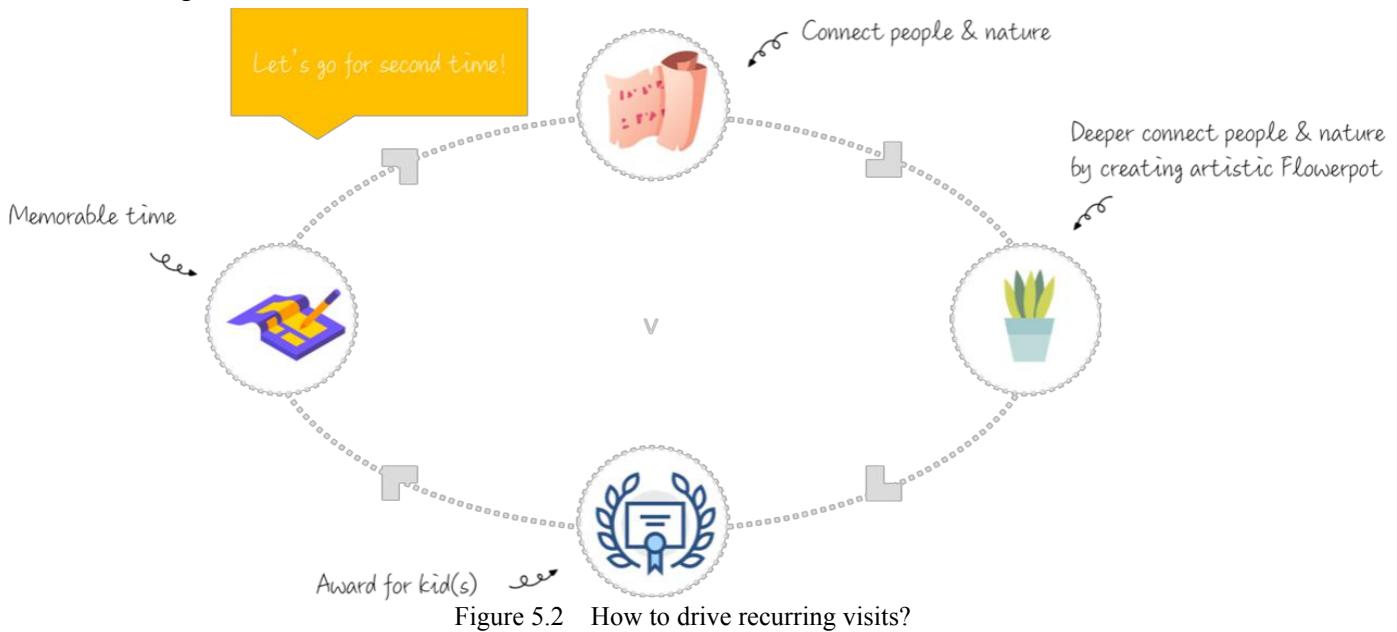


Figure 5.2 How to drive recurring visits?

5.3 Storyboard-A happy family day out in NDP

We drew a storyboard about [how a young family can spend time in NDP]. It shows the dilemma of a young family in travel, how to be attracted by NDP ads, how to buy tickets, how children and parents can explore in NDP through booklets, and finally spontaneously promote on social media to attract more The customer came to the NDP story.

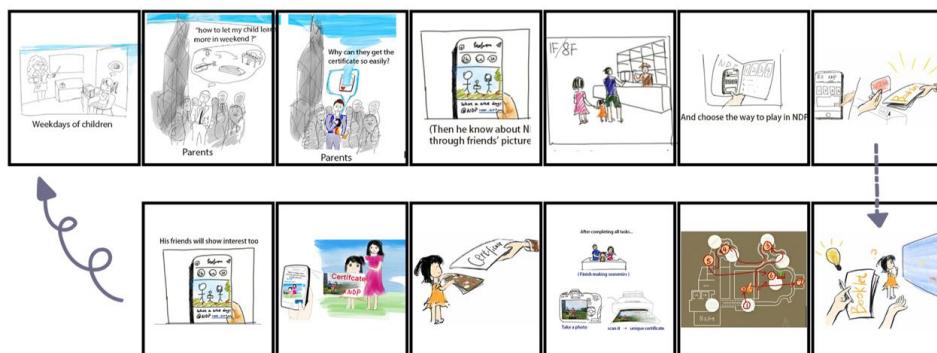


Figure 5.3 Happy moment of family in NDP

5.4 Prototyping

We invited a “6 years old” child to test our first draft booklet. According to the prototype test, we made the following changes.



Figure 5.4 Role play prototyping

● Unclear Statement

■ Lack of Guidance

▲ Useless Content

Figure 5.5 three type of sign for improve the booklet

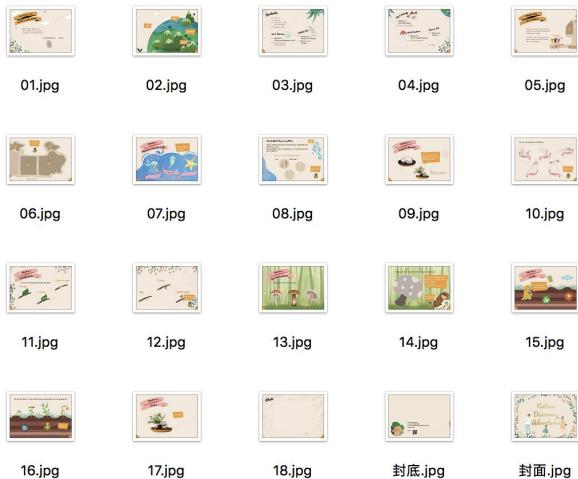


Figure 5.6 step to improve the booklet

During the prototype test, we found that the guidance and some of content was not clear enough, and the logic of task design was not reasonable. We set three colors of sign to distinguish what needs improvement, which are respectively: Unclear statement, Lack of guidance, useless content. (As shown in Figure 5.5)

Booklet visual design



6 Business summary

6.1 Pricing Strategy

Entrance fee (all ages): HKD60

Guided tour: HKD200 (adult) and HKD100 (students/under 18)

Event:50K HKD

Redesigned pricing strategy for NDP was based on cost, customers willings to pay(WTP) and competitors price.Roughly calculating,workshop costed 100HKD/Person,while guided tour on weekends costed 150HKD/Family,including materials and booklets,extra labors and training cost,outsourced design fees and so on.According to questionnaire and interviews,customers' willings to pay was 100-300HK for 1H workshop, and 200HKD/Person for ecotour, 500 HKD/family or more with certifications.Competitors' prices of workshop varied from 150 to 350HKD.The prices of competitors' ecotour tickets were free or pretty low,most were not more than 150HKD.But the location were not good.Thus we set the price 300HKD/Person to Adult Workshop, and 600HKD/Family for family guided tour.And for safety consideration, one kid must be accompanied by an adult, and 2 adults a family at the most.The guided tour on Tuesday and Thursday remained 200HKD.The souvenirs prices varied,but the average price was about 100HKD.

6.2 Promotion plan

Here's the promotion plan in the next month.Total budget is within 50 thousand HKD.The purpose is to increase 50% of the followers on the internet, and 10% visitors to NDP. This plan publicize this brand new family tour and workshop combining with online share discount and most like interaction activity on social media, besides we plan to invited some KOLs to post several pictures on INS within 10000HKD/month. Here is the sample steps of promotion to develop a viral social media campaign (<https://www.cifnews.com/article/35345>). It's about operational process and tools on FB and INS.It estimates to cost 5000HKD to run social media and the web by NDP themselves.And the design of booklets,tour process and workshop content can be outsourced by 3rd party design company which will change seasonally.The cost estimates to be 15000HKD/season(5000HKD/month).It is also important to add the display opportunity of NDP on other floors.So we add the related posters and AD fees about5000HKD/month in K11 musea.

Promotion Plan for "NDP Green educational playground" to social media campaign				
Promotion mix	Email	Facebook/Instagram/twitter	Posters/Ads/Booklets/Google web	Workshop
Goals	To increase 50% of the followers on the internet, and 10% visitors to NDP			
Target market	Young family,female group and couples			
Launch date	2019/11/1-11/30			
Key message	Present the new certificational tour for family and workshop for adults,publish the new promotion code and activity on the internet(20HKD down to post on FB/INS/Twitter with more than 10 likes,top 3 likes can get special awards)			
Budget	Total Budget for this activity:within 50000HKD Mail sending software and design: 1000HKD Web/social media design and running fees:5000HKD(mainly FB/Ins AD promotion running by yourself) Kol:10000HKD 3rd party design company cost 5000HKD/print & Ad fees:5000HKD (family booklet:200 copies/month,posters and Ads display in K11) Training fee: 5000HKD, materials:100-150HKD/ person, invest equipment (microscope,shelters):5000HKD,promotion discount:10000HKD			
Planning(1 week before)	Prepare message and material	Prepare message and material	Prepare material and train employees	Prepare material and train employees
1st week of launch	Send mails to K11 members	Confirm and launch	confirm and launch	Launch, get feedback and adjust
Ongoing	Keep sending to new members	Push,monitor ,adjust	Keep display	Launch, get feedback and adjust
Wrap-up	Sending the result mail and maintain the mail information	Measure results	Backup materials	Award top 3 clients with prize. Review and improve,plan for the next promotion activity

Figure 6.1 Promotion plan

6.3 Profit

NDP now offers visit service without guide (entrance fee:60HKD), guided tour for adults(tickets:200HKD for adult, HKD100 for students/under 18), event renting(50K HKD), workshops, and other school package.

To make good use of NDP, we design to adjust guided tour “The Maritime Silk Road” for adults in the same 3 periods(11:00-12:30 or 14:30-16:00 or 16:30-18:00) to every Tuesday and Thursday. Besides, student groups and other group visit can be arranged on weekdays. On weekends, new outdoor adventure tours will be open to young family and indoor workshop for adults 30mins earlier. Both tour and workshop last about 1h. The usage of NDP on weekend enables the revenue to 65% increase supposed before and after getting to the full capacity. Of course after 6pm, the whole floor can get another profit from events.

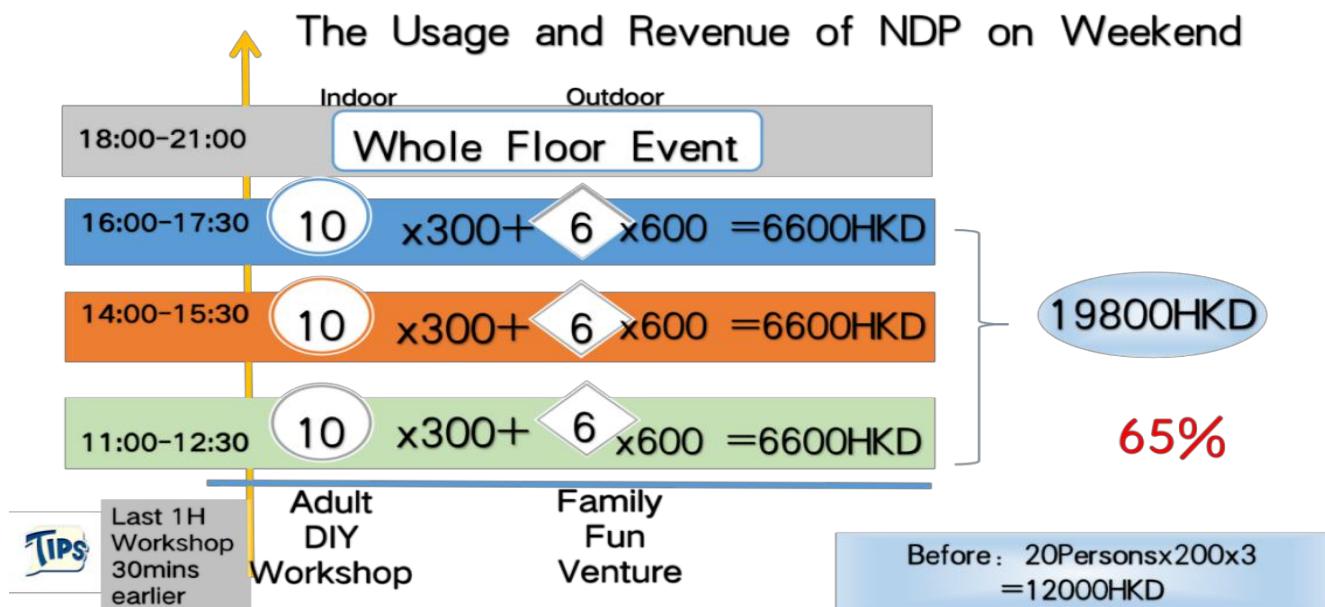


Figure 6.2 Weekend in NDP

The cost of our promotion plan is within 50000HKD. It won't take too long for NDP to get profit from this plan according to our rough calculation of the net profit as below(table from data in Appendix:Profit and Loss Forecast Statement of NDP from Nov 2019 to Oct 2020).

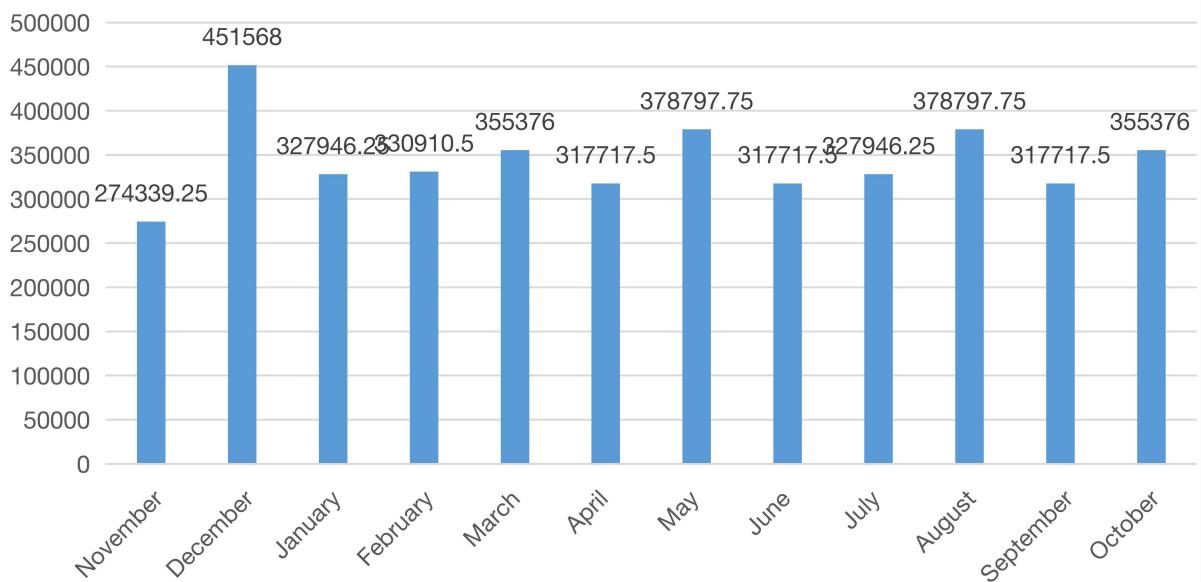
6.4 Risk and Opportunity

Risk and reward go hand-in-hand. On one hand, there are 4 major risks. First, the economy goes downhill, other competitors might cut price. Promotion of NDP and cooperation with other organizations can be more frequently. Second, the interest of customers will fade. We suggest change content of guide tour and workshop seasonally with the help of 3rd party design company. Third, the event income covers a large proportion in total revenue. So we suggest should maintain the relationship with major PR companies and try to improve other income resource. And last, we can't

ignore the depreciation & grass destroyed situations in the future. So leave enough time and invest some profit to maintain is important.

On the other hand, K11 musea has powerful brand attraction, especially in its new opening period. We suggest display Ads and posters on apparent places of other floors of K11 musea, which can attract more traffic flows to 8F. And our redesigned family certification tour and workshop can increase the willings of customers to pay, as HK people values certifications.

NET PROFIT



2019-2020	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Weekend days	9	9	8	9	9	8	10	8	8	10	8	9
Tue&Thur days	8	8	9	8	9	9	8	9	9	8	9	9
Weekday days	21	22	23	20	22	22	21	22	23	21	22	22
REVENUE												
Family adventure	97200	97200	86400	97200	97200	86400	108000	86400	86400	108000	86400	97200
(Tickets = 600HKD * 6family * 3times * weekend days)												
Adult guided tour	38400	38400	43200	38400	43200	43200	38400	43200	43200	38400	43200	43200
(Tickets = 200HKD * average 8people * 3times * Tue&Thu days)												
Tickets without guide	522000	534000	516000	510000	534000	504000	552000	504000	516000	552000	504000	534000
(Tickets without guide = 200people * 60HKD * weekday + 60hkD * 500 people * weekend days)												
Souvenir	28500	29000	27500	28000	29000	27000	30500	27000	27500	30500	27000	29000
(Souvenir income = estimated 10peices * 100HKD average * weekend day + 100HKD * 5 pieces * weekdays)												
Event income	150000	400000	250000	250000	250000	250000	250000	250000	250000	250000	250000	250000

(Event income=average 50000HKD*forecast quantity)												
Workshop	81000	81000	72000	81000	81000	72000	90000	72000	72000	90000	72000	81000
(Workshop=300*3times*10quota*weekend days)												
TOTAL REVENUE	917100	1179600	995100	1004600	1034400	982600	1068900	982600	995100	1068900	982600	1034400
COST OF SALES (including materials and booklets, extra labors and training cost,outsourced design fees,etc)	95550	145800	109350	115300	115800	109100	122250	109100	109350	122250	109100	115800
(guide material&extra labor cost:150HKD*6family*3*weekends days+souvenir cost:revenue*50%profit rate+workshop cost:100HKD*10quota*3*weekends days+event preparation cost:estimated 10000HKD*times)												
RENT	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000	93000
(RENT=sqm*estimated TST average commercial rent of roof 500HKD/sqm)												
Salary fees	300000	300000	300000	300000	300000	300000	300000	300000	300000	300000	300000	300000
(Salary and labor fees=10people*30000HKD average)												
GENERAL AND ADMINISTRATION(electric,water,Internet,Accounting and Legal Fees etc)	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000
Advertising and Promotion	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000
TOTAL EXPENSES	588550	638800	602350	608300	608800	602100	615250	602100	602350	615250	602100	608800
GROSS PROFIT BEFORE TAX	328550	540800	392750	396300	425600	380500	453650	380500	392750	453650	380500	425600
(GROSS PROFIT BEFORE TAX=Revenue-Cost)												
PROFITS TAX	54210.75	89232	64803.75	65389.5	70224	62782.5	74852.25	62782.5	64803.75	74852.25	62782.5	70224
(HK Tax Rates Applicable to Corporations=16.5%)												
NET PROFIT	274339.25	451568	327946.2	330910.5	355376	317717.	378797.7	317717.	327946.2	378797.7	317717.	355376

Figure 6.3 Profit and Loss Forecast Statement of NDP from Nov 2019 to Oct 2020

7 Project Reflection

1. Team management:

We decided to use Google drive to edit shared documents, team members take turns to be leaders. Two weeks are a time cycle. The leader is responsible for making meeting plans, assigning tasks, time management, etc.

2. Time management:

Our group will hold group meetings regularly, which has the advantage of increasing communication among group members and enhancing our recognition of the final solution. The disadvantage is that the communication between team members usually takes a lot of time, because the group members with different academic backgrounds have different ideas, so everyone sees the problem from different angles.

3. Task managements:

Our team has set a deadline for everyone's tasks, and the advantage is that we can ensure the smooth progress of the tasks according to the scheduled plan. The disadvantage is that sometimes the schedule of the stage is too tight, which leads to the imperfection and repeat of the content.



Date

1st November, 2019

Tutors

Dr. Liu Wu (LW)

Dr. Clifford Choy (CC)

Mr. Benny D. Leong (BDL)

Subjects

MM5001

Essential Business Theories and Concepts

SD5151

Essential Design Theories and Concepts

SD5152

Essential Integration of Technologies
in Design & Business Innovation