



A New Concept Intelligent Product of iPillow Group:80

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Table of Contents

Table of Contents.....	2
Summary of Responsibilities.....	3
Individual Member Contribution: < Yan Gao >.....	3
Individual Member Contribution: < Yusi Yang >.....	3
Individual Member Contribution: < Mofan Li >.....	3
Individual Member Contribution: < Yuming Gan >.....	3
Individual Member Contribution: < Lanhao Chen >.....	3
Individual Member Contribution: < Jiaju Luo >.....	3
Introduction.....	4
Strategic Fit.....	4
Identify Opportunities.....	4
Technology Leadership.....	4
Target Market.....	5
Technical Details.....	5
Appearance:.....	5
Operation:.....	6
The auto shape-adjustment of pillow interior:.....	7
Detecting on the sleeping quality:.....	7
Detecting on air quality:.....	8
The delicate fragrance which helps sleep:.....	8
An alarm clock with slight shaking and comfortable music:.....	8
Technology Outlook:.....	8
Market Research.....	9
Description of the Department.....	11
Conclusion.....	11
Summary:.....	11
Recommendation:.....	12
quality:.....	12
Investment:.....	12
Update:.....	12
References.....	12

Summary of Responsibilities

Individual Member Contribution: < Yan Gao >

Yan Gao wrote the fore part of Market Research and did the market research questionnaire.
Market Research: From page 8 to page 10

Individual Member Contribution: < Yusi Yang >

Yusi Yang wrote the back part of Market Research and the Description of the Department part.
Market Research: From page 8 to page 10
Description of the Department: Page 10

Individual Member Contribution: < Mofan Li >

Mofan Li wrote the introduction and the summary of Conclusion. He is in charge of overall check of the quality of this report.
Introduction: Page 3
The summary of Conclusion: Page 11

Individual Member Contribution: < Yuming Gan >

Yuming Gan wrote the Strategic Fit part and the recommendation part of Conclusion.
Strategic Fit: Page 3
The recommendation part of Conclusion: Page 12

Individual Member Contribution: < Lanhao Chen >

Lanhao Chen and Jiaju Luo wrote the technical review part of Technical details together.
Technical detail: From page 4 to page 7

Individual Member Contribution: < Jiaju Luo >

Lanhao Chen and Jiaju Luo wrote the technical review part of Technical details together.
Technical detail: From page 4 to page 7

Introduction

With the development of technology, Our lives become more and more convenient. However the human's sleep quality didn't get improved. According to the research, there are only less than 40% people satisfied with their sleep quality. Nowadays people prefer more convenience to enjoy sleep. Pillow plays an important role in this era. We usually sleep with our pillows. A good pillow can make the sleep better and make us full of the energy. Under this condition, iPillow shows us a new way that how a pillow can help us sleep different from before.

This report provides a new product named iPillow which can meet the demands of sleep needs. And the report will first introduce why we can and should develop iPillow by analyzing the corporate strategy. Then it will introduce the technological element considering several aspects. We also give our idea and concept of this new product and the plan for developing in the future. In the Market Research part we show the target market and lead consumer. At last, we give a conclusion of this report to show our achievement and give a briefly future of iPillow.

The remainder of this report is structured as follows.

Strategic Fit

As a totally new product, iPillow works on improve the human's sleep quality. It is based on IOS (Apple's operation system). It fit the design idea that it is the software application which inside the hardware casing is what Apple is going to sell. The promotions of iPillow will improve the business diversification of Apple.

Identify Opportunities

Apple is a famous company for its great product and brilliant user experience. iPhone has taken a huge number of smart phones' market in these years. Actually, IOS operation system is the core technology which Apple wants to promote to the users. This goal has been accomplished. There is a trend that everything is connected with Internet. No doubt, Apple should enter the Internet-of-things field.

There are a sort of opportunities and advantages for Apple. Firstly, Apple has already begun the development of iWatch, and prepared to enter the intelligent wearable field. Secondly, Apple attracted a lot of users by its operation system. Apple has its own functional subdivision strategy in other fields. Thirdly, people's demand of high quality of life is stronger than ever. They are willing to buy the useful things to improve their life no matter the price is. Furthermore, straight battalion is a large advantage because users can experience the product free. [1]

Technology Leadership

Apple has one of the best design team in the world and a lot of experience on human engineering and human-computer interaction.

Apple has a mature system called IOS. It can be established on other devices. The applications can be download from app store to the operation system to perfect the functions of iPillow.

Apple got an experiment of the curved glass screen used on iWatch. This technology will fast accelerate the development of the screen on iPillow.

Siri can receive the request and answer so that iPillow can be more humanized and easy to operate. The powerful cloud-based computing capacity can be used to analyze related data.

Target Market

In the late three years, USA, Europe and China are the top three markets of Apple. Apple's sales in the China market make a spurt of progress in three years increased by 320%.The market is going saturated with single product. Pillow is a kind of daily necessities, Apple can improve the use value by iPillow. Connect people's life between the street and bedroom. [2]

Technical Details

Appearance:

iPillow is insisted of pillowcase and pillow interior. The colour of pillowcase is silvery white, which is nearly no difference from the ordinary pillowcase. The sense of touch is familiar with the sense of touching cotton cloth. The material, which is not cotton exactly, is made by special technology. It can change its colour when it sensing the change of the magnetic field. The pillow interior use the memory foam as its main material, and there are many sensors in it, besides, there is a CPU and a Bluetooth module which can contact with PC or smart phone.

The high performance polymer battery is used in iPillow, and this type of battery is safe enough. (There is zero battery accident happened since the high performance polymer battery is used). There is a button on the side of iPillow, which is the only difference between iPillow and ordinary pillow. The button is the switch of power. The pillowcase can be cleared by normal way. The electron device in pillowcase is designed to be water-repellent, which means you can throw iPillow in water. But you may not wash it by using washing machine since high frequency shaking can cause a damage on iPillow, so you'd better wash it by hands. [3]



Fig 1. Concept Graph of iPillow

Operation:

When pressing the button, the contact between iPillow and PC (or smart phone) will be positive. There will be a corresponding APP which is used to control iPillow. The iPillow itself can also give feedback information to the Bluetooth module. The memory foam can change its shape in a proper range according to the sleeping position of users. This product can detect the sleeping quality of users, and give advices around how to improve the sleeping quality. iPillow can also detect the quality of the air, judge that whether the humidity, cleanliness, temperature of the air is fit enough for sleeping. Our product can create the odour by its sachet. The odour of which is smelled as delicate fragrance, it can help the users have a calm, steady, comfortable sleep. By the way, the users can set the alarm clock by the APP, and the alarm is not a noisy voice, but a proper strength shake and peaceful music.

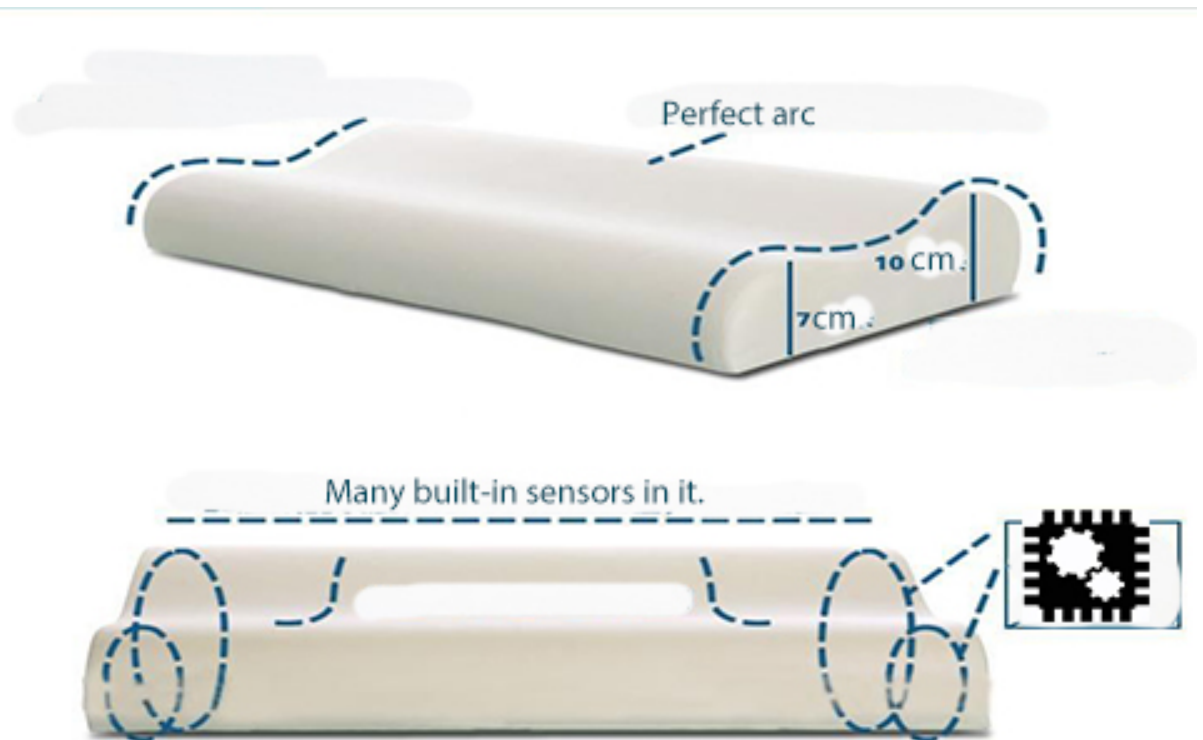


Fig 2. Internal Structure of iPillow

The auto shape-adjustment of pillow interior:

The design of iPillow's default shape is based on the test where the volunteers sleep on. We recorded the sleeping style of everyone who is tested (the amount is huge enough), and we design the shape that is fit most users. And it is correspond the consideration of ergonomics. You don't need to worry about that you are the one who sleep in different style with the others, iPillow can adjust its shape in a proper range for you, which means every iPillow is unique, and it fits everyone.

Detecting on the sleeping quality:

The core function of iPillow is estimating the sleeping quality of the users, and most other functions is based on it, such as giving advices to the users about how to have a nice sleep on each different night. iPillow will detect the sleeping roll, temperature of head, frequency of breath, whether you speak during dream or not, and use the data to evaluate the sleeping quality. iPillow will change its colour smoothly according to the sleep quality last night. The special material of the pillow case will sense the changing magnetic field, alter the frequency of the reflected light, which means change the colour. So we put magnetic module into iPillow to control the colour-changing.

When the users have a goodnight, it will appear as light green. When it looks orange, you may have a not bad sleep, but you also need to adjust the sleep style and improve the environment. The red colour means that your have a terrible sleep, you'd better to see some doctors. The detailed data will deliver to the Bluetooth module and be send to the PC or smartphones, you can browse the data in the APP meanwhile there will be many advices of how to improve the sleeping quality on it. This is a whole feedback system, and in a word, you can know the statement you sleep with just an APP and the colour of iPillow. [4]

Detecting on air quality:

We all know that there will be many negative effects to the body when you sleep in a closet space room (which means the air quality is terrible), such as have bad dreams or have negative emotion and so on. iPillow have inner sensor that can detect the air quality (temperature, composition, cleanliness, humidity), and delivered these data to the APP. With the use of air quality detecting system, users can judge whether to open the windows or turn on the air conditioner or not. iPillow may not open the window for you, but it can remind you to do this friendly.

The delicate fragrance which helps sleep:

There is a large amount of data declaring that some odour have positive effect on helping people calm down and have a peaceful sleep. Many doctors also suggest to put two or more apples in your bedroom for better sleep quality. iPillow have professional sachet, it can create delicate fragrance, which have positive effect on having a nice sleeping, and guarantee the high quality sleeping. There are two kinds of odour to choose now, they are smile like apple or lavender. The spices is picked up by the naturel apples and lavenders. It is not composed by the chemical substances, and it will bring no harm to human.

An alarm clock with slight shaking and comfortable music:

The alarm clock is set with proper strength and proper frequency shaking, users will not feel scared by the shake. The peaceful music will also wake people up with less scared. Our design will make sure that the users will have a good feeling. It will have good effects on users' daily life, avoid many problems. Thus iPillow will change your life and change the world.

Technology Outlook:

There is something about pillow interior cleaning. Although we have done waterproofing work to iPillow (based on nanometer materials), which makes iPillow can be washed by water. But from the perspective of the situation of iPillow now, the pillow interior can be only washed by hands. This will no doubt cause inconvenience to many users. Thus, we will continue the research of this aspect, make the machine washing even dry washing come true, bring more convenience to the users.

We only have odour like apple or lavender at present. There are a lot of papers, a huge amount of research reports declaring that the odour of apple can keep people having good mood, the odour of lavender may make people feel peace and calm, and stay with a statement of peaceful. But users may bored with only two kinds of odour. We will provide more kinds of odour for choosing. Certainly, we will do it after detailed consideration, further research, and a huge amount of survey. All these will based on trying our best to improve the users' quality of sleeping.

Our basic faith: Use a simple way to change the life and change the world.

Market Research

To predict the market reaction and make strategy of iPillow, we did a market research. The total respondents of our questionnaire are 82 people, among whom are 42 females and 40 males. Our questions vary from survey of sleep quality to expectations of iPillow's functions. Seeing from the nice market response, lots of people are interested in the new product, which means iPillow meets the public needs.

In the front part of questionnaire, the questions are designed to reflect respondents' sleeping habits and sleeping problems. Statistics show that 53.66% people sleep average 8 hours every day, which indicates most people have disciplinary daily schedules. But 31.71% and 10.98% people sleep 6 hours and less than 6 hours respectively, which shows that a portion of people have a quick pace of life. Having dreams or not concerns many people as a sleep problem. There are 53.66% respondents sometimes have dreams, 31.71% often have dreams, and 14.63% barely not have dreams. One of the functions of iPillow is sleep meliorating including reducing the frequency of dreams.

Products are made to improve life quality and meet individual requirements. In order to enhance the function design of iPillow, we need to know different sleep problem of different people. According to our research, although problems vary from one another, it tends to be divided by gender and ages. Generally, females often have poor sleeps with problems such as insomnia, dreamful sleep or having nightmares, and insomnia hardly annoys males. Another obvious research result is that almost all males ages from 40 to 50 have the same problems as snoring. In the following is the figure of analysis of sleeping problems:

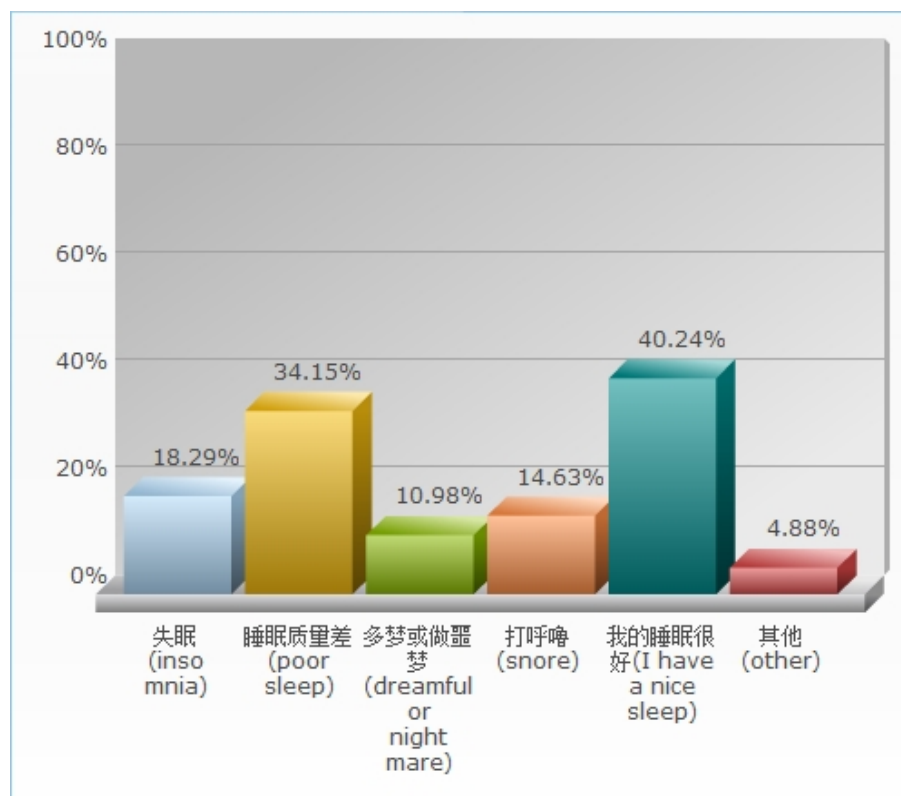


Fig3. Analysis of Sleeping Problems

Comparing in horizon, we can see that a large portion of people of 40.24% have a nice sleep while a little less of 34.15% have a poor sleep. The ratio of problems like insomnia, dreamful sleep and snore is quite close to each other. Other respondents reflect problems like insufficient sleep and uncomfortable pillow. We can tell from these sleeping problems that people have a quite strong desire to improve their sleeping quality. So the idea of intelligent iPillow fits the market in a very proper way.

After the analysis above, we can determine the interested customers of iPillow should be people who have poor sleeps and various sleeping problems. What's more, the function of our product can be aimed according to division of gender and age as analyzed in the previous paragraph.

For the sake of knowing more desire of customers of iPillow, we design questions grading from willing to unwilling. In the 6th question, since our design of this new concept product for daily using takes respectably strong function, we must research that whether our idea can be acceptable by customers. This question is check out that if you hope your pillow can reflect your bad sleep habit such as snore, talking in dream or turn over again and again, these bad habits may be the most important reason which lead to a poor sleep. In our reaching, 51.22% people choose "Yes", 40.24% people choose "I can accept", but 8.54% people choose "No". We can see that most people would like notice that what they do in the nonsense night, if people can see their own bad habits of sleep, they can take some effective method to find and solve their own sleep problems.

Maybe some people do not think that notice their own sleep habits is necessary because it is a personal secret, but nobody would reject their pillow can make you sleep better every night. We list some of functions we designed for our new product iPillow which can improve sleep quality. In our design, iPillow could send out nice smell and play music if you cannot sleep at night. It also can change its temperature according the temperature of your body and the room you sleep in. Nowadays more and more people suffer from the cervical vertebra disease because of heavy work in front of computer or bow the head for long time, that take serious stress to the cervical vertebra. So our product is designed to change in any type to make your cervical vertebra comfortable. From our researching, we can easy to see that almost every people would like to have a pillow that can change according to cervical curvature, the rate of it is 90.24%. Besides, the rate of choosing "Send out nice smell" is 31.71%, the rate of choosing "Play music" is 34.15%, the rate of choosing "Change temperature" is 30.49%. Some other people make suggest that they hope personal pillow can get a function of massage, our members are thinking about adding this function to our new concept pillow.

75.61% of the respondents give the answer "Yes" in the last question in our questionnaire "Are you willing to enjoy intelligent life", 23.17% people think that intelligent life means good but expensive life, you must spend a lot of money to buy or repair electric digital products, so they choose have a life in this shape should "Depend on price". There also have 1.22% people would not like to change the traditional life style in to intelligent life style. Intelligent life is sure to make our life colourful and convenient but it cannot be the nature and simple one as traditional life style. Most people like to try the new concept life show that more and more people accept intelligent products and these merchandises can integrate into daily life.

Based on the above analysis, the lead customer of iPillow is determined as people ages between 20-30 and 40-50, most of them would like to try and accept new product and

because of hard study and work they need this kind of pillow especially. Before the final product is released, these people will try out the test version and give feedbacks to our R&D department to help us improve our product. [5]

Description of the Department

	Capacity	Product Support
Marketing Team	1. Brand effect. Increase iPillow's visibility. 2. Rich experience. Design a marketing strategy for the new product. 3. Ample creativity. Design a go-to-market strategy.	App store Apple mail
Design Team	1. Fresh ideas. Add the new functions which traditional pillows do not have. 2. Existing technology. Such as department of operation system design and department of application design. 3. Compressive staff. A totally new product need to be perfected thousands of times.	IOS system iWatch iPhone, iPad
Manufacturing Team	FoxconnOEM having the ability to manufacture product.	
Service Team	As products of Apple spread over the world, the repair of hardware is satisfactory.	

Conclusion

Summary:

After a month's studying and researching, we finally accomplished a new product – iPillow. iPillow means a declaration that the pillow will have a total change compared to the traditional pillow before. At the development stage, we have concluded the ideas of iPillow. At the design stage, we design the form and different functions of the product.

iPillow is based on IOS operation system and insisted of pillowcase and pillow interior which has a colour of silvery white. With the technique used in our product, users can operate comfortably and experience convenient functions.

After researching the market, it is easy to see the increasing number of people who want a better sleep. It means that this market has a big potential to be explored. As there are limited strong competitors and iPillow is a new product, we will share most of the market.

Recommendation:

Quality:

Quality is most important for a new product. If we want our brand has a good reputation, we must focus on this. Never let one imperfection out.

Investment:

To occupy the market we need a big chunk of money including advertisement, salary and other expenses.

Update:

When our products enter the market, the similar product will come out soon. We must update our product as quick as we can to make our product more competitive.

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