

Analysis of Innovation Opportunities for AirTag

Qibing Li^{1,*}

¹*Business Marketing & Applied psychology, The Open University of Hongkong, Hongkong*

**Corresponding author. Email: liqibing0213@gmail.com*

ABSTRACT

Innovation not only refers to the innovation of products and technologies, it can also be various types of innovations such as new strategies and new services. Although Apple products have already occupied some of their competitive advantages, if there are no innovative products, it will still lead to loss of customers. This paper uses innovation radar to analyze the innovation opportunities of Apple's newly released AirTag product on April 30, 2021, and determine whether it can bring Apple a competitive advantage. And concluded that in the analysis of innovation radar, AirTag helped customers solve many problems and made the search more convenient. At the same time, it has brought more benefits to Apple and put Apple in a competitive advantage for the time being.

Keywords: *Innovation, AirTag, Innovation radar, Advantage*

1. INTRODUCTION

Although this product is not the first location search product in this market, it differs from other products in that it uses the U1 chip to make the location more accurate. This Apple product not only helps you find the place where the item is placed faster and more accurately, but also brings you more convenience. And in real life it is needed by many people, so he attracted me. Through this research, it is determined whether the closer integration of VR and product functions in AirTag will affect the development direction of electronic technology products and the market? Will the release of AirTag bring more benefits and stronger competitive advantages to Apple? The significance of this paper is not only to show the importance of innovation to a company, but also to let everyone know that although the road to innovation is difficult, it must be brave to innovate. From the perspective of the market, Apple is always at the forefront of innovation. When it releases a new product, many companies will imitate it. Therefore, Apple has always had a competitive advantage in not only being brave to innovate, but also in improving the performance of its products in response to customer needs. Judging from the release of this new product by Apple, the future direction of electronic technology product companies may focus on "VR intelligence" and no longer only exist in a two-dimensional plane.

2. ANALYSIS OF INNOVATIVE PRODUCTS-AIRTAG

In this era of rapid development of electronic technology, every innovation brings a different experience. However, in the electronic technology industry, Apple can have a competitive advantage because they are constantly innovating[5]. At the Viva Technology conference, Apple CEO Tim Cook said: "They are doing a lot of work on a lot of projects, but they have not succeeded, and although there will be many failures on the way to innovation, they may gain more important things in the process of trying. thing."

In addition, Tim Cook also said: He is excited about AR because it will improve our lives [2]. Therefore, Apple's future products will develop towards AR. It is not difficult to find that Apple has slowly applied AR technology to certain devices, i.e., Measure in the iPhone, which is a virtual measurement tool. Although people don't have a ruler, we can also use mobile phones to measure the width of the bed and the size of the wardrobe. However, this new product of AirTag also applies AR technology, and the built-in U1 chip makes the positioning more accurate. Although there were similar products on the market before AirTag was released, they all used Bluetooth for positioning. AirTag adopt special chip technology to add visual and auditory prompts to help customers perform more precise positioning. This is the technological innovation, which

makes the positioning more accurate and easier to find the lost items.

AirTag is a product that can track items that customers consider important, such as bicycles, pets, keys, wallets and other items. People can attach AirTags to objects. When they can't find these things, use the Find My app on the phone to search for signals. These devices will send the AirTag's location to iCloud, and then the customer can follow the directions on the phone. Find the item. In other words, the current Find My app can be used not only for searching between Apple products, but also for third-party searches. And the entire search process is encrypted to protect the privacy of customers.

Then, the opportunity of innovation is analyzed using the 12 dimensions of the innovation radar. Next, we will analyze the innovation opportunities of AirTag mainly from the dimension of solutions. Solution refers to the creation of customized products that can solve client-side integration problems. In fact, the advertisement about the AirTag conference reflected the application of this new product to U1 chip AR technology and can effectively solve customer problems.

The content of the advertisement is that a person is in a hurry to go out but can't find the key. He lets AirTag play a sound through his mobile phone, and then he dives into the sofa looking for the key. In the world of the sofa, he is small, and he can truly see the scene on the sofa and find the location of the key. This is the embodiment of U1 chip AR technology, which applies a virtual way to find objects, making the scene more realistic and positioning more accurate. The application of the U1 chip has changed the previous application of Bluetooth technology. Bluetooth can only determine an approximate location. When we are close to an object, it cannot be more specific. It only helps us narrow the range. However, AirTag uses the U1 chip, and precise positioning is its slogan. It also shows that this technology will have more advantages than basically all locator technologies on the market. It enlarges the location of the item, and the customer can accurately find the location of the item through the visual and auditory prompts of the mobile phone. It reflects the virtual arrow above the real view, rather than a two-dimensional plan view. Guide people to find a more precise location.

And AirTag was born to help people find important items. In today's life, people often forget where they left something because they are busy or careless. Just like people always look for mobile phones, keys and wallets before going out, and often forget where they locked their bicycles or other various problems. Through a certain experimental design, it is also found that the search time for items with a locator on the item will be greatly reduced than that without a locator on the item, and people prefer that the locator can support visual and auditory technologies [4]. However, AirTag combines such technology to support vision and hearing. In the

previous Find My app, only when a customer lost an Apple-related product could they use one of the products to make the missing product make a sound, and then the customer would use the released sound to find the lost iPhone, iPad, etc. Now you can send the location after the signal is detected, and then the customer can follow the direction of the arrow to find the item through the direction of the mobile phone, so that the item can be found more quickly.

However, after the release, it was suggested that its code could be easily cracked and might even be used by others for malicious tracking. When a tracker is put in a person's bag, it takes three days for the initial AirTag to send out an alert of being tracked. On June 17, 2021, Apple issued an announcement to fix this bug, shortening the time to less than 8 hours. But the current security risk is that only the iPhone can retrieve the alarm, so Apple is developing an Android application that will make Android permanent and prevent it from being tracked. Apple has released such an innovative product that not only can use an updated technology to effectively solve the problem that people are troubled by finding things in their lives, but also continuously improve and update the performance of the product through customer feedback. If it is expressed by scores in the radar, it can reach ten points.

Through a more specific analysis of AirTag's innovation opportunities, an overall radar chart can be obtained as is shown in Figure 1. In general, although AirTag still needs to be improved in more aspects, it is technically a relatively innovative technology in the field of electronic technology. It can bring more convenience to people. It can be said that this innovation is temporarily unsuccessful, but through continuous improvement, it will be a very successful product. AirTag is another new product after the release of Air pods. Apple users now need new products to hit the market. In fact, the research and development of this product also has an impact on the electronic technology industry, which puts Apple temporarily in a position of competitive advantage. Because other products are in the Bluetooth search stage, the precise positioning technology was first developed and put into market application by Apple.



Fig. 1. Innovation radar

3. CONCLUSION

This paper studies the advantages of AirTag this innovative product to Apple and its impact on the future development of the entire electronic technology industry. This paper studies the advantages of Airtag this innovative product to Apple and its impact on the future development of the entire electronic technology industry. Through the application of solution in the innovative radar, it can be analyzed that although there are already similar products on the market, the AirTag launched by Apple has solved the problem more effectively from the perspective of consumers. It is more in line with the needs of customers. And now is the time when there is a shortage of chips, AirTag has applied the U1 chip, making it difficult for other technology companies to imitate quickly in a short time. This can give Apple a temporary advantage.

In fact, behind every company's success is continuous experimentation. Even such a successful company, Apple, is in the process of continuous experimentation and improvement to obtain products that satisfy customers. The success of innovation depends not only on whether the company has developed a product or technology that can affect the entire industry, but also on whether the development of a certain technology or the application of a certain strategy can also bring more convenience, which is also innovation. Although AirTag has had a lot of problems right after its release, through continuous improvement, this innovative product will be recognized by more people. Then, the research and development of AirTag also put the company into a state of competitive advantage.

ACKNOWLEDGMENTS

Thanks to Kishore Sengupta for providing guiding suggestions on the content of my thesis. His profound knowledge has given me a better understanding of "innovation".

Thank you John for helping me answer the knowledge points that I did not answer and the guidance of the content direction.

Thanks to the thesis instructor Han Min for modifying the content and format of the paper

Finally, I am very grateful to everyone for your help. I can't help but greatly improve my knowledge level and give me a deeper understanding of social development. So that I can better interact with the development direction of this society

REFERENCES

- [1] Chance, M.,(2021,June)Tim Cook talks Android vs. iOS, possibility of future AR products, and more at 'Viva Tech' conference
Retrieved from: <https://9to5mac.com/2021/06/16/tim-cook-ar-android-ios-interview/>
- [2] BBC News. 2021. Apple updates AirTags after stalking fears Retrieved from: <https://www.bbc.com/news/technology-57351554>
- [3] Chu, S. (2010). Managing knowledge for global and collaborative innovations (Vol. 8). World Scientific. Retrieved from https://www.researchgate.net/publication/269146234_Technological_and_Knowledge_Diffusion_Through_Innovation_Networks
- [4] Song, Y., Huang, Y., Cai, Z., & Hong, J. I. (2020, April). I'm All Eyes and Ears: Exploring Effective Locators for Privacy Awareness in IoT Scenarios. In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (pp. 1-13). Retrieved from: <https://dl.acm.org/doi/10.1145/3313831.3376585>
- [5] Lan, L., (2018,November). What Is Apple's Competitive Advantage in Its Industry? Available at: Retrieved from <http://bizfluent.com/info-8734236-apples-competitive-advantage-industry.html>
- [6] <https://www.apple.com/airtag/>