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The Impact of Apple's Digital Design on Its Success: An Analysis of Interaction and Interface Design

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Abstract: This article explores how Apple's digital design, through interaction and interface design, has led to its success. It reviews the development history of Apple's digital design, emphasizing the profound influence of Steve Jobs. Jobs' unique creativity and deep understanding of consumer psychology allowed Apple's product designs to deeply attract users. The article further analyzes Apple's user interface (UI) and user experience (UX) design, highlighting these as the most crucial components of digital design. Apple's design style centers on simplicity, drawing inspiration from Zen and minimalist principles absorbed in Japan, which are reflected in all of Apple's products. By comparing different systems and cross-device interactions, the article demonstrates Apple's leading position in the field of digital design. Additionally, it discusses how Apple has created a full-scenario ecosystem through deep integration of hardware, software, and services, enhancing user loyalty and operational efficiency. Ultimately, the article summarizes Apple's successful experiences in UI and UX design and anticipates future innovation challenges.

Keywords: Apple, Digital Design, User interface (UI), User Experience (UX), Steve Jobs, Minimalism, Full-scenario Ecosystem, User Loyalty, Operational Efficiency, Design Philosophy.

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1 Introduction

The digital design of Apple has a long history that shows the steps of how it developed from a blank slate to today's comprehensive design specification. Steve Paul Jobs influenced Apple's design and provided the background for Apple's success. To focus on the Apple's achievement as a whole. He influenced the digital design of Apple and "after he took over from Amelio, he ended the copy age of Mac" [8]. He was not just a creative force for the Apple design team; he also brought the brand a different future. It cannot be ignored that Steve Jobs was quite unique because of his imagination and creativity. He could accurately capture the most impressive elements of the consumer's heart and bring these elements into the product design, so that people have a good impression of Apple's products unconsciously [6].

In addition, Apple used its products to change the world, even beyond the Coca-Cola to become a new American popular idol. Although some people think he was not a professional designer and could not influence the digital design for the "Apple" brand, this is not true. Most people widely recognize the design team at Apple is remarkable, like Jonathan Ive [9], it does not mean a team composed of geniuses can always produce excellent final outcomes, and these outcomes may not be able to change the business value and consumer loyalty to a brand. He controlled the final decisions for design and for the whole design team [5]. All the design decisions during his time at Apple came from his experience of further study.

To pursue disruptive creativity and global brand influence, the founding team was destined not to simply "borrow" others' design styles and commonly used interaction methods. This also predetermined that the brand's overall business design style should not be overly complex. In this way, only minimalist design specifications and visual styles can facilitate widespread indiscriminately and continuation in society easily. Therefore, it is not difficult to understand why Jobs went to Japan to try to find inspiration and design style for Apple. Japan is widely known for its concept of "minimalist design", which is reflected in all aspects, from Japanese living habits and eating habits to home design concepts and media communications, all of which subtly reflect this principle. This influenced Jobs to incorporate minimalist design into Apple's products, which has become a cornerstone of Apple's design philosophy.

2 Methodology

This article will demonstrate that Apple's design is one of the most popular design styles in society and that the user interface and user experience of its digital design hold the most instructive and leading position. It will first explain the specific meaning of digital design in products, then introduce the source of Apple's design. By comparing

different systems and cross-device interactions, it will analyze the two key components of Apple's digital design: user interface (UI) and user experience (UX). Finally, it will express Apple's leading position in the field of digital design.

Digital design can be wide-ranging and include different appearances on various devices. Whether it's digital illustrations, web design, mobile application user experience (UI) design, or motion graphics, all of these fall under digital design [3]. However, like society, nothing exists in isolation, and it is not comprehensive to consider things from a single point of view. The most important parts of digital design are the user interface and user experience. The method of communicating with the phone is to touch the screen with one's fingers on the icons, pictures, or text; all these elements combine to form a page, and these kinds of pages are called the user interface (UI). Although the UI is the first medium for people to communicate with contemporary electronic products, in fact, only the UI, product, and interactive design (UX) link together to produce real effects. Interactive design is a purely subjective experience established when users interact with products [2]. The product is just a carrier, and UX and UI are the soul, so both need to be designed perfectly.

Most of Apple's design decisions were made by Jobs. He traveled to Japan several times, and his experiences there clearly provided him with much inspiration, helping him decide on the overall product design style as an important guide [10]. The place he visited most in Japan is the "Temple of the Dragon," located in Japan's quietest area. He visited several times and absorbed the culture of "Zen," bringing back an aesthetic vision of simplicity. This pure feeling of inner calm can be found in many places in Japan and is an attitude that reflects in every small detail. For example, the color of Apple products deeply reflects this simplicity, as all the colors chosen for Apple products are within a specific range. The most notable color is "Apple grey," which is quite similar to the rock ground color in the courtyard of the "Temple of the Dragon." This simple, beautiful design style has been used for several years, including in Apple's latest product designs.

About a dozen years ago, Nokia phones held 67% of global market share for decades. However, their heavy plastic bodies and physical buttons only ensured durability and failed to make breakthroughs in the nine-square interface and body design style.

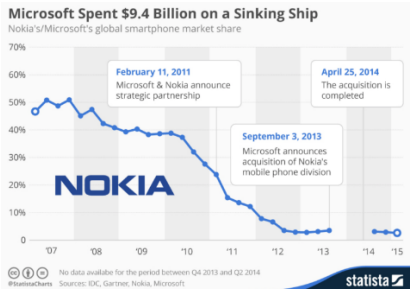

Figure 1. https://www.statista.com/chart/3626/nokias-smartphone-market-share/

Although the market share in many countries and regions was dominated by Windows phones such as Nokia and Motorola at that time, the market value of these phones exceeded 100 billion US dollars in its heyday. However, consumer attention gradually shifted to the Android market and system. Nokia also withdrew from the Android system mobile tablet market in 2014, and its market share has been declining year by year [1]. Google's Android phones also occupied a significant position in the market. However, because Google did not have its own production line at that time, it affected the enthusiasm for mobile phone production and had to rely on third-party manufacturers. Therefore, Google phones at that time could not achieve uniformity in appearance and overall design style comparable to later Apple products, which impacted their market share [3]. From this historical change, it is evident that as people spend more time on mobile devices, these devices have become increasingly integral to daily life. Consequently, user interface (UI) and user experience (UX) design have become recognized and valued by the public.

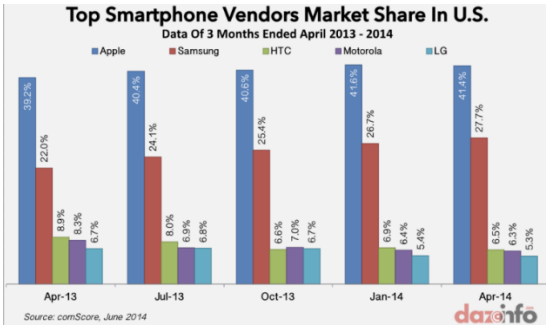

Figure 2. https://dazeinfo.com/2014/06/06/apple-inc-aapl-iphone-android-smartphone-market-us-growth-q1-2014/

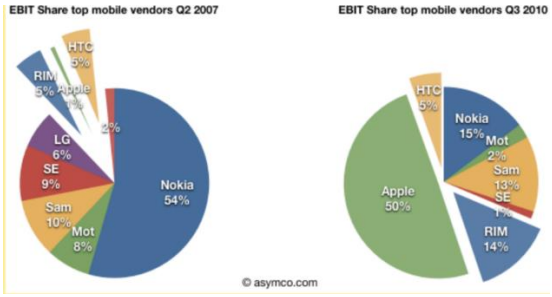

Figure 3. https://www.asymco.com/2010/10/30/last-quarter-apple-gained-4-unit-share-22-sales-value-share-and-48-of-profit-share/

As people use computers and mobile phones every day, it means they interact with the UI daily. Most people rely more on mobile phones than computers. When the first generation of Apple phones appeared, many companies were researching the operating systems of touchscreen mobile phones, but Steve Jobs was the first to start mass

production and successfully bring them to market. The release of the world's first iPhone in 2007 caused an immediate sensation [12]. It introduced numerous new functions and a new design style for the interface, marking a milestone in UI design. The design of its icons was also completely different from the past. People interacted directly with the screen through the phone, rather than pressing physical buttons as they had done before. The icons were designed to be completely covered by the finger, which enhanced usability. The clarity of the interface was improved, and apps opened within seconds of tapping the icons, making the UI design intuitive and reliable. The rounded icons created a more harmonious spacing and brought them closer together. Although the Android system holds a large market share, it introduced the flat design style to its UI system earlier than the iPhone. However, frequent system upgrades and inconsistent icon designs, coupled with opening the system to many manufacturers in the early stages, led to severe fragmentation [4]. This significantly damaged the overall quality of UI design. Although Google recently launched the Material design language to unify visual and interactive design, the proliferation of disparate system versions has hindered its development. Another reason Apple has been able to maintain its unique UI design style and stay at the forefront is its continuous development of interfaces. IOS 7, released in 2007, was the largest update since the launch of the iPhone [13]. This update redesigned the UI system with a new flat interface design style. In an effort to retain existing user loyalty and attract new users, Apple boldly made breakthroughs in its core design areas. Jonathan Ive, Apple's new head of industrial design, is known for his minimalist design style. Thus, this change was not merely an update but a transformation of the entire UI design from "skeuomorphic" to "flat." The new characteristics from this development reflected Apple's new approach to mobile operating systems. Icons in IOS 7 adopted a new coordinate system and color scheme, eliminating the previous "skeuomorphic" elements. The color coordination and geometric designs unified the design system as a whole, which was quite refreshing. Apple's new design style did not emphasize the "flat" style with solid colors alone. Every detail showcased natural visual effects throughout the entire design system, including flat icons, vibrant colors, minimalist lines, and transparent backgrounds. Moreover, Apple's UI design has been highly successful due to its distinctive style.

Apple's successful digital design style is not only attributed to its creation of a unique UI design system but also its exemplary interactive design. Each app includes a comprehensive navigation bar, content area, toolbar, and tab bar, forming the foundation of user interaction. The navigation bar facilitates seamless page transitions, allowing users to move forward or backward without interrupting their flow. Toolbars enable text input and other interactions essential for engaging with applications, while tab bars provide quick access to different sections. These interactive elements enable swift and effective communication with the system, although they represent a foundational rather than ultimate form of human-computer interaction [10].

Apple's design philosophy breaks the traditional market by insisting on the simplest and most intuitive visual design, and applies this philosophy to its product design and user experience design. Minimalist design can obviously reduce the user's learning curve, thereby helping users save time and improve operational efficiency made Apple successful undoubtedly. Although each click may save a few tenths of a second, thousands or tens of thousands of clicks and operations in a day are enough to make users excited, not to mention that the user interface (UI) of the Apple system always uses the most intuitive design principles, and a good consistency principle is implemented from product to interface and interaction, which undoubtedly lowers the threshold for users to understand and use the system. The consistency principle in the Universal Principles of Design holds that Apple's design homogeneity on several devices essentially lowers the user's learning cost, helps users to quickly adjust to new gadgets, and enhances the user experience [14].

For example, the interface design of Apple's iOS operating system follows the principle of minimalism, reduces the interface elements to a minimum, and focuses on the smoothness of user interaction, thereby maximizing the user experience. This breakthrough breaks the consistent principle of mobile devices before: in order to ensure the visual effect of multiple layers, add a "heavy" system with too many functions, and sacrifice or never face up to the importance of user experience (UX) in the overall research and development process. This breakthrough is like selling a can of "Coca-Cola" to a child who has never touched a beverage before in the hot summer. Users are attracted by the minimalism of this interface design, and young people are beginning to discover how comfortable the simple, clear, and easy-to-understand interaction design principles are. For example, Apple's depiction of details in UI and UX design, even the smoothness of animation transition effects, and the timeliness of feedback from each user click operation. After the user clicks the button, they will immediately receive feedback that the operation was successful, ensuring that they can understand the results in a timely manner. This ensures that the user will not feel abrupt or stuck during the operation. All of these reflect Apple's pursuit of excellence in user experience. In addition, in terms of interface design, the icon design of iOS uses a rounded rectangle, which makes the interface more harmonious and unified and also echoes the appearance of the product, which also reflects the consistency of design. In addition, Apple also pays attention to the rationality of the interface layout, placing important function buttons and information in the most accessible position for users so that they can quickly find what they need.

Apple aggressively develops a full-scenario ecosystem so that consumers may move between iOS operating system environments on several devices without any trouble. Apple

has developed a distinctive and closely linked user experience by means of deep integration of hardware, software, and services, therefore enabling customers to feel consistency and convenience when switching between several devices. Apple's Handoff tool, for instance, lets users easily move chores between iPhone, iPad, and Mac, therefore optimizing user experience and job efficiency. Apple has fulfilled its ambition of a full-scenario ecosystem by means of a uniform design language and consistent user experience, therefore addressing interaction and interface design of various devices. This also reveals the direction of development of the brand and commercial vision, therefore fostering users' adoption of its operating system on several devices. The whole-scenario environment not only raises user loyalty but also strengthens users' reliance on Apple products. Apple's design team pays close attention to details and makes sure customers may have the same operating experience on several devices by means of consistent visual elements and interaction modes, therefore preventing interruptions to users' immersive operations. iOS and macOS systems' icons, layouts, and navigation techniques all follow consistent design standards, which lets users quickly fit new devices and lower learning expenses. Apple's computing device design philosophy — that which applied to Mac — has always been straightforward and uniform. Mac's UI design is more current and aesthetically pleasant since it makes extensive use of transparent effects and flat icons. On the other hand, even if the Windows system is continuously improving its UI design, its openness and compatibility lead to poor consistency between several devices and more fragmented user experience. Regarding user experience (UX), Apple's meticulous approach permeates all aspect. From the system reaction speed to the trackpad's natural scrolling orientation, every design choice Apple makes seeks to enhance the user experience generally. The Mac's trackpad, for instance, offers multi-touch gestures so that users may accomplish complicated activities with basic motions, so enhancing operating efficiency as well as user pleasure of usage. By comparison, although the Windows system also provides touch capabilities soon after, its gesture recognition and response speed have not yet matched Mac's level.

While ensuring consistency across devices, so enabling a comfortable and convenient use environment to meet the needs of users in various scenarios, Apple's UI and UX design on computer devices not only visually concise and consistent but also greatly increases the user's operating efficiency and satisfaction. Windows lacks design consistency and user experience details even if it is not less functionally than Mac. These architectural variations enable Mac to be unique in the very competitive market and top pick for many consumers.

In contrast, while the Android system has undergone redesigns and significant improvements in user experience, its fragmentation persists due to customization by various mobile phone manufacturers, preventing a unified native experience across all Android devices. Android must continue developing its user experience to achieve greater consistency.

Moreover, Apple reports that iOS devices have sold over 600 million units, with over 60% of users preferring iPhones over Android devices, and iOS satisfaction rates ranking highest at 73% [7]. Apple's meticulous attention to detail contributes significantly to its user retention; even children can navigate iPhones effortlessly, thanks to its intuitive interactive design efforts. The difference in user experience between iOS and other brands is evident; iOS allows most operations on computers using touch panels with just five fingers. Apple's introduction of the "natural" touchpad scrolling direction—aligning with content movement—represents a bold departure from traditional methods, enhancing user interaction and integrating seamlessly into daily life. Nowadays, it is evident that a product with a well-designed user interface (UI) and an excellent user experience (UX) may sway users' decisions to buy and even persuade them to open their wallets and indulge. This makes people think about user interface (UI) and user experience (UX) design are crucial to the success of mobile devices.

3 Conclusion

In conclusion, Apple excels in the digital design domain due to its design philosophy, which manifests in superior UI and UX. Jobs' influence on creating an unmatched design style is undeniable. While competitors recognize the importance of digital design, Apple cannot afford to rest on its laurels. The next challenge for Apple is to innovate and lead another revolutionary breakthrough. This article was first created in 2017 at De Montfort University and later rewritten and published in 2024.

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Conflict of Interest

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