

Exhibit 9  
(Submitted Under Seal)

**UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA  
SAN JOSE DIVISION**

_____	)	
APPLE, INC., a California corporation	)	
	)	
Plaintiff,	)	Case No. 11-cv-01846-LHK
	)	
v.	)	
	)	
SAMSUNG ELECTRONICS CO., LTD., a	)	
Korean corporation; SAMSUNG	)	
ELECTRONICS AMERICA, INC., a New	)	
York corporation; and SAMSUNG	)	
TELECOMMUNICATIONS AMERICA,	)	
LLC, a Delaware limited liability company,	)	
	)	
Defendants.	)	
_____	)	

**EXPERT REPORT OF SAM LUCENTE**

SUBJECT TO PROTECTIVE ORDER  
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**I. INTRODUCTION**

I, Samuel Lucente, have been retained by Quinn Emanuel Urquhart & Sullivan, LLP, attorneys for Defendants Samsung Electronics Co., Ltd., Samsung Electronics America, Inc. and Samsung Telecommunications America, LLC (hereinafter “Samsung”) to provide opinions and testimony pursuant to Federal Rule of Civil Procedure 26(a)(2) about certain patents, trade dress and trademarks asserted by Apple, Inc. (“Apple”) in the above-captioned action.

**II. BACKGROUND/QUALIFICATIONS**

I received my Bachelors of Science in Design (with high distinction) from the College of Design, Architecture, Art and Planning of the University of Cincinnati in 1981. I have worked for over thirty years as an industrial designer in the technology industry. I am currently employed as the Designer and Principal of Lucente Design, LLC. Lucente Design offers consulting and advice to clients on complex design problems. I have previously worked as a designer for IBM Corporation, Netscape Corporation and Hewlett-Packard Corporation. In addition, I have served as a consultant for numerous other companies in the information technology and consumer electronics industries. A copy of my current *Curriculum Vitae* is attached as **Exhibit A**, which contains a complete listing of my education and experience.

I am the author of several of articles in the area of industrial design and I frequently lecture about design at industry conferences and universities. A partial list of my design-related publications and speaking engagements can be found on my *Curriculum Vitae* attached as **Exhibit A**.

I am currently a member of the Industrial Designers Society of America (IDSA), and served as the At-Large Director from 2009 to 2011.

I am also the named inventor on thirty-five technology-related patents in the United States.

My consulting fee for this case is \$650 per hour.

**III. MATERIALS CONSULTED**

Beyond my credentials and experience, I have considered the materials listed in attached **Exhibit B** in forming the opinions expressed in this report. However, I am informed that depositions and document productions have not yet concluded, and that Apple has continued to produce pertinent documents after the depositions of the inventors, industrial designers, interaction designers, and other witnesses relevant to my analysis. I reserve the right to modify or supplement this report and my opinions based on additional documents, discovery responses, deposition testimony and any other evidence as this matter progresses. If necessary, I will supplement **Exhibit B** to incorporate such additional materials.

**IV. SUMMARY OF OPINIONS**

For the reasons set forth in this report, I have formed the following opinions:

(1) The D 627,790, 'D 604,'305 and D 617,'334 patents (together, the “Asserted Design Patents”) are invalid because the designs are functional as a whole and on an element-by-element basis.

(2) The Asserted Design Patents are invalid because they are either anticipated and/or obvious from the prior art.

(3) The trademarks and trade dress asserted in Apple’s Amended Complaint and trade dress registrations and applications are invalid because the trademarks and trade dress described therein are functional

(4) The asserted trademark and trade dress registrations are invalid because the trademarks and trade dress described therein are not distinctive and were commonplace in the market when first used in commerce by Apple.

(5) The asserted trademarks and trade dress are functional.

This report serves as a summary of my expert opinions and testimony. I reserve the right to modify or supplement this report and my opinions based on additional documents, discovery responses, deposition testimony and any other evidence as this matter progresses. I further reserve the right to render opinions in response to any rebuttal opinions offered on behalf of Apple.

**V. RELEVANT LEGAL PRINCIPLES**

I am not an expert in the law of design patents, trademarks, or trade dress. However, for the purpose of rendering the opinions set forth in this report, counsel has advised me of certain legal principles relevant to my analysis.

**Functionality**

It is my understanding that design patents are fundamentally different from utility patents in that design patents protect the ornamental designs of a given product, while utility patents protects the way a given product is used and how it works.<sup>1</sup> I also understand that functional designs cannot, as a matter of law, receive design patent protection. If the patented design is primarily functional rather than ornamental, the patent is invalid.<sup>2</sup> I also understand that many

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<sup>1</sup> *Richardson v. Stanley Works, Inc.*, 597 F.3d 1288, 1293(Fed. Cir 2010).

<sup>2</sup> *Id.* at 1293-94

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designs can be well-constructed or aesthetically pleasing, but still cannot enjoy design patent protection where they are the result of functional considerations or dictated by function.<sup>3</sup>

Counsel has informed me that courts have articulated tests for functionality of design patents in different ways. One is that a design element is functional “if it is essential to the use or purpose of the article or if it affects the cost or quality of the article.”<sup>4</sup> Another is that the design is “deemed to be functional when the appearance of the claimed design is ‘dictated by’ the use or purpose of the article.”<sup>5</sup> It is my opinion that the Asserted Design Patents are functional under any formulation, and I have used that understanding in forming my opinions in this report regarding functionality of Apple’s design patents. I further understand that functionality is not only relevant to determining whether a design patent is invalid, but also to the appropriate scope of the patent because “it would indeed be improper to allow” “a claim scope that includes ... utilitarian elements.”<sup>6</sup>

I also understand that functional trade dress is not protected by law.<sup>7</sup> Trade dress is functional if it is “essential to the use or purpose of the article [or] affects [its] cost or quality.”<sup>8</sup> If the feature is essential to the use or purpose of the article or affects its cost or quality, “the inquiry is over—the feature is functional and not protected.”<sup>9</sup> If the feature meets that test, there is no need to “proceed further to consider if there is a competitive necessity for the feature” or “engage ... in speculation about other design possibilities.”<sup>10</sup> Counsel informs me that trade dress can be deemed functional with respect to its utility, as noted above, or “aesthetically functional” where the aesthetics of the trade dress itself drives consumer demand for the product.<sup>11</sup> Aesthetic functionality is present where “use of the feature would put competitors at a significant, non-reputation-related disadvantage.”<sup>12</sup> Unless otherwise noted, when I refer to “functionality” in my report, I mean to refer to “utilitarian” not “aesthetic” functionality.

**Anticipation and Obviousness**

Counsel has informed me that Apple claims the designs of the Asserted Design Patents were conceived and reduced to practice as follows: D’790 and D’305 on April 26, 2007 and D’334 on July 15, 2008. I have no opinion regarding this accuracy of these claimed priority dates, but I have taken it into consideration as part of my analysis of validity. I am also aware

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<sup>3</sup> *Lee v. Dayton-Hudson Corp.*, 838 F.2d 1186, 1188 (Fed Cir. 1998) ((quoting *In re Carletti*, 328 F.2d 1020, 1022 (CCPA 1964); *Richardson*, 597 F.3d at 1294.

<sup>4</sup> *Amini Innovation Corp. v. Anthony Cal. Inc.*, 439, F.3d 1365, 1372 (Fed. Cir. 2006).

<sup>5</sup> *L.A. Gear, Inc. v. Thom McAn Shoe Co.*, 988 F.2d 1117, 1123 (Fed. Cir. 1993) (citation omitted).

<sup>6</sup> *Richardson*, 597 F.3d at 1294.

<sup>7</sup> *See TrafFix Devices, Inc. v. Marketing Displays, Inc.*, 532 US 23, 27 (2001).

<sup>8</sup> *Au-Tomotive Gold, Inc. v. Volkswagen of America, Inc.*, 457 F.3d 1062 (9th Cir. 2006) (quoting *TrafFix*, 532 U.S. at 32-33).

<sup>9</sup> *Id.*

<sup>10</sup> *TrafFix*, 532 U.S. at 33.

<sup>11</sup> *Au-Tomotive Gold, Inc.*, 457 F.3d at 1068.

<sup>12</sup> *TrafFix*, 532 U.S. at 28-29.

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that Apple unveiled the first iPhone at Macworld on January 9, 2007, and the first iPad on January 27, 2010.

I understand that “prior art,” as used in reference to design patents, is public information, public knowledge and public acts that occur a year before the application for the design patent was filed or before the design was invented. Prior art can include other patents, journals, Internet publications, systems and products.<sup>13</sup>

Counsel has informed me that a design patent may be invalid as (1) anticipated by prior art; or (2) obvious in light of the prior art:

I understand that an asserted design patent is anticipated by prior art where a single prior art reference discloses all the limitations of a claim.<sup>14</sup> Thus, a design patent is invalid based upon anticipation when, “in the eye of an ordinary observer, giving such attention as a purchaser usually gives,” the alleged anticipatory reference is “substantially the same” as the patent-in-suit, meaning “the resemblance is such as to deceive such an observer, inducing him to purchase one supposing it to be the other.”<sup>15</sup>

An asserted design patent is obvious, and therefore invalid, if the “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to the person having ordinary skill in the art to which the said subject matter pertains.”<sup>16</sup> In the obviousness context, the role of one skilled in the art lies “in determining whether to combine earlier references to arrive at a single piece of art for comparison with the potential design, or to modify a single prior art reference.”<sup>17</sup>

I understand that, for the purposes of evaluating obviousness, “a person skilled in the art” is “a designer of ordinary skill or capability in the field to which the design pertains” who is “presumed to have perfect knowledge of all pertinent prior art.”<sup>18</sup> A person of ordinary skill in the art relevant to the Asserted Design Patents would have had experience designing electronic devices and graphic user interfaces for touch screen displays.

### **Indefiniteness**

I understand that a design patent is indefinite where it does not enable a designer of ordinary skill in the art to make an article having the shape and appearance of the design for which protection is sought.<sup>19</sup> Thus, if the drawings in the patent are inconsistent, or if there are

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<sup>13</sup> 35 U.S.C. § 102

<sup>14</sup> *Id.*

<sup>15</sup> *International Seaway Trading Corp. v. Walgreens Corp.*, 589 F.3d 1233, 1239 (Fed. Cir. 2009).

<sup>16</sup> 35 U.S.C. § 103(a).

<sup>17</sup> 35 U.S.C. § 102.

<sup>18</sup> *LA Gear, Inc. v. Thom McAn Shoe Co.*, 988 F.2d 117, 1124 (Fed Cir. 1993).

<sup>19</sup> Manual of Patent Examining Procedure § 1504.04; *id.* § 1503.2 (“As the drawing or photograph constitutes the entire visual disclosure of the claim, it is of utmost importance that

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ambiguities in the drawings that leave the scope of the design open to conjecture, it can be rendered invalid due to indefiniteness.<sup>20</sup>

**Distinctiveness and Exclusivity of use of Trade Dress**

I understand that in order to be protected, trade dress must be distinctive.<sup>21</sup> Counsel informs me that trade dress is considered to be distinctive if it has attained “secondary meaning” which occurs when, “in the minds of the public, . . . [its] primary significance . . . is to identify the source of the product rather than the product itself.”<sup>22</sup> I am also informed that Courts consider a number of factors in determining whether trade dress has acquired secondary meaning including whether the trade dress has been used exclusively by the plaintiff, or whether the same or similar trade dress has been used by third parties on related products.<sup>23</sup>

**Other Legal Points**

I further understand that invalidity of a design patent based on anticipation, obviousness, functionality or indefiniteness must be shown by clear and convincing evidence.<sup>24</sup> I understand the clear and convincing evidence standard to require evidence that produces an abiding conviction that the truth of a factual assertion is highly probable.<sup>25</sup> Thus, my opinions in this report reflect my understanding that anticipation, obviousness, functionality and indefiniteness must be shown by clear and convincing evidence.

I am informed by counsel that Apple has the burden of proving that its unregistered trade dress is both (1) not functional and (2) distinctive by a preponderance of the evidence.<sup>26</sup> I also understand that Apple enjoys a presumption that its registered trade dress is (1) not functional and (2) distinctive, and that Samsung has the burden of introducing sufficient evidence to rebut the presumption of validity.<sup>27</sup> Once the presumption of validity is overcome, Apple bears the burden of proving that its trade dress is (1) not functional and (2) distinctive.<sup>28</sup>

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the drawing or photograph be clear and complete, and that *nothing* regarding the design sought to be patented is left to conjecture.”) (emphasis added).

<sup>20</sup> See, e.g., *Seed Lighting Design Co., Ltd. v. Home Depot*, 2005 WL 1868152, \*8 (N.D. Cal. Aug. 3, 2005).

<sup>21</sup> *Wal-Mart Stores, Inc. v. Samara Bros., Inc.*, 529 U.S. 205, 210 (2000).

<sup>22</sup> *Id.* At 210.

<sup>23</sup> *Art Attacks Ink, LLC v. MGA Entertainment Inc.*, 581 F.3d 1138, 1145 (9th Cir. 2009)

<sup>24</sup> *Titan Tire Corp. v. Case New Holland, Inc.*, 566 F.3d 1372, 1376-77 (Fed. Cir. 2009).

<sup>25</sup> *Price v. Symsek*, 988 F.2d 1187, 1191 (Fed. Cir. 1993).

<sup>26</sup> 15 U.S.C. § 1115(a).

<sup>27</sup> See *Tie Tech, Inc. v. Kinedyne Corp.*, 296 F. 3d 778, 783 (9th Cir. 2002); *Vuitton Et Fils SA v. J. Young Enterprises, Inc.*, 644 F. 2d 769, 775 (9th Cir. 1981).

<sup>28</sup> *Tie Tech*, 296 F.3d at 783.

**VI. THE ASSERTED DESIGN PATENTS, TRADE DRESS AND TRADEMARKS ARE FUNCTIONAL**

**A. Evolution of Graphical User Interface Design As a Functional Tool**

When using a computer or other electronic device with a user interface, people interact with a display screen to access information and perform tasks by selecting something displayed on the screen. To make the selection, a user might employ an input device such as a keyboard or mouse, he might touch the screen surface with his finger when using a touch screen device, or he might make selections by gesturing with his hands or body or by using his voice.

In computing, a graphical user interface (GUI) is a type of user interface that allows users to interact with electronic devices with images rather than text commands. GUIs can be used in computers, hand-held devices such as MP3 players, mobile telephones, or gaming devices, and household appliances and office equipment. A GUI represents the information and actions available to a user through graphical icons and visual indicators rather than text-based interfaces, typed command labels or text navigation. The actions are usually performed through direct manipulation of the graphical elements.<sup>29</sup>

To meet user, technology and manufacturing requirements for functional products, GUIs converge towards optimized solutions across the information technology industry. This convergence of design solutions with standard controls and behaviors driven by functional requirements is typical in the evolutionary design of GUIs and other areas of computer technology.

Many of the standard controls and behaviors for GUIs were introduced in the early 1980’s, such as interacting with icons grouped together on a screen in a grid or matrix layout, are now essential, functional elements of human-computer interaction. Focusing on function, user interface designers use these standard controls and behaviors to create usable interfaces between people and computers.

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<sup>29</sup> [http://en.wikipedia.org/wiki/Graphical\\_user\\_interface](http://en.wikipedia.org/wiki/Graphical_user_interface)



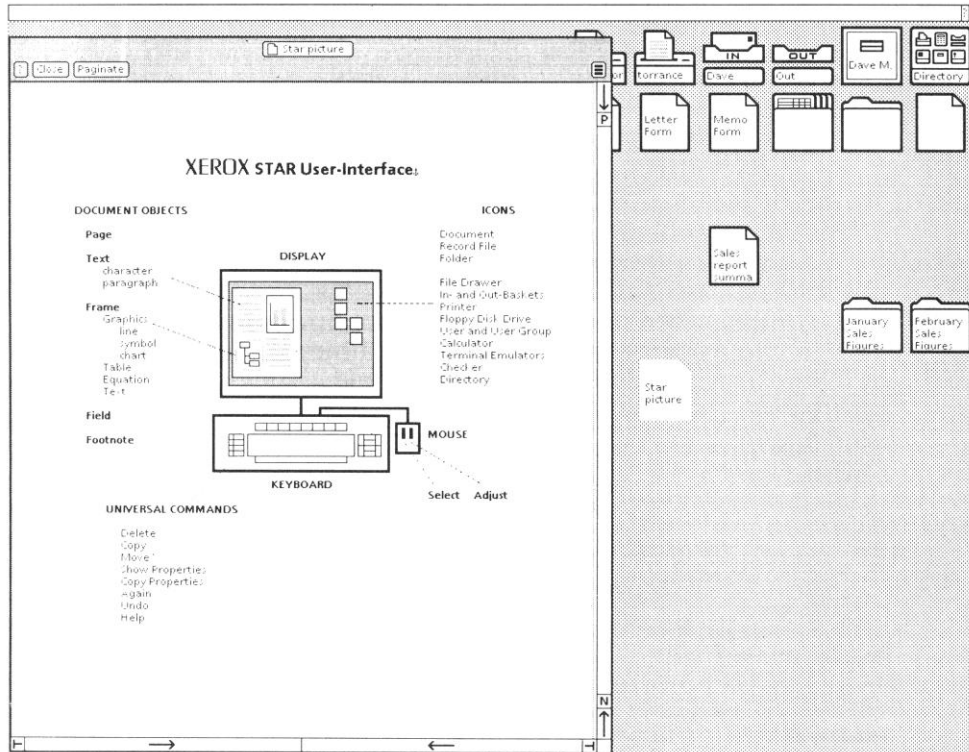


*Xerox Star Desktop Computer, 1981*

The legendary Xerox Star, released in 1981, was the first commercially available graphical user interface. Many of the designs created today are based on the functional elements introduced in the “Desktop” metaphor of this seminal and functional screen design.<sup>30</sup>

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<sup>30</sup> <http://www.digibarn.com/collections/systems/xerox-8010/xerox-star-8010-large.jpg>  
*Xerox Star, 1981*



Screen Shot of Xerox Star’s Graphical User Interface, referenced as figure 2

The above image shows the “Desktop” as it appeared on the Xerox Star. Thirty years ago, the designers of the Xerox Star described the notion of selectable icons and an icon grid, noting the functional aspects of these basic graphical user interface principles that are widely used today:

Every user’s initial view of Star is the “Desktop,” which resembles the top of an office desk, together with surrounding furniture and equipment. It represents your working environment – where your current projects and accessible resources reside. On the screen are displayed pictures of familiar office objects, such as documents, folders, file drawers, in-baskets, and out-baskets. These objects are displayed as small pictures or “icons,” as shown in figure 2.

You can “open” an icon to deal with what it represents. This enables you to read documents, inspect the contents of folders and file drawers, see what mail you have received, etc. When opened, an icon expands into a larger form called a “window,” which displays the icon’s contents. Windows are the principal mechanism for displaying and manipulating information.

The Desktop “surface” is displayed as a distinctive gray pattern. This restful design makes the icons and windows on it stand out crisply, minimizing eyestrain. The surface is organized as an array of one-inch squares, 14 wide by 11 high. An icon can be placed in any square, giving a maximum of 154 icons. Star centers an icon in its square, making it easy to line up icons neatly. The Desktop always

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occupies the entire display screen; even when windows appear on the screen, the Desktop continues to exist “beneath” them.<sup>31</sup>

Describing the functional attributes of their design, one of Xerox Star’s designers noted the increased usability of the icons on the screen stating “when everything in a computer system is visible on the screen, the display becomes reality. Objects and actions can be understood purely in terms of their effects upon the display. This vastly simplifies understanding and reduces learning time.” Grids, in general, have been used as a functional element for other areas of design. Technical authors Mullet and Sarno state that “the central element of any successful program is the grid, which provides a unifying framework for the diverse elements of the system.”<sup>32</sup> The Xerox design team’s focus on functional elements in human-computer interaction led to a “breakthrough in usable design.”<sup>33</sup> They instilled the principles of simplicity and consistency as a main goal for the system’s design.

Following this approach to graphical user interface design, the Apple iOS Human Interface Guidelines focus on integrating function, over ornamentation, into Apple’s design solutions. In describing their principle of Aesthetic Integrity, Apple states that:

Aesthetic integrity is not a measure of how beautiful an application is. It’s a measure of how well the appearance of the app integrates with its function. For example, an app that enables a productive task generally keeps decorative elements subtle and in the background, while giving prominence to the task by providing standard controls and behaviors. Such an app gives users a clear, unified message about its purpose and its identity. If, on the other hand, the app enables the productive task within a UI that seems whimsical or frivolous, people might not know how to interpret these contradictory signals.<sup>34</sup>

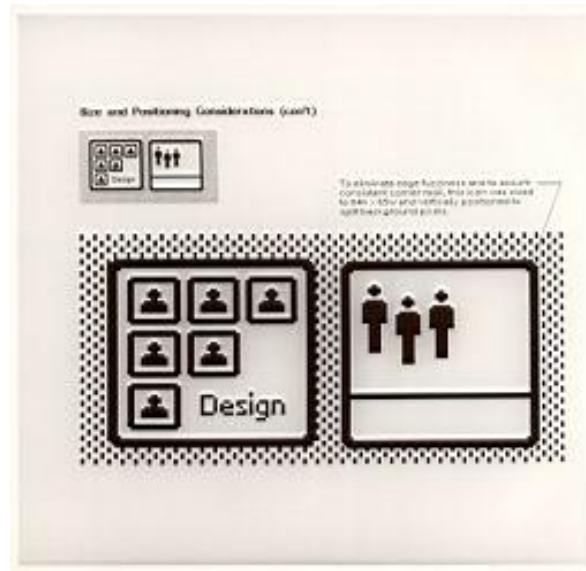
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<sup>31</sup> “Designing the Star User Interface” from Byte 1982.

<sup>32</sup> Designing Visual Interfaces, Mullet and Sarno (page 137).

<sup>33</sup> The Design of Everyday Things, Norman (page 181).

<sup>34</sup> Apple iOS Human Interface Guidelines,  
[https://developer.apple.com/library/IOs/#documentation/UserExperience/Conceptual/MobileHIG/Principles/Principles.html#/apple\\_ref/doc/uid/TP40006556-CH5-SW1](https://developer.apple.com/library/IOs/#documentation/UserExperience/Conceptual/MobileHIG/Principles/Principles.html#/apple_ref/doc/uid/TP40006556-CH5-SW1)



*Detail of Xerox Star User Interface*

The focus on integrating function into graphical user interface design encompasses all elements on the screen including detailed design of the icons. Shown in the above detail image, the Xerox Star used icons with rounded rectangles as a consistent design element placed with consistent spacing on the screen.<sup>35</sup> The Xerox Star icon design was noted in an article published in 2003, “The icons were highly symbolic, based on rounded rectangles. They established conventions used to this day....”<sup>36</sup>

The use of rounded rectangular or square icons have become commonplace throughout our everyday world. “A system of 50 symbol signs was designed for use at the crossroads of modern life: in airports and other transportation hubs and at large international events. Produced through a collaboration between AIGA and the U.S. Department of Transportation (DOT), they are an example of how public-minded designers can address a universal communication need.”

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<sup>35</sup> <http://www.digibarn.com/collections/screenshots/xerox-star-8010/index.html>

<sup>36</sup> “One thousand square pixels of canvas” by Marcin Wichary, 2003  
<http://www.guidebookgallery.org/articles/onethousandsquarepixelsofcanvas>

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*AIGA / U.S. Department of Transportation Symbols*

The first set of 34 symbols was published in 1974, and received one of the first Presidential Design Awards, then 16 more symbols were added in 1979. “These copyright-free symbols have become the standard for off-the-shelf symbols in the catalogues of U.S. sign companies..”<sup>37</sup>

Even Apple’s former CEO, in directing his designers and programmers, noted the pervasiveness of the rounded rectangle as a proven, universal communication symbol saying, “Well, circles and ovals are good, but how about drawing rectangles with rounded corners?” “Rectangles with rounded corners are everywhere!... Just look around this room... And look outside, there’s even more, practically everywhere you look!” “Within three blocks, we found seventeen examples . . . I started pointing them out everywhere until he was completely convinced.” Eventually his software engineer conceded and implemented this direction: “When he finally got to a No Parking sign, I said, ‘Okay, you’re right, I give up. We need to have a rounded-corner rectangle as a primitive!”<sup>38</sup> The rounded rectangular icon was implemented on early Apple desktop applications following the Xerox efforts.

The current Apple iOS Human Interface Guidelines also emphasize the functionality of the icons themselves. Apple expressly adopted a consistent rounded rectangular design as a functional design element as noted in their detailed specifications. Using current tools not

<sup>37</sup> <http://www.aiga.org/symbol-signs/>

<sup>38</sup> Steve Jobs, Walter Isaacson (page 130).

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available to the Xerox designers, the conversion from a square icon to a consistent, rounded square icon with added visual effects is programmed into the guidelines.

“When iOS displays your application icon on the Home screen of a device, it automatically adds the following visual effects:

- Rounded corners
- Drop shadow
- Reflective shine (unless you prevent the shine effect)

For example, a simple 57 x 57 pixel iPhone application icon might look like this:



When it’s displayed on an iPhone Home screen, iOS adds rounded corners, a drop shadow, and a reflected shine. So the same application icon would look like this:<sup>39</sup>



Emphasizing the functional aspect of the icons, the Apple iOS Human Interface Guidelines note that, “Beautiful, compelling icons and images are a fundamental part of the iOS user experience. Far from being merely decorative, the icons and images in your app play an essential role in communicating with users.” They continue, saying, “Embrace simplicity. In particular, avoid cramming lots of different images into your icon. Try to use a single object that expresses the essence of your app. Start with a basic shape and add details cautiously. If an icon’s content or shape is overly complex, the details can become confusing and may appear muddy at smaller sizes.”<sup>40</sup>

Apple’s Guidelines also acknowledge the need for universal imagery and metaphors in icons that convey their function to the user easily. Initially, Apple instructs that designers must “[u]se universal imagery that people will easily recognize. Avoid focusing on a secondary or obscure aspect of an element.” “Try to balance eye appeal and clarity of meaning in your icon so that it’s rich and beautiful and clearly conveys the essence of your application’s purpose. Also,

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<sup>39</sup> Apple iOS Human Interface Guidelines, [https://developer.apple.com/library/IOs/#documentation/UserExperience/Conceptual/MobileHIG/IconsImages/IconsImages.html#//apple\\_ref/doc/uid/TP40006556-CH14-SW1](https://developer.apple.com/library/IOs/#documentation/UserExperience/Conceptual/MobileHIG/IconsImages/IconsImages.html#//apple_ref/doc/uid/TP40006556-CH14-SW1)

<sup>40</sup> Apple iOS Human Interface Guidelines, [https://developer.apple.com/library/IOs/#documentation/UserExperience/Conceptual/MobileHIG/IconsImages/IconsImages.html#//apple\\_ref/doc/uid/TP40006556-CH14-SW1](https://developer.apple.com/library/IOs/#documentation/UserExperience/Conceptual/MobileHIG/IconsImages/IconsImages.html#//apple_ref/doc/uid/TP40006556-CH14-SW1)

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it’s a good idea to investigate how your choice of image and color might be interpreted by people from different cultures.”

Icons in the shape of rounded rectangles as a functional element on a touch interface were used on the first smartphone, the IBM Simon, which was launched in 1993.<sup>41</sup> The Simon included a calendar, address book, world clock, calculator, note pad, e-mail, and games. The Simon used a touchscreen and optional stylus to dial phone numbers, send faxes and write memos. Text could be entered with either an on-screen “predictive” keyboard or QWERTY keyboard. The IBM Human Factors Group spent two years conducting studies and providing usability guidance, again focusing on the functional aspects of the graphical user interface.



*Views of IBM Simon Smartphone and Graphical User Interface (1993)*

The Simon’s icons are positioned in an icon grid much like the Xerox Star. When touched, the icons launch applications, such as the phone shown here.<sup>42</sup> Rounded rectangles are used consistently throughout the Simon design.

The Simon included another functional element by adding descriptive labels under the icons to provide a redundant means of communicating the function to the user in addition to the graphical image. More importantly, however, the small size of the touchscreen led to the introduction of an “icon dock,” containing the most frequently used icons located at the bottom of the rectangular screen. The dock concept was another functional element in the evolution of

<sup>41</sup> <http://www.business2community.com/mobile-apps/a-look-back-in-time-at-the-first-smartphone-ever-040906>

<sup>42</sup> <http://research.microsoft.com/en-us/um/people/bibuxton/buxtoncollection/detail.aspx?id=40>

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the graphical user interface, specifically as applied to a small screen device. The IBM Human Factors Group derived this functional design from studies. When evaluating the icon dock, they write, “Most icons that appear on Simon include a descriptive label. There are four icons, however, that appear on every Simon screen. Because these icons appear on every screen, we had a design goal to provide small icons that did not require labels (conserving valuable screen space). We assessed these icons using a battery of icon assessment methods including a matching and confidence tasks, icon production task, and a semantic differential.” (Lewis, 1988; Lin, 1992). The outcome of the study indicated a problem with recognition of the icon representing access to the non-phone office tools, and led to a re-representation of the function with a focus on its access to a mobile office.<sup>43</sup>

Functional requirements even dictate minute details of a design such as the use of mixed uppercase and lowercase text on the icon label. “Although professional programmers have learned to read uppercase-only text, most users prefer and find easier to read mixed uppercase and lowercase messages.”<sup>44</sup>

These functional elements, or building blocks, of the graphical user interface are directly relevant to the design features claimed in the Accused Patents and have originated from a need to provide people with functional graphical user interfaces.

**B. Analysis of Functionality of Apple’s Asserted Design Patents, Trade Dress and Trademarks**

I have analyzed Apple’s Asserted Design Patents, trade dress and trademarks in light of the foregoing historical perspective, as well as my own experience designing electronic devices and GUIs for the past 30 years. To assess the functionality of the claimed designs, I reviewed the patents, trade dress registrations and applications, and their file histories. I have also examined the prior and contemporary art in the field of computing and mobile devices in particular, as well as reference material and design literature. Finally, I have reviewed testimony of Apple’s designers and named inventors on the design patents.

Based upon this analysis, it is my opinion that the Asserted Design Patents, trade dress, and trademarks are functional as a whole and on an element-by-element basis. I will discuss each of the three design patents in turn, and then the trade dress and trademark icons.

**Design Patent D 627,790**

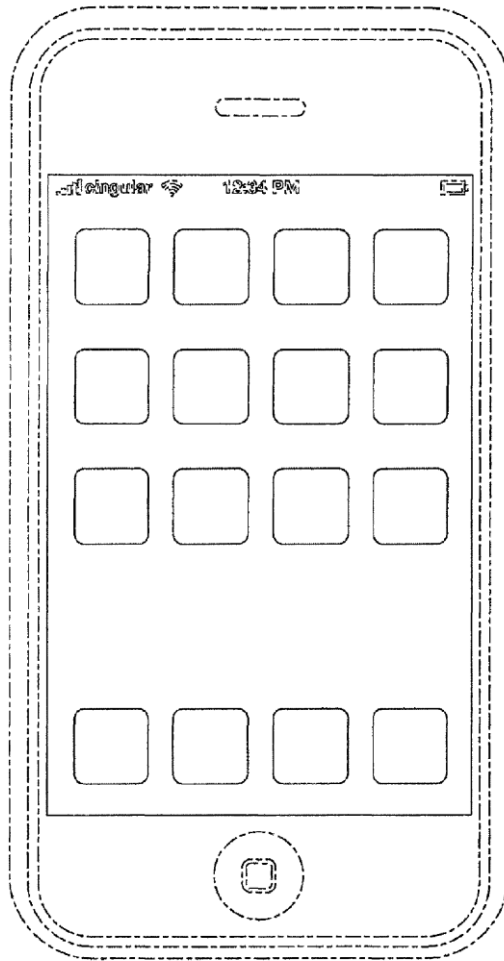
The D’790 is entitled “Graphical User Interface for a Display Screen or Portion Thereof.” The original application was filed June 23, 2007, and it was issued on November 23, 2010.

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<sup>43</sup> <http://research.microsoft.com/en-us/um/people/bibuxton/buxtoncollection/detail.aspx?id=40>

<sup>44</sup> Designing the User Interface, Ben Shneiderman, Section 11.2.4 page 376.





***Figure of Design Patent D 627,790***

*Functionality of a Rectangular Display*

Given that this design is for a graphical user interface screen, I will assume for that the rectangular outline centered within the larger rounded rectangular shapes defines a display area. The rectangular shape of this element is driven by display screen technology. The rectangular display for a graphical user interface is a fundamental, functional element for human-computer interaction. Alternative designs would be more expensive and more difficult to develop, and would not have the organizational benefits of the rectangular shape. Thus, the large rectangular element of the D’790 “design” is merely functional and not decorative.

*Functionality of an Icon Grid*

Again, I will assume for this analysis that the upper 12 squares with rounded corners and the lower 4 squares with rounded corners are selectable icons on a screen. The upper 12 icons are arranged in a grid layout. A grid of icons is functional because it serves as an organizational structure that allows a user to see and understand information quickly. The rows and columns in a grid are functional because the rows and columns are determined by the size of the screen and the number of icons. The spacing of the icons within the grid is functional because it allows a

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human finger, a human hand with a stylus, or human hand with a mouse to better select only a single icon at one time.

Although no text labels are shown in the drawing, I note that there is a difference in vertical versus horizontal spacing of the squares within the grid. This element is also functional because it allows space for text under the icons. In referring to the vertical spacing of the icons in the D’790 patent, named inventor and Apple interface designer Imran Chaudhri testified as follows. “If you look at the grid here between the rows there’s a -- an appreciable amount of room to accommodate a label that would indicate what the icon is.” Deposition of Imran Chaudhri (“Chaudhri Dep.”) at 159:25 and 160:1-2.

Further supporting the functional nature of the icon grid and grouping of icons, Gestalt principles of perception suggest that objects that are close together are perceived as a group.<sup>45</sup> These same Gestalt design principles provide that objects sharing similar attributes, e.g., multiple squares with rounded corners, are perceived as a group. The application of these principles is inherent in the icon grid structure shown in D’790.

In referring to the icon grid in the D’790 patent, Mr. Chaudhri testified that “there is a -- an evenness to the amount of - to the rhythm of the spacing, that there’s rows and columns that are orderly - laid out in an orderly fashion.” Chaudhri Dep. at 135:11-14. Mr. Chaudhri further explains that the layout “makes it predictable” Chaudhri Dep. at 135:17. Essentially describing an icon grid and its function, Chaudhri also defines the blank row in the drawing as part of the icon grid, noting that “[i]t’s an area where additional icons would go.” Chaudhri Dep. at 141:4-5.

An icon grid on a graphical user interface is a fundamental, functional element for human-computer interaction. Thus, the rounded square elements of the D’790 “design” are merely functional and not decorative.

*Functionality of an Icon Dock*

The lower four squares with rounded corners, or assumed selectable icons, are placed at the lower edge of the graphical user interface screen. Again for purposes of this analysis, I will assume that the lower row of rounded squares represents a dock of frequently-used icons, which are visible on all or most of the menu screens of an interface. As discussed above, such dock elements have been in use for nearly two decades, and are functional elements of an interface because they allow the user to keep the most frequently-used icons in a location that can be quickly accessed from each page.

As Imran Chaudhri testified, the bottom row of icons remains static and gives the “customer a quicker access to them.” Chaudhri Dep. 133:2-3. This statement effectively defines the functional role of the dock in the D’790 patent. Further, the placement of the dock on the bottom end of the display screen is the most convenient location to access when operating the

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<sup>45</sup> *Reference for Gestalt principles*  
[http://www.developer.nokia.com/Resources/Library/Design\\_and\\_UX/designing-for-nokia-devices/visual-design/basic-principles-of-visual-design/the-gestalt-principles-of-perceptual-organisation.html](http://www.developer.nokia.com/Resources/Library/Design_and_UX/designing-for-nokia-devices/visual-design/basic-principles-of-visual-design/the-gestalt-principles-of-perceptual-organisation.html)

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device with a single hand. Mr. Chaudhri further explained that the bottom row is in “closer proximity to where their finger was previously... [s]o the customer would press the home button, which would bring them to this home screen. And generally their -- their finger would be towards the bottom of the screen anyway. And it means that their -- that their finger wouldn’t have to travel as far. Chaudhri Dep. 133:14-15, 19-24.

The dock on a graphical user interface is another functional element for human-computer interaction. Thus, these elements of the D’790 “design” are merely functional and not decorative.

*Functionality of the Spacing & Proportions, Shape and Number of Icons*

The relative size of an icon is functional because the relative size allows a person to see the icon and a human finger better to select the icon. Significant research exists specifying optimal touch target sizes and the overall size of the icons depicted in the D’790 Patent align to these targets.<sup>46</sup> In fact, the Apple iOS Human Interface Guidelines even specify a size for the “comfortable minimum size of tappable UI elements.”<sup>47</sup>

Both the size and the shape of the icon is functional because the consistent size and shape conveys the form of a selectable button and communicates that the icons share similar attributes so that they perceived as a group. This establishes user expectations that user interactions of the icon will follow consistent behaviors. As noted earlier, “The gestalt laws are used in user interface design. The laws of similarity and proximity can, for example, be used as guides for placing radio buttons. They may also be used in designing computers and software for more intuitive human use.”<sup>48</sup> One of the Gestalt principles of grouping applies to the size and shape of the icons in D’790, specifically: “The law of similarity – the mind groups similar elements into collective entities or totalities. This similarity might depend on relationships of form, color, size, or brightness” Icons sharing similar attributes in size and form (shape), e.g., squares with rounded corners, are perceived as a group. The application of these principles is inherent in D’790.

The number of the icons is functional because the number is determined by the overall area of the rectangular outline, the size of the icon, shape of the icon, the spacing of the icon in the grid and the number of icons desired by the user and/or the manufacturer. When referring to the number of icons on the D’790 Patent, as noted above, Chaudhri clarifies the purpose of the blank row in the drawing as “an area where additional icons would go.” Chaudhri Dep. at 141:4-5. He further notes, “if you had 13 icons, then the 13th icon would fall into that blank space.” Chaudhri Dep. at 141:19-20. Confirming that adding an icon is based on user needs, he states, “Ultimately, it’s the user’s decision how they want to configure that space.” Chaudhri Dep. at 142:14-15.

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<sup>46</sup> See, e.g., <http://hcil.cs.umd.edu/trs/2006-11/2006-11.htm>

<sup>47</sup> Apple iOS Human Interface Guidelines, p. 59.

[https://developer.apple.com/library/IOs/#documentation/UserExperience/Conceptual/MobileHIG/UEBestPractices/UEBestPractices.html#//apple\\_ref/doc/uid/TP40006556-CH20-SW1](https://developer.apple.com/library/IOs/#documentation/UserExperience/Conceptual/MobileHIG/UEBestPractices/UEBestPractices.html#//apple_ref/doc/uid/TP40006556-CH20-SW1)

<sup>48</sup> [http://en.wikipedia.org/wiki/Gestalt\\_psychology](http://en.wikipedia.org/wiki/Gestalt_psychology) and [http://www.interaction-design.org/encyclopedia/gestalt\\_principles\\_of\\_form\\_perception.html](http://www.interaction-design.org/encyclopedia/gestalt_principles_of_form_perception.html)

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Another Apple interface designer, Freddy Anzures, testified to the number of icons on the similar D’305 Patent discussed below, stating that, “based on a design perspective, there were a certain number of applications that we were looking at for the phone, they happen to round out to a particular number, and so we determined this grid based on the number of applications that we had. Deposition of Freddy Anzures (Anzures Dep.) at 141:14-19. This is a functional requirement determined by the manufacturer.

The spacing, proportions, shape and number of the icons on a graphical interface are fundamental components of human-computer interaction. Thus, the rounded square elements of the D’790 “design” are merely functional and not decorative in the context of a “Graphical User Interface for a Display Screen or Portion Thereof.”

Accordingly, it is my opinion that the claimed elements of the D’790 design are all functional, and not decorative, whether taken as individual elements or the design as a whole.

**Design Patent D 604,305**

The D’305 patent application was filed on June 23, 2007, and the patent issued on November 17, 2009. The D’305, entitled “Graphical User Interface for a Display Screen or Portion Thereof,” shows two variations of the same “design,” with one in color and one in black and white. The overall rectangular outline of the D’305 figures matches exactly the rectangular outline that is centered within the larger rounded rectangular shapes in the D’790 Patent.



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*Figs. 1 and 2 of D604,305*

*Functionality of a Rectangular Display, Icon Grid, Icon Dock, and the Size, Shape and Number of Icons*

Given that this patent has the same title as D’790, I once again assume for the sake of this report that the upper 12 squares with rounded corners and the lower 4 squares with rounded corners depict selectable icons on a display screen. The D’790 Patent and the D’305 Patent depict the same basic functional elements. Accordingly, for all the reasons set forth above regarding the D’790, it is my opinion that the rectangular shape, grid of rounded squares, separate lower grouping of rounded squares, and the size, shape and number of the 16 rounded squares are all functional elements in the D’305 Patent.

Several aspects of the functionality of these elements are further reinforced in D’305. For example, use of the gray background for icon dock area uses shading to functionally group like items. The use of a color or shading to functionally group the icons on the dock is a functional necessity, but the exact details regarding color or texture could be an ornamental choice. Thus, it is my opinion that these elements of the D’305 “design” are merely functional and not decorative, as set forth more fully above.

*Functionality of Status Indicators*

I will assume for the sake of this report that the symbols and nomenclature at the top of the large rectangular area are status indicators on a display screen. The status indicators in the upper area are functional because they are located at the top to provide quick readability. Moreover, the status indicators use established conventions for cellular or wireless connectivity: name of the carrier, type and strength of cellular connection, time and battery level to communicate status.

The International Standards Organization<sup>49</sup> defines status indicators as “a graphic symbol that represents a state within the system. It is noted that status indicators assist a mobile device user to confirm some system-setting state without accessing the system settings. They are dynamically updated only when the state changes in real-time. Users are not able to use the status indicator to control the change. For example, a status indicator is used to show that vibration is set in a cellular phone instead of sounds to indicate ringing or alert. Or as a second example, a status indicator is used to show the remaining battery charge of a personal data assistant (PDA).”

The status indicators on a graphical user interface are a fundamental, functional element for human-computer interaction. Thus, the top line elements of the D’305 “design” are merely functional elements, and not decorative.

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<sup>49</sup> International Standards Organization document ISO/IEC 24755:2007(E) 4.5.

*The Functionality of Icons*

Icons themselves are functional because they are metaphors for the function the user wishes to access. In other words, icons are descriptive of the applications and/or features that they activate, and thus they are functional. The International Organization for Standardization (ISO) provides a relevant definition of icons:

“Icons are used on Information and Communications Technology (ICT) products to facilitate interaction with their users. Icons can provide a language-independent means of communicating information to the user. They can facilitate the user’s ability to learn, understand, and remember functional elements of the system, and aid in the manipulation of these elements. They are especially suitable for elements that are frequently used and where the meaning of the icon can be easily understood.

Typically, icons draw on a user’s environment to provide a metaphorical representation of the user’s tasks, objects, actions, and attributes. A metaphor provides an analogy to concepts already familiar to the user, from which the user can deduce the system’s use and behaviour. Icons can express the metaphor directly, as graphical representations of the metaphorical objects. They may also directly represent a physical object.

Icons are distinguished from other user interface symbols by the fact that they represent underlying system functions. Icons represent the objects, pointers, controls and tools making up the domain of an application that users manipulate in doing their jobs. They can also represent status indicators used by the computer system to give information to the user and to mediate user interactions with software applications..<sup>50</sup>

Technical authors, Mullet and Sarno provide clear direction to designers of icons stating:

A crucial aspect of visual imagery is the speed and directness of recognition and identification. Selecting the correct approach for a particular communication task is more a discipline than a technique:

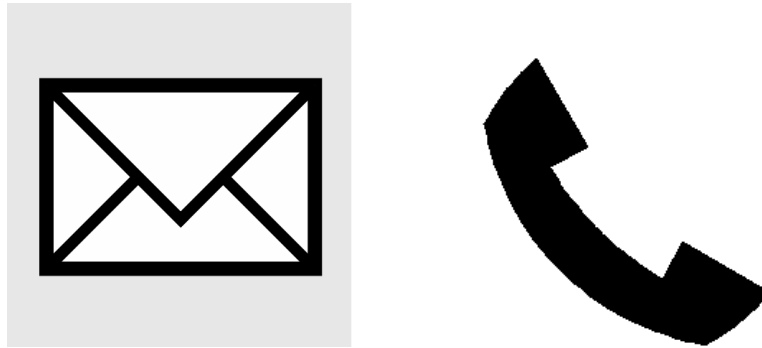
1. Use an icon if the concept to be communicated is a familiar object or an externally obvious state.

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<sup>50</sup> ISO/IEC TR 11581-1:2011(E) ) © ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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2. Consider developing a conventional symbol if the concept will be used repeatedly throughout an application, especially if an existing sign can be borrowed from the real world.
3. Otherwise, use a textual label, especially if the concept to be communicated is an abstract process or a subtle transition between states.
4. Avoid mixing text, icons and symbols within a single image.<sup>51</sup>



*Views of widely used standards icons for mail and phone.*

The ability for masses of people to easily recognize an icon relies on the familiarity of the symbols. Named inventor Freddy Anzures defines this goal in his testimony: “Familiar in the sense that designers have a general understanding of the symbols and icons that people, in general, see every day in their lives.” Anzures Dep. at 63. One such symbol depicted in the D’305 Patent is the icon for mail, a widely used International Standards Organization symbol showing an envelope.<sup>52</sup> Another symbol depicted in the D’305 Patent is the phone icon, a commonly used symbol shown above from a leading designer symbol sourcebook compiling ISO, AIGA and other worldwide standards, signs and symbols. It was created with the angled position to show activity.<sup>53</sup> Details such as the angle of the phone receiver in D’305 requires disciplined thinking as noted by Mullet and Sarno above to effectively communicate the purpose of the icon. Anzures noted this when describing the design stating, “it’s the angle at which you would pick up the phone.” Anzures Dep. at 205. Apple’s iOS Human Interface Guidelines set out above emphasize the functionality of these types of choices.

Color integrated into the icon can reinforce the function of the icon. The phone icon depicted in the D’305 Patent uses a green background; green typically communicates go, active or good state, all useful meanings when trying to tell a user where to push to make a call. Many user interface guidelines reinforce the use of color as a functional element as noted by these widely used Microsoft desktop guidelines:

Color is typically used in UI to communicate:

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<sup>51</sup> (Mullet & Sano 1995)

<sup>52</sup> ISO/IEC 24755:2007(E).

<sup>53</sup> Official Signs and Icons, Ultimate Symbol, Inc. 2002

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1. Meaning: The meaning of a message can be summarized through color. For example, color is often used to communicate status—where red is a problem or error, yellow is caution or warning, and green is good.
2. State: An object’s state can be indicated through color. For example, Windows® uses color to indicate selection and hover states. Links within Web pages use blue for unvisited and purple for visited.
3. Differentiation: People assume that there is a relationship between items of the same color, so color coding is an effective way to differentiate between objects. For example, in a control panel item, task panes use a green background to visually separate them from the main content. Also, Microsoft® Outlook® allows users to assign different colored flags to messages.
4. Emphasis: Color can be used to draw users’ attention. For example, Windows uses blue main instructions to help them stand out from the other text.<sup>54</sup>

As noted above, the functional use of color is depicted in the D’305 Patent. Functional use of color establishes user expectations that user interactions in the application will follow consistent behaviors.

Icons are functional because they communicate applications or features in an efficient, small area to a wide range of people and cultures as compared to text. Apple interface designer Freddy Anzures testified to this functional aspect of the icons noting, “In my opinion as a designer, the main reason to use icons on a touchscreen display is, obviously, there isn’t a lot of real estate to present text or labels that may represent those icons. Also, icons serve a role of providing a picture that can be understood by many different types of people; whereas, if things were rendered in a text or letters, you’re limiting it based on the language of people who are using it.” Anzures Dep. at 29-30.

The icons on a graphical user interface are a fundamental, functional element for human-computer interaction. Thus, the rounded square elements with graphics in them in the D’305 “design” are merely functional, and not decorative.

#### *The Functionality of Words Under Icons*

Underneath each of the rounded square elements in D’305, there are words, or labels, that reinforce the functionality of those icon elements by providing additional description of it. When used as a complement to an icon, small text descriptions can be efficiently changed to accommodate other languages. As stated in the International Standards Organization document, the label is used to provide language-based information to supplement the icon display.<sup>55</sup> And as shown by the study related to the Simon phone development, labels have a highly functional role in conveying information to the largest group of potential users of an interface.

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<sup>54</sup> <http://msdn.microsoft.com/en-us/library/windows/desktop/aa511283.aspx>

<sup>55</sup> International Standards Organization document ISO/IEC 24755:2007(E) 4.2.



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Words underneath icons in a graphical user interface are a fundamental, functional element for human-computer interaction. Thus, the word, or label, elements of the D’305 “design” are merely functional and not decorative.

Because rectangular display, the icon grid, the icon dock, and the size, shape and number of the icons, and the status indicators, the icons (themselves), the words under an icon, all on a graphical user interface are fundamental, functional elements for human-computer interaction, it is my opinion that the graphical user interface design shown in D’305 patent is functional, not decorative, whether taken as individual elements or the design as a whole.

**Design Patent D 617,334**

The D’334 patent application was filed on July 15, 2008, and the patent issued on June 8, 2010. The D’334, is entitled “Graphical User Interface for a Display Screen or Portion Thereof” like the other two design patents at issue here. The D’334 patent depicts eight variations of the same design in shades of black and white. The overall rectangular shape of the D’334 matches exactly the outline in the D’790 and D’305 Patents. In comparison to the D’790 Patent and the D’305 Patent, there are changes to the symbols and nomenclature in the status indicators, 2-3 additional rounded square icons for a total of 18-19, changes to the Calculator icon and two dots in the lower portion of the black area and above the shaded gray area.



*Figs. 1 and 2 of D617,334*

Given that this is a claim for a graphical user interface screen, I will assume for the sake of this report that the symbols and nomenclature are at the top of the large rectangular area are status indicators on a screen, the upper 14 or 15 squares with rounded corners and the lower 4 squares with rounded corners are selectable icons on a screen, and that the two dots, one lighter and one darker, are page indicators.

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As discussed above concerning the D’305 Patent, the status indicators and icons in a grid in a graphical user interface are a fundamental, functional element for human-computer interaction. Thus, the corresponding elements of the D’334 “design” are merely functional and not decorative for all of the same reasons.

*Functionality of Page Indicators*

Unlike the D’334, the D’305 ’has two small dots on the lower portion of the screen. Based upon my assumption that these dots represent page indicators within a menu structure in a use interface, they are purely functional because they visually show which of two pages is displayed. Such page indicators in a graphical user interface are a fundamental, functional element for human-computer interaction. Thus, the dot elements of the D’334 “design” are merely functional and not decorative.

Accordingly, it is my opinion that the claimed elements of the D’334 design are all functional, and not decorative, whether taken as individual elements, or the design as a whole.

**The Asserted Trade Dress Is Functional**

The Asserted Trade Dress comprises three elements relating to the GUI of the devices. This report will address these aspects of the Asserted Trade Dress, but will not discuss the hardware-related elements.

According to Apple, the GUI-related elements of its Asserted Trade Dress are:

- when the device is on, a matrix of colorful square icons with evenly rounded corners within the display screen;
- when the device is on, a bottom dock of colorful square icons with evenly rounded corners set off from the other icons on the display, which does not change as other pages of the interface are viewed;
- and when the device is on, a row of small dots on the display screen.<sup>56</sup>

For all the reasons noted in the Evolution of Graphical User Interface Design As a Functional Tool and the Analysis of Functionality of Apple’s Asserted Design Patents sections above, in my opinion, each of the three Asserted Trade Dress elements is functional.

**The Asserted Trademarks Are Functional**

The Asserted Trademarks as set forth in Apple’s Amended Complaint comprise the following U.S. Registrations:

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<sup>56</sup> See Amended Complaint ¶¶ 33, 35, 56, 59.

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3,886,196  
Icon for  
Telephone Calls



3,886,169  
Icon for Notes



3,889,642  
Icon for Messaging



3,886,197  
Icon for Contacts



3,886,200  
Icon for Photos



Application No. 85/041,463  
(Purple iTunes Store Trademark)  
and



3,889,685  
Icon for Settings



Registration No. 2,935,038  
("iTunes Eighth Note and CD  
Design Trademark")

These icons are used by Apple to identify various applications and services. The design patent functionality section above discussed the functional attributes of icons to some extent. In the definition noted above as set forth by the International Organization for Standardization,

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“Icons are used on Information and Communications Technology (ICT) products to facilitate interaction with their users...” and “provide a metaphorical representation of the user’s tasks, objects, actions, and attributes. A metaphor provides an analogy to concepts already familiar to the user...” “Icons can express the metaphor directly, as graphical representations of the metaphorical objects. They may also directly represent a physical object.”<sup>57</sup> The Asserted Trademarks use familiar metaphors in this way to represent computer functions on a graphical user interface for ICT products. “They... facilitate the user’s ability to learn, understand, and remember functional elements of the system, and aid in the manipulation of these elements. They are especially suitable for elements that are frequently used and where the meaning of the icon can be easily understood.”<sup>58</sup>

Icons are most functional when they use symbols that are “already familiar to the user” such as an envelope for mail or phone for making a phone call as noted earlier. Deviating from these established symbols is not recommended. The ISO document states “Abstract geometric symbols should only be used when the search for metaphorical solutions has been exhausted. Although there are few conventions from which the meaning of abstract symbols can be derived (e.g. flowcharting, safety/road traffic signs), there are no clear conventions or guidelines as to their universal use and interpretation.”<sup>59</sup>

Because the Asserted Trademarks are used as icons they are functional. Each Asserted Trademark will be discussed below.



3,886,196  
Icon for Telephone Calls



Telephone, Official Signs and Symbols<sup>60</sup>

The Trademark Icon for Telephone Calls uses a familiar and conventional icon for the function of making a phone call. The depicted asserted trademark also employs color functionally to convey the well documented use of green to communicate go, active or good. In my opinion, Apple cannot “own” this icon because if it did, other manufactures would be

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<sup>57</sup> ISO/IEC TR 11581-1:2011(E) ) © ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

<sup>58</sup> ISO/IEC TR 11581-1:2011(E)

<sup>59</sup> ISO 80416-4:2005(E)

<sup>60</sup> Official Signs and Icons, Ultimate Symbol, Inc. 2002

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prevented from using the one of the best and most efficient methods of visually communicating to users how to make a phone call on their devices.



3,889,642  
Icon for Messaging



The three most common speech balloons (top to bottom: speech, thought, scream).<sup>61</sup>

The Trademark Icon for Messaging uses a familiar and conventional icon for the function of messaging. The use of “speech bubble” symbol in western graphic art dates back to the 13<sup>th</sup> Century. The particular depiction of a speech balloon is the most common and likely most familiar convention for this metaphor. Speech bubble icons are synonymous with comments and other forms of messaging in information and communication technology. The depicted asserted trademark also color functionally to convey the well documented use of green to communicate go, active or good. In my opinion, Apple cannot “own” this icon because if it did, other manufactures would be prevented from using one of the best and most efficient methods of visually communicating to users how to access the text messaging feature of their devices.



3,886,200  
Icon for Photos



Photo software icon

The Icon for Photos uses a metaphorical representation of a photograph. Although, not a direct representation of a physical object, the close-up image of a flower is a widely used and functional convention to communicate photographs. This image was used by Adobe for photo software. In my opinion, Apple cannot “own” this icon because if it did, other manufactures would be prevented from using one of the best and most efficient methods of visually communicating to users how to access the photographs on their devices.



3,889,685  
Icon for Settings



Typical Settings Icon

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<sup>61</sup> [http://en.wikipedia.org/wiki/Speech\\_balloon](http://en.wikipedia.org/wiki/Speech_balloon)

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The Icon for Settings uses a metaphorical representation of a gears or ‘inside the machine’ and is an established convention in the area of computers for utilities, preferences and settings. In my opinion, Apple cannot “own” this icon because if it did, other manufactures would be prevented from using one of the best and most efficient methods of visually communicating to users how to access the computer utilities of their devices.



3,886,169  
Icon for Notes



ISO Standard Icon<sup>62</sup> and physical representations of a real-world notepads.

The Icon for Notes uses a familiar and conventional icon for the function of making notes. The use of physical representation of the notepad object is documented as a standard icon information and communication technology and is a common and familiar convention for this metaphor in other domains. The depicted asserted trademark also uses a conventional colors of yellow lined paper associated with a real-world notepad or “legal pad.” In my opinion, Apple cannot “own” this icon because if it did, other manufactures would be prevented from using one of the best and most efficient methods of visually communicating to users how to access the note taking feature of their devices.



3,886,197  
Icon for Contacts



ISO Standard for Address Book Icon<sup>63</sup>

The Icon for Contacts uses a familiar and conventional icon for the function of managing contacts. The use of physical representation of an address book object is documented as a standard icon information and communication technology and is a common and familiar convention for this metaphor in other domains. In my opinion, Apple cannot “own” this icon because if it did, other manufactures would be prevented from using one of the best and most efficient methods of visually communicating to users how to access the address book feature of their devices. Use of a silhouette is also a common symbol to represent a person, particularly one for whom no photograph is available, such as school yearbooks and online identification images (such as Facebook, etc.).

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<sup>62</sup> ISO/IEC 24755:2007(E)

<sup>63</sup> ISO/IEC 24755:2007(E)

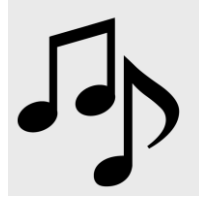
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Application No. 85/041,463 (Purple iTunes Store Trademark) and



Registration No. 2,935,038 (“iTunes Eighth Note and CD Design Trademark”)



<sup>64</sup>

ISO Standard for Audio Application



Music Symbol, Official Signs and Symbols <sup>65</sup>



Compact Disc, Official Signs and Symbols <sup>66</sup>

The Application No. 85/041,463 (Purple iTunes Store Trademark) and Registration No. 2,935,038 (“iTunes Eighth Note and CD Design Trademark”) use familiar, conventional icons for the function of playing and managing music as products and services in the Information and Communication Technology and Entertainment in general. Separately, the Compact Disc and the Eight Note are international standards. The combined use of a the Eight Note and a Compact Disc is common metaphor to show the ability to play and manage music on a computer. The depicted asserted application and registration also use a purple color often used in entertainment metaphors since the purple is a vibrant color and not confused with other colors such as red, yellow or green which have established meanings such as problem or error, caution or warning, and active or good respectively. In my opinion, Apple cannot “own” this icon because if it did, other manufactures would be prevented from using one of the best and most efficient methods of visually communicating to users how to access the digital music-related applications of their devices.

In summary, for the reasons stated above, the trademarks asserted in Apple’s Amended Complaint are functional.

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<sup>64</sup> ISO/IEC 24755:2007(E)

<sup>65</sup> Official Signs and Icons, Ultimate Symbol, Inc. 2002

<sup>66</sup> Official Signs and Icons, Ultimate Symbol, Inc. 2002

### **Analysis of Prior Art Regarding Design Patents D'790, D'305, and D'334**

The following section considers a number of prior art references for the D'790, D'305, and D'334 patents. I base my analysis of the patents and the prior art on the testimony of the inventors named on the patents, Imran Chaudhri and Freddy Anzures, who testified about their own understanding of what these patented designs claim. I have made no judgments as to whether they have accurately described these patents, nor have I offered my own alternative claim interpretation.

According to Imran Chaudhri, the D'790 patent appeared to be the homescreen of the iPhone. Chaudhri Dep. at 133:11-12. The square elements in the patents were called "icons". *Id.* at 133:18. And these icons are laid out in "two sections". *Id.* The first section included the upper rows of icons, and the second section included the bottom row of icons below a blank area. *Id.* at 133:18-24. Chaudhri testified that this arrangement included "rows and columns that are orderly — laid out in an orderly fashion." *Id.* at 135:11-14. He also called the layout "clean," "regular," and "predictable." *Id.* at 135:17-24. Regarding the space above the bottom row of icons, Chaudhri stated that this was a place where additional icons could go, so there was "really no difference between it and the three by four above it." *Id.* at 139:24-25. He also stated that he did not know if the blank row was a part of his invention, but that it was "more a result of how many icons are on the screen." *Id.* at 143:16-144:12. If more icons were added to the D'790 layout, they would go in the empty row, he said. *Id.* Chaudhri also stated that the D'790 design would be substantially the same if one, two, three, or four icons were added to the empty row. *Id.* at 188:4-17. Also, according to Chaudhri, the spacing between the rows of icons in the upper section included "an appreciable amount of room to accommodate a label that would indicate what the icon is." *Id.* at 159:25 and 160:1-2. He also stated that in comparison to the D'334 patent, the D'790 patent was lacking in details and was minimalistic. *Id.* at 207:9-23.

Freddy Anzures noted that the D'790 patent included "round rects," or rectangles, that he assumed were icons. Anzures Dep. at 159:24-160:18. Anzures also stated that the D'790 included a specific spacing and scale for the icons "with respect to the aspect ratio of the screen." *Id.* at 160:21-161:3. He also testified about the D'790 patent that "the visual proportion creates a hierarchy when you look at the device," and that the "four at the bottom" and the "cluster above it" communicates "a certain hierarchy of use, of what's important." *Id.* at 160:23-161:3.

Imran Chaudhri stated that the D'334 design included "icons" and a "dock". *Id.* at 192:6-7. He did not know whether the words "AT&T" or "YouTube" were a part of the claimed design. *Id.* at 194:25-195:25. He identified a number of icons, including a "Phone" icon that had a telephone receiver or handset in it, *id.* at 170:4-25; a "Text" icon that had a "speech bubble" or "chat bubble" in it, *id.* at 172:14-9; a "Notes" icon with a picture of a memo pad, *id.* at 173:11-15; an "iTunes" icon with "music notes" in it, *id.* at 173:21-174:8; a "settings" icon that included gears, *id.* at 176:13-177:3; a "photos" icon that depicted a flower, *id.* at 179:13-20, and an icon above the words "YouTube" that depicted an old-style television, *id.* at 184:12-20.



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Regarding the D'305 patent, Chaudhri indicated that it was substantially the same as the design in the D'334 patent. Chaudhri Dep. at 203:8-13. He noted as differences that the D'334 design had "page dots" and a "pause button or icon," which the D'305 design did not, and that these were the differences that made the D'334 design a "new and different design when compared to the '305 patent." *Id.* at 204:3-205:12. Regarding the D'305 patent, Anzures stated that it was the "visual execution" of the D'790 layout. Anzures Dep. at 162:20-21. He also stated that it had a "bottom dock". *Id.* at 50:11-12. Anzures also indicated that he thought "the idea of having applications on a phone and presented in rounded rectangles or rounded squares for icons . . . had not been done before." *Id.* at 53:6-11. Chaudhri stated that the D'305 design was "substantially the same as the layout that is shown in the D'790 design patent." Chaudhri Dep. at 198:2-6.

### Anticipatory Reference for D'790, D'305, and D'334

#### 1. January 9, 2007 Public Announcement of the iPhone by Apple



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On January 9, 2007, several months before the alleged conception date for D'790 and D'305, and over a year before the alleged conception of D'334, Steve Jobs publicly announced the iPhone and Apple released images showing a display screen that is substantially the same as the D'790, D'305 and D'334 designs. The only difference between the images released by Apple in January 2007 and the D'305 patent appears to be that the D'305 patent shows a different number on the icon above the word Calendar, it has the addition of an icon featuring an old-style television, and the icons labeled Calculator, Notes, Clock and Settings have moved in their relative positions. An ordinary observer would find these designs to be substantially the same. And although there are a few extra differences between the January 9th image and the D'334 patent, these would be considered minor and obvious to someone skilled in the art. The addition of an extra icon in the case of the D'790 patent, or four extra icons for the D'334 patent, would be obvious to a designer skilled in the art, especially in light of the testimony by Imran Chaudhri that adding icons in the blank row would still yield substantially the same design.



*Comparison between D'305, the Jan. 9, 2007 image, D'334, and D'790*

## Primary Obviousness References for D'790, D'305, and D'334

### 1. BellSouth/IBM Simon Personal Communicator — (1993)

The Simon Personal Communicator was developed as a joint venture between BellSouth and IBM in the early 1990s and was first shown publicly at a trade show in 1992. The phone was released in 1993 and utilized a touchscreen interface. The interface had a dock of four icons at the bottom of the screen. The phone also ran applications, and the icons for these applications were arrayed in rows and columns, and included a calendar, world clock, calculator, note pad, mail, and address book. The grid pattern provided enough room to accommodate text below the icons. And as can be seen in the middle image below, the background displayed behind the four bottom row or "dock" icons is different than that behind the icons displayed above, helping it to

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stand out in a visual hierarchy. The dock is also static though the remainder of the screen changes, just as the dock in the GUI design patents remains static while pages of icons are scrolled through, according to Mr. Chaudhri. Chaudhri Dep. at 134:4-10.

The Simon phone shows that from the inception of the "smartphone" era, the obvious and intuitive way to create a touch user interface was through icons and rounded rectangular elements depicting common, everyday metaphors and arranged in a grid pattern of rows and columns. Using the Simon interface as a primary reference in combination with the collection of icons in the chart at the end of the section, a designer of ordinary skill in the art could arrive at a design that is substantially the same as the D'790, D'305, and D'334 patents. I believe this because as telephone and touchscreen technology has improved, phones have decreased in size from what they were in the early 1990s and display screens have become much more high resolution. Designers can visually communicate more in a smaller area than was possible with lower resolutions and larger pixel dimensions in older devices. Reducing the size of the Simon to account for these changes would yield a display screen with dimensions more similar to the three design patents. Maintaining the dock already present in the Simon, a designer would find it obvious to arrange icons and text labels above that dock in rows and columns. A configuration of 4 columns would be obvious in light of the 4 icons in the dock, and as seen in the secondary references below, 4 or 5 rows of icons would be an obvious design choice if the display screen could accommodate it.



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The first image contains a row of four squares or icons at the bottom of the display screen, as do the D'790, D'305, and D'334. The second image of the Prada contains rounded rectangles arranged in a grid pattern. Although the grid pattern is 3x5 in the LG Prada and 4x4 with an apparently missing row in D'790, it would be obvious to a designer skilled in the art to alter the number of rectangles in the rows and columns to match what is displayed in D'790 if the designer had a reason to make this change. This is especially true because the image on the left already has four icons in a row, so it was apparent to the designers of the LG Prada that a row of four was feasible if desired. And as seen in the image on the bottom right, the LG Prada displayed icons with text below them, arranged in a grid pattern. For these reasons, I believe the user interface of the LG Prada is a primary obviousness reference for the asserted GUI patents.

In combination with secondary references, the LG Prada user interface renders as obvious the designs in the D'790, D'305, and D'334 patents, as they are claimed by Apple's designers. For example, the four icon dock at the bottom of the screen could be used in combination with a device such as the BlackBerry 7130e to create a 4x4 grid of colorful icons with a missing row above the fourth row, like D'305, or a 4x5 grid with a missing icon in the fourth row, like the D'334. And as with many of the other prior art devices in this report, the LG Prada displays icons using common everyday metaphors. For example, there is an icon featuring the receiver of an analog phone, a gear wheel, an envelope, and an address book. These features further render obvious the individual icons in the D'305 and D'334 patents.

#### **4. Finnish Design Application 20030256**

Design application 20030256 from Finland was published on April 29, 2004. It depicts an organization of icons in 4x5 grid pattern. The icons are rounded rectangles and are evenly spaced. The icons also contain images that are used in graphical user interfaces as common metaphors. For example, the following images are present: an analog phone receiver, musical eighth notes, a note pad, a calendar, a clock, and a spiral bound address book.



*Comparison views of D'305, Finnish Design Registration 20030256, and D'334*

The above side-by-side comparison shows that the Finnish design is very similar to the designs in the D'305 and D'334 patents. For example, the Finnish design does not include text below the icons and there is no status bar or region at the top of the display. The D'305 and D'334 patents each have empty or blank spaces above the dock, while the Finnish design has a full grid.

I believe it would have been obvious to a designer skilled in the art to remove some of the differences between the Finnish design and either D'305 or D'334. For example, a slight re-scaling of the Finnish design so that it displays squares instead of rectangles makes the grid pattern, icon size, and icon spacing virtually identical to that in the D'305 and D'334 patents:



*Comparison views of D'305, re-scaled Finnish Design Registration 20030256, and D'334*

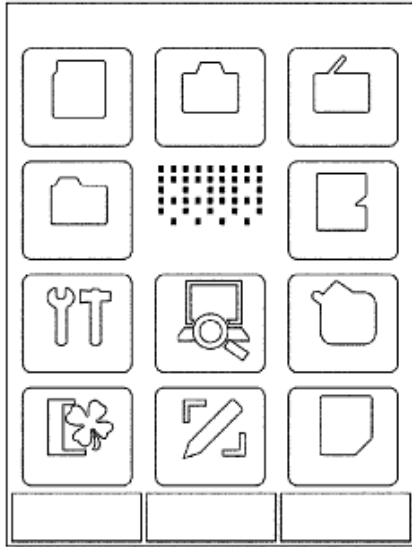


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Also, as explained below, adding text to label icons was a common and obvious design choice at the time the D'305 and D'334 were allegedly conceived. Status bars were another commonplace design choice for user interface displays in mobile devices in 2007. Thus, any modifications or secondary reference combinations needed to make the Finnish design substantially the same as the D'305 and D'334 designs would have been obvious to a designer skilled in the art of creating a graphical user interface for a mobile device in 2007.

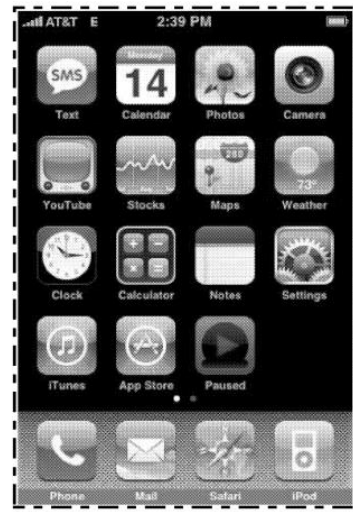
**5. Japanese Design Patent D1279226** (Issued Aug. 21, 2006)

The Japanese design patent below shows that several design elements said to be claimed in the asserted GUI patents were obvious prior to their alleged conception. Most notably, the use of rounded squares for icons or icon containers. Also, the arrangement of those rounded squares in two sections. Just as Mr. Chaudhri and Mr. Anzures testified regarding the D'790 patent, the Japanese reference below has a row of icons at the bottom of the display that are part of a different visual hierarchy from the icons above, which can help in denoting their importance.



**6. Sharp Zaurus SL-6000L**

The Sharp Zaurus SL-6000L was released in 2004 and includes a user interface with colorful square icons arranged in a grid pattern.



*Comparison views of D'305, Sharp Zaurus SL-6000L, and D'334.*

The above side-by-side comparison shows the three designs to be similar to one another. For example, the user interface display in the Sharp Zaurus SL-6000L contains an array of colorful icons arranged in a grid pattern. The icons are square in all three displays. There are also text labels below each icon for all three. The Sharp Zaurus SL-6000L display also includes a status bar that shows information such as the time and battery strength, although it is located at the bottom of the screen, not the top. The Sharp Zaurus also includes a number of icons with the same or similar text and metaphor as the D'305 and D'334 patents. For example, all three have an icon with the word "calendar" below a calendar page with a day and number on it; all three have an icon above the word "clock" with an image of a clock on it; all three include an icon labeled "calculator" with the addition, subtraction, multiplication, and division symbols arranged in a 2x2 grid on it; and all three have an icon labeled "mail" or "Email" with a picture of an envelope on it. Also, both the Sharp Zaurus SL-6000L and the D'334 patent have an icon

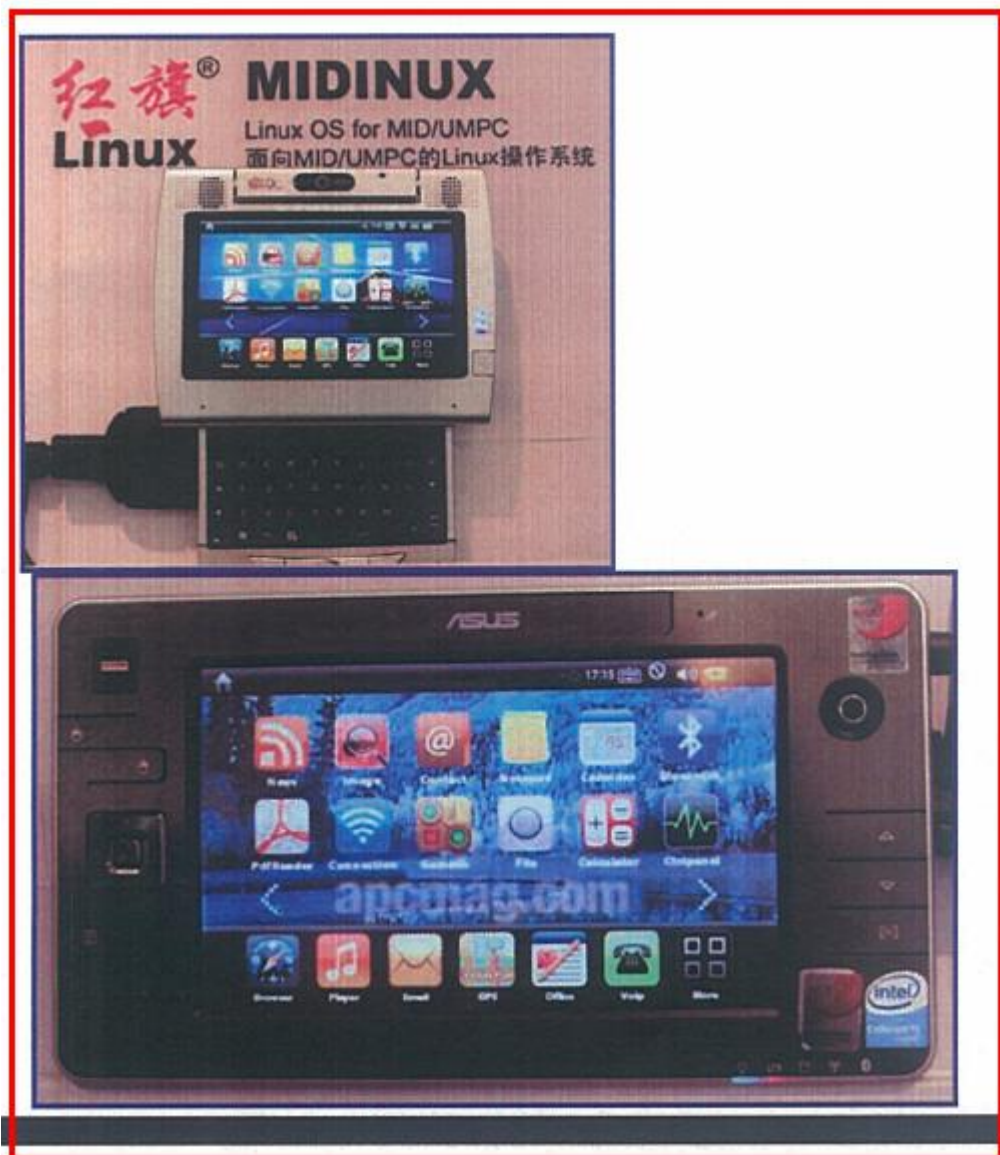
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featuring musical eighth notes and a circular element. Each of these two designs also has 5 rows of icons.

There are a few differences between the Sharp Zaurus SL-6000L design and the two Apple designs. For example, the Sharp Zaurus SL-6000L design has 3 columns while the D'305 and D'334 patents have 4 columns.

**7. Midinux**

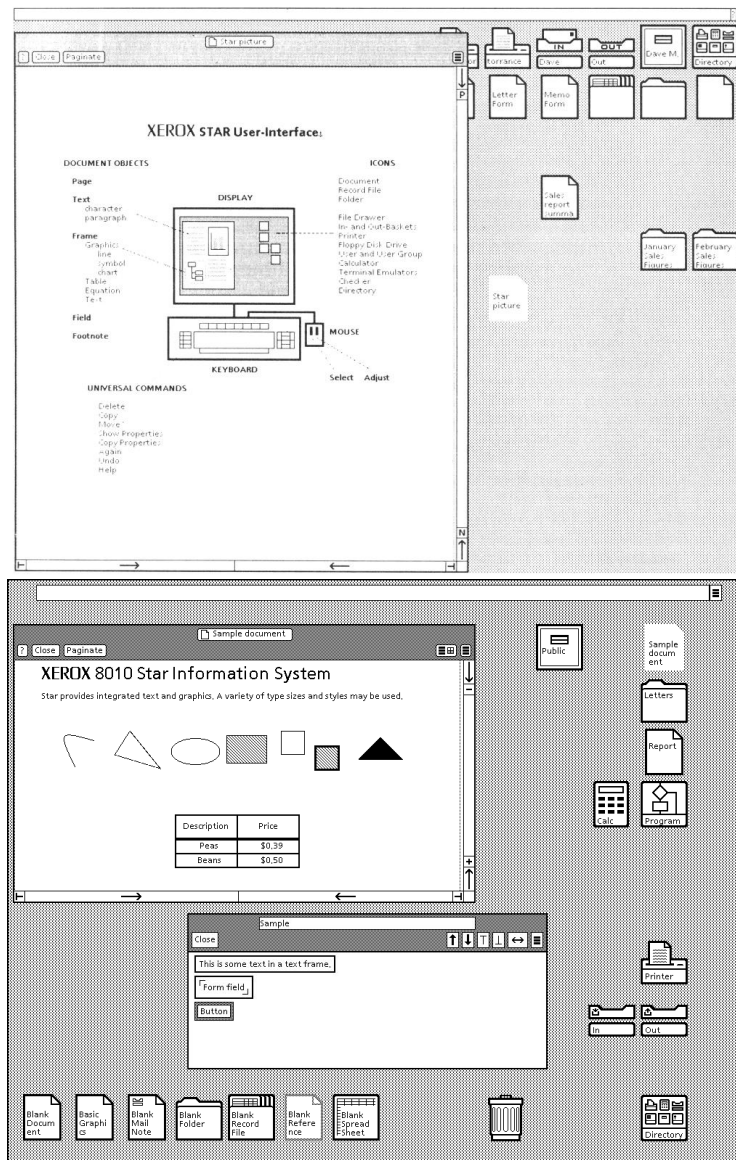
The Midinux was released on April 18, 2007 and includes a user interface with colorful rounded square icons with labels beneath that are arranged in a grid pattern, and a dock of icons at the bottom of the screen.



## Early Development of Computer Graphical User Interfaces

### 1. Xerox Star display – (1981)

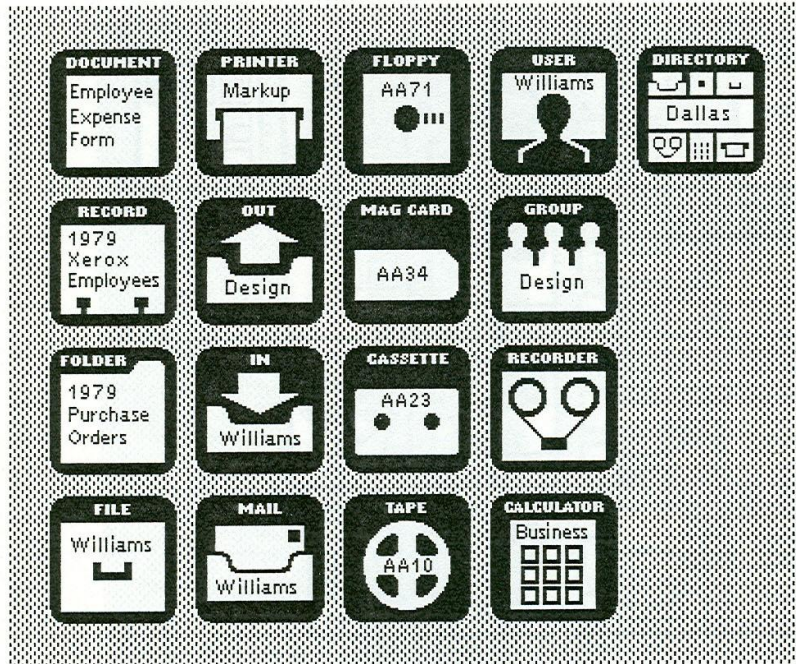
The Xerox Star, released in 1981, featured a functional icon layout with icons arrayed in a grid pattern. Frequently used icons were placed at the bottom of the screen and were given text labels. Many icons were square with rounded corners. This reference was the basis for the contemporary development of iconography. The display also contained a status bar at the top of the display.



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The following image shows a Xerox design study that was done in 1980. The image shows a graphical user interface design using square icons with rounded corners. The icons are displayed in an evenly spaced grid pattern. Combining this reference with the icons collected below would be enough to create designs that are substantially the same as the D'305 and D'334 designs. Removing the content of the icons to leave only the outlines of rounded squares would yield the D'790 patent.

Figure 2.  
Set 2 (Bowman)



- |             |                          |             |            |           |
|-------------|--------------------------|-------------|------------|-----------|
| document    | printer                  | floppy disk | user       | directory |
| record file | out-basket               | mag. card   | group      |           |
| folder      | in-basket                | cassette    | recorder   |           |
| file drawer | in-basket<br>(with mail) | mag. tape   | calculator |           |

(<http://www.digibarn.com/collections/screenshots/xerox-star-8010/index.html>)

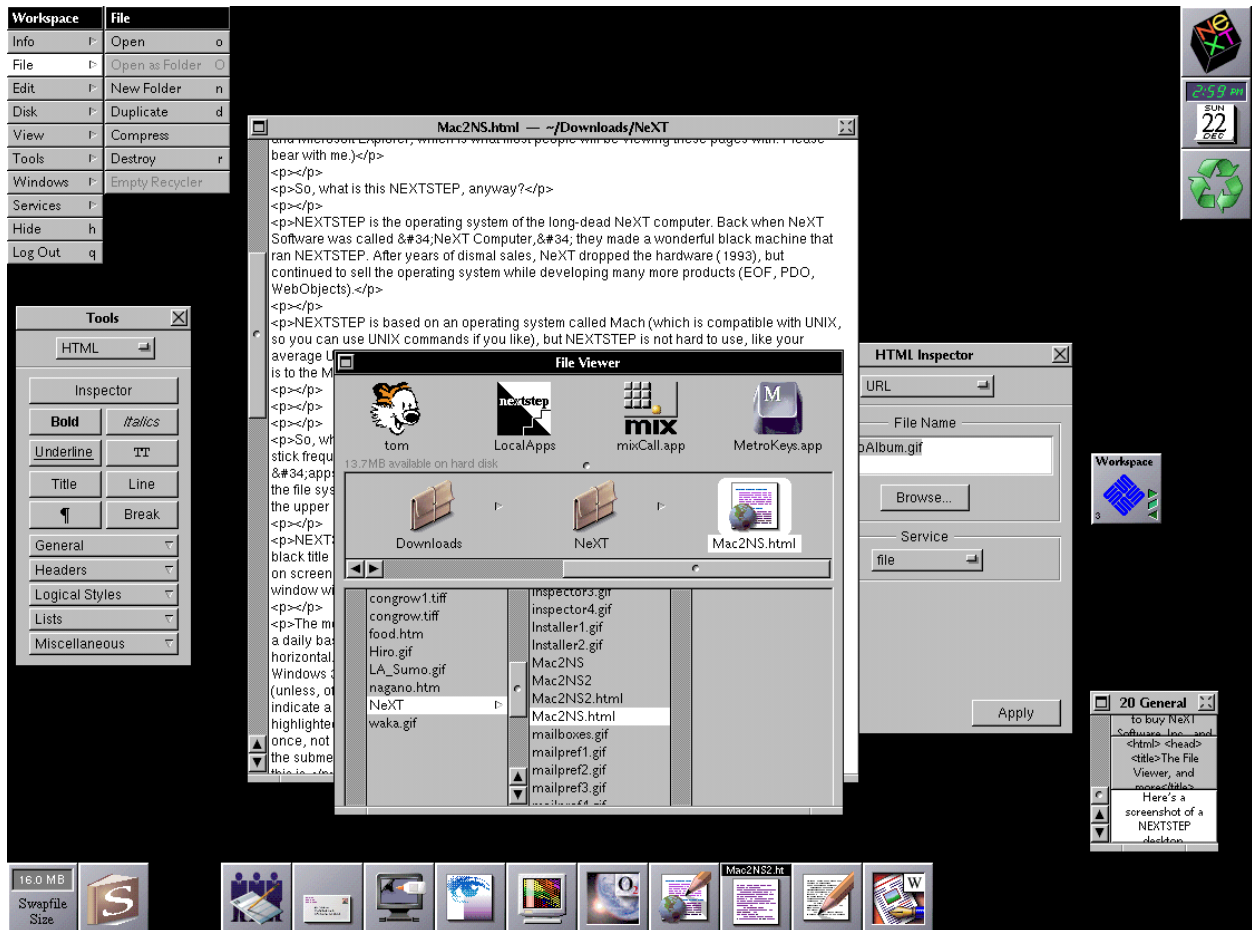
## 2. Arthur — Acorn Computers (1987)

In 1987, Acorn Computers released an operating system known as Arthur that utilized icons and a taskbar (or icon bar) at the bottom of the display. The system used common metaphors such as a clock, a calculator, a calendar, and a notepad for the icons. This reference helps render those metaphors as obvious for use in an operating system, as well as placing commonly used icons in a dock or taskbar at the bottom of the display screen.



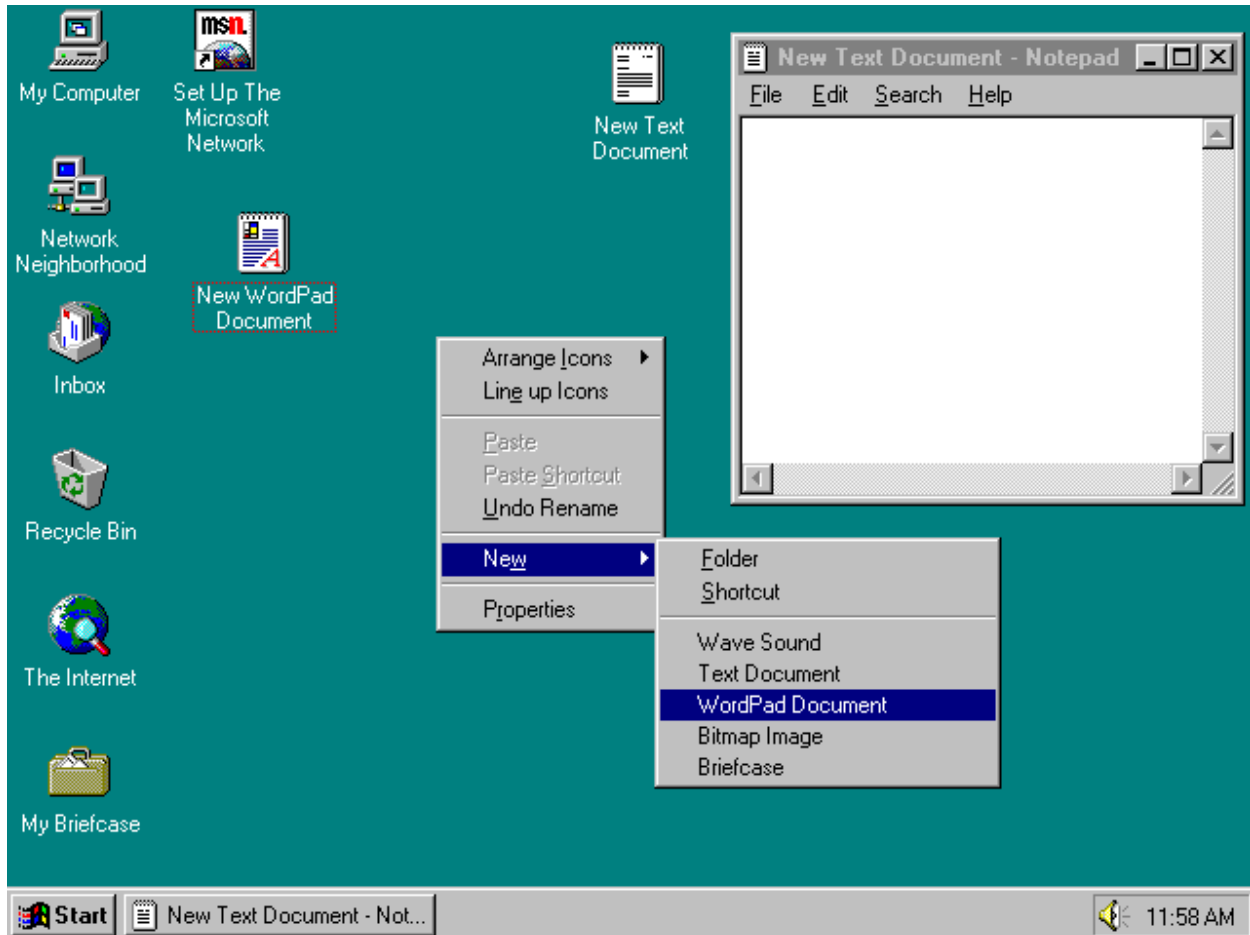
### 3. NeXTSTEP — (1989)

The NeXTSTEP user interface was released in 1989 and featured a dock where icons were gathered. The icons were squares with colorful images on them displaying the various metaphors that represented the underlying applications. This reference renders obvious the square shape of the icons in the GUI patents as well as the dock.



#### 4. Windows 95 — (1995)

In 1995, Microsoft released the Windows 95 graphical user interface-based operating system. The system featured icons, arranged in a grid pattern, included text labels below the icons, and a dock of applications in use.



#### 5. Mac OS X 10.4 — Tiger (2005)

The Tiger operating system, released in 2005, included a user interface application called the Dashboard. The Dashboard displayed a dock at the bottom of the screen where square icons with rounded corners were located. These icons also had text labels beneath them and the dock featured a background distinct from the background used for the main screen. Among the icons in Dashboard were those for calculator, calendar, and stocks applications or "widgets". Several icons, such as the calculator, calendar, and stocks icons look substantially the same as they do in the D'305 and D'334 patents.



## Development of PDAs and Phones with Graphical User Interface Systems

### 8. BellSouth/IBM Simon Personal Communicator — (1993)

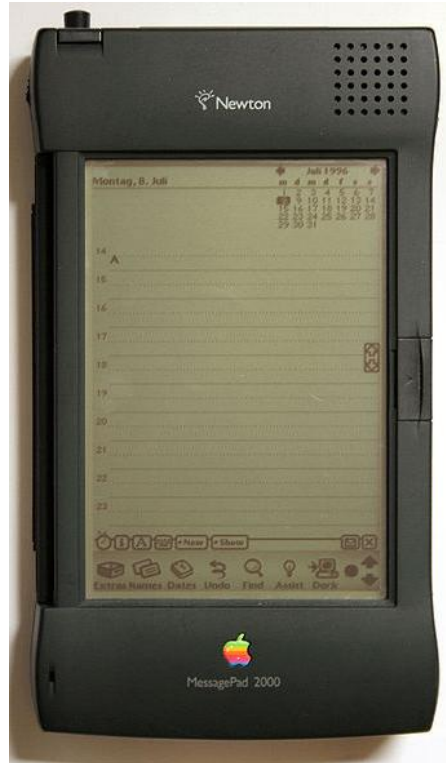
As mentioned above, the IBM Simon was the first "smartphone" and contained a number of features that Apple's inventors claimed were new and unique to the Apple GUI design patents.

### 9. MessagePad — Apple Newton — (1993)

The MessagePad was developed by Apple in the early 1990s and featured a touchscreen user interface. Various models of the MessagePad are shown below, all of which feature a user interface with icons arrayed in a grid pattern, with common applications represented in a dock, usually at the bottom of the screen.



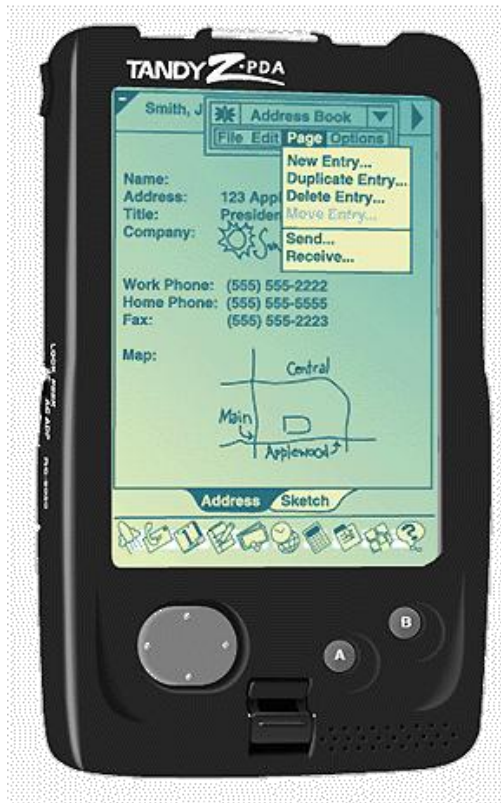
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### 10. Tandy Zoomer — (1992)

In 1992, the Tandy company released the Tandy Zoomer, which was a personal digital assistant ("PDA"). The Zoomer was a touchscreen device and the graphical user interface utilized icons arrayed at the bottom of the screen in a dock region. The icons included a calendar page, an analog phone receiver, a calculator, a writing pad, and a world clock.



### 11. Handspring Visor — (1999)

Like its predecessors, the Handspring Visor user interface displayed icons arranged in a grid pattern with text labels beneath. A dock of four icons for commonly used tasks surrounded a stylus input matrix in a 2x2 grid. The Visor had icons for common applications such as calculator, date book, mail, addresses, and world clock. The Visor also had a status bar at the top of the display showing information such as the time and battery strength. A location indicator on the side of the display indicated the portion of the icon catalog being displayed on the screen. Although the user interface included a 3x4 grid pattern, it would be an obvious choice to a designer with skill in the art to create a 4x4 grid if the screen permitted. Using this device as a primary reference, adjusting the dock to look like the one in the Simon Personal Communicator, and adding square icons from the collection below, the display of the Visor could be easily altered to look substantially the same as the GUI patents.



## 12. Palm

### a. Palm i705

The Palm i705 is an example of an early PDA device made by Palm. The i705 device was released in January 2002 and the display maintained the same general appearance as the predecessor Handspring device.



**b. Palm Treo**

The Palm Treo is a line of PDAs beginning in 2002. Building off of the earlier Handspring and Palm devices, the Treo display featured colorful icons arranged in a grid pattern. The display also had a status bar at the top including information such as time, network, battery power, and signal strength. The devices also had icons for various applications such as messages, calendar, picture/video, calculator, memos, and contacts, and each icon had a text label beneath.



### 13. BlackBerry Devices

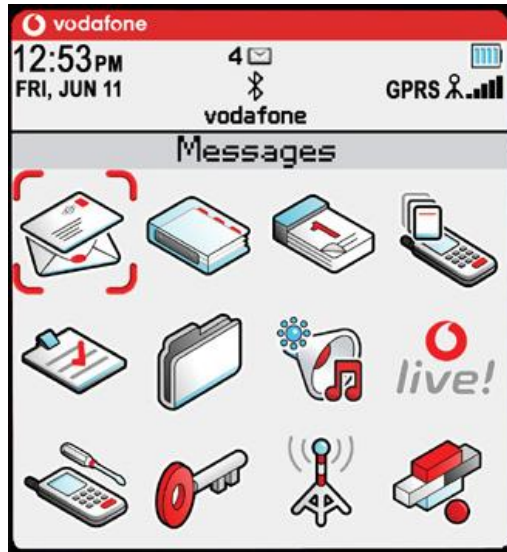
Beginning in the late 1990s, the company Research in Motion (RIM) developed and produced BlackBerry devices that operated as smartphones and PDAs. Representative pictures of the displays of various models are shown below. In general, the displays for the BlackBerry devices share many of the same features:

- Colorful array of icons
- Icons in matrix pattern
- Status bar or region at top of display screen, including information such as time, network, battery power, and signal strength.
- Icons for various applications such as messages, telephone calling, tasks, settings, notes, calculator, clock, volume, calendar, address book.

#### i) BlackBerry 6710 (released Oct. 2002))



#### ii) RIM BlackBerry 7100V (released around Oct. 2004)



iii) BlackBerry 7290 (released early 2005)



iv) BlackBerry 7130e (released Nov. 2005)

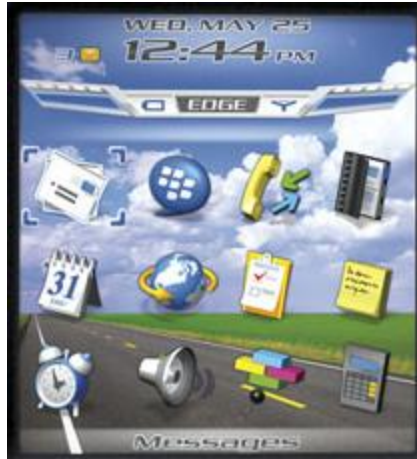


v) BlackBerry 8700C (released Nov. 2005)





vi) BlackBerry 8700g (released April 17, 2006)



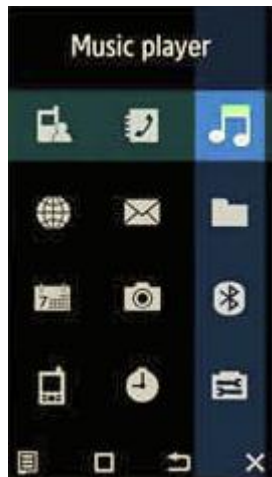
**14. Nokia N73** — (August 2006)

The Nokia N73 was announced in April 2006 and released in August 2006. As with many of the references above, the rectangular display on the device contained a matrix of colorful icons in a grid pattern. The icons used common metaphors such as eighth notes for the music player function, an envelope for messages, and a wirebound page displaying the day of the month the calendar function. One and two word text labels were used below each icon. All of these features were further rendered obvious to designers with skill in the art by the Nokia N73.



### 15. Samsung F700

The Samsung F700 was announced in February 2007, and like the LG Prada above, it contains a number of features later included in the D'305 and D'334 patents. The phone has a rectangular display screen presenting a grid of icons. There is a row of four icons at the bottom of the display screen, and the display includes icons using common metaphors such as the receiver of an analog phone, an envelope, musical eighth notes, a globe, the silhouette of a person, a camera, a wirebound calendar page that includes the day of the month, and a clock. These features, which are shared by a number of other prior art devices, had become common by the time they were used in the Samsung F700.



**Various Design Elements Already Known Prior to the Alleged  
Conception Dates for D'790, D'305 and D'334**

**1. Dot Indicators**

The Samsung F300 was announced in December 2006 and contained a dual face construction, one side being a phone and the other an MP3 player. The user interface for the MP3 player included a row of icons at the bottom of the display, including a common musical eighth note icon for the music player. Above each icon was a small filled circle, or dot, that increased in brightness when the user scrolled to that icon at the icon menu screen.



Like many of the previously discussed devices, the F300 also had a status bar or region at the top of the screen that displayed useful information such as the battery's strength.

**2. Square Icons and Containers with Rounded Corners**

The following references in this section all display square icons or containers with rounded corners. All of these pieces of prior art serve as secondary references of obviousness for the rounded square design feature, as well as other features, such as the use of a status bar and arrangement of icons in a grid pattern. Many of the individual icons shown in the designs below can also serve as secondary references for the obviousness of the individual icons in the D'305 and D'334 patents. Many of those icons have been collected in the chart at the end of this section.

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- a. **Korean Patent 30-20060005195** (Issued February 11, 2006)



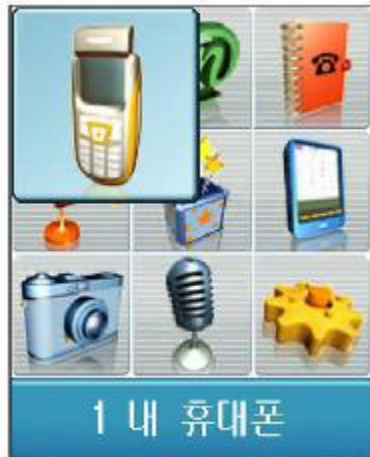
- b. **Nokia 7710** – (Released Nov. 2004)



- c. **European Community Design Registration No. 000505532-0001** (Published May 23, 2006)



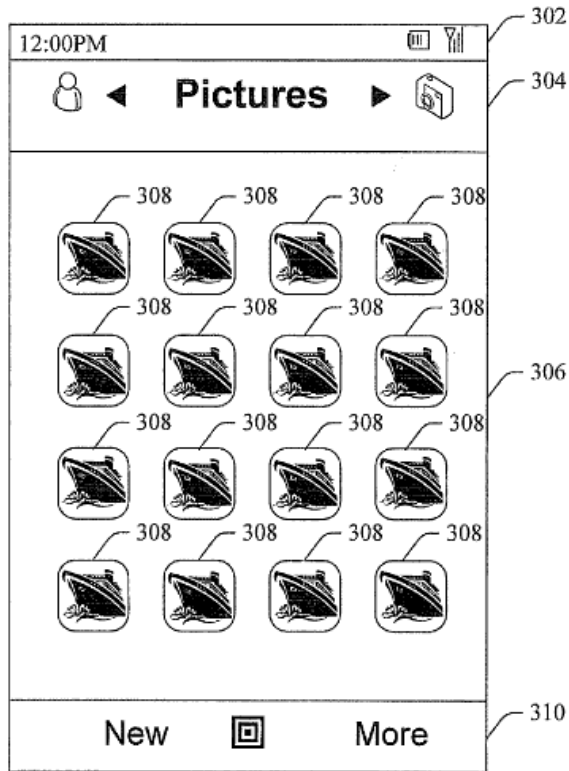
c. Korean Design Patent 30-0403504 (Published Jan. 10, 2006)



d. Japanese Design Patent D1189312 (Issued Nov. 5, 2003)



e. United States Patent Application Publication 2007/0067738 (Published Mar. 22, 2007)



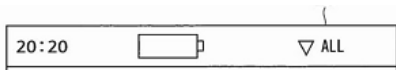
**FIG. 5**

**3. Status Bar or Region at Top of Display Screen**

The following is a sampling of devices and designs that present a status bar or region at the top of the display, including images that symbolize battery strength, signal strength, the name of a carrier and/or network, and the time. In almost every case, the signal strength and battery strength are indicated using parallel bars. In the case of signal strength, the bars increase in height from left to right, as with the D'305 and D'334 patents. And battery strength is often depicted using equal parallel bars inside the outline of a battery, as in the D'305 and D'334 patents. Time is also displayed in a number of the status bars below, and is usually depicted using numerals and the abbreviations "AM" or "PM".



Korean Patent 30-20060005195 (February 11, 2006)



US 2005/0183026 A1 (Aug. 18, 2005)



Community Design Reg. 000584529-0001 (Nov. 14, 2006)

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Windows Mobile 5.0 (2005)



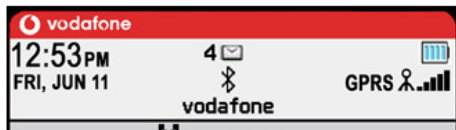
Windows Mobile 6.0 (Feb. 2007)



Palm i705 (Jan. 2002)



Palm Treo (Nov. 2006)



RIM BlackBerry 7100V Oct. 2004)



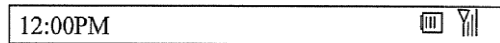
BlackBerry 8700C (Nov. 2005)



BlackBerry 7130g (Sept. 2006)



BlackBerry 6710 (Oct. 2002)




United States Patent Application Publication  
2007/0067738 (Mar. 22, 2007)



LG KE850 ("LG Prada") (Dec. 2006)













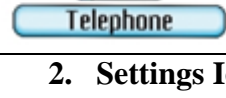

**4. Common Metaphors for Icons**

The following is a collection of prior art icons using the same metaphors that appear to have been used by Apple in the D'305 and D'334 patents.


Icon Features	Icon Images
<ul style="list-style-type: none"> <li>An icon featuring the receiver of an analog phone.</li> <li>Receiver depicted at a near</li> </ul>	<p><b>1. Phone Icons</b></p>
	 <p>Samsung M4300 (2005)</p>





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Icon Features	Icon Images
<p>45 degree angle.</p> <ul style="list-style-type: none"> <li>Green color often used either for the phone receiver or the phone.</li> </ul>	 Windows Mobile 5.0 (2005)  (08.2007 – KU990Viewty)  (09.2007 - LG KS20)  (05.2007 - LG U960)  (Samsung SGH 800 (1999))  (Samsung SCH-X800 (2003))  Nokia 6310i (March 2002)  Skype (2005-2006)  Finnish Design Registration 20030256 (April 2004)  BlackBerry 6710 (released Oct. 2002)  BlackBerry 7290 (released early 2005)  BlackBerry 7130e (Released Nov. 2005)  Nokia 7710 – (Nov. 2004)
<ul style="list-style-type: none"> <li>An icon featuring gear wheel(s).</li> </ul>	<p><b>2. Settings Icons</b></p>  2002 Samsung (CDMA2000)











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Icon Features	Icon Images
	 <p>2004 Samsung (Mega2 model)</p>
	 <p>2005 design registration</p>
	 <p>Windows Mobile 5.0 (2005)</p>
	 <p>중남미향 (2002)</p>
	 <p>의장등록 (2004)</p>
	 <p>(2006 – Samsung SCH-U420)</p>
	 <p>(2004 Sony Ericsson Q4 T290)</p>
	 <p>(Dec. 2006 – LG ke850 prada)</p>
	 <p>GNOME 2.0 (2002 – “Applications”)</p>
	 <p>Windows 95 (1995 – “Settings”)</p>







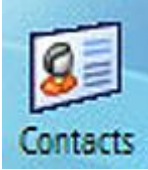




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Icon Features	Icon Images
	 <p>Windows 98 (1998 – “Settings”)</p>  <p>GNOME 2.0 (2002 – “Run”)</p>  <p>Slicer – 2006 Windows Icons Design Contest Winner</p>  <p>Slicer – 2006 Windows Icons Design Contest Winner</p>  <p>BlackBerry 8700c (Nov. 2005)</p>  <p>Windows Mobile 6 (Feb. 2007)</p>  <p>Korean Patent 30-20060005195 (Issued February 11, 2006)</p>  <p>European Community Design Registration No. 000505532-0001 (Published May 23, 2006)</p>  <p>European Community Design Registration No. 000778741-0001 (Published April 9, 2007)</p>  <p>Korean Design Patent 30-0403504 (Published Jan. 10, 2006)</p>
<ul style="list-style-type: none"> <li>An icon featuring paper bound at one edge</li> </ul>	<p style="text-align: center;"><b>3. Notes Icons</b></p>












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Icon Features	Icon Images
	 <p>GEOS (1986)</p>
	 <p>GeoWorks 1990-2002</p>
	 <p>Mac OS 1995-1999</p>
	 <p>OS/2 (1992)</p>
	 <p>OS/2 (1994)</p>
	 <p>OS/2 (1996)</p>
	 <p><b>MEMO PAD</b> US 2005/0183026 A1 (Aug. 18, 2005)</p>
	 <p>BlackBerry 7290 (2005)</p>
	 <p>Finnish Design Registration 20030256 (April 2004)</p>
	 <p>BlackBerry 7130e (Nov. 2005)</p>


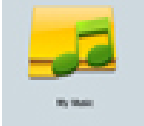






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Icon Features	Icon Images
	 BlackBerry 8700g (April 2006)  BlackBerry 7130g (Sept. 2006)  Korean Design Patent 30-0441582 (Feb. 27, 2007)  BellSouth/IBM Simon Personal Communicator — (1993)
<ul style="list-style-type: none"> <li>Colorful icons that include the silhouette of a person’s head and shoulders on or next to a bound address book or information card.</li> </ul>	<p><b>4. Contacts Icons</b></p>  <b>Contacts</b> Palm Treo 700p (Q2 2006)  Gigabyte GSmart q60 (May 2007)  <b>Contacts</b> Windows Mobile 5.0 (2005)  <b>Contacts</b> Windows Mobile 6.0 (Feb. 2007)  Vodafone v1240 (HTC Tornado Noble) (Jan. 2006)  Sony Clie PEG-NX73VE (Sept. 2003)  Blackberry 8703e (Verizon 2006)










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Icon Features	Icon Images
	 BlackBerry 8700c (Nov. 2005)  Address Book Sharp Zaurus SL-5600 (2003)  United States Patent Application Publication 2007/0067738 (Mar. 22, 2007)  Samsung F700 (Feb. 2007)
<ul style="list-style-type: none"> <li>• Colorful icons that include eighth notes</li> <li>• Icons that include a CD</li> <li>• Icons that include eighth notes and a CD</li> </ul>	<p style="text-align: center;"><b>5. Music Icons</b></p>  GNOME 2.0 (2002 – “Media Player”)  GNOME 2.0 (2002 – “CD Player”)  OS/2 Warp 3 (1994 – “CD Player”)  Window NT 3.1 (1993 – “CD Player”)  BeOS Operating System – (1995)  Samsung SCH-X650 (Aug. 2002)  SonyEricsson K800 (June 2006)

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Icon Features	Icon Images
	 <p>2007 SAMSUNG SGH-F700</p>
	 <p>Nokia N77 (Feb. 2007)</p>
	 <p>Slicer – 2006 Windows Icons Design Contest Winner</p>
	 <p>BlackBerry 8700c (Nov. 2005)</p>
	 <p>Sharp Zaurus SL-5600 (2003)</p>
	 <p>Finnish Design Registration 20030256 (April 2004)</p>
	 <p>BlackBerry 6710 (released Oct. 2002)</p>
	 <p>Korean Patent 30-20060005195 (Issued February 11, 2006)</p>
	 <p>European Community Design Registration No. 000584529-0001 (Published Nov. 14, 2006)</p>
	 <p>European Community Design Registration No. 000778741-0001 (Published April 9, 2007)</p>
	 <p>European Community Design Registration No. 000778741-0001 (Published April 9, 2007)</p>

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


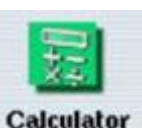

Icon Features	Icon Images
	<div style="display: flex; flex-direction: column; align-items: center;">  <p>Music player Nokia 7710 – (Nov. 2004)</p>  <p>Music player Nokia N73 (August 2006)</p>  <p>Samsung F300 (Dec. 2006)</p> </div>
<ul style="list-style-type: none"> <li>Colorful icons or images depicting an orange or yellow flower.</li> </ul>	<p><b>6. Photos Icons</b></p> <div style="display: flex; flex-direction: column; align-items: center;">  <p>01.2007 Windows Vista</p>  <p>Photoshop 2006</p> </div>
<ul style="list-style-type: none"> <li>Colorful icons featuring cartoon text balloons of various shapes including rounded rectangles.</li> <li>Text balloons including several letters or a small picture.</li> </ul>	<p><b>7. Text Messaging Icons</b></p> <div style="display: flex; flex-direction: column; align-items: center;">  <p>Samsung SGH-Z130 (Jan. 2005)</p>  <p>2005 AOL Icon</p>  <p>2003 ICQ</p>  <p>Blackberry 8830 (Q2 2007)</p> </div>
<ul style="list-style-type: none"> <li>Colorful icons that include a calendar page, often</li> </ul>	<p><b>8. Calendar Icons</b></p>








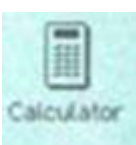






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Icon Features	Icon Images
including the day number.	 <p>United States Patent D445,428 (Issued July 24, 2001)</p>
	 <p>Sharp Zaurus SL-5600 (2003)</p>
	 <p>Windows Mobile 5.0 – (2005)</p>
	 <p>Finnish Design Registration 20030256 (April 2004)</p>
	 <p>BlackBerry 7130g (Sept. 2006)</p>
	 <p>Windows Mobile 6 – (Feb. 2007)</p>
	 <p>BlackBerry 6710 (released Oct. 2002)</p>
	 <p>BlackBerry 7290 (released early 2005)</p>
	 <p>BlackBerry 8700C (released Nov. 2005)</p>
	 <p>BlackBerry 7130e (Released Nov. 2005)</p>
	 <p>RIM BlackBerry 7100V (released Oct. 2004)</p>
	 <p>Palm Treo (released Nov. 2006)</p>
	 <p>Palm i705 (released ~ Jan. 2002)</p>
 <p>European Community Design Registration No. 000584529-0001 (Published Nov. 14, 2006)</p>	















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Icon Features	Icon Images
	 <p>European Community Design Registration No. 000778741-0001 (Published April 9, 2007)</p>  <p>Korean Design Patent 30-0441582 (Published Feb. 27, 2007)</p>  <p>BellSouth/IBM Simon Personal Communicator — (publicly announced 1993)</p>  <p>Calendar Nokia 7710 – (Nov. 2004)</p>  <p>Calendar Nokia N73 (August 2006)</p>  <p>Apple Newton MessagePad 2000 (1995)</p>  <p>Samsung F700 – (Announced Feb. 2007)</p>  <p>Mac OS X 10.4 Tiger (2005)</p>  <p>Sony Ericsson T610i (2003)</p>
<ul style="list-style-type: none"> <li>• Colorful icons that include mathematical symbols in a 2x2 grid pattern.</li> <li>• Colorful icons that include images of a calculator.</li> </ul>	<p style="text-align: center;"><b>9. Calculator Icons</b></p>  <p>Palm i705 (released ~ Jan. 2002)</p>  <p>CALCULATOR US 2005/0183026 A1 (Published Aug. 18, 2005)</p>  <p>Calculator Sharp Zaurus SL-5600 (2003)</p>  <p>Calc Palm Treo (released Nov. 2006)</p>














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Icon Features	Icon Images
	 <p>Mac OS X 10.4 Tiger (2005)</p>  <p>BlackBerry 7130g (Sept. 2006)</p>  <p>BlackBerry 7290 (released early 2005)</p>  <p>BlackBerry 7130e (Released Nov. 2005)</p>  <p>United States Patent D445,428 (Issued July 24, 2001)</p>  <p>Calculator BellSouth/IBM Simon Personal Communicator — (publicly announced 1993)</p>
<ul style="list-style-type: none"> <li>Colorful icons that include an envelope.</li> </ul>	<p style="text-align: center;"><b>10. Mail Icons</b></p>  <p>Sharp Zaurus SL-5600 (2003)</p>  <p>LG Prada (Dec. 2006)</p>  <p>BlackBerry 7130g (Sept. 2006)</p>  <p>Messaging Windows Mobile 5.0 – (2005)</p>  <p>Messaging Windows Mobile 6.0 – (Feb. 2007)</p>  <p>BlackBerry 6710 (released Oct. 2002)</p>















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Icon Features	Icon Images
	 BlackBerry 7290 (released early 2005)
	 Korean Patent 30-20060005195 (Issued February 11, 2006)
	 Motorola Razr (late 2004)
	 BlackBerry 8700c (Nov. 2005)
	 BlackBerry 7130e (Released Nov. 2005)
	 RIM BlackBerry 7100V (released Oct. 2004)
	 Palm Treo (released Nov. 2006)
	 Palm i705 (released ~ Jan. 2002)
	 European Community Design Registration No. 000584529-0001 (Published Nov. 14, 2006)
	 European Community Design Registration No. 000505532-0001 (Published May 23, 2006)
	 United States Patent D445,428 (Issued July 24, 2001)
	 BellSouth/IBM Simon Personal Communicator — (publicly announced 1993)
	 Nokia 7710 – (Nov. 2004)
	 Nokia N73 (August 2006)
	 Samsung F700 – (Announced Feb. 2007)








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Icon Features	Icon Images
	 Sony Ericsson T610i (2003)
<ul style="list-style-type: none"> <li>Colorful icons that include a clock.</li> </ul>	<p style="text-align: center;"><b>11. Clock Icons</b></p>  United States Patent D445,428 (Issued July 24, 2001)  Sharp Zaurus SL-5600 (2003)  Finnish Design Registration 20030256 (April 2004)  BlackBerry 7130g (Sept. 2006)  BlackBerry 6710 (released Oct. 2002)  Palm i705 (released ~ Jan. 2002)  European Community Design Registration No. 000584529-0001 (Published Nov. 14, 2006)  BlackBerry 7130e (Released Nov. 2005)  Korean Design Patent 30-0441582 (Published Feb. 27, 2007)  BellSouth/IBM Simon Personal Communicator — (publicly announced 1993)  Samsung F700 – (Announced Feb. 2007)
<ul style="list-style-type: none"> <li>Colorful icons that include a globe, a portion of a globe, or a web browser program symbol.</li> </ul>	<p style="text-align: center;"><b>12. Web Browser Icons</b></p>  Korean Design Patent 30-0441582 (Published Feb. 27, 2007)

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Icon Features	Icon Images
	 <p>Nokia 7710 – (Nov. 2004)</p>  <p>European Community Design Registration No. 000584529-0001 (Published Nov. 14, 2006)</p>  <p>BlackBerry 7130e (Released Nov. 2005)</p>  <p>BlackBerry 8700C (released Nov. 2005)</p>  <p>Samsung F700 – (Announced Feb. 2007)</p>  <p>BlackBerry 8700g (Released April 17, 2006)</p>  <p>BlackBerry 7290 (released early 2005)</p>  <p>BlackBerry 6710 (released Oct. 2002)</p>  <p>BlackBerry 7130g (Released Sept. 2006)</p>  <p>Internet Explorer</p> <p>Windows Mobile 5.0 – (2005)</p>  <p>Internet Explorer</p> <p>Windows Mobile 6.0 – (Feb. 2007)</p>
<ul style="list-style-type: none"> <li>Colorful icons that include a camera.</li> </ul>	<p><b>13. Camera Icons</b></p>  <p>Camera</p> <p>Palm Treo (released Nov. 2006)</p>  <p>European Community Design Registration No. 000584529-0001 (Published Nov. 14, 2006)</p>  <p>Korean Design Patent 30-0403504 (Published Jan. 10, 2006)</p>

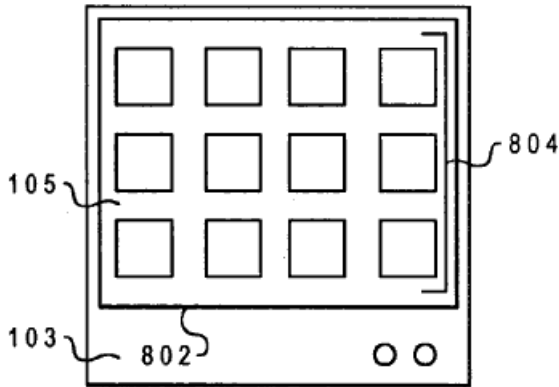
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Icon Features	Icon Images
	 Korean Design Patent 30-0441582 (Published Feb. 27, 2007)  Camera Nokia 7710 – (Nov. 2004)  Samsung F700 – (Announced Feb. 2007)  Samsung F300 (Dec. 2006)  Sony Ericsson T610i (2003)  United States Patent Application Publication 2007/0067738 (Mar. 22, 2007)
<ul style="list-style-type: none"> <li>Icon that includes a line graph.</li> </ul>	<p style="text-align: center;"><b>14. Stocks Icon</b></p>  Mac OS X 10.4 Tiger (2005)

**Additional Obviousness References for D'790**

**1. United States Patent 6,983,424**

US patent 6,983,424 ("424") was filed on June 23, 2000 and issued on January 3, 2006. The patent is directed at a method of automatically scaling icons to fit a display area. Figure 8b of the '424 patent shows empty squares evenly arranged in a 4x3 grid pattern.

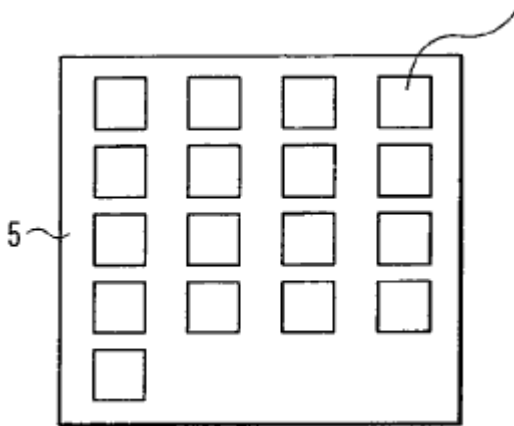


The above side-by-side comparison between the '424 patent and D'790 shows that they are very similar designs. Both sets of squares are situated in four columns inside a rectangular display area. The squares are of uniform size and are evenly spaced. There are some differences between the designs. For example, the squares in the '424 patent do not have rounded corners and the '424 pattern does not have a dock or a missing row above the dock. I believe the differences between the designs could be overcome by combining these references with other prior art references in this report, including the references below using rounded square icon containers, and the docks from the Simon and the LG Prada.



**2. United States Patent Application 2006/0107207 ("Wada") -**

United States patent application 2006/0107207 was filed on Jan. 4, 2005 and published on May 18, 2006. It was ultimately issued as United States Patent 7,587,680 on Sept. 8, 2009. The patent, which is also referred to as Wada, displays are similar design to the D'790 patent. There are four columns and four rows (with an additional icon in the first column. The display is rectangular, and the elements arrayed in the display are squares. There are no other elements other than the squares shown in the display, and the squares contain no content or ornamentation.



The above comparison shows that arranging squares in a matrix or grid pattern was not a new or novel thing to do at the time the D'790 patent was allegedly conceived. And I believe the differences between the images could be eliminated by combining Wada with other references. For example, adding the dock from the Simon or the Prada to the Wada reference.

**The Asserted Trade Dress And Trademarks Lack Distinctiveness**

Again, as set forth above, the Asserted Trade Dress in Apple’s Amended Complaint – whether found in trade dress registrations, applications, or the common law – comprises three elements relating to the GUI. Specifically, the GUI-related elements of the Asserted Trade Dress are:

-when the device is on, a matrix of colorful square icons with evenly rounded corners within the display screen;

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-when the device is on, a bottom dock of colorful square icons with evenly rounded corners set off from the other icons on the display, which does not change as other pages of the interface are viewed; and

-when the device is on, a row of small dots on the display screen.

For the reasons discussed below, it is my opinion that this element of Apple’s claimed trade dress is not distinctive because it exists in substantially similar form on many, if not most, smart phones and/or tablets on the market today.

**Apple’s Matrix of Colorful Square Icons Is Not Distinctive**

A matrix of colorful square icons has been a staple of the graphical user interface employed by smart phones and computer tablets. For example, the Nokia N7710, which was released in 2005, shows a vivid colorful array of icons housed in squares with rounded corners:



Other phones released before the iPhone 1 had a variety of colorful icon grids, such as the Nokia N73 or the Blackberry 7130e or the 8700g shown here.

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The Axiotron ModBook, released in 2007, was a tablet running OS X with a row of colorful icons.



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Today, practically all smart phones and tablets on the market employ such a matrix. The images below represent only a few of the literally hundreds of examples of phones and/or tablets available today employing this type of colorful icon matrix.



**LG GS290**



**Nokia Symbian Belle**



**Velocity Micro Cruz T408**



**Viewsonic Viewpad**

I attach as **Exhibit C** additional photos of third party tablet and phones available to consumers today that employ a similar colorful matrix of icons.

From an industrial design standpoint, it is very difficult for me to understand how Apple can claim to “own” this type of matrix layout, given its functional nature and widespread use in consumer electronics.

### **Apple’s “Dock of Icons” Is Not Distinctive**

A “dock” of icons is also an extremely common feature employed on the graphical user interface of phones and tables today. As explained above, this type of dock is utilitarian because it enables the user to keep his or her favorite or most used icons stationary and always present on the display screen.

Numerous consumer electronic devices on the market today employ similar docks of icons. There is simply nothing about this type of functionality that is unique to Apple products. The images below represent just a few of the numerous devices that employ this functional feature:



**SONY Ericsson Experian**



**Droid Razr Maxx**



**LG Nitro**



**HTC Vivid**



**HTC One X, HTC One S and HTC One**

I attach as **Exhibit D** additional photos of third party tablet and phones available to consumers today that employ the same or very icon dock at the base of the screen.

**None of Apple’s Individual Icons Are Distinctive**

I understand Apple has claimed that the icons used in the graphic user interface of certain of its devices are distinctive. It is my opinion, however, that none of these icons is distinctive because the same or very similar icons are used in connection with many of the smart phones and tablets being sold today.

Apple’s telephone icon is not distinctive. To the contrary, as the images below illustrate, similar green icons with the image of a phone are used by companies other than Apple in connection with consumer electronics available on the market today:



**Apple**

**NOKIA**

**Microsoft**

**SKYPE**

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I understand Apple contends that its speech bubble icon is distinctive. To the contrary, as the images below illustrate, similar icons with a speech bubble are often used by companies other than Apple in connection with consumer electronics available on the market today:



**Apple**



**SONY Vita**



**Google Talk**



**Blackberry**

I understand Apple contends that its flower icon is distinctive. To the contrary, as the images below illustrate, similar icons with a flowers are often used by companies other than Apple to represent photos or photo applications in connection with consumer electronics available on the market today:



**Apple**



**Adobe Photoshop**



**Windows Vista**



**Color Effect**



**Photo Transfer**



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I understand Apple contends that its gears icon is distinctive. To the contrary, as the images below illustrate, similar icons with gears are often used by companies other than Apple to represent settings/phone functions in connection with consumer electronics available on the market today:



**Apple Icon**



**NOKIA**



**NOKIA**



**LG**

I understand Apple contends that its notepad icon is distinctive. To the contrary, as the images below illustrate, similar notepad icons are often used by companies other than Apple to represent settings/phone functions in connection with consumer electronics available on the market today:



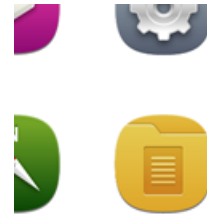
**Apple**



**DSM Notepad**



**Microsoft**

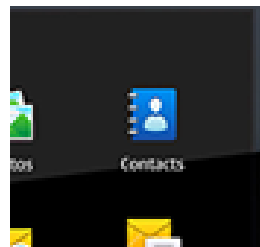


**NOKIA**

I understand Apple contends that its address book icon is distinctive. To the contrary, as the images below illustrate, icons bearing a silhouette of a person on an address book are often used by companies other than Apple in connection with consumer electronics available on the market today:



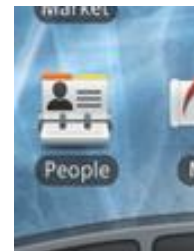
**Apple**



**NOKIA**



**LG**



**HTC**

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I understand Apple contends that its iTunes icons are distinctive. To the contrary, as the images below illustrate, icons bearing an eighth note and/or a record are frequently used by companies other than Apple to represent music functions in connection with consumer electronics sold on the market today:



**Apple**

**SONY VITA**

**NOKIA**

**Smart Music**

In sum, none of the graphical user interface elements identified by Apple as being trademarks and/or trade dress are distinctive in the marketplace. A matrix of colorful icons, an icon “dock” as well as all of the individual icons are all widely used by competing manufactures of consumer electronics and are not unique to Apple.

**VII. SUMMARY**

In conclusion, it is my opinion that the Asserted Design Patents, trade dress and trademarks are functional because they enhance utility of the subject devices. In addition, it is my opinion that the asserted trademarks and trade dress are not distinctive because similar trademarks and trade dress are regularly used on consumer electronics by manufactures other than Apple. If Apple were to “own” any of these features, other manufacturers would be placed at a significant competitive disadvantage from an industrial design perspective in that they could not employ many of the most useful and efficient designs and configurations, and the quality of the resulting devices would suffer.

Signature executed on March 22, 2012

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Samuel Lucente