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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN JOSE DIVISION

CHRISTINA GRACE and KEN POTTER, Individually and on Behalf of All Others Similarly Situated,

Plaintiffs,

v.

APPLE, INC.,

Defendant.

Case No. 5:17-cv-00551-LHK

FIRST AMENDED CLASS ACTION COMPLAINT

1. Trespass to Chattels
2. Violations of the Unfair Competition Law, California Business and Professions Code §17200 *et seq*.

DEMAND FOR JURY TRIAL

Plaintiffs Christina Grace and Ken Potter ("Plaintiffs"), individually and on behalf of all others similarly situated, bring this Class Action against defendant Apple Inc. ("Apple" or "Defendant"), and allege as follows:

NATURE OF THE ACTION

1. This is a consumer class action brought by Plaintiffs on behalf of themselves and all others similarly situated who owned an Apple iPhone 4 or iPhone 4S that was operating on iOS 6 or an earlier operating system, and therefore lost the ability to use Apple's "FaceTime" video conferencing feature when Apple intentionally broke FaceTime for iOS 6 and earlier operating systems on April 16, 2014.

2. Apple Chief Executive Officer ("CEO") Tim Cook ("Cook") has described the iPhone as "one of the most important, world-changing and successful products in history." Since introducing the iPhone in 2007, Apple has sold more than one billion units.

3. All iPhones operate through Apple's proprietary "iOS" operating system, which is the software that controls the device's functions and operations.

4. FaceTime is Apple's immensely popular real-time video messaging and chat feature that enables FaceTime users to engage in real-time video (and audio) communications. FaceTime is proprietary to Apple products and therefore users can only communicate via FaceTime with Apple products. Since first releasing FaceTime in 2010, Apple has heavily marketed the feature's ability to close the gap between friends and loved ones separated by great distances, particularly at life's most meaningful milestones. Apple heavily touted FaceTime as a centerpiece in the company's advertisements for the iPhone 4. In the years following its release, FaceTime became one of the most popular and valued iPhone features. Indeed, at Apple's 2013 annual stockholders' meeting, CEO Cook revealed that fifteen to twenty million FaceTime calls were made on a ***daily*** basis.

5. There are two types of ways that participants in a FaceTime call can exchange audio/video media: (1) the so-called "peer-to-peer method," where a direct connection is formed between the caller and the callee; and (2) the so-called "relay method," where the caller and the

callee connect to a relay server that relays the data on behalf of the devices. During the period relevant to this action, the servers used by Apple for relaying FaceTime calls were owned by a company called Akamai Technologies, Inc. ("Akamai"). Unlike peer-to-peer FaceTime calls, Apple made significant payments to Akamai for "relay usage" (*i.e.*, bandwidth) on Akamai's servers.

6. Prior to November 7, 2012, approximately 90-95% of FaceTime calls were connected through the peer-to-peer method, and only 5-10% through the relay method. Thus, Apple's relay usage—and the expense to Apple arising therefrom—were relatively low.

7. On November 7, 2012, however, a jury found that Apple's peer-to-peer method of connecting FaceTime calls infringed on patents held by VirnetX, Inc. ("VirnetX"). The only way for Apple to avoid knowingly and intentionally continuing its infringement on VirnetX's patents was to shift 100% of FaceTime call volume to the relay method.

8. Upon shifting 100% of FaceTime call volume to the relay method, Apple's relay usage soared. As a result, Apple began to incur multi-million dollar ***monthly*** charges for its use of Akamai's servers. Therefore, as internal Apple emails reveal, Apple undertook a concerted effort to find a way to reduce its relay usage by reducing the volume of FaceTime calls connected through the relay method. Indeed, an internal Apple email chain circulated during this time period bore the subject "Ways to Reduce Relay Usage," and explored potential strategies for doing so.

9. On September 13, 2013, potential relief from Apple's high relay usage fees arrived. On that day, Apple introduced iOS 7, a next generation operating system that could connect FaceTime calls through the peer-to-peer connection method in a way that had not yet been found to infringe on VirnetX's patents. The introduction of iOS 7 therefore helped Apple reduce its relay usage and the resultant payments from Apple to Akamai.

10. More than seven months after the introduction of iOS 7, however, millions of Apple users' devices still operated on iOS 6 or earlier operating systems and thus could only be connected via FaceTime through the relay method. Because of this, Apple was still amassing significant relay usage and, therefore, facing substantial payment obligations to Akamai.

11. Consequently, to further reduce its relay usage costs, Apple devised a scheme to ***force*** millions of its users—*i.e.*, users running iOS version 6 and earlier—to stop using FaceTime on their devices. As Apple's internal emails and sworn testimony at the VirnetX trial revealed, Apple formulated a plan by which its engineers caused a digital certificate necessary to the operation of FaceTime on iOS 6 or an earlier operating system to prematurely expire. Upon the expiration of that certificate, and as a direct result of Apple's actions, the valuable FaceTime feature immediately and abruptly stopped working for millions of users running iOS 6 or an earlier operating system (the "FaceTime Break"). To regain FaceTime capability, those users had to either transition to iOS 7, or buy an entirely new Apple device with iOS 7 preinstalled.

12. Apple did this knowing that for millions of users, moving to iOS 7 was highly problematic because it was essentially incompatible with certain Apple devices. For iPhone 4 and iPhone 4S users, for example, the coerced move to iOS 7 subjected their devices to slowness, system crashes, erratic behavior and/or the elimination of their ability to use critical functions on their phone. As succinctly stated in one of the media reports that discussed these widespread functionality problems, "[t]he older handsets buckle under the weight of the new software." Thus, for millions of Apple's customers, a move to iOS 7 would significantly harm the functionality of their device.

13. In addition to recognizing these perils of moving certain Apple devices to iOS 7, Apple more generally recognized the gravity of its decision to implement the FaceTime Break. Indeed, in the days leading up to the FaceTime Break, then-Apple Manager of Operating System Security Jacques Vidrine ("Vidrine") sent an email to other Apple personnel in which he highlighted the significance of what the company planned to do, stating: "[L]et me just voice my concern here. Maybe someone can talk me off the ledge by convincing me this is not as big a deal as I think."

14. Unfortunately, Vidrine's appeal fell on deaf ears. In a disturbing juxtaposition to Apple's marketing campaigns that highlighted the life-changing importance of FaceTime to separated families, deployed soldiers, hearing-impaired individuals and countless others, Apple

advanced its financial interests by intentionally breaking FaceTime for millions of its users. Indeed, Apple employees mocked the situation—and the millions of users unwittingly marching toward the FaceTime Break—with a cartoon that was circulated within Apple via email.

15. Apple selected April 16, 2014 as the day on which the FaceTime Break would strike its customers. At the appointed time on that day and without warning, millions of Apple users—every user who had not installed iOS 7—suddenly lost the ability to use FaceTime.

16. The public response to the unexpected and unexplained FaceTime Break was swift and substantial, including numerous media reports and vast customer outcry. Rather than revealing the truth about the cause and impetus of the FaceTime Break, Apple claimed that FaceTime had suffered a "bug," and that to regain the ability to use FaceTime, users needed to transition their device to iOS 7.

17. Internal Apple emails eliminate any doubt that Apple intentionally broke FaceTime, and did so in order to reduce relay usage and the high costs related thereto. For example, weeks or months after the FaceTime break, Apple engineering manager Patrick Gates ("Gates") sent the following email to various Apple personnel: "Hey, guys. I'm looking at the Akamai contract for next year. I understand we did something in April around iOS 6 to reduce relay utilization." Apple engineer Gokul Thirumalai responded to Gates, stating the following: "It was a big user of relay bandwidth. ***We broke iOS 6, and the only way to get FaceTime working again is to upgrade to iOS 7***." (Emphasis added.)

18. Following the FaceTime Break, millions of iPhone 4 and iPhone 4S users whose devices were operating on iOS 6 or an earlier operating system faced three options for continuing to use their device: (1) remain on a pre-iOS 7 operating system, but without the ability to use FaceTime; (2) transition to iOS 7, and accept the significant reduction in functionality that their iPhone would suffer as a result; or (3) purchase a new Apple device with the necessary processing power to run iOS 7 without significantly reducing the functionality of the device. To quote the colorful language used by an Apple employee in an internal Apple email sent within hours of the FaceTime Break, as a result of the break "***our users on [iOS 6] and before are basically***

screwed[.]" (Emphasis added.)

19. Plaintiffs bring this action on behalf of themselves and all other similarly situated consumers who, at the time of the April 16, 2014 FaceTime Break, owned an iPhone 4 or iPhone 4S that was running on iOS 6 or an earlier operating system, and who therefore lost the ability to use FaceTime on their devices. Plaintiffs allege trespass to chattels and violations of the Unfair Competition Law, California Business and Professions Code §17200, *et seq*. (the "UCL").

JURISDICTION AND VENUE

20. This Court has jurisdiction over this matter pursuant to 28 U.S.C. §1332(a)(1) as modified by the Class Action Fairness Act of 2005, because at least one member of the Class is a citizen of a different state than Defendant, there are more than 100 members of the Class, and the aggregate amount in controversy exceeds $5,000,000.00, exclusive of interest and costs.

21. Pursuant to 28 U.S.C. §1391(b), venue is proper in this district because a substantial part of the events giving rise to the claims occurred in this District.

INTRADISTRICT ASSIGNMENT

22. Assignment to the San Jose division of this district is appropriate under Civil Local Rule 3-2 because a substantial part of the events or omissions which give rise to the claims occurred in the San Jose division.

THE PARTIES

23. Plaintiff Christina Grace is a citizen of California who resides in Marin County, California. She owns an iPhone 4 that was running on iOS 6 or an earlier operating system on April 16, 2014 and incurred damages as the result of Apple's conduct.

24. Plaintiff Grace used the FaceTime feature on her iPhone 4 to communicate with her family. FaceTime stopped working on Plaintiff Grace's iPhone 4 on April 16, 2014. The FaceTime Break interfered with Plaintiff Grace's use of her iPhone 4 because she was unable to use the FaceTime feature. The FaceTime Break and the resultant inability to place FaceTime calls significantly reduced the value of Plaintiff Grace's iPhone 4.

25. Plaintiff Ken Potter is a citizen of California who resides in San Diego County, California. He owns two iPhone 4 devices that were running on iOS 6 or an earlier operating system on April 16, 2014 and incurred damages as a result of Apple's conduct.

26. Between the time Plaintiff Potter purchased the two iPhone 4 devices and April 16, 2014, he used FaceTime to communicate with his family on a daily basis. Potter used one iPhone 4 and his family used the second. From the time Potter purchased the two iPhone 4 devices until April 16, 2014, the FaceTime feature worked consistently on both of his iPhone 4 devices.

27. FaceTime stopped working on Plaintiff Potter's iPhone 4 devices on April 16, 2014. Potter tried unsuccessfully to use FaceTime to communicate with his family after April 16, 2014. The FaceTime Break substantially interfered with Plaintiff Potter's use of his iPhone 4 devices because he was unable to use the FaceTime feature to communicate with his family. The FaceTime Break and the resultant inability to place FaceTime calls significantly reduced the value of Plaintiff Potter's iPhone 4 devices.

28. In order to use FaceTime, Plaintiff Potter was forced to migrate the iPhone 4 device owned by him and used by his family to iOS 7.0.4. As a result, that iPhone 4 experienced lost functionality, including slow and erratic behavior, and Wi-Fi disconnections. Plaintiff Potter took that iPhone 4 for his own use and purchased an iPad (4th generation) for his family in order to resume FaceTime communication with them. Later, Plaintiff Potter was forced to replace his second iPhone 4 with an iPhone 5S in order to have both a functional smartphone and mobile access to FaceTime.

29. Defendant Apple is a California corporation with its headquarters and principal place of business in Cupertino, California, which lies within this District. Apple designs, manufactures and sells various consumer electronics, computer software and online services. Apple's consumer electronics products include the iPhone 4 and iPhone 4S. In addition to being headquartered and having its principal place of business in Cupertino, California, Apple transacts substantial business throughout the State of California, through advertising, marketing and ownership of numerous Apple retail stores throughout California, including several in this

District. Further, substantially all of the misconduct alleged in this Complaint occurred in and/or emanated from California.

SUBSTANTIVE ALLEGATIONS

Background

30. Widely recognized as Apple's premier product line, iPhone is a line of industry-leading smartphones[1] that debuted on June 29, 2007. In the years that followed, Apple released several successive versions of the iPhone on an approximately yearly basis.

31. On June 7, 2010, Apple's then-CEO Steve Jobs introduced the iPhone 4, which he described as "the biggest leap since the original iPhone."[2] Within three days of the June 24, 2010 launch of the iPhone 4, Apple announced that it had sold roughly 1.7 million units.[3]

32. Apple launched its next generation iPhone—the iPhone 4S—on October 14, 2011. Over four million iPhone 4Ses were sold within the first three days of the device's launch. Apple Senior Vice President of Worldwide Product Marketing Philip Schiller commented that these sales were "the most ever for a phone and more than double the iPhone 4 launch during its first three days."[4]

33. In July of 2016, Apple celebrated the sale of its billionth iPhone.[5] Apple included within the press release announcing that milestone sale the following quote from its CEO Tim Cook:

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[1] PC Magazine defines the term "smartphone" as "[a] cellphone and handheld computer that created the greatest tech revolution since the Internet. A smartphone can do everything a personal computer can do, and because of its mobility, much more . . . A smartphone combines a cellphone with e-mail and Web, music and movie player, camera and camcorder, GPS navigation, voice dictation for messaging and a voice search for asking questions about anything . . ." *See* http://www.pcmag.com/encyclopedia/term/51537/smartphone (last visited April 4, 2017).

[2] *See* http://www.apple.com/pr/library/2010/06/07Apple-Presents-iPhone-4.html (last visited April 4, 2017).

[3] *See* http://www.apple.com/pr/library/2010/06/28iPhone-4-Sales-Top-1-7-Million.html (last visited April 4, 2017).

[4] *See* http://www.apple.com/pr/library/2011/10/17iPhone-4S-First-Weekend-Sales-Top-Four-Million.html (last visited April 4, 2017).

[5] *See* http://www.apple.com/newsroom/2016/07/apple-celebrates-one-billion-iphones.html (last visited April 4, 2017).

> iPhone has become one of the most important, world-changing and successful products in history. It's become more than a constant companion. iPhone is truly an essential part of our daily life and enables much of what we do throughout the day.

34. All Apple iPhones, including the iPhone 4 and the iPhone 4S, operate through a proprietary Apple mobile operating system called iOS. iOS is an acronym that stands for "iPhone operating system." iOS has been described as "the software that controls all the basics of your gadget, including the look, feel, settings and hardware."[6] Apple itself describes iOS as what brings iPhone "to life."[7] Among other things, iOS runs the features and applications on the iPhone.

35. One of the most popular iPhone features is a real-time video conferencing feature called FaceTime. Released in 2010 in conjunction with the release of the iPhone 4, FaceTime allows users to place audio/video calls to other FaceTime users.[8] During Apple's 2013 annual stockholders' meeting, Apple CEO Tim Cook revealed that ***fifteen to twenty million*** FaceTime calls were made on a ***daily*** basis.[9]

In Marketing and Selling The iPhone 4, Apple Highlights FaceTime as a Breakthrough, Life-Changing Technology

36. Prior to the introduction of FaceTime, video conferencing was a coveted but as-yet largely undelivered feature of mobile technology. As described by Frank Casanova, Apple's Senior Director of Partner Marketing, during sworn testimony at the VirnetX trial given January 28, 2016:

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[6] *See* http://www.cnn.com/2013/09/18/tech/mobile/ios-7-upgrade-faq (last visited April 4, 2017).

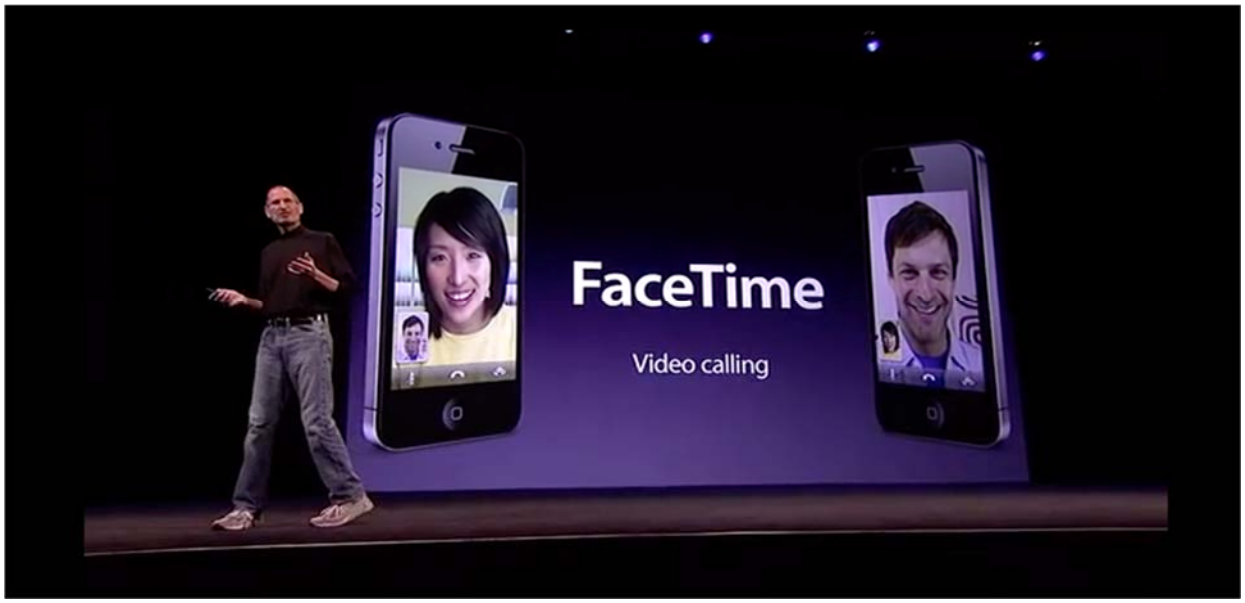
[7] *See* http://www.apple.com/iphone-7/ios/ (last visited April 4, 2017).

[8] According to Apple, over Wi-Fi, FaceTime was and is available for use on the following devices: iPhone 4 or later, iPad 2 or later, iPad mini (all models), iPod touch 4th generation or later (only iPod touch 5th generation supports FaceTime audio calling). *See* https://support.apple.com/en-us/HT204380 (last visited April 4, 2017). According to Apple, with a cellular data plan, FaceTime was and is available for use on the following devices: iPhone 4S or later and iPad (3rd generation or later). *Id.*

[9] *See* http://www.macrumors.com/2014/02/28/apple-40-billion-imessages/ (last visited April 4, 2017).

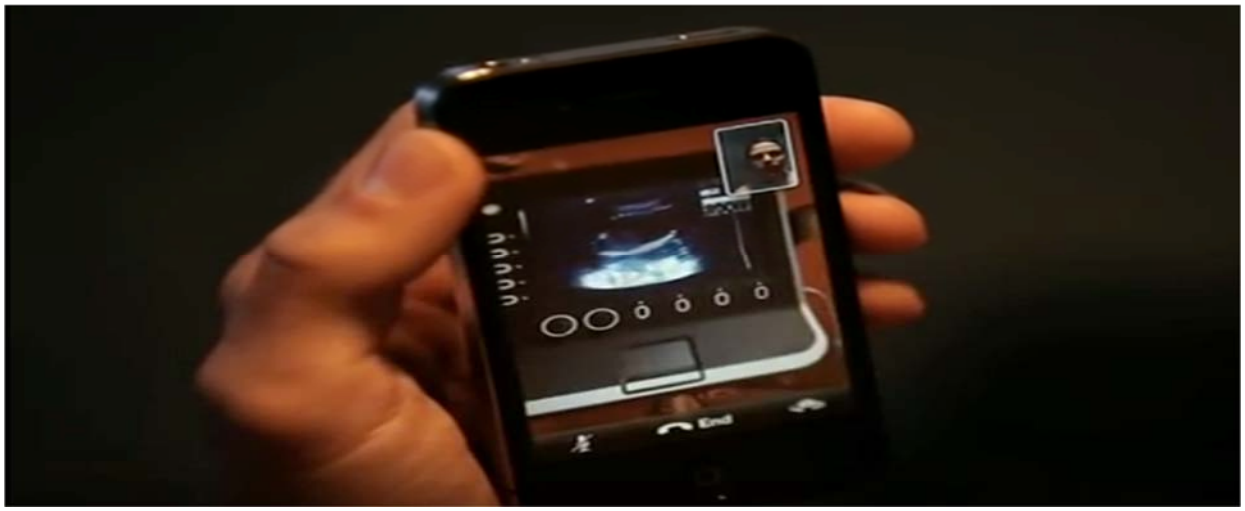
> [V]ideo conferencing has long been held as something everyone's wanted to do, but it's been very difficult for many years . . . [I]t wasn't until we brought our FaceTime product that it was actually usable across a wide range of products and across great distance, whether through Wi-Fi or cellular connections.

37. The iPhone 4 was the first iPhone that offered FaceTime as a feature. In marketing the iPhone 4, Apple heavily emphasized this new and groundbreaking video conferencing capability. For example, Apple press releases regarding the iPhone 4 described the device as "the new iPhone 4 featuring FaceTime." Further, at Apple's 2010 Worldwide Developer's Conference, then-CEO of Apple Steve Jobs heralded the release of FaceTime and its inclusion within the iPhone 4, noting that for the first time in history, video calling from mobile devices had been made easy. The following image depicts Steve Jobs delivering this message at this pivotal point in Apple's history:



38. FaceTime was featured prominently in the advertising campaign launched by Apple to promote the iPhone 4. In fact, several of Apple's television advertisements for the iPhone 4 focused exclusively on FaceTime and its life-changing capabilities, emphasizing the feature's ability to bridge the gap between friends and loved ones no matter the geographic distance between them, particularly at life's most meaningful milestones.

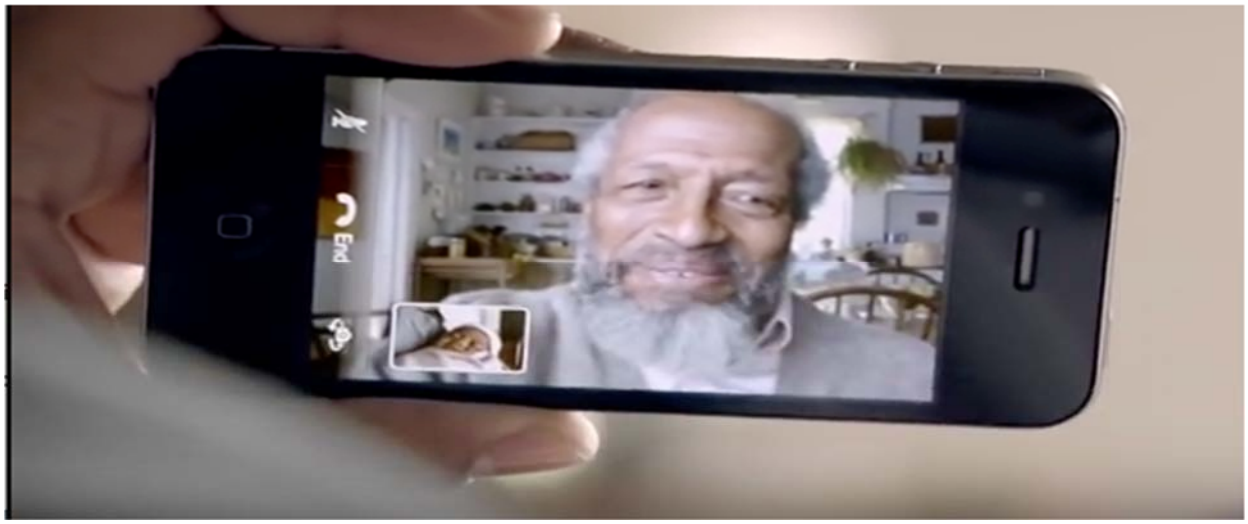
39. As shown in the following screenshot, one such advertisement depicted a deployed soldier in the United States military who, despite being separated from his pregnant wife, was able to be "present" as a medical professional administered a sonogram to the expectant mother, providing the couple perhaps their first glimpse of their unborn child:[10]



40. The same advertisement also depicts what appears to be a hearing-impaired couple, who are able to see and communicate with one another in sign language in real time thanks to FaceTime:

[10] *See* https://www.youtube.com/watch?v=cKoLp_lGo14 (last visited April 4, 2017).

41. A second advertisement depicts a grandfather who sees his newly-born granddaughter for the first time, and engages in an emotionally charged conversation with his son in which they discuss what it feels like to be a first-time father and grandfather:[11]



42. Another such advertisement shows various people communicating through FaceTime, and includes a narrated voiceover that underscores that FaceTime is synonymous with—and essentially indivisible from—the iPhone. The voiceover states the following:

> If you don't have an iPhone, you don't have FaceTime on your phone. Which makes it this easy to talk face to face with another iPhone. This easy to talk with a Mac. And this easy to talk with an iPad. FaceTime – just one more thing that makes an iPhone an iPhone.

43. These and other iPhone 4 and iPhone 4S advertisements demonstrate that Apple fully appreciated FaceTime's critically important role in the lives of iPhone users, particularly those separated by great distances and even war.

Apple Appropriates VirnetX's Patented Technology For Use in FaceTime

44. VirnetX is an internet security software and technology company that holds a portfolio of patented technology for securing real-time communications over the internet, including 4G LTE security. VirnetX offers software and technology solutions designed to

[11] *See* https://www.youtube.com/watch?v=KMRz1GjMvL4 (last visited April 4, 2017).

facilitate secure communications and create a secure environment for real-time communication applications such as instant messaging, voice-over-internet protocol, smart phones, eReaders, and video conferencing.

45. VirnetX was founded in part by former employees of Science Applications International Corporation ("SAIC," which is now Leidos, Inc.), a Fortune 500 scientific, engineering and technology applications company that uses its deep domain knowledge to solve problems of vital importance to the nation and the world, in national security, energy and the environment, critical infrastructure and health.

46. The story of VirnetX's founding begins in 1999, when the Central Intelligence Agency (the "CIA") launched a joint program with SAIC[12] to develop technology that would allow agents in the field to communicate with CIA headquarters safely.[13]

47. While developing this technology for the CIA, the VirnetX inventors also invented ways to facilitate secure communications that would greatly improve ease of use for the end users, and they recognized that this technology had a potentially massive commercial value. SAIC therefore spun its groundbreaking technology out into a separate startup venture named VirnetX, which was populated by highly-qualified and experienced scientists and engineers who had occupied prominent positions at SAIC.

48. After its founding, VirnetX took the secure encrypted communications technology that its scientists and engineers had invented and developed, and commercialized that technology into a marketable product that enables secure messaging, secure voice and video calling, and secure mail and secure file sharing between any device.

49. Unfortunately, in the years following its founding, VirnetX became a victim of patent infringement. As three separate juries determined, Apple appropriated VirnetX's patented

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[12] Prior to changing its name in September of 2013, Leidos, Inc. was called Science Applications International Corporation. For the sake of clarity and efficiency, the term "Leidos" as used herein encompasses both Leidos and SAIC.

[13] *See* http://www.forbes.com/sites/marshallphelps/2016/05/09/an-innovation-jason-bourne-would-love/#21962ec9435e (last visited April 4, 2017).

technology and used it to set up the secure communications for various features offered on iPhones and other Apple devices. One such feature—and the one at the center of this action—is FaceTime.

50. To stop Apple's unauthorized patent infringement and "to protect their patented innovations, the [VirnetX] scientists were forced to litigate."[14]

Apple Is Ordered To Pay VirnetX $368.2 Million For Infringing On Patented Technology Used In FaceTime

51. On August 11, 2010, VirnetX filed a lawsuit against Apple in the United States District Court of the Eastern District of Texas. The lawsuit, captioned *VirnetX Inc., et al v. Apple, Inc.*, 6:10-cv-00417 (the "VirnetX Action"), alleged that Apple had infringed on four of VirnetX's patents, specifically US Patent Nos. 6502135, 7418504, 7490151, and US 7921211.

52. As of November 2012 and continuing through April 16, 2014, devices running iOS 6 or earlier operating systems that were communicating in a FaceTime call could exchange audio/video media between each other in two ways: (1) the peer-to-peer method, and (2) the relay method.

53. When audio/video data was communicated using the peer-to-peer method, the caller and the callee would exchange that data directly between each other through the internet.

54. Sometimes, however, it was not possible to connect a FaceTime call through the peer-to-peer method. Thus, in those instances, the devices would connect to a relay server, and the relay server would relay the audio/video data on behalf of the devices.

55. At the same time that a calling iPhone would try to establish a peer-to-peer connection, it would concurrently try to establish a relay connection. Thus, the two connection methods would occur in parallel, and the call would be connected through whichever method achieved a connection first. The first connection would be achieved through the peer-to-peer method 90 to 95% of the time.

[14] *See* http://www.forbes.com/sites/marshallphelps/2016/05/09/an-innovation-jason-bourne-would-love/#21962ec9435e (last visited April 4, 2017).

56. In the VirnetX Action, VirnetX alleged, *inter alia*, that Apple devices infringed on the '504 and '211 patents by establishing peer-to-peer FaceTime calls. Following extensive and contentious litigation activity, along with a refusal by Apple to compensate VirnetX for its use of VirnetX's patented technology, the case went to trial.

57. On November 7, 2012, a jury awarded VirnetX $368.2 million in damages based upon Apple's infringement on VirnetX's patents.[15] Among the jury's findings was a determination that Apple devices infringed on VirnetX's '504 and '211 patents. Specifically, the jury found that when FaceTime calls on iOS 6 (or earlier operating systems) were connected through the peer-to-peer connection method, they unlawfully infringed on VirnetX's patented secure encryption technology.[16]

Apple's Patent Infringement Subjects The Company To Substantial Expense In Connection With FaceTime Calls Placed On iOS 6 and Earlier Operating Systems

58. The November 7, 2012 judicial finding that FaceTime on iOS 6 and earlier operating systems infringed on VirnetX's patents created a serious and costly problem for Apple.

59. As noted above, FaceTime calls can be connected in either of two ways: the peer-to-peer method, or the relay method. Importantly, as of 2012 and continuing at least until April 16, 2014, the relay servers through which relay method FaceTime calls were connected were owned and operated by Akamai. In exchange for allowing Apple to route FaceTime calls through

[15] On September 16, 2014, the United States Federal Circuit Court of Appeals affirmed the finding that Apple had infringed on VirnetX's '135 and '151 patents, reversed the district court's construction of a claim term of the '504 and '211 patents, reversed the damages award, and remanded for further proceedings. In subsequent proceedings in the VirnetX Action, a jury found that Apple ***willfully*** infringed on VirnetX's '504 and '211 patents under the Federal Circuit's claim constructions of those patents and awarded $302 million for Apple's violation of VirnetX's patents. *See, e.g.*, https://www.virnetx.com/virnetx-awarded-302-4-million-verdict-apple/ (last visited April 4, 2017).

[16] To be clear, this complaint does not assert any patent or patent-based claims against Apple (or anyone else), nor does this action require any review, reconsideration or re-litigation of the patent claims at issue in the VirnetX Action. Further, the findings in the VirnetX Action with respect to Apple's patent infringement in no way dictate the outcome of this action. Rather, the findings of patent infringement referred to herein merely constitute background facts comprising part of the sequence of events that caused Apple to break FaceTime for users running iOS 6 and earlier operating systems.

its relay servers, Akamai charged Apple fees that were calculated based on Apple's usage of those servers. Thus, low usage of Akamai's relay servers by Apple translated to low fees owed by Apple to Akamai, and high relay usage required Apple to pay Akamai substantially higher fees.

60. Prior to November 7, 2012, roughly 90 to 95% of FaceTime calls were connected through the peer-to-peer method rather than the relay method. Because FaceTime calls connected through the peer-to-peer method did not utilize Akamai's servers, calls connected in that manner did not increase Apple's relay usage or the fees arising therefrom. Thus, when the peer-to-peer method of FaceTime call connection was available to Apple, the relay usage fees that Apple was paying to Akamai were very modest. This dynamic underwent a seismic change, however, due to the November 7, 2012 judicial finding that peer-to-peer FaceTime calls placed on iOS 6 or earlier operating systems infringed on VirnetX's patents.

61. Following the November 7, 2012, jury verdict in the VirnetX Action, Apple could no longer connect FaceTime calls through the peer-to-peer method without knowingly and intentionally infringing on VirnetX's patents. Indeed, the district court in the VirnetX Action ordered Apple to pay VirnetX an ongoing royalty that was higher than the jury's effective royalty rate in its damages award to account for the willful nature of Apple's future infringement. Attempting to avoid this liability, Apple eliminated the peer-to-peer method of connecting FaceTime calls on iOS 6 and earlier operating systems, and shifted to a system whereby 100 percent of FaceTime calls placed on iOS 6 and earlier operating systems were connected using the relay method ("100% Relay Mode").

62. Because the fees that Apple paid to Akamai for use of Akamai's servers were predicated on Apple's relay usage, the shift from an approximately 5-10% relayed FaceTime calls to 100% Relay Mode significantly increased the fees that Apple had to pay Akamai.

63. Internal Apple documents reveal that when Apple switched to 100% Relay Mode, Akamai promptly alerted Apple that Apple's usage of Akamai's servers had substantially increased and that this increase in relay usage would trigger a correspondingly large increase in Apple's payments to Akamai. Emails sent to Apple by Akamai in 2013 indicate that Apple had

been paying Akamai roughly $2 million per month for use of Akamai's relay servers, and that the increased relay usage would trigger an increase of an additional $3.2 million ***per month***. Further, projections developed during this time period indicated that for the following year (*i.e.*, 2014), relay usage would increase to possibly a terabit of data on a monthly basis, which could mean monthly relay usage costs in excess of $10 million, if not substantially higher.

64. Testimony from the 2016 retrial of the VirnetX Action indicates that between April 2013 and September 2013 alone, Apple expended approximately $50 million on relay usage as a result of entering into 100% Relay Mode.

Apple Searches For Ways To Reduce Relay Usage, And Introduces The iOS 7 Operating System

65. Internal Apple emails demonstrate that, faced with mounting and potentially massive costs arising from its rapidly increasing usage of Akamai's relay servers, Apple sought ways to mitigate those costs by reducing its relay usage. For example, on February 15, 2013, roughly three months after the November 7, 2012 jury verdict in the VirnetX Action, an Apple employee sent an email to Apple Senior Software Engineer Dr. Thomas Jansen, Apple engineering manager Patrick Gates and Apple engineer Gokul Thirumalai, among others, discussing ways to potentially reduce Apple's relay usage. The revealing and transparent subject of that email was "Ways to Reduce Relay Usage."

66. Other internal Apple emails confirm the company's devotion to finding ways to reduce its relay usage. For example, another internal Apple email shown in open court during the 2016 trial of the VirnetX Action confirms that Apple urgently desired to reduce its relay usage, and identified potential strategies intended to "get us [*i.e.*, Apple] back to 2012 relay levels." Apple's identification of 2012 as the turning point with respect to relay usage is logical, because it was the November 7, 2012 judicial determination in the VirnetX Action that prompted the seismic shift from 90 to 95% of FaceTime calls being connected through the peer-to-peer method to 100% of FaceTime calls being connected through the relay method (*i.e.*, 100% Relay Mode).

67. Potential relief from the substantial expense that Apple was accruing through its

heavy relay usage arrived on September 13, 2013, when Apple released iOS 7. In contrast to iOS 6 and earlier operating systems, iOS 7 allowed Apple to connect iOS 7 FaceTime calls through the peer-to-peer method in a way that had not yet been found to infringe VirnetX's patents. By reverting back to establishing peer-to-peer connections, iOS 7 presented an alternative that would allow Apple to avoid amassing enormous relay usage that would translate to correspondingly large payments to Akamai.

68. And yet, iOS 7's method of peer-to-peer FaceTime connection could only reduce Apple's relay usage to the extent that the millions of Apple customers then using iOS 6 or earlier operating systems – including iPhone 4 and iPhone 4S users[17] -- ***voluntarily*** transitioned to iOS 7.

69. Although concerns and risks can arise with respect to any transition to a newer iOS version, they were particularly acute with respect to a potential shift to iOS 7. This is because, as recognized by Apple itself, iOS 7 was "the most significant iOS update since the original iPhone[.]"[18]

iOS 7 Subjects iPhone 4 and iPhone 4S Devices to Substantially Reduced Functionality

70. As described in a September 19, 2013 TechRadar article titled "iOS 7 and iOS 6: how different are they?", "iOS 7 [wa]s the biggest change to Apple's iOS since the arrival of apps in 2008."[19]

71. Compared to iOS 6, iOS 7 was a more robust and powerful operating system that acted as a significant drain on the processing capability of any device on which it ran. Newer iPhones were designed to include a more powerful processor in order to function properly with iOS 7. Indeed, Apple designed iOS 7 specifically for its most powerful processing chip to date: the 64-bit A7, which featured both a computer processing unit and an upgraded graphic processor.

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[17] *See* https://support.apple.com/kb/dl1682?locale=en_US (last visited April 4, 2017) ("System Requirements – iPhone 4 and later . . .").

[18] *See* http://www.apple.com/pr/library/2013/06/10Apple-Unveils-iOS-7.html (last visited April 4, 2017).

[19] *See* http://www.techradar.com/news/phone-and-communications/mobile-phones/ios-7-vs-ios-6-what-s-different-1179663 (last visited April 4, 2017).

Cutting-edge devices as of that time such as the iPhone 5S and 5C possessed the 64-bit A7 processing chip, and therefore possessed sufficient processing power to run iOS 7 without reducing the functionality of the iPhone.

72. By contrast, iOS 7 was simply too demanding from a processing standpoint to run without causing severe problems on the older and weaker processing chips in the iPhone 4 and the iPhone 4S. The problem was exacerbated by the fact that the iPhone 4 and the iPhone 4S only possessed approximately half of the onboard random access memory (or "RAM") of the later-generation iPhones for which iOS 7 was designed. Whereas the iPhone 5S and iPhone 5C boasted a full gigabyte of RAM, the iPhone 4 and iPhone 4S were each limited to only 512 megabytes. For all of these reasons, transitioning to iOS 7 on an iPhone 4 or iPhone 4S significantly impaired device functionality in a manner that manifested in myriad ways, including non-responsiveness, keyboard sluggishness, extremely slow app launching and device crashes.

73. This generalized reduction in functionality suffered by the iPhone 4 and iPhone 4S devices upon transitioning to iOS 7 was thoroughly documented in media reports dedicated to these problems. For example, an October 15, 2013 article titled "When iOS 7 Attacks: Help for iPhone 4 And 4s Owners" reported the following:

> According to users Web-wide, ***iOS 7 seems to have made legacy Apple smartphones a bit dumber. Reports continue to pour in describing crashes, slowness and erratic behavior overtaking iPhone 4s and 4Ses that have upgraded to the newest version of iOS*** . . . Perhaps it should come as no surprise; iOS 7 was designed with the more powerful iPhone 5S and 5C in mind. Yet many users are surprised, to say nothing of annoyed and frustrated . . . ***The older handsets buckle under the weight of the new software***.
>
> (Emphasis added.)[20]

74. Similarly, an article in *Lifewire* titled "Should You Upgrade Your iPhone 4 to iOS 7?" discussed the perils of upgrading to iOS 7 on an iPhone 4, and stated the following as "The Bottom Line":

> Whether you upgrade your iPhone 4 to iOS 7 is up to you, of course, but I'd be cautious. If you upgrade, you'll be putting the latest OS, which requires a lot of processing horsepower and memory, onto a device that's coming close to

[20] *See* http://readwrite.com/2013/10/15/ios-7-fixes-iphone-4-4S/ (last visited April 4, 2017).

> the end of its usable life. The combination will work, but it may be slower or more problematic than you'd like.
>
> If you're willing to live with some bugs or slowness and just have to have the latest OS, go for it. Otherwise, I'd consider holding off.[21]

75. The precise impact of the sluggishness caused by transitioning to iOS 7 on an iPhone 4 was analyzed and then reported by *ARS Technica* in a September 18, 2013 article titled "New lease on life or death sentence? iOS 7 on the iPhone 4."[22] The article explained that the iPhone's A4 processor "simply isn't up to the task of rendering iOS 7 as Apple intended," and that "[w]hen it comes to launching apps, the iPhone 4's general slowness is only exacerbated by the too-long animation durations in iOS7."

76. To measure the precise harm to responsiveness imposed by iOS 7 on the iPhone 4, *ARS Technica* conducted a series of experiments in which it "launched a number of the built-in apps on both iOS 6 and iOS 7 and timed them to see whether there were any regressions." *ARS Technica* then compiled a chart of data that "measure[s] the time between when the app icon is tapped and when the app becomes ready for user input, and each app's launch time was measured three times and averaged . . . We also measured the time it took for the phone to cold boot to the lock screen." The chart published within the *ARS Technica* article and reproduced here reveals a uniformly striking regression in load times for apps running on iOS 7:

APPLICATION	IOS 6.1.3	IOS 7.0 GM
Safari	1.13 seconds	2.05 seconds
Camera	1.9 seconds	2.63 seconds
Settings	1.31 seconds	1.88 seconds
Mail	1.0 seconds	1.50 seconds
Messages	1.57 seconds	2.80 seconds
Calendar	1.23 seconds	1.78 seconds
Phone	0.67 seconds	2.37 seconds
Cold boot to lock screen	31.14 seconds	45.13 seconds

[21] *See* https://www.lifewire.com/upgrade-iphone-4-ios-7-1999204 (last visited April 4, 2017).
[22] *See* http://arstechnica.com/apple/2013/09/new-lease-on-life-or-death-sentence-ios-7-on-the-iphone-4/ (last visited April 4, 2017).

77. *ARS Technica* summarized and analyzed these troubling findings as follows:

> ***Everything is slower in iOS 7***, usually by one to one-half second or so but sometimes by more. These tiny delays can add up—if you unlock you phone, check your mail or messages quickly, and then put your phone away in the course of 10 or 15 seconds, that lag can become a significant percentage of the time you spend.
>
> (Emphasis added.)

78. The consequences of transitioning to iOS 7 on an iPhone 4 or iPhone 4S are further documented in an Apple customer complaint that Apple received on April 25, 2014, which is discussed *infra* at ¶¶ 109-110. That customer complaint further confirms that "iOS 7 does not function well on iPhone 4 and iPhone 4S."

79. Compounding the problem for iPhone 4 and iPhone 4S users was the fact that, in a reversal of previous protocol and in connection with its release of iOS 7, Apple made it impossible for users who had transitioned to iOS 7 to revert back to an earlier version of iOS. Prior to the release of iOS 7, Apple had created encrypted digital "signatures" that would allow a user to install older operating systems. In conjunction with releasing iOS 7, however, Apple stopped "signing" older versions of iOS.

80. The generalized "crashes, slowness and erratic behavior overtaking iPhone 4s and 4Ses" upon transitioning to iOS 7 were also accompanied by more acute defects that plagued these devices upon downloading iOS 7. For a sizeable portion of the iPhone 4 and 4S population, a defect in iOS 7 meant that transitioning to iOS 7 would prevent them from accessing Wi-Fi and/or Bluetooth.

81. iPhones can connect to the internet via a cellular connection or a Wi-Fi connection. Typically, iPhone users have entered into an agreement with a cellular telephone service provider (such as AT&T) through which the user receives a limited amount of data on a periodic basis in exchange for an agreed upon payment. Provided that an iPhone is geographically located within the service provider's coverage network, the iPhone will be able to connect to the internet using the cellular service provided by the applicable service provider. This is called a cellular connection. An active cellular connection requires the iPhone to incur data usage, which in turn

depletes the data contractually allotted to the user by the service provider. If the iPhone user exceeds his or her data allotment for the relevant time period, the user will incur a data overage charge that can be significant, particularly when compared to the standard monthly data charge paid by the user.

82. When compared to cellular connections, Wi-Fi connections have a number of advantages.[23] First, a Wi-Fi connection can allow for a faster internet connection speed than a cellular connection, particularly when the user is in a location with a weak cellular connection. That faster internet connection is valuable to the user, because it allows the user to download and upload information more quickly. Additionally, in locations where a total lack of cellular coverage makes a network connection impossible, a Wi-Fi connection represents the ***only*** practical vehicle through which the iPhone can connect to the internet. A Wi-Fi connection is also superior to a cellular connection because it can impose less of a drain on the battery of the iPhone, thereby preserving the iPhone's battery life and extending the device's availability for use and overall shelf life.[24]

83. The loss of Wi-Fi capability also harmed iPhone 4 and 4S users because several important, valuable and/or popular iPhone functions and capabilities require Wi-Fi. For example, system updates—including iOS updates—cannot be downloaded over a cellular connection. Rather, they must be downloaded using a Wi-Fi connection. In addition to presenting new

[23] *See, e.g.*, http://smallbusiness.chron.com/advantages-using-wifi-smartphone-71651.html (last visited April 4, 2017).

[24] Further, when an iPhone has established an active Wi-Fi connection, the iPhone can avoid using any cellular data whatsoever. As such, Wi-Fi capability is a vital tool with respect to avoiding data overage charges, and the ability to create a Wi-Fi connection can result in substantial cost savings for iPhone users, particularly those who use data that would otherwise exceed their data plan. Without the ability to connect through Wi-Fi, iPhone users may be forced to decide between (1) restricting their use of the device, (2) upgrading to a more expansive—and therefore more expensive—data plan, or (3) incurring sizeable data overage charges. Simply put, because an iPhone with an active Wi-Fi connection can avoid consuming cellular data under a subscriber's data plan, the inability to use Wi-Fi caused iPhone 4 and 4S users to unnecessarily consume greater amounts of cellular data, resulting in data overage charges that could have been avoided had their Wi-Fi connection not stopped working upon transitioning to iOS 7.

features, changing interfaces and making other purportedly positive changes, iOS updates can also serve the critical function of providing security updates and fixes (or "patches") for bugs and other defects. Indeed, Apple's website shows that no fewer than fourteen security updates were issued for iOS in 2016 alone.[25]

84. Downloading system updates was not the only function that required a Wi-Fi connection. One of the key benefits of an iPhone is the ability to download any of the thousands of applications (or "apps") that are made available for the device. Although some iPhone apps can be downloaded using a cellular connection, certain large apps could only be downloaded through a Wi-Fi connection. Similarly, various video streaming applications that allow iPhone users to watch movies and other programming from their device offer content that can only be streamed through a Wi-Fi connection. The loss of Wi-Fi capability also prevented users from accessing certain features of iCloud.[26] When users lost the ability to access Wi-Fi, they simultaneously lost the ability to take full advantage of all these valuable functions.

85. For many iPhone 4S users, upgrading to iOS 7 also triggered another serious problem: the loss of Bluetooth capability. Bluetooth allows users to connect their iPhones with their computer or automobile, or to share an internet connection with other devices. The iPhone 4S was the first generation of iPhone to feature a new version of Bluetooth called Bluetooth 4.0, which was described by the executive director of the Bluetooth Special Interest Group as "enabl[ing] an entirely new class of product into the Bluetooth world."[27] Thus, the many iPhone 4S users who lost Bluetooth capability upon upgrading to iOS 7 suffered significantly reduced functionality of their device.

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[25] *See* https://support.apple.com/en-us/HT201222 (last visited April 4, 2017).

[26] As described on Apple's website, "iCloud connects you and your Apple devices in amazing ways. It makes sure you always have the latest versions of your important information—like documents, photos, notes, and contacts—on whatever device you're using. It lets you easily share photos, calendars, locations, and more with friends and family. It even helps you find your device if you lose it." *See* https://support.apple.com/kb/PH2608?locale=en_US (last visited April 4, 2017).

[27] *See* http://reviews.cnet.com/8301-19512_7-20116316-233/bluetooth-4.0-what-is-it-and-does-it-matter/ (last visited April 4, 2017).

86. The inability to access Wi-Fi and Bluetooth has been referred to as the "grayed out" issue because when the problem manifests, the Wi-Fi and Bluetooth options turn gray on the device and cannot be activated (the "Grayed-Out Issue").

87. Like the more generalized reduced functionality problems that afflicted iPhone 4 and iPhone 4S devices after transitioning to iOS 7, the Grayed-Out Issue was widespread and well-publicized.

To Force Consumers To Stop Using FaceTime On iOS 6 and Earlier Operating Systems, Apple Breaks FaceTime For iOS 6

88. Even six months after the September 13, 2013 introduction of iOS 7, a sizeable percentage of Apple's user base was still using iOS 6 or earlier operating systems. According to statistics posted by Apple on its App Store developer support page, during a seven-day period ending April 6, 2014, a substantial portion of Apple iOS-based devices were still operating on iOS 6 or earlier.

89. As described above, with millions of users still using iOS 6 or earlier operating systems and with each FaceTime call placed on iOS 6 or earlier operating systems increasing Apple's relay usage and Apple's payment obligations arising therefrom, Apple's financial interests would substantially benefit from preventing users from using FaceTime on iOS 6 or earlier operating systems.

90. Thus, Apple decided to exploit the enormous popularity and importance of FaceTime by breaking FaceTime on iOS 6 and earlier operating systems, making it impossible for those users to regain FaceTime capability on their devices unless they transitioned to iOS 7. When Apple made this shocking and disturbing decision, it was fully cognizant of the substantial reduction in functionality that would accompany the transition of an iPhone 4 or iPhone 4S to iOS 7.

91. In order to break FaceTime for iOS 6 and earlier operating systems, Apple arranged for its engineers to cause a digital certificate necessary to the operation of FaceTime on iOS 6 and earlier operating systems to prematurely expire on a specific date predetermined by

Apple: April 16, 2014.

92. Thus, on the FaceTime Break date selected by Apple, FaceTime would simply stop working for Apple users whose devices were operating on iOS 6 and earlier operating systems. Pursuant to Apple's plan, its user base would have no clue that their sudden inability to use FaceTime was the result of a calculated, intentional consequence of actions taken by Apple to increase its profits by reducing its payments to Akamai. Rather, users of iOS 6 and earlier operating systems would know only that they could no longer use FaceTime on their device, and Apple would exploit that informational vacuum by publicly stating that in order to regain FaceTime capability, they needed to transition to iOS 7.[28]

93. Of course, for the reasons set forth above, transitioning to iOS 7 was extremely problematic for iPhone 4 and iPhone 4S users, as the defects and flaws that iOS 7 posed to those

[28] *See* "Apple's fix for FaceTime woes in iOS 6? Upgrade to iOS 7," *9to5Mac*, April 24, 2014, available at https://9to5mac.com/2014/04/24/apples-fix-for-facetime-woes-in-ios-6-upgrade-to-ios-7/ (last visited April 4, 2017) ("Apple has released a new support document explaining some of the issues that iOS 6 users have experienced lately when trying to make FaceTime calls. Along with an explanation, there's finally a fix in sight that's also detailed on the support page. What's the fix? Update to iOS 7. First spotted by MacRumors, the support document informs users of a pretty obvious solution to the problem. If you're using a device that supports iOS 7, you'll need to update to the latest version of iOS 7."); "Solution to 'FaceTime' Problem Observed in iOS 6, iOS 7 and OS X," *International Business Times*, May 1, 2014, available at http://www.ibtimes.com.au/solution-facetime-problem-observed-ios-6-ios-7-os-x-1339329 (last visited April 4, 2017) ("Devices that are running on iOS 6.x but are capable of iOS 7 upgrade like iPhone 4 or higher, iPad 2 or higher and iPod touch (5th generation), will have to update to the latest iOS version in order to use FaceTime . . . Unfortunately, users who are happy with their devices running on iOS 6 must upgrade to the newer version of iOS to continue enjoying Apple's video and voice calls with the help of FaceTime."); "Apple offers frustrating fix for iOS FaceTime calling woes," *iPhone Hacks*, April 24, 2014, available at http://www.iphonehacks.com/2014/04/apple-offers-fix-ios-6-facetime-calling-woes.html (last visited April 4, 2017) ("Apple advises users to update to iOS 7.1 if their device is capable of running the iOS 7 operating system. Older devices that are not compatible with iOS 7 should upgrade to iOS 6.1.6. iOS owners running iOS 7.0.4 or later or iOS 6.1.6 are not affected by this glitch and do not have to upgrade."); "iOS 6 Users on Devices Able to Run iOS 7 Must Upgrade to Fix FaceTime," *MacRumors*, April 24, 2014, available at https://www.macrumors.com/2014/04/24/ios-6-facetime-fix/ (last visited on April 4, 2017) ("While FaceTime does work with iOS 6.1.6, that particular update is not available to recent devices that are able to run iOS 7, which means iOS 6 users with newer devices who wish to access FaceTime must upgrade to iOS 7.").

iPhone models would irreversibly and significantly reduce the functionality and value of the device.

94. The harmful impact of iOS 7 on iPhone 4 and iPhone 4S devices was well known to Apple as it planned and then implemented the FaceTime Break. Yet Apple simply disregarded those consequences to its customers using iPhone 4 and iPhone 4S devices, choosing instead to further its own financial interests despite the collateral damage.

95. Nor did the human cost of Apple's decision to break FaceTime prevent it from doing so. As Apple's iPhone 4 marketing campaign demonstrates, Apple fully recognized that FaceTime was a very important tool that allowed loved ones separated by geographic distance to remain connected in a meaningful way, and to share once-in-a-lifetime experiences that they otherwise would have missed. By intentionally breaking FaceTime, Apple elevated its own financial interest over the interests of the millions of deployed soldiers, military spouses, grandparents, grandchildren, parents, children and others who were placing millions of FaceTime calls on a daily basis.

96. Internal Apple documents from the period leading up to the FaceTime break establish the company's recognition that, due its own affirmative actions, the digital certificate for FaceTime on iOS 6 and earlier operating systems would expire on April 16, 2014. For example, clearly concerned about Apple's decision to break FaceTime for iOS 6 and earlier operating systems and the consequences that would flow from that decision, then-Apple Manager of OS Security Jacques Vidrine sent an email to other Apple personnel stating as follows: "[L]et me just voice my concern here. Maybe someone can talk me off the ledge by convincing me this is not as big a deal as I think."

97. Unfortunately, the concerns expressed by Mr. Vidrine were ignored by fellow Apple personnel and ultimately superseded by Apple's desire to advance its financial interests. In fact, the same email chain containing Mr. Vidrine's appeal for Apple to reconsider its decision to break FaceTime contains another email in which an Apple employee suggests taking the conversation about the propriety of the FaceTime Break offline so that it would not be documented in writing.

98. Internal Apple documents demonstrate that a perverse excitement and jocularity developed within Apple in anticipation of the FaceTime Break. An April 16, 2014 email from then Apple Senior Security Engineering Manager Andrew Whalley to other Apple personnel states "Today's the day," a reference to the fact that the certificate would expire that day, foreclosing the ability of millions of Apple users to communicate through a life-changing technology that had become an important part of their lives. That same email chain states in plain terms the impact of the FaceTime Break: "All users with [iOS] 6.0 and older can't make FaceTime [calls] any longer."

99. More disturbing still, Apple personnel circulated over email a cartoon mocking the situation and the millions of individuals who would suddenly and unexpectedly lose the ability to communicate with their loved ones through the very technology that Apple had leveraged to encourage those individuals to buy their Apple devices.

100. Internal Apple documents also eliminate any doubt that Apple intentionally broke FaceTime for iOS 6 and earlier operating systems for the express purpose of lowering its relay usage, and therefore the relay usage-based costs that it would have to pay Akamai. For example, weeks or months after Apple broke FaceTime, Apple engineering manager Patrick Gates sent an email to various Apple personnel seeking a reminder regarding the details of Apple's April 16, 2014 break of FaceTime. In that email, Gates states the following: "Hey, guys. I'm looking at the Akamai contract for next year. I understand we did something in April around iOS 6 to reduce relay utilization." Apple engineer Gokul Thirumalai responds to Gates, stating the following: "It was a big user of relay bandwidth. ***We broke iOS 6, and the only way to get FaceTime working again is to upgrade to iOS 7***." (Emphasis added.)

101. In sworn trial testimony given years after the FaceTime Break, Apple further recognized that it intentionally broke FaceTime and that it did so to reduce its relay usage. On January 29, 2016, for example, Apple's Senior Software Engineer Dr. Thomas Jansen explicitly acknowledged that Apple "broke" FaceTime for iOS 6, and that "Apple did something [in April 2014]; and as a result, relay usage went down[.]"

102. Nor is there any question that the FaceTime Break imposed an immediate and significant detriment upon iPhone 4 and iPhone 4S users operating on iOS 6 and earlier operating systems. As confirmed by Dr. Jansen during his sworn trial testimony given on January 29, 2016, as a result of the FaceTime Break, all users of iOS 6 and earlier operating systems—including those with an iPhone 4 or an iPhone 4S—lost the ability to use FaceTime on their device, and if they wanted to regain FaceTime capability they had no choice but to move to iOS 7, regardless of the detrimental impact of doing so: "On April 17th, 2014, they had to [move to iOS 7]; that is correct." Thus, as a direct and proximate result of the FaceTime Break, every Apple iPhone 4 and iPhone 4S user whose device was operating on iOS 6 or an earlier operating system suffered a significant decrease in the value of their device. That reduced value was reflected, *inter alia*, in the market value of iPhone 4 and iPhone 4S devices, which meaningfully decreased as a direct result of the FaceTime Break. As one Apple employee colorfully and succinctly stated in an internal Apple email sent within hours of the FaceTime Break, "***our users*** on Sundance [*i.e.*, iOS 6[29]] and before ***are basically screwed***[.]" (Emphasis added.)

103. In addition, sworn trial testimony by Apple representatives confirms that Apple could have fixed the FaceTime Break without forcing the millions of affected users to transition to iOS 7, thereby subjecting their devices to significantly reduced functionality. Dr. Thomas Jansen conceded under oath that Apple could have fixed Apple's older phones without forcing them to transition to iOS 7 by "removing . . . the check for the expiration date." Instead, Apple elected to intentionally break FaceTime for all users of iOS 6 and earlier operating systems, refused to fix the break, and then lied about what it had done.[30]

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[29] It is widely-known that "Sundance" was the code name that Apple internally used to refer to iOS 6. *See, e.g.*, https://en.wikipedia.org/wiki/List_of_Apple_codenames (last visited April 4, 2017).

[30] Apple did, however, release iOS 6.1.6. According to a February 21, 2014 post on the Apple Support Page, iOS 6.1.6 was a "security update" that "provide[d] a fix for SSL connection verification." *See* https://support.apple.com/kb/dl1722?locale=en_US (last visited April 4, 2017) ("**System Requirements** -iPod touch (4th generation) -iPhone 3GS") (emphasis in original).

Concealing The Truth From Consumers, Apple Insists That The Only Way iOS 6 and Earlier Users Can Regain FaceTime Is To Transition To iOS 7, Regardless Of The Consequences

104. Given FaceTime's prominent role in the lives of Apple users and the enormous volume of FaceTime calls placed on a daily basis, the reaction to FaceTime's sudden failure to work on iOS 6 and earlier operating systems was prompt and vociferous. Within hours of the April 16, 2014, FaceTime Break, concerned inquiries flooded online message boards devoted to Apple and its products, and media outlets picked up the story.

105. Apple could have resolved the issue and restored FaceTime to users of its iOS 6 and earlier operating systems. Instead—prioritizing its financial interests over its customers—Apple proceeded with its strategy to reduce its costs by preventing its customers from using FaceTime on any device running on iOS 6 or an earlier operating system.

106. Moreover, Apple refused to disclose the truth behind ***why*** FaceTime had suddenly stopped working on iOS 6 and earlier operating systems. As set forth above, FaceTime stopped working for iOS 6 and earlier operating systems on April 16, 2014 because, as a result of its infringement on VirnetX's patents, Apple began incurring substantial relay usage charges and therefore intentionally broke FaceTime iOS 6 and earlier operating systems in order to force Apple users to stop accruing relay usage. Apple publicly disclosed ***nothing*** about any of this (until it was reluctantly forced to do so at the VirnetX retrial in 2016).

107. Instead, Apple stated that FaceTime had stopped working on iOS 6 and earlier operating systems due to a "device certificate that expired," and instructed consumers to move from iOS 6 and earlier operating systems to iOS 7 in order to restore the FaceTime feature on their device. This was a misleading half-truth in that Apple failed to disclose that it had intentionally caused this device certificate to expire prematurely.

108. For example, in a statement issued on or around April 24, 2014, Apple stated as follows:

> If you started to have issues making or receiving FaceTime calls after April 16, 2014, your device or your friend's device may have encountered a bug resulting

> from a device certificate that expired on that date. Updating both devices to the latest software will resolve this issue.

109. Apple adopted the same approach in response to specific inquiries received from individual Apple users. For example, on April 25, 2014, Apple received a customer complaint that read as follows:

> Dear Investor Relations,
>
> I'm writing to express my extreme dissatisfaction with Apple. A few weeks ago, I noticed that FaceTime was not functioning on my iPhone 4. When I inquired at my local carrier's store, they did not have any answers except that I needed to upgrade my software to iOS 7. The problem, iOS 7 does not function well on iPhone 4 and iPhone 4S.
>
> According to news reports, FaceTime no longer works with iOS 6, even though no notice to this effect was given by the company. When I tried to contact Apple support, I am informed that I had to pay $19 just to speak to someone, who will no doubt tell me that all I need to do to remedy the problem is to upgrade the operating system on the phone.
>
> This is extremely frustrating, as the only reason I and other friends and family purchase an iPhone in the first place is to take advantage of the FaceTime application.

110. An internal Apple document indicates that, in addition to contacting Apple's investor relations department, the customer who sent this letter also expressed her dissatisfaction to Apple. That document indicates that Apple "advised updating to iOS 7 to resolve the issue."

111. Thus, rather than acknowledge to its customer base and the public in general that it had intentionally broken FaceTime on iOS 6 and earlier operating systems to lower its costs, Apple exploited the chaos it had created by herding its users to iOS 7 despite knowing that for anybody with an iPhone 4 or an iPhone 4S, a transition to iOS 7 meant significant impairment of the functionality and value of their device.

CLASS ACTION ALLEGATIONS

112. Plaintiffs bring this action as a class action pursuant to Federal Rules of Civil Procedure 23(a) and 23(b) on behalf of themselves and all others similarly situated as members of the following class:

THE CLASS: All owners of Apple iPhone 4 or Apple iPhone 4S devices in the United States who on April 16, 2014, had iOS 6 or earlier operating systems on their iPhone 4 or iPhone 4S devices (the "Class").

113. Subject to additional information obtained through further investigation, fact collection and discovery, the foregoing definition of the Class may be expanded or narrowed by further amendment. Specifically excluded from the proposed Class is Defendant Apple and any of its past, present or future officers, directors, trustees, agents, representatives, employees, principals, trusts, partners, joint ventures or controlled entities; any successors, assigns, heirs or other persons or entities related to or affiliated with Defendant Apple; the Judge assigned to this action; and any member of the Judge's immediate family.

114. ***Numerosity***. The members of the Class are so numerous as to render their individual joinder impracticable. Although the precise number of Class members is unknown, based upon information and belief Plaintiffs allege that the Class contains millions of members. The true number of Class members is known by Defendant, however, and, thus, may be notified of the pendency of this action through electronic mail, first class mail and/or by published notice.

115. ***Existence and Predominance of Common Questions of Law and Fact***. Common questions of law and fact applicable to all members of the Class predominate over any questions affecting only individual Class members. These common legal and factual questions include, but are not limited to, the following:

(a) Whether Apple caused FaceTime to stop working on Apple devices running on iOS 6 and earlier operating systems;

(b) The manner in which Apple caused FaceTime to stop working on Apple devices running on iOS 6 and earlier operating systems;

(c) Whether the FaceTime Break prevented Apple users with devices operating on iOS 6 and earlier operating systems from using FaceTime without first transitioning to iOS 7;

(d) Whether Apple committed trespass to chattels in connection with the FaceTime Break;

(e) Whether Apple violated the UCL in connection with the FaceTime Break;

(f) Whether Plaintiffs and the members of the Class have sustained financial loss, and the proper measure of any such financial loss;

(g) Whether Plaintiffs and the members of the Class are entitled to restitution; and

(h) Whether Plaintiffs and the members of the Class are entitled to damages, and the proper measure of any such damages.

116. ***Typicality***. Plaintiffs' claims are typical of those held by the other members of the Class in that through the implementation of the FaceTime Break, Defendant Apple caused FaceTime to stop working on each Class member's iPhone 4 or iPhone 4S device.

117. ***Adequacy of Representation***. Plaintiffs will fairly and adequately protect the interests of the Class. Plaintiffs have retained trial counsel highly experienced in complex litigation including complex consumer class action litigation, and Plaintiffs intend to vigorously prosecute this action. Plaintiffs have no interests in this action that are adverse or antagonistic to the interests of the Class.

118. ***Superiority***. Class action litigation is superior to all other available means for the fair and efficient adjudication of this controversy. The damages, harm and financial detriment suffered by individual members of the Class are relatively minor compared to the burden and expense that would be entailed by individual prosecution of their claims against Defendant Apple. It would thus be practically impossible for the members of the Class, on an individualized basis, to effectively seek and obtain redress for the wrongs committed against them. In addition, even if the Class members could afford—and realistically would be willing—to pursue such individualized litigation, this Court likely could not reasonably sustain the imposition on resources that individualized litigation over this controversy would entail. Further, individualized litigation would create the danger of inconsistent or contradictory judgments arising from the identical factual predicate. Individualized litigation would also result in a substantial increase in the time and expense required of the parties and the Court to address the issues raised by this litigation. By contrast, litigation of the controversy outlined herein as a class action provides the

benefits of adjudication of these issues in a single, unitary proceeding, provides substantial economies of scale, allows comprehensive supervision of the legal and factual issues raised herein by a single court, and presents no unusual management difficulties under the circumstances presented here.

119. Alternatively, the Class should be certified because:

(a) the prosecution of separate actions by individual members of the Class would create a risk of inconsistent or varying judgments and adjudications with respect to individual Class members that would establish incompatible standards of conduct for Defendant;

(b) the prosecution of separate actions by individual members of the Class would create a risk of adjudications with respect to them that would, as a practical matter, be dispositive of the interests of other members of the Class not party to those proceedings, and/or would substantially impair or impede their ability to protect their interests; and/or

(c) Defendant has acted and/or refused to act on grounds generally applicable to the Class, thereby making appropriate final declaratory and/or injunctive relief with respect to the members of the Class as a whole.

120. The claims asserted herein are applicable to all consumers throughout the United States who, as of April 16, 2014, owned an iPhone 4 or iPhone 4S device that was running on Apple's iOS 6 or an earlier operating system.

121. Adequate notice can be given to Class members directly using information maintained in Defendant's records or, if necessary, through notice by publication.

122. Damages may be calculated from the claims data maintained in Defendant's records, so that the cost of administering a recovery for the Class can be minimized. The precise measure of damages available to Plaintiffs and the Class, however, is not a barrier to class certification.

FIRST CAUSE OF ACTION

Trespass to Chattels Under California Law

123. Plaintiffs repeat and reallege each and every allegation above as if set forth in full herein.

124. Plaintiffs and the Class members maintained actual or constructive possession of their iPhone 4 or iPhone 4S devices during the time period of the FaceTime Break.

125. Defendant Apple intentionally interfered with Plaintiffs' and the Class members' use of their iPhone 4 and iPhone 4S devices by implementing the FaceTime Break, which caused FaceTime to cease to function on all such devices.

126. Plaintiffs and the Class members did not consent to Apple's interference.

127. Apple's interference was the actual and proximate cause of injury to Plaintiffs and the Class members because it actually and substantially harmed the functioning of the devices by preventing Plaintiffs and the Class members from using FaceTime on their devices. This harm to the functioning of the devices significantly impaired the devices' condition, quality and value.

128. Apple's interference was malicious and oppressive. Apple knew and intended that its conduct would cause injury to Plaintiffs. Apple acted despicably and with conscious disregard of Plaintiffs' rights.

129. As a result of Apple's interference with their devices, Plaintiffs and the members of the Class are entitled to recover the actual damages they suffered in an amount to be determined at trial, as well as punitive damages in an amount to be determined at trial.

SECOND CAUSE OF ACTION

Violation of California's Unfair Competition Law
California Business and Professions Code §17200, *et seq.*

130. Plaintiffs reallege and incorporate by reference each and every allegation above as if set forth in full herein.[31]

[31] For the avoidance of doubt, Plaintiffs and the Class members are not asserting any claims based on any alleged misrepresentations by Apple.

131. The UCL prohibits "any unlawful, unfair or fraudulent business act or practice…." Cal. Bus. & Prof. Code §17200. Defendant's acts and practices were unfair in that (i) they were immoral, unethical, oppressive, unscrupulous, and substantially injurious to consumers; (ii) they harmed consumers in a manner far outweighing any legitimate utility of their conduct; (iii) the injury was not one that consumers reasonably could have avoided; and (iv) they were contrary to legislatively declared and public policy.

132. By intentionally orchestrating and implementing the FaceTime Break that took effect on April 16, 2014, Defendant prevented Plaintiffs and members of the Class from placing FaceTime calls on iPhone 4 and 4S devices running on iOS 6 or earlier operating systems, and did so without any acceptable justification, whether business or otherwise. Defendant's implementation of the FaceTime Break was unfair in that Defendant refused to take responsibility for intentionally breaking FaceTime for iOS 6 or earlier operating systems and the lost money or property suffered thereby, or to provide any remedy for their injurious conduct. This conduct by Defendant was substantially injurious to consumers, offended public policy, and was immoral, unethical, oppressive, and unscrupulous, and the gravity of the conduct substantially outweighed any alleged benefits attributable to such conduct.

133. Apple financially benefited from the FaceTime Break to the financial detriment of Plaintiffs and Class members. Plaintiffs conferred a financial benefit to Apple by purchasing iPhone 4 and 4S devices with the FaceTime feature. Apple devised the FaceTime Break to save itself tens of millions of dollars in relay fees. This scheme ***forced*** millions of its customers, including Plaintiffs and Class members, to stop using FaceTime on their devices. To regain FaceTime capability, those users had to either (1) transition their iPhone 4 and 4S devices to iOS 7 and thereby lose substantial functionality on their device, (2) lose significant value in their property by virtue of losing the ability to use FaceTime, and/or (3) buy new Apple devices with the necessary processing power to run iOS 7 without significantly reducing the functionality of the devices.

134. As a direct and proximate result of Defendant's unfair practices, Plaintiffs and the

members of the Class have suffered substantial injury in fact, and lost money and/or property. The injuries suffered by Plaintiffs and the members of the Class include, but are not limited to, diminution in the value of their personal property associated with the loss of FaceTime.

135. Defendant has thus engaged in unfair business acts and practices in violation of Cal. Bus. & Prof. Code §17200, entitling Plaintiffs and the members of the Class to judgment and relief against Defendant as set forth in the Prayer for Relief.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs and the members of the Class pray for relief and judgment against Defendant, as follows:

(a) For an order certifying the class and appointing Plaintiffs as Class Representatives and their counsel as Class Counsel;

(b) For a judgment finding Defendant Apple liable for trespass to chattels;

(c) For a judgment finding that Defendant Apple violated the UCL by engaging in unfair business acts and practices;

(d) For damages suffered by Plaintiffs and the Class;

(e) For restitution to Plaintiffs and the Class of all monies wrongfully obtained by Defendant;

(f) For appropriate injunctive relief;

(g) For a judgment and order requiring Defendant Apple to pay to Plaintiffs and the Class the financial benefit received and unjustly retained by Defendant Apple as a result of the FaceTime Break;

(h) For a judgment and order disgorging Defendant Apple of the financial benefit received and unjustly retained by Defendant Apple as a result of the FaceTime Break and requiring payment of the same to Plaintiffs and the Class;

(i) For a ruling ordering Defendant Apple to pay punitive damages to Plaintiffs and the Class based upon the misconduct set forth herein;

(j) For a ruling awarding Plaintiffs reasonable attorneys' fees pursuant to, *inter alia*, Cal. Code Civ. Proc. § 1021.5;

(k) For a ruling awarding Plaintiffs costs incurred; and

(l) For such other and further relief that the Court deems just and proper.

JURY DEMAND

Plaintiffs demand a trial by jury on all claims so triable.

Dated: April 5, 2017

Respectfully Submitted,

By: */s/ Jill M. Manning*

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CERTIFICATE OF SERVICE

On April 5, 2017, I electronically filed the foregoing with the Clerk of the Court by using the CM/ECF system which will send notice of electronic filing to all persons registered for ECF. All copies of documents required to be served by Fed. R. Civ. P. 5(a) and L.R. 5-1 have been so served.

/s/ Alma Roque
Alma Roque