B. Apple uses APIs and other critical access points in the smartphone ecosystem to control the behavior and innovation of third parties in order to insulate itself from competition

i. Messaging: Apple protects its smartphone monopoly by degrading and undermining cross-platform messaging apps and rival smartphones

80. Apple undermines cross-platform messaging to reinforce "obstacle[s] to iPhone families giving their kids Android phones." Apple could have made a better cross-platform messaging experience itself by creating iMessage for Android but concluded that doing so "will hurt us more than help us." Apple therefore continues to impede innovation in smartphone messaging, even though doing so sacrifices the profits Apple would earn from increasing the value of the iPhone to users, because it helps build and maintain its monopoly power.

81. Messaging apps allow smartphone users to communicate with friends, family, and other contacts and are often the primary way users interact with their smartphones. In Apple's own words, messaging apps are "a central artery through which the full range of customer experience flows."

82. Smartphone messaging apps operate using "protocols," which are the systems that enable communication and determine the features available when users interact with each other via messaging apps.

83. One important protocol used by messaging apps is SMS.[1] SMS offers a broad user network, but limited functionality. For example, all mobile phones can receive SMS messages, but SMS does not support modern messaging features, such as large files, edited messages, or reactions like a "thumbs up" or a heart.

[1] Following industry practice, throughout this complaint, "SMS" refers to both SMS and MMS ("multimedia messaging service"). MMS is a companion protocol to SMS that allows for group messages and messages with basic multimedia content, such as small file sharing.

84. Many messaging apps—such as WhatsApp, Facebook Messenger, and Signal—use proprietary, internet-based protocols, which are sometimes referred to as OTT ("over the top") protocols. OTT messaging typically involves more secure and advanced features, such as encryption, typing indicators, read receipts, the ability to share rich media, and disappearing or ephemeral messages. While all mobile phones can send and receive SMS messages, OTT only works between users who sign up for and communicate through the same messaging app. As a result, a user cannot send an OTT message to a friend unless the friend also uses the same messaging app.

85. Apple makes third-party messaging apps on the iPhone worse generally and relative to Apple Messages, Apple's own messaging app. By doing so, Apple is knowingly and deliberately degrading quality, privacy, and security for its users. For example, Apple designates the APIs needed to implement SMS as "private," meaning third-party developers have no technical means of accessing them and are prohibited from doing so under Apple's contractual agreements with developers. As a result, third-party messaging apps cannot combine the "text to anyone" functionality of SMS with the advanced features of OTT messaging. Instead, if a user wants to send somebody a message in a third-party messaging app, they must first confirm whether the person they want to talk to has the same messaging app and, if not, convince that person to download and use a new messaging app. By contrast, if an Apple Messages user wants to send somebody a message, they just type their phone number into the "To:" field and send the message because Apple Messages incorporates SMS and OTT messaging.

86. Apple prohibits third-party developers from incorporating other important features into their messaging apps as well. For example, third-party messaging apps cannot continue operating in the background when the app is closed, which impairs functionality like

message delivery confirmation. And when users receive video calls, third-party messaging apps cannot access the iPhone camera to allow users to preview their appearance on video before answering a call. Apple Messages incorporates these features.

87. If third-party messaging apps could incorporate these features, they would be more valuable and attractive to users, and the iPhone would be more valuable to Apple in the short term. For example, by incorporating SMS, users would avoid the hassle of convincing someone to download a separate app before sending them a message. Third-party messaging apps could also offer the ability to schedule SMS messages to be sent in the future, suggest replies, and support robust multi-device use on smartphones, tablets, and computers—as they have already done on Android.

88. Moreover, messaging apps benefit from significant network effects—as more people use the app, there are more people to communicate with through the app, which makes the app more valuable and in turn attracts even more users. Incorporating SMS would help third-party messaging apps grow their network and attract more users. Instead, Apple limits the reach of third-party messaging apps and reinforces network effects that benefit Apple.

89. Recently, Apple has stated that it plans to incorporate more advanced features for cross-platform messaging in Apple Messages by adopting a 2019 version of the RCS protocol (which combines aspects of SMS and OTT). Apple has not done so yet, and regardless it would not cure Apple's efforts to undermine third-party messaging apps because third-party messaging apps will still be prohibited from incorporating RCS just as they are prohibited from incorporating SMS. Moreover, the RCS standard will continue to improve over time, and if Apple does not support later versions of RCS, cross-platform messaging using RCS could soon be broken on iPhones anyway.

90. In addition to degrading the quality of third-party messaging apps, Apple affirmatively undermines the quality of rival smartphones. For example, if an iPhone user messages a non-iPhone user in Apple Messages—the default messaging app on an iPhone—then the text appears to the iPhone user as a green bubble and incorporates limited functionality: the conversation is not encrypted, videos are pixelated and grainy, and users cannot edit messages or see typing indicators. This signals to users that rival smartphones are lower quality because the experience of messaging friends and family who do not own iPhones is worse—even though Apple, not the rival smartphone, is the cause of that degraded user experience. Many non-iPhone users also experience social stigma, exclusion, and blame for "breaking" chats where other participants own iPhones. This effect is particularly powerful for certain demographics, like teenagers—where the iPhone's share is 85 percent, according to one survey. This social pressure reinforces switching costs and drives users to continue buying iPhones—solidifying Apple's smartphone dominance not because Apple has made its smartphone better, but because it has made communicating with other smartphones worse.

91. Apple recognizes that its conduct harms users and makes it more difficult to switch smartphones. For example, in 2013, Apple's Senior Vice President of Software Engineering explained that supporting cross-platform OTT messaging in Apple Messages "would simply serve to remove [an] obstacle to iPhone families giving their kids Android phones." In March 2016, Apple's Senior Vice President of Worldwide Marketing forwarded an email to CEO Tim Cook making the same point: "moving iMessage to Android will hurt us more than help us."

92. In 2022, Apple's CEO Tim Cook was asked whether Apple would fix iPhone-to-Android messaging. "It's tough," the questioner implored Mr. Cook, "not to make it personal but I can't send my mom certain videos." Mr. Cook's response? "Buy your mom an iPhone."

93. Recently, Apple blocked a third-party developer from fixing the broken cross-platform messaging experience in Apple Messages and providing end-to-end encryption for messages between Apple Messages and Android users. By rejecting solutions that would allow for cross-platform encryption, Apple continues to make iPhone users' less secure than they could otherwise be.