Sideloading Drivers and motivations.

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With the recent court cases involving Google, Apple, and Epic Games, sideloading has taken a prominent position in the current and future accessibility and usability of smartphone applications. Sideloading is defined in the context of smartphones as the download and installation of an application via non-official means, such as a Third-Party Marketplace or repository. Enabling, or disabling the ability to sideload in smartphone eco-systems has the potential for an increase in wider issues such as the prevention of device longevity and digital sustainability. This paper outlines the current research into Sideloading drivers and motivations with discussion on future studies to be conducted.

Sideloading, Smartphone Applications, Digital Sustainability, Device Usability

1. INTRODUCTION

Since the introduction of the modern smartphone, sideloading has existed as an alternative method of downloading and installing applications via third party marketplaces and repositories (Goodwin, 2020). Although predominantly a method used on Android Smartphones, research into ongoing court cases, fringe community ideologies have highlighted the growing demand for easier sideloading methods on Apple Smartphones (Epic Games, Inc v Apple Inc, 2021), (Goodwin, 2022). This doctoral consortium paper intends to highlight a brief overview of the previous, current, and future research in the field of sideloading.

2. RESEARCH AND OBJECTIVES

The area of sideloading is under researched. This is partially because the research field is new sideloading has only become a contentious and noteworthy research field in the past few years. This is due to sideloading becoming a staple in the Apple, Google VS Fortnite court cases (Epic Games, Inc v Apple Inc, 2021) with the demand for the reduction in the monopolisation of App Stores on Google & Apple smartphones and a demand for a more open ecosystem. Due to cases and drivers such as these, plus others mentioned later in the paper, the aims and objectives of the research are to answer the following questions:

- **RQ1**: What are the behaviours, interactions and attitudes surrounding unofficial smartphone application installation? (See Fig.1).
- **RQ2**: What are the underpinning motivations for the intentional or unintentional pursuit of sideloading applications?

![Figure 1: Venn Diagram with Sideloading drivers and relationships discovered in the literature and grey studies.](http://dx.doi.org/10.14236/ewic/HCI2022.64)
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tested alongside the parameters of whether they “installed”, “opened” and “functioned” and were assigned as a “functional supported application” or not. It was discovered that out of 200 applications, only 29 (12.6%) could be downloaded directly and 141 (61.3%) in total could be downloaded and function with help from another device.

Figure 2. Example screenshots illustrating hurdles to downloading an application on a legacy Apple Tablet. (A): Unable to download the application directly on the iPad Mini. (B): Search and down-load the application on a supported modern Apple device with the same account credentials. (C): On the iPad Mini, search for the application purchase history. (D): Download the last compatible version of the required application (if supported). (Goodwin, 2022)

The study attempted to show the underpinning conditions that could force the user to sideload applications on older Apple devices to maintain system and application useability and functionality. Moreover, it highlights issues with devices with closed ecosystems and the loopholes required to maintain useability on older devices.

Study Two: Survey on Sideloading Drivers and Attitudes - In this study, 103 participants were asked a series of 17 open and closed questions (some were branched) about their understanding and experiences in Sideloading applications and their opinion on topics of discussion closely related to sideloading cultures (such as the right to repair etc). Participants were recruited from relevant Reddit threads and from staff/student Computer Scientists at Keele University. Preliminary results indicate Reddit participants have high familiarity with the term ‘sideloading’ (83.6%) after being shown a definition which defines the term but doesn’t reveal it. In comparison only (44.4%) of Computer Science Students and Staff were able to guess correctly. Furthermore, the analysis suggests that almost a third of participants from both cohorts who sideload applications do so because the application was not available on the official App Stores of the respective smartphone they use. These results and others are to be fully analysed and compiled into a paper and published at a relevant conference soon.

2.1 Future Research

Planned future research includes a device longevity study which expands on Study One. This is because the device will become classified as “Obsolete” by Apple as opposed to “Vintage” when the study was first completed (Apple Support, 2022). This will allow a comparison of device and application functionality to see if there is a gradual or steep decline in usability after the device changes classification. Another planned study is an interactive design survey alongside a usability scale which explores the experiences and opinions of Sideloading an application.

3. REFERENCES

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