

## ***Is talking to Alexa enough?***

### **A study of user experience from Alexa-enabled Echo devices with a screen.**

Amazon's Alexa-enabled Echo started as a smart speaker that served as an in-home hub for the company. There are now many Echo devices with different sizes and form factors, such as those with a screen. Alexa has also come a long way, as she has acquired many new "skills" over the past few years and she can now be the virtual butler of your smart home. Other than playing music, reading news, checking weather, or selling stuff from Amazon, Alexa can now help the user around the house. With a few words, Alexa can now make you a cup of coffee, play you a movie, show you who's at the door, and to change the lighting in your room while keeping the temperature at 72 F, given you also have the supported smart products and services.

In this study, I am going to focus on Echo devices that have a screen – a logical and sensible next-step for the smart speaker product line. These devices are no longer just smart speakers as they can now deliver both audio and visual information to the users. The screen provides another dimension for users to interact with these devices, and Alexa has also evolved to a more capable virtual assistant, who can talk as well show you things.

The key question of this study, as reflected by the title, is to investigate whether these Alexa-enabled devices is better with a screen. This study will examine the user experience to obtain insights into the following questions:

- 1) For Echo's users, does the added screen and its related functions provide a better experience relative to other Echo smart speakers that do not have a screen?
- 2) For Amazon, are these devices with a screen more effective in driving Amazon's businesses, including promoting purchases as well as selling other Amazon's services? In addition, do the users like the Echo devices better with a screen? In consideration of the next generation of similar Echo products, what are features or services to include, improve, or exclude?
- 3) For Amazon's partners, does the added screen increase sales of their services and products?

The subjects of this study will cover the latest Amazon's Alexa-enabled Echo devices that have a screen. Currently, Amazon has released three such devices, Echo Show 1<sup>st</sup> generation, Echo Dot, and Echo Show 2<sup>nd</sup> generation. Each of these devices have thousands of reviews available on the Amazon website, composing the dataset of this study. From this data set, analyses will be performed to obtain insights into the users and usage of these devices. In addition, these reviews might also provide insights into the evolution of these smart speakers with screens. For example, analyses will be carried out to compare the 1<sup>st</sup> and 2<sup>nd</sup> generation of Echo Show, or to compare the bigger-screen Echo Show and the smaller Echo Dot. Amazon's and third-party products or services with known Alexa support will also be examined.

This study aims to provide a quantitative understanding of these smart devices and related services from analyzing the user experience for those who are developers of smart voice assistant and smart devices as well as consumers who are in the market for smart speakers or smart products. The analysis will help characterize existing users of these devices, their usage habits, and the key positive and negative features of these devices. The findings, based upon usage of current generation of products, will provide data-driven guidance for development of the next generation of related smart products. For potential buyers of Amazon's Echo, this study will provide a quantitative review of current Echo products with a screen based on user's

reviews. The deliverables of this study will include the code and a paper summarizing the findings.