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To Be The Hub or Not: Explaining the Diffusion of Communication Apps

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Abstract

Communication apps can be a major factor in a digital strategy based on being a data and communication hub, and therefore understanding their diffusion and growth is of high importance. In this paper, we provide a list of factors and concepts that drive their growth, but can also be used to differentiate between apps, in order to understand why some are successful, but at the same time limited to certain countries or regions. With the conceptual diffusion model proposed based on these factors, we contribute to our understanding of the dynamics in the network economy, as well as enable future quantitative research into this topic.

Keywords: Diffusion of innovations; network effects; communication technology.

1. Introduction

In the digital world whoever controls the data has the power. There is an old saying, that if you have full information you can make the perfect decision. However, people are not always willing to share their data. Yet if you

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are the hub that all data passes through, you can gain competitive advantage that can be leveraged in many ways. It is very difficult though to become such a hub, and maybe even the sole one. That would suggest a "monopoly" which regulatory agencies will most probably not allow to be created or persist. A digital company's goal may nevertheless be to establish the hub that all data passes through, and they may end up sharing that position with a handful of other companies. Messaging apps are trying to form such a hub - or one of the major hubs – thus controlling the data.

Controlling data allows applying data mining and deep learning that leads to customized and individualized treatment of consumers resulting in satisfaction and in turn more usage. For example Apple has created IPhone, IPad, IPod, IMac, and ITunes; Google has its search engine, Android operating system and starting Google phone; Microsoft recently bought LinkedIn and Skype. In short, digital companies are positioning themselves to be able to collect as much data and mine them to create intelligence. They want to be the one-stop-shop where the more people come to, the better they are served better and they return through positive externality increasing the number of users.

Text messaging offered by Telecom operators is giving way to apps on smart phones that cost zero or very little to send messages. Users are switching in large numbers to VoIP based apps in countries such as India, China, South Korea, Turkey, Brazil, and Spain. For example, one such app, WhatsApp is very popular with over 1 billion users in India, Middle East, Europe, and South America. It is the fastest growing app in the four years since its inception, being far beyond Facebook, Gmail, Twitter, and Skype in a comparison according to this number. WeChat on the other hand is predominantly widespread in China. Although it is technologically superior to WhatsApp in some ways – e.g. it can handle cash transactions – it has not crossed over the cultural and/or national borders and barriers. Similarly, Line is growing in Japan, while Kakao on the other hand is being used in South Korea.

Given this data, and the relevance of such apps for implementing a digital strategy based on being a data and communication hub, it is paramount to understand their diffusion and growth. In this paper, we will therefore provide a list of factors and concepts that drive the growth, but can also be used to differentiate between apps, in order to understand why some flourish, and some succeed but are limited to certain countries or regions. With the conceptual diffusion model proposed through these factors, we contribute to our understanding of the dynamics in the network economy, as well as enable future quantitative research into this topic.

2. Diffusion and Growth Factors and Concepts

2.1. History Matters: SMS Pricing, Path Dependence and S-Curves

One factor is the history of SMS pricing in a region. Seven or eight years ago many people were predominantly using SMS or text messaging. WhatsApp then came to the rescue. It was easy to use, simple, and most importantly cheap. People immediately adopted this form of communication. WhatsApp shows the greatest penetration in countries such as Spain, India, and South America where the SMS pricing is high. In the USA where the SMS pricing is very low the penetration rate of WhatsApp is also very low.

This can also be seen as an example of path dependence [1]: While in some countries or regions SMS became highly successful and widespread, and thus people are used to text messaging, it is also considerably easier for replacement technologies to penetrate. One of the reasons for SMS success in some regions have also been relatively high rates for speech telephony. Finally, the relationship to SMS can also be analyzed from the perspective of the S-curve model [2], with the reasoning being that low SMS prices make shifting to the new technology less enticing, as long as there is no major functionality or performance difference between the two.