

A two-sided market approach to value chain dynamics in telecom services



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When studying the technology components of platforms from coordination cost perspective, we can capture aspects of technology innovation inside the twosided markets concept.

This approach seems promising for further research into how platforms combine existing services into new bundles or products. We can also extend the analysis to how technological platform innovation affects pricing strategies, and value chain dynamics in the telecom industry. Two mobile service cases from own interviews and archival research are used to illustrate the utility of the study lens. Keywords: mobile telecom, service innovation, two-sided market, platform, value chain, dynamics etween users on two different sides of a market. It provides an alternative way of analyzing converging markets and thereby industry dynamics by taking technical innovation into account through its recognition of the economics of platforms. Further, the two-sided market model provides different conditions for pricing compared to one-sided markets, which are an important aspect of business models available to platform providers.

The theory of two-sided markets, referred to as concept in this paper, is still under development and was first used by antitrust cases concerning the credit card market in the US and the development of business models in the “ new economy” in the 1990s. The two-sided markets concept assumes a few basic conditions in the information and communications technology industry expressed by Shapiro and Varian: The industrial economy is driven by economics of scale, whereas the information economy is driven by economics of networks.

Shapiro and Varian define three basic characteristics of networks: 1) Network externalities (interconnected actors are affected by each other, positively or negatively, even if they are indirectly connected), 2) increasing returns (the value/utility of a network increases with the number of actors connected), and 3) path-dependencies and lock-ins. Within the logic of this information economy, a two-sided market features one or more platforms bringing together two or more groups of consumers that are independent of each other.

This results in indirect externalities in a two-sided market. Evans defines a two-sided market in the following: “ At any point in time there are a) two distinct groups of customers; b) the value obtained by one kind of customers increase with the number of the other kind of customers; and c) an intermediary is necessary for internalizing the externalities created by one group for the other group”. Industry economics and management of technology represent two crucial aspects of innovation being considered by firms for competitive advantage and long-term success.

However, one of the challenges in studying innovation is its interdisciplinary nature: Economics and management often belong to two different schools of thought and focus on macro and the micro perspective respectively. Attempts to bridge this gap was pioneered by Schumpeter [1], whose main points rest on notions of the availability and use of debt financing by risk takers to introduce new techniques, structures or procedures. However Schumpeter left technology as an exogenous variable without studying much dynamics of technology innovation itself.

Management studies on the other hand often focus on micro level resource allocation, leadership and capabilities, which could lend itself to a meso-level network unit of analysis, but rarely to suitable models of industry convergence and dynamics. The concept of two-sided markets is a relatively new concept whereby one or several platforms facilitate interactions 978-0-7695-4084-9/10 \$26. 00 © 2010 IEEE DOI 10. 1109/ICMB-GMR. 2010. 76 505 506 Compared to classic transaction cost theory and Coases's theorem, the transaction between two parties on a two-side market only takes place in the presence of a third party, the platform.

A Coasian neutral price through direct bargaining between the two agents is therefore not possible. Since there is no pricing neutrality, platform strategies could be based on price allocation between the two markets, rather than conventional cost-based pricing. As a mutual dependency exist between the two markets, a profit optimization would strike a balance between number of users and price on both sides, where one side could subsidize the other. Take the example of a mobile site portal (i-mode in its initial years e. g. , the balance to strike for the platform owner (NTT DoCoMo in this case) is to have an attractive price for users (max 300 yen in this case), while maintaining an attractive revenue share for content providers (9% in this case). This price allocation between the two markets has certain basic characteristics: • Elasticity: if the installed based on one side increases and if this side is captive, it is profitable for the platform to increase its price in order to decrease its price on the other side and attract more users.

The content provider's market power: if content providers enjoy significant market power, then the platform could decrease its price it charges those

service providers to decrease the double marginalization effect. User's market power: Lead users and heavy users are usually important for feedback and profitability. Platform providers could then lower prices for users and increase them for content providers. The consequence of multi-homing (users connecting to multiple platforms) price sensitivity appears to increase on the user side, but various scenarios could occur.

The platform takes on an important role when using the two-sided market model as mentioned. A platform is also a well known concept in software design and technology innovation, often facilitating transformation of data between two incompatible systems. Gateways often refer to quick evolution as an alternative to backward compatibility (slow evolution) when linking technologies together. It is a means to avoid confrontation, and introduce modularization between existing standards.

In the telecoms industry gateways are often seen as facilitators of industry convergence, which often encompasses configurative innovations. Standards change the economics of networks and the rules of competition. If a user base is tied to a technological standard, increasing returns applies to the standard too. This can be summarized in a standards reinforcement mechanism which also explains how a standard that builds up an early installed base before competitors, create path dependency among customers [6].

The reinforcement process ("positive feed-back") that technological standards induce on its user base is in contrast to classic economy of decreasing returns (due to scarce natural resources). The focus in economics of standards is demand-side economies of scale, where users

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benefit from interoperable products and technologies. As large infrastructure networks tend to “ drift” and accept new patches of complementing technology as they emerge, gateways are important to enable a balanced ecology of networks.