

Why Facebook is flying up high and Twitter can't fly away...

Making money from personal Big Data

by

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Facebook and Twitter are two iconic Internet companies. Both offer social network services but their business performance trajectories (earnings and stock prices) are diverging. The question is why.

Facebook, founded by Mark Zuckerberg in 2004, has 1.18 billion monthly active users, employs 10,000 people, and reported almost US\$3 billion profits in 2014 (*Figure 1*). Twitter, founded by Jack Dorsey and three other people in 2006, has 316 million monthly users, employs 3900 people and reported a net loss of US\$ 600 million last year. Listed on the US stock exchange in 2012, Facebook's market capitalization reaches US\$265 billion in 2015 more than 13 times the market value of Twitter, which went public one year and a half later. The evolution of the share prices reflects the investors' sentiment about the two companies (*Figure 2*).

There are surely many factors explaining why Twitter is lagging behind Facebook. One of them may deserve more scrutiny: what business is Twitter in?

From the analysis of its user database, Kwak *et al.* (2010) concluded that Twitter was a news media rather than a social media. This empirical observation seems to us very important to understand why Twitter is struggling to reach profitability. Like any news media, Twitter makes information public to the users' followers. However, there is one difference between Twitter and traditional news media (newspapers, TVs or radios). Twitter does not produce information. It only broadcasts information produced for free by its users. Therefore, it does not incur the cost of producing information as traditional news media. Is this sufficient to be more profitable than traditional news media?

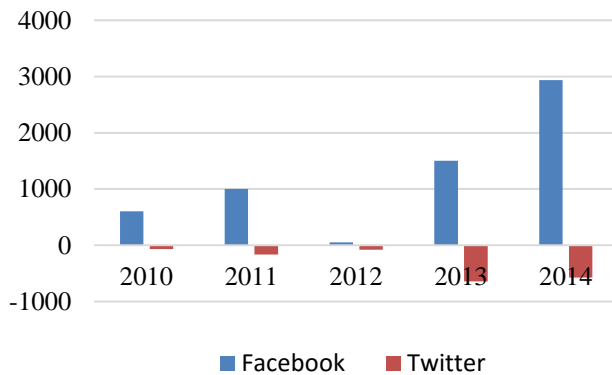


Figure 1: Net Income (in million US dollars)

The answer is no. In a celebrated paper, the American economist Kenneth Arrow (1962) explains that information is a public good, i.e. a good that several people can consume at the same time and that is difficult for its owner to keep the exclusive property rights on it. Moreover, diffusing information is easy and cheap, especially at the time of the Internet. As a result, the producer of information has a hard time to appropriate the revenues of information. If he sells information, it will diffuse and may eventually become public. The value of that information becomes zero for its owner when it is publicly known. If he keeps information for himself, he may not be able to extract value from it or even prevent the leaking of it. Making money from information is thus tricky and risky. Due to these low incentives, Arrow concluded that the production of information and knowledge is unfortunately suboptimal in a market economy.

The sector of information managed to be profitable by centralizing broadcasting in the hands of a few private and sometimes public players, and by

financing the cost of production through revenues from advertising. The emergence of the Internet destabilized this market bringing more competition in broadcasting (Twitter is a competitor to traditional news media) and more competition in the advertising market. The decentralization of the diffusion of information has reduced the advertising market share of the traditional news media to the benefit of new players such as Facebook and Twitter. However, if the cost structure of Twitter's business model is advantageous relative to that of the traditional news media, its revenues side is similar. Its revenues, i.e. its ad revenues, depend on the size of its audience. The number of Twitter's users is still growing but not as fast as in the past and represents only 25% of Facebook's audience, which is also growing at a much slower pace than previously.

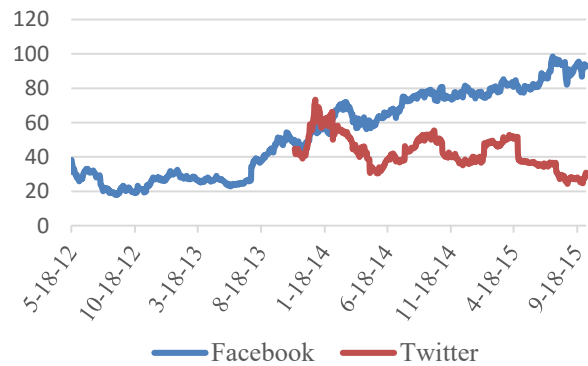


Figure 2 Facebook and Twitter stock prices since IPO (in US dollars)

Then, what makes Facebook so successful?

Facebook is a social media through which users can exchange information with their "friends". But this information



is often personal and may not even be interesting to the friends. However, any personal information is interesting to Facebook, which learns much about who we are and who we are connected with. Google, Facebook and Amazon are huge collectors of personal data from Internet users. Google knows what we search (text information, images and videos), Amazon knows what we buy and Facebook knows what we like and dislike. The question is: can they make money from that information?

The answer is yes. In a recent paper (Artige 2015), I extend Arrow's analysis of the market for information to the Big Data phenomenon. Big Data is the production of information at a large scale thank to the digital technology. A large part of Big Data is personal information. Digital technology enables Internet users to consume digital services in exchange of personal information that they transfer for free. What each Internet user accepts to transfer in terms of personal data to a server, he would not easily accept to transfer to a person. By communicating with machines, we leave digital footprints about ourselves that are used by algorithms to create a very precise profile of our tastes and purchasing power. These personal data are accumulated in big quantities by Internet companies such as Facebook. Not only Facebook generates ad revenues (like Twitter) because it has a large audience, it can also make money from our personal information. Thanks to privacy laws, personal information

cannot be diffused in the public arena like any information in newspapers or tweets. Privacy laws enable Facebook to appropriate personal information and therefore appropriate the returns from it.

Traditional news media and Twitter diffuse information to an audience they do not know personally. They do not have access to detailed personal information of their audience so that their advertising targets the general public. Google, Facebook and Amazon also diffuse information but to an audience from which they accumulate personal data transferred by users. They have more personal knowledge about their users and due to their large audience they can infer statistical information about the demands for many markets by aggregating personal information on users. This information is extremely useful for enterprises whose primary objective is to meet the market demand and forecast its future swings. Thank to privacy laws, the personal data accumulated by the Internet giants cannot be publicized or even transferred to another company. This has given Google, Facebook and Amazon a huge market power on the advertising market.

The threat to Facebook's market power could come from competition regulators (cf. the recent decision of the European court of Justice on the "Safe Harbor" framework) and privacy engineering technology. By then, Facebook's wings will remain more competitive than Twitter's.



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