

The power of digital ecosystems

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In just a few years the big technology companies have gone from being admired for their constant innovation, offering us new products and services, to being labelled as dangerous all-powerful giants. In the recent Davos forum, without more ado, George Soros accused Facebook and Google of being “obstacles to innovation” and a “menace to democracy”. But, why have the big technology companies accumulated so much power? And, what are the real benefits and perils entailed?

In spite of the fact that their range of products and services is varied (social networks, e-commerce, search engines, operating systems and app stores, etc), these companies have a communal way of relating to consumers and expanding their activity. They construct a network of products and services around the user which are interconnected - a digital ecosystem which takes advantage of synergies and offers the customer an integrated experience to satisfy a wide range of needs. These ecosystems have three features which explain their huge power: they develop network effects, they are a portal to other markets, and they generate and exploit huge amounts of data. Let's take it one step at a time.

In the first place, network effects arise because digital ecosystems allow users to connect and interact with each other (for example, using a social network) and, using marketplaces, access products and services from different suppliers. In fact, facilitating these connections is one of the main activities of the majority of ecosystems and, because of this, their value increases in line with the number of participants and their level of involvement. These network effects mean that, when an ecosystem reaches a certain critical mass, it benefits from a positive feedback loop which gives it a dominant position with relative ease.

In the second place, digital ecosystems have the role of guardians, or gateways, to products and services on other markets. This is the case, for example, with mobile operating systems and app stores, which set up conditions for creating and distributing messaging, games or mobile payment services apps. Internet search portals are also sometimes gateways, via which users access communications media, e-commerce or travel booking services. This role as guardians or gateways allows digital ecosystems to exercise a certain degree of control over other products and services and extends its tentacles towards these related markets and therefore makes the network around consumers grow.

The third key element to digital ecosystems is big data generation and exploitation. The services they offer allow them to obtain a huge amount of data about their users. Combining and exploiting this information properly they improve the quality of services (for example, by further personalising sales' offers) and develop new functions. In this way they increase user participation and gain new users, obtaining yet further data and continuing to improve their value, which gives rise to a feedback loop which reinforces their market position.

These three features of digital ecosystems (network effects, gateways and big data) are key to understanding the benefits they offer and the risks they pose. In principle, consumers enjoy a simple, integrated user experience and can access a wide, personalised range of products and services. From an economic point of view, ecosystems allow advantage to be taken of various types of synergies: economies of scale and network externalities, etc.

The problem is that these same factors give a concentration of power to a very few companies whose domain, moreover, crosses the traditional barriers between business sectors. Their network of products and services can become a spider's web which is ever stronger and larger and which ends up reducing the choices available to consumers. To prevent this happening, a regulatory and competition framework needs to be developed which adequately assigns the accountability of those controlling the ecosystems and which guarantees that digital markets are open, competitive, dynamic and innovative. This is, in fact, one of the major public challenges of the digital economy.

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