MOOC

Innovating in a Digital World

Lesson : The power of externalities

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Introduction

In the old days, everything could be found at La Samaritaine, a large department store in the French capital. That was their slogan, so everyone went there. Today, everything's on Amazon, so that's where everyone goes now. Back in the day, everyone went to the village dance, because everyone else was there. Today, the whole world meets up on Facebook.

There are places and platforms that everyone rushes to, because that's where we find the people we want to spend time with or meet. Or that's where we find the offer of goods or services that were developed there, precisely because it's so popular. This interdependence of consumption or activities points to externalities, which is what we will look at in this module.

What is an externality?

An externality is the benefit or loss incurred by an economic agent because of the activity of another economic agent, because of the activity of another economic agent, without there being any economic interaction between them. We call it a positive externality when there's a benefit, and a negative externality in the case of a loss.

For example, all pollution in our environment (air, water, noise, etc.) created by a third party constitutes a negative externality. So does any use of a network causing congestion. In these cases, we are negatively affected by the activity of an economic agent, without causing it in any way.

Fortunately, there are activities that affect us positively. For example, a tree grower will be glad to see a beekeeper settle in next to his orchards, as the bees foraging there will pollinate the flowers. The beekeeper will benefit from the orchard's flowers since the bees will collect their nectar to produce honey. The more blossoming trees there are, the more bees there will be, and so the more fruit there will be.

The digital world feeds on externalities

There are many mutual benefits in the digital world. The more people subscribe to a network, the more people there will be to call. The more searches are performed on a search engine, the more the engine's algorithm can be improved. These are direct externalities. The more people use a product (a service, a standard, a device, etc.), the more this product will gain or lose value. The gain or loss will depend on the nature of the externality in question.

The more people use a game console, the more games there will be to choose from on that console. The more rooms are offered on Airbnb, the more travellers will search for rooms on the website and vice versa. These externalities play on two sides of a market, connected by a platform. We call these indirect or cross-side externalities.

In all cases, there is no economic relationship between the agents. Increasing or reducing the value of a service by accessing it does not affect the price to access it.

Externalities create dominance phenomena

In the presence of externalities, there’s no longer a proper equilibrium between supply and demand. So there’s market failure, with overproduction in the case of negative externalities, and underproduction in the case of positive ones. Should these phenomena be controlled or regulated?

Take the case of the complex relationship between breeders and farmers in areas where crops are not enclosed. The cattle can go into the fields and destroy certain crops when they ripen, but also fertilize fields when they have been harvested. In this respect, Ronald Coase explains that negotiation can prove more effective than regulation imposed on agents.

In the case of positive externalities, the rush follows the crowd. For instance, platforms that grasp the dynamics of consumer and supplier agglomeration before anyone else, quickly become dominant. Google, YouTube, eBay, Amazon, and Uber are some examples, amongst many others. These platforms leave little room for the competition. Should they be regulated?

Until now, the volatility of digital consumers seems to have limited the duration of such dominance. This has mitigated any harsh action by government authorities.

To reduce these dominant positions, their external effects have to be spread out as much as possible, if they are positive. This can be done by fostering interconnection, interoperability, platform openness and possibilities of portability between platforms.

Digital technology has generated multiple platforms with extremely powerful external effects. These platforms develop as spaces connecting two sides or facets of a market. Highly elaborate meeting, frequenting and transaction algorithms are developed, that reinforce the externalities, that is, the interdependence of utilities. In this respect, virtual places are slowly replacing the physical places that once had these external effects. So people meet less and less at neighbourhood dances, and increasingly through Facebook.