



Paris, June 22, 2018

This half-day event brought together academic economists, decision-makers and regulators to share insights and discuss the major challenges of the digital economy, in particular the role of Big Data and its impact on firms.

Wilfried Sand-Zantman (TSE) and **Eric Gautier** (TSE) presented their recent research on the issue, followed by a roundtable discussion between **Jacques Crémer** (TSE), **Amal Taleb** (SAP) and **Hubert Tardieu** (Atos).

Wilfried Sand-Zantman (TSE) The Role of Data in Business

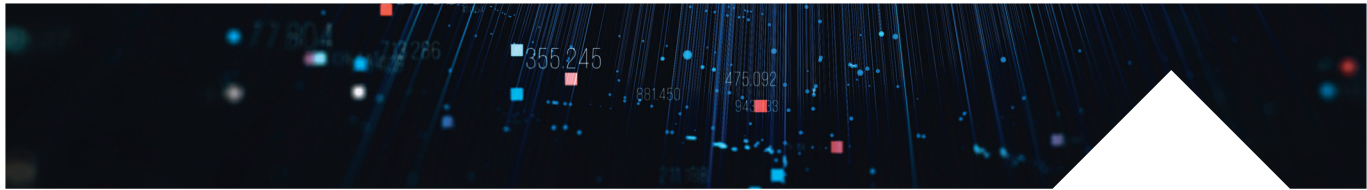
“ The value of data depends on the decisions it drives ”

TSE professor and competition expert **Wilfried Sand-Zantman** gave some perspective on the revolution triggered by the advent of Big Data, considering that: *“Data is giving rise to a major change, often compared to the oil revolution, but there are several key differences. Although they may be similar in the changes they bring about, unlike oil, data is produced by any activity. To all extents and purposes, it is a by-product. It can also be shared with no loss. Finally, data is not a new commodity, as banks, insurers and telephone operators have been exploiting it for a long time.”*

Wilfried Sand-Zantman then highlighted the impact of data: *“The value of data depends on the decisions it drives.”* But when an economic actor is the sole holder of data these decisions will not be the same as when data is shared: *“Information is a double-edged sword insofar as economic actor react to information held by others. This reaction could largely cancel the benefits of having privileged information.”* If data is shared by all competitors, this leads to aggressive tariff offers that erode profits to the benefit of consumers.

The economist concluded by elaborating on how targeted advertising is made possible by data, recalling the two types of targeting: *“Positive targeting, which consists of selecting the target audience and negative targeting, which excludes consumers who would not be interested. Optimal targeting depends on the target market.”*





“ The issue with Big Data is that once data is over a certain volume size all processing which should be simple becomes extremely complex ”

**Eric Gautier (TSE)
Big Data and Decision-Making**

Eric Gautier presented the challenges of processing a large volume of data: *“If we suppose that a dataset consists of many rows (observations) and many columns (variables), this poses two, very different problems. Having a high number of rows is a bonanza, as statistical uncertainty is low. However, this could raise a potential computational problem requiring distributed algorithms or intelligent sub-sampling. Having many variables poses a very different problem. Econometrics and traditional statistics assume the number of variables are fixed and relies on probabilistic approximations. These are no longer valid when the number of rows is low compared to the number of columns.”*

Eric Gautier then presented the challenges of optimization and solutions based on convex relaxations and parsimony: *“This is based on the assumption that the many unknowns in modelling are well approximated by a simple object, for example a number of parameters are zero or low-ranking matrices.”*

Eric Gautier concluded by presenting the current research focus in the economic analysis field, where tools developed for statistical learning are not suitable, particularly for causal analysis and counterfactual studies.



Roundtable on Maximising Data Value

Moderated by Jean-Marc Vittori (*Les Echos*) - Jacques Crémer (TSE) - Amal Taleb (SAP) - Hubert Tardieu (ATOS)

The exchange of views between the three panelists was rich and lively. Jacques Crémer addressed the pessimism and fear currently surrounding the issue and reminded participants that data, when well regulated, should improve trade and so drive growth: *“How many books have you read that you would never have heard of without the recommender systems made possible by personal data?”*

Amal Taleb gave a legal perspective on the issue: *“Personal data was easily defined in the past. Legally, it was all information that could be used to target an individual within a group: name, client number, membership number etc. Today it is far more complex.”*

Hubert Tardieu picked up on the comments of Jacques Crémer, stating that personal data is not considered problematic when it provides a service: *“The big problem companies need to overcome is that they are not thinking about the service they could provide to users before asking for their data. When service takes priority over data, the use of personal data is not an issue.”*

Hubert Tardieu then explained why he believes that the crossover of personal data and company data will be a key issue in debates, especially in the legal context. Amal Taleb clarified this, noting that consent was not the be all and end all of legislation on the subject.

In conclusion, Jacques Crémer explained that a great deal of research is needed to understand the implications of these massive volumes of data and their exchange: *“Much long term research on this issue is required and this is what we have set out to do at TSE.”*

