

# Toulouse Network for Information Technology

## List of Abstracts

2010

### **Luis Garicano (LSE) “Trading Know-How”**

Abstract : We study how improvements in communication technology allow for the development of anonymous (internet-mediated) problem-solving markets. We show that such markets, if efficient, benefit particularly both the least skilled (who cannot produce without help) and the most skilled (who can leverage their talent) individuals in society. These markets are however plagued by informational asymmetries, since the difficulty of the questions posed, the quality of those offering help, and often, whether a real solution to the problem has been found may all be unknown. We study efficient contracting in these markets in a general equilibrium setting, which allows us to address the question of whether these markets can attract the most talented individuals. We show that efficiency often requires that agents in the middle of the knowledge distribution neither seek help on the problems they cannot solve nor provide help to others. However, under two-sided asymmetric information, if contingent contracts cannot be written, the market collapses and no advice is sought or given. This is due to the impossibility of excluding 'pretenders' (low knowledge agents posing as experts) from entering the market. Only if output contingent contracts are feasible can the market function. In fact, for some parameters it can even attain first best while for others the equilibrium may involve too much advice as no agent can be excluded in equilibrium. The presence of 'pretenders' thus leads to inefficiencies involving either too much trade, or no trade at all. We show that improvements in the communication technology increases efficiency in these markets and may allow these anonymous markets to attain first best.

### **Daron Acemoglu (MIT) "Cascades in Networks and Aggregate Volatility"**

Abstract : We provide a general framework for the study of cascade effects created by interconnections between sectors, firms or financial institutions. Focusing on a multi sector economy linked through a supply network, we show how structural properties of the supply network determine both whether aggregate volatility disappears as the number of sectors increases (i.e., whether the law of large numbers holds) and when it does, the rate at which this happens. Our main results characterize the relationship between first order interconnections (captured by the weighted degree sequence in the graph induced by the input-output relations) and aggregate volatility, and more importantly, the relationship between higher-order interconnections and aggregate volatility. These higher-order interconnections capture the cascade effects, whereby low productivity or the failure of a set of suppliers propagates through the rest of the economy as their downstream sectors/firms also suffer and transmit the negative shock to their downstream sectors/firms. We also link the probabilities of tail events (large negative deviations of aggregate output from its mean) to sector-specific volatility and to the structural properties of the supply network.

### **Bruno Jullien (Toulouse) “Designing a Two-Sided Platform: When To Increase Search Costs?”**

Abstract : We propose a model for analyzing an intermediary's incentives to increase the search costs incurred by consumers looking for sellers (stores). First, we show that the quality of the search service offered to consumers is more likely to be degraded (i.e. the probability that consumers find their favorite store in the first round of search is less than 1) when the intermediary derives higher revenues from consumers shopping at the lesser-known store relative to revenues from consumers shopping at the more popular store. Second, the intermediary may have an incentive to degrade the quality of search even further when its

design decision influences the prices charged by stores. By altering the composition of demand faced by stores, the intermediary can force the latter to price lower and thereby increase total consumer traffic.

**Nicholas Bloom (Stanford) “Does management matter: evidence from India”.**

Abstract: A long-standing question in social science is to what extent differences in management cause differences in firm performance. To investigate this we ran a management field experiment on large Indian textile firms. We provided free consulting on modern management practices to a randomly chosen set of treatment plants and compared their performance to the control plants. We find that adopting these management practices had three main effects. First, it raised average productivity by 11% through improved quality and efficiency and reduced inventory. Second, it increased decentralization of decision making, as better information flow enabled owners to delegate more decisions to middle managers. Third, it increased the use of computers, necessitated by the data collection and analysis involved in modern management. Since these practices were profitable this raises the question of why firms had not adopted these before. Our results suggest that informational barriers were a primary factor in explaining this lack of adoption. Modern management is a technology that diffuses slowly between firms, with many Indian firms initially unaware of its existence or impact. Since competition was limited by constraints on firm entry and growth, badly managed firms were not rapidly driven from the market.

**Jon Levin (Stanford) “Sales Mechanisms in Online Markets”**

Abstract: Consumer auctions were very popular in the early days of internet commerce, but today online sellers mostly use posted prices. Data from eBay shows that compositional shifts in the items being sold, or the sellers offering these items, cannot account for this evolution. Instead, the returns to sellers using auctions have diminished. We develop a model to distinguish two hypotheses: a shift in buyer demand away from auctions, and general narrowing of seller margins that favors posted prices. Our estimates suggest that the former is more important. We also provide evidence on where auctions still are used, and on why some sellers may continue to use both auctions and posted prices.

**Susan Athey (Harvard) “Will the Internet Destroy the News Media?”**

Abstract: We provide a model of the market for advertising on news media outlets when consumers have opportunities to switch between outlets. We hypothesize that the move to online news content has facilitated greater consumer switching, as well as heterogeneity in consumer switching patterns. The news outlets are modeled as competing two-sided platforms bringing together heterogeneous, partially multi-homing consumers with advertisers with heterogeneous valuations for reaching consumers, and the multi-homing behavior of the advertisers is determined endogenously. The presence of switching consumers means that, in the absence of certain consumer tracking technologies, scarce advertising capacity is taken up by advertisers purchasing wasted impressions on outlets, as a given advertiser may reach the same consumer too many times. This has subtle effects on the equilibrium price for ad impressions and the profits of outlets, and it may lead to heterogeneity in the multi-homing behavior of advertisers. We characterize the impact of greater consumer switching on outlet profits and the impact of technologies that track consumers both within and across outlets on those profits. Somewhat surprisingly, superior tracking technologies may not increase outlet profits. In addition, we analyze the impact of blogs, aggregators and paywalls on outlet profits from advertising, which ultimately determine market structure and outlet quality investment.

**Glenn Ellison (MIT) “How does the market evaluate academics? On the use of citation data in computer science and economics”**

Abstract: A large literature following Hirsch (2005) has proposed citation-based indexes of individuals' research output. This paper views Hirsch's index as one member of a larger class and examines how well different indexes align with labor market outcomes for young tenured economists at 50 U.S. departments. Variants that emphasize smaller numbers of highly-cited papers are more aligned with labor market outcomes than is Hirsch's original index. It also examines how the market assesses jointly authored work, and how indexes can be adjusted for differences in citations across fields and years of experience.

**Glen Weyl (Harvard) “Materialistic Genius and Market Power” (with Jean Tirole).**

Abstract: What is the best way to reward innovation? While prizes avoid deadweight loss, intellectual property screens out projects generating low consumer surplus per unit sold. We build a model that formalizes this trade-off and develop tools for solving the resulting multidimensional screening problem. Optimal policy generally calls for some market power but never full monopoly pricing. The appropriate degree of market power is determined by a value-weighted average of the innovation supply elasticity multiplied by the log-variance of innovation quality. This quantifies the value of the materialistic genius long associated with entrepreneurship, opening it to empirical calibration. Our results also apply to the pricing of platforms and public infrastructure.

**Ilya Segal (Stanford) and Mike Whinston (Northwestern) “Property Rights”**

Abstract: A central feature of property rights is that they influence economic efficiency not (only) directly, but (also) through their effect on subsequent decisions made by agents, either unilaterally or in negotiation with each other. We examine models in which property rights affect incentives for agents' non-contractible unilateral actions (such as the static "Tragedy of the Commons," "adaptation" models, and hold-up models) as well as models in which property rights affect the efficiency of bargaining (such as private-information "partnership dissolution" models and bilateral contracting with externalities models). For incentive theories, we relate optimal property rights allocations to the nature of externalities arising from agents' actions. First, we show that when there exist property rights that eliminate harmful externalities at a first-best outcome, these property rights ensure the first best. When harmful externalities cannot be eliminated, second-best property rights are chosen with the view of reducing distortions in agents' actions. We examine how the sign of externalities determines the nature of distortions and the resulting second-best property rights allocations. This analysis applies not just to static incentive models but also to hold-up models, in which a prominent role is played by bargaining externalities (through agents sharing renegotiation surplus) in addition to possible direct externalities (from cooperative investments). The analysis unifies a number of theories of incentive contracts and property rights, including Hart and Moore's (1990) theory, and highlights the role of various assumptions in the specific results. We also discuss the possibility of using mechanism design or renegotiation design for improving upon simple property rights.

Next, we discuss how the efficiency of bargaining under private information is affected by property rights ("status quo allocation"). We describe a general class of situations in which efficient bargaining is impossible (which includes Myerson and Satterthwaite's famous setting), and also demonstrate property rights that permit efficient bargaining in a wide class of situations. Finally, we consider the role of property rights on the efficiency of bilateral bargaining with externalities.

**Suzanne Scotchmer (UC Berkeley) “Openness, Open Source and the Veil of Ignorance”**

Abstract: Open source collaborations are increasingly among commercial firms whose interest is profit. Why would profit-motivated firms voluntarily share code? One reason is that cost reductions can outweigh increases in rivalry. This is especially persuasive when the contributors make complementary products. However, cost reductions do not explain why open source is a more profitable way of sharing than other forms of licensing. Why would firms use an inflexible contract like the GPL? I present a model that shows how open source licensing can lead to higher industrywide profit than would result if a first innovator could choose the most profitable license once it finds itself in the position of first innovator. From behind a veil of ignorance, that is, not knowing which firm will be first, open source licensing creates higher expected profit for the industry as a whole, and thus for each firm, than if first innovators were allowed to choose.