TNIT newsletter

Toulouse Network for Information Technology

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Dear Readers

First, we would like to wish you all the best for 2013. We are starting this new year with a special issue on the research presented by the TNIT members at our September 2012 conference. Included are three pieces drawing on the articles by Josh LERNER, Jon LEVIN and Luis GARICANO as well as overviews of the papers by the other members of the Network. We would like to thank Romesh VAITILINGAM for writing these excellent pieces and overviews. This issue also features a "How, What, Why, When, Who" article by Josh LERNER on how governments can boost new high-potential ventures.*

Please feel free to send us any ideas or reactions you may have upon reading our Newsletter.

Jacques CRÉMER and Yassine LEFOUILI

SPECIAL ISSUE

** Romesh VAITILINGAM (romesh@vaitilingam.com) is a writer, media consultant and a member of the editorial board of Vox. He is the author of numerous articles and several successful books in economics, finance, business and public policy.*

CONTENT

The Toulouse Network for Information Technology (TNIT) is a research network funded by Microsoft and managed by the Institut d'Economie Industrielle. It aims at stimulating world-class research in the Economics of Information Technology, Intellectual Property, Software Security, Liability, and Related Topics.

http://idei.fr/tnit

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Lost in the clouds

What is the impact of changes in copyright protection on investment in new firms? Research by TNIT member Josh Lerner and colleagues analyzes how contrasting court rulings in Europe and the United States have influenced the extent of venture capitalists' interest in the cloud computing industries of the two regions.

What scope of intellectual property protection provides the most effective incentives for people and organizations to develop new ideas and invest in their commercialization? There is a considerable body of research on this question in the realm of patents. But there has been far less work on the arguably more important issue of the consequences of broader or narrower copyright protection. The absence of attention to this question is particularly striking given the intensity of controversies about the Digital Millennium Copyright Act and the proposed Stop Online Piracy Act.

Our research examines the effect of changes in the scope of copyright on venture capital investment in the emerging cloud computing industry, in which firms provide computing as a service rather than a product, with software and data stored remotely and accessible over networks such as the internet. We focus on venture capital investment because it has been shown to have a positive impact on innovation and economic growth.

Furthermore, unlike corporate investment decisions, venture capitalists' decisions to invest in new firms are well documented and less likely to be affected by existing assets and capabilities of the firms. Thus, while venture capital represents only a fraction of total investment in the cloud computing industry, it is a natural setting for understanding the impact of policy shifts, for example, through court decisions.

To understand the impact of copyright policy changes on the willingness of venture capitalists to invest in cloud computing, we employ a 'difference-in-difference' approach, hypothesizing that policy shifts affect investments in different sectors, different years and different parts of the world in varying ways. Such techniques have been widely employed by economists to examine the consequences of policy shifts.

To quantify the impact of copyright policy changes, we first analyze the effects on venture capital investment in cloud computing firms of The Cartoon Network et al. v. Cablevision decision in the United States in August 2008. We then examine the impact of court rulings on comparable copyright cases in France and Germany.

In 2006, Cablevision announced the development of a 'remote storage digital video recorder' (RS-DVR). Similar in operation to a traditional recorder, the RS-DVR allows consumers to record, pause and replay television content on a hard drive. But unlike a traditional DVR, in which consumers install and use the appliance in their own home, the Cablevision RS-DVR was located remotely, recording to and playing back from remote servers. When consumers hit the 'record' button on their remote controls, the RS-DVR would start to record, just as if it were right in their living rooms.

In response, a consortium of US television and copyright holders sued Cablevision over alleged copyright infringement in May 2006. The case was litigated and in August 2008, the Appellate Court ruled that the DVR did not violate copyright law.

On the other side of the Atlantic, a firm called Wizzgo launched the first online DVR platform in France in May 2008. In response, a consortium of French television and copyright holders filed complaints against Wizzgo over alleged copyright infringement. In November 2008, the Tribunal de Grande Instance de Paris declared a final set of summary judgments against Wizzgo.

A little earlier in Germany, two firms (Shift.tv, founded in 2005, and Save.tv, founded in 2006) began to offer subscription-based services that allow customers to select and store television content on servers. Two German television channels filed complaints over alleged copyright infringement. Although the litigation continues today, a number of court rulings, which were favorable to the plaintiffs, were made in 2006, 2007 and 2009.

The Cablevision decision was widely perceived as easing certain ambiguities surrounding the intellectual property standing of cloud computing firms in the United States and thus was likely to increase venture capital investment in them. In contrast, the French and German rulings were perceived as restricting the intellectual property standing of cloud computing firms in the two countries, and thus were likely to decrease venture capital investment in them.

We find that venture capital investment in cloud computing firms did indeed increase significantly in the United States relative to the European Union (EU) after the decisions. Specifically, our results suggest that the Cablevision decision (along with the court rulings in France and Germany, which either broadened or led to more ambiguity about copyright scope) led to additional incremental investment in US cloud computing firms ranging from $728 million to approximately $1.3 billion over the two-and-a-half years after the decision.

When paired with previous findings of the enhanced effects of venture capital investment relative to corporate investment, this may be the equivalent of between $2 billion and $5 billion in traditional investment in research and development (R&D).

We also separately analyze the effects of the French and German court rulings on venture capital investment in cloud computing firms in these countries relative to that in other EU countries. We find that these rulings regarding the scope of copyrights had significant negative impacts on investment. Specifically, we find that venture capital investment in cloud computing firms declined in Germany and France, relative to the rest of the EU, after the rulings.

Our results suggest that these rulings led to an average reduction in venture capital investment in French and German cloud computing firms of $4.6 and $2.8 million per quarter, respectively. This implies a total decrease in French and German venture capital investment of $87 million over an approximately three-year period. When paired with the findings of the enhanced effects of venture capital investment relative to corporate investment, this is the equivalent of approximately $269.7 million in traditional R&D investment.

Taken together, our findings suggest that decisions around the scope of copyrights can have significant effects on investment and innovation. Rulings that are seen as narrowing the scope of copyright protection, such as the Cablevision decision, appear to have led to increased venture investment, while rulings that are seen as broadening or introducing ambiguities about the scope of protection appear to have led to decreased venture investment.

At the same time, we must acknowledge that this analysis is partial, since we cannot observe investment by large firms or the long-run consequences of the policy shifts. The court decisions may have had different effects on the willingness of incumbent firms to invest. Similarly, even if the short-run consequence of the narrowing of copyright protection were to boost investment, the longer-run consequences are still ambiguous: such a decision may have reduced the willingness of firms to invest in basic research that might form the basis of subsequent investments.

This article summarizes ***'Lost in the Clouds: The Impact of Copyright Scope on Investment in Cloud Computing Ventures'***

by Chris BOREK, Laurits CHRISTENSEN, Peter HESS, Josh LERNER and Greg RAFERT

http://www.intertic.org/Conference/Lerner.pdf

TNIT member Josh LERNER is at Harvard Business School. His co-authors are at Analysis Group, Inc.

Whatever happened to internet auctions?

Consumer auctions played a major role in the early days of internet commerce, but today's online environment has shifted towards posted prices. TNIT member Jonathan Levin and colleagues explore the evolution of sales mechanisms in online markets.

In the early days of the internet, many observers speculated that technology would shift retail markets towards more dynamic and flexible pricing mechanisms. In 2000, The Economist wrote that the internet had introduced 'the possibility of a permanent worldwide bazaar in which no prices are ever fixed for long, all information is instantly available, and buyers and sellers spend their lives haggling to try to get the best deals'.

The best example is eBay, which became the dominant platform for consumer auctions. eBay made it easy for sellers to run auctions, and made bidding fun and relatively convenient for buyers, who didn't need to pay attention every minute because they could submit proxy bids that authorized eBay to respond to rival bids. By 2001, eBay was the third-ranked website in terms of time spent by consumers.

Since then, online commerce has grown enormously. But internet auctions have not. Instead, most online commerce nowadays takes place at posted retail prices. Our study explores why, using detailed data from eBay to distinguish between competing explanations.

One hypothesis is that the composition of internet sellers or of items being sold online has changed. But at least on eBay, this does not appear to explain the move to posted prices. Instead, the shift has occurred within natural groupings of sellers and products.

Another possibility is a change in consumer tastes. Ten years ago, internet auctions were a form of entertainment. Today, YouTube, Facebook and other media compete for our online attention. Finally, the 'price discovery' benefits of auctions may have declined. Online search has made it easier to find comparable prices and increased competition may have narrowed sellers' margins.

Economic theory suggests that auctions have the greatest benefits when sellers don't know the appropriate price and can benefit from competition between buyers. We develop a simple model in which sellers compare this price discovery benefit of running an auction with the convenience of using a posted price.

Modeling the trade-off allows us to match the basic patterns in the data, including robust evidence that auctions listings tend to have higher probabilities of being sold but lower prices. The model captures how reduced uncertainty about an item's value, greater retail competition and greater demand for convenience all favor posted prices.

To evaluate sellers' incentives to use auctions, we take advantage of the prevalence of 'seller experimentation' on eBay - the very high frequency with which sellers post identical listings either simultaneously or over time while varying their sale format or other pricing parameters. We look for sellers who have experimented by both running auctions and setting posted prices in 2003 (when auctions were dominant) and then in 2009 (when posted prices had overtaken auctions).

An immediate finding from these data is the gradual growth of an 'auction discount' - the difference between what a seller receives if she offers an item by auction and the posted price at which she is selling the (same) item. The auction discount rose from less than 5% in 2003 to 16% by 2009.

The data also reveal how the demand for auction listings relative to posted price listings has fallen considerably, shifting sellers' incentives towards using posted prices. The change in sellers' incentives is driven in part by a reduction in residual demand (for example, due to increased competition) and in part by a reduction in the relative demand for auctions (for example, due to a greater preference for convenience, perhaps due to competition from other online diversions). The latter could explain 40% or more of the shift in sellers' incentives.

The decline of internet auctions may also be exacerbated by the increased use of smart phones by eBay users. On smart phones, eBay browsing sessions are 25% shorter and cover 50% fewer page views, so we might expect smart phone users to favor convenience even more.

Our study also considers why the two sales mechanisms might continue to co-exist. One obvious reason is the heterogeneity of goods traded online and the diversity of sellers. It is natural that idiosyncratic and hard-to-price items, particularly valuable ones, should be offered by auction or that inexperienced sellers might enjoy some benefit from letting the market determine the appropriate price for their product.

More interesting is the possibility that experienced sellers of retail items would use auctions in combination with posted prices, a typical pattern. We show that such a strategy can be a desirable form of price discrimination. From this pers-

pective, some of the current use of online auctions, at least on eBay, may simply be analogous to the types of mixed marketing strategies commonly seen in retail.

Finally, while studying eBay - which in 2009 had 90 million active users and $57 billion in gross merchandise volume - is of interest in its own right, a natural question concerns the extent to which our findings apply more generally. The 2010 decision of Prosper, one of the two leading social lending websites, to abandon its original auction model in favor of pre-set interest rates suggests that similar mechanisms may be at play elsewhere. Indeed, Prosper's chief executive explained the decision by arguing that pre-set rates were more efficient and that auctions were 'too complicated'.

A more careful answer to the question would require data we don't currently have - for example, on users' internet browsing and the extent to which other online entertainment options have crowded out the early excitement associated with bidding in online auctions. This is a promising avenue for future research.

This article summarizes ***'Sales Mechanisms in Online Markets: What Happened to Internet Auctions?'***

by Liran EIRAV, Chiara FARRONATO, Jonathan LEVIN and Neel SUNDARESAN

www.stanford.edu/~jdlevin/Papers/InternetAuctions.pdf

Liran EIRAV, Chiara FARRONATO and TNIT member Jonathan LEVIN are at Stanford University. Neel SUNDARESAN is at eBay Research.

Capital market breakdown: the damage to Spanish innovation and growth

European capital markets have become fragmented in the wake of the financial crisis, with particularly negative consequences for the 'periphery'. Research by TNIT member Luis Garicano and Claudia Steinwender reveals the scale of the impact of restricted access to capital on Spanish firms' employment, innovation and investment in IT.

Since the financial crisis began, there has been a gradual breakdown of the single European capital market. As banks suffered from decreased access to credit and as the support of the sovereigns on which their ratings depend became increasingly differentiated, banks operating across borders started to retrench to their home countries. This meant reducing their lending to businesses and institutions in the so-called 'peripheral' countries - Portugal, Ireland, Italy, Greece and Spain.

As a result, lending to business in those countries became increasingly local. For example, in Spain, evidence shows that Spanish financial institutions, which were heavily overleveraged and dependent on wholesale funding, suffered a sharp drop in access to credit in 2008/09. This was then transmitted to the firms that are their customers.

Our research documents the consequences of this reduced credit access for Spanish firms' investment decisions, focusing our analysis on technology-related investment. To do this, we compare the changes in investments before and after the financial crisis between Spanish firms and foreign-owned firms operating in Spain. This strategy allows us to control for demand-side effects and to focus on the key issue that differentiates these firms: the lack of access to the deep pockets of a corporate parent based abroad.

We expect credit-constrained firms that are worried about their future survival to cut longer-term investments so that they can boost shorter-term investments. We develop a simple theoretical analysis to capture this mechanism. Firms can choose how much to invest in a range of possible choices that fall into two categories: those that have immediate short-term payoffs - such as product advertising - and those that take a while to pay off - such as innovation and research and development (R&D). The long-term investments involve a risk: in a crunch, they disappear, as the firm must liquidate.

In the absence of liquidity constraints, firms equalize the value of the marginal dollar on each investment. But in the presence of liquidity shocks such as the financial crisis, there is a wedge between the value of investment that pays off immediately and long-term investment. Firms place more value on the immediate investment and are willing to cannibalize future profits.

The implication is that in the presence of liquidity problems, if we were to rank spending by their payoffs, firms would first cut investments where the consequences are long-term and keep making investments where payoffs are shorter-term.

Thus, the credit crunch mechanism distorts the investment allocation and implies that firms undertake fewer positive 'net present value' decisions, as they apply a stricter profitability test before undertaking them. Decisions that are longer-term and those that increase the probability of a liquidity crunch are less likely to be taken.

To apply our analysis to recent developments in the Spanish economy, we rely on a rich dataset that includes a wide range of firm choices, especially investment decisions. The 'Encuesta Sobre Estrategias Empresariales' (Survey of Business Strategies) is a high-quality, long-term panel dataset of Spanish manufacturing firms, which has precise information on their financial situation as well as a number of key variables, including innovation, R&D, capital investment, advertising, prices and outsourcing.

These data allow us to explore the consequences of financing shocks at the microeconomic level. Our test relies on the hypothesis that in the absence of the crucial link to the home country, Spanish-owned firms and foreign-owned firms in the same industry and market that took similar actions before the financial crisis would continue to take similar actions after the crisis. The differential impact of the crisis is then due to their 'Spanishness' or lack of it.

Our empirical analysis confirms that within industries, Spanish-owned firms operating in Spain appear to have been sharply affected by financial constraints. Compared with foreign-owned firms and controlling for differences among firms, Spanish-owned firms have cut investment by 19% more and reduced employment by 6% more. Spanish firms have also increased prices, which suggests that they are harvesting customer loyalty at the expense of future market share.

The pattern of the investment cuts is consistent with the idea that firms reduce their time horizons, with insignificant reductions in advertising, smaller reductions in product innovation (5%) than in process innovation (9%) and substantial decreases in IT investments (such as computer-aided design

and local area networks), which drop by 8-9%. Firms therefore reduce the investments that have a more immediate market impact (advertising and product innovation) by less than longer-term investments.

Presumably substituting for these investment cuts, firms' reliance on outsourced software application and programming has increased substantially - by 10% and 14%, respectively. This suggests that, as in our theory, faced with increasing uncertainty about their survival, firms again replace the long-term commitments implicit in having an in-house IT workforce by the shorter-term commitment of outsourcing. Spanish-owned firms are trying to rent rather than buy - and to survive the very near future.

Beyond the actual composition of the investment, our analysis shows that Spanish-owned firms suffer differentially compared with their foreign-owned competitors, reducing employment and investment substantially. While they manage to maintain sales and exports in spite of these cuts relative to their peers, it is easy to conclude that they are jeopardizing their ability to survive into the future. Indeed, as we show, Spanish-owned firms have a higher probability of leaving the industry of around 9%.

Our analysis has two readings, a macro and a micro one: the macro view concerns Spain and the financial crisis in the euro area; while the micro view focuses on finance and the decisions of firms.

On the macro side, the findings suggest that the breakdown of the single European capital market is likely to have long-term effects on Spanish firms. Those that are affected by the credit squeeze have cut employment, investment and innovation activities substantially. Moreover, they are also much more to exit. Credit constraints force Spanish firms to eat up their future and act as if only the immediate future, tomorrow, mattered. This is likely to have a long-term impact on the Spanish economy, impeding recovery after the financial crisis.

On the micro side, our analysis teaches us about what firms do when they are worried about liquidity. We show that they prioritize investments that pay off in the near future (such as advertising and product innovation) over investments that have a more uncertain or long-term payoff - such as process innovation and IT. We also show that firms cut employment but not wages - an outcome that is probably a Spanish idiosyncrasy - and, surprisingly, that firms increase prices significantly, probably aiming to harvest customer loyalty in the short run.

All in all, the credit crunch appears to be placing Spanish firms at a severe competitive disadvantage relative to their foreign competitors. Moreover, this disadvantage is likely to persist into the foreseeable future since reductions in investment and innovation have long-term implications for economic growth. Future research must quantify the impact of these innovation and investment decreases on GDP growth.

This article summarizes *'Consequences of the Breakdown of the European Single Capital Market: Innovation, Information Technology and Employment in Spanish Firms'*

by Luis GARICANO and Claudia STEINWENDER

TNIT member Luis GARICANO and Claudia STEINWENDER are at the London School of Economics.

HOW can governments boost new high-potential ventures?

by Josh LERNER

In those parts of the world that are the great hubs of entrepreneurial activity - places like Silicon Valley, Singapore, Tel Aviv, Shanghai and Bangalore - the stamp of the public sector is unmistakable. But for each effective government intervention, there have been countless disappointments, where substantial public spending bore no fruit.

This might suggest that the pursuit of entrepreneurial growth by the public sector is a casino: governments are simply making bets, with few guarantees of an attractive return. Perhaps there are no lessons we can learn from comparing the experiences of programs that succeeded and programs that failed.

But the truth is very different. In many cases, the outcomes of failed programs were completely predictable. These abandoned government efforts have a shared set of design flaws, which doomed them virtually from the start.

The rationale for government efforts to stimulate entrepreneurship rests on three pillars. First, the role of technological innovation as a spur for economic growth is now widely recognized. Indeed, policy statements by governments worldwide highlight the importance of encouraging innovation as a key to achieving sustained prosperity.

Second, research has confirmed the role of entrepreneurs and venture capitalists in stimulating innovation. These firms and financiers have developed a set of tools that are very well suited to the challenging task of nurturing high-risk but promising new ideas.

If that were all, there would be a compelling case for public involvement. But the case for public intervention also rests on a third pillar: the idea that governments can effectively promote entrepreneurship and venture capital. This is a much shakier assumption.

To be sure, the characteristics of entrepreneurial markets can be used to make a credible intellectual case for a natural role for government in encouraging their evolution. Entrepreneurship is a business where there are 'increasing returns'. Put another way, it is far easier being a start-up founder if there are ten more entrepreneurs and other supportive organizations nearby than if one is alone.

It is in such settings that governments can often play a positive role as catalysts. But two well-documented problems can derail their efforts. First, public sector programs can simply get it wrong: allocating funds and support in an inept or even counterproductive manner. Economists also focus on a second phenomenon known as 'regulatory capture'. This analysis suggests that private and public sector entities will organize themselves to capture subsidies handed out by the public sector. For example, programs geared towards boosting nascent entrepreneurs may instead end up boosting cronies of the nation's rulers or legislators.

How can these problems be overcome? First, it is vital to ensure that entrepreneurship itself is an attractive option. In their eagerness to get to the 'fun stuff' of handing out money, public leaders often neglect the importance of 'setting the table' or creating a favorable environment.

Such efforts are likely to have several dimensions. Ensuring that creative ideas can move easily from universities and government laboratories is critically important. But many entrepreneurs come not from academia but from corporate positions. Studies have documented the extent to which the attractiveness of entrepreneurial activity for these individuals is sensitive to tax policy.

It is also important to ensure that the law allows firms to enter into the contracts that they need – for example, with potential financiers or technology sources – and that these contracts can be enforced. Education too is critical: ensuring that business and technology students are exposed to entrepreneurship classes will allow them to make more informed decisions. Creating training opportunities in entrepreneurship for mid-career professionals is also likely to pay dividends.

A second role for government is to intervene directly in the entrepreneurial process. Because of the 'increasing returns' nature of entrepreneurship, these efforts can be important in an industry's early days. But they must be designed thoughtfully to be as sensitive as possible to the needs of the private sector.

At the same time, governments must avoid the common pitfalls that befall public venture initiatives. One is to ignore the realities of the entrepreneurial process. For example, many public venture capital initiatives have been abandoned after a few years: the programs' creators have apparently not understood that these initiatives take many years to bear fruit.

Others have added requirements that seem reasonable from a public policy perspective but which run counter to the entrepreneurial process. In still other cases, reasonable programs have been created that are too tiny to have an impact or so large that they swamp existing funds.

A second frequent problem is the creation of programs that ignore the dictates of the market. Far too often, government officials have sought to encourage funding in industries or geographical regions where private interest was simply not there. Whether driven by political considerations or hubris, the result has been wasted resources. Effective programs address this problem by demanding that credible private sector players provide matching funds.

The Architecture of Innovation by Josh LERNER is published by Harvard Business Press and Oxford University Press.

Other research by TNIT members presented at our September 2012 conference:

Papers available online:

➔ *'Trade Induced Technical Change: The Impact of Chinese Imports on Innovation, IT and Productivity'*

Nicholas BLOOM
(with Mirko Draca and John Van Reenen)

What is the impact of competition from Chinese imports on innovation in Europe? This study looks at broad measures of technical change - patenting, IT, R&D, productivity and management practices - using new panel data across 12 European countries between 1996 and 2007.

The analysis shows that Chinese import competition led to increased technical change within firms. It also reallocated employment between firms towards more technologically advanced firms. These within and between effects were about equal in magnitude and account for 15% of European technology upgrading over the period 2000-07.

www.stanford.edu/~nbloom/TITC.pdf

*See also: **'WHAT impact is the rise of China having on technological change in the West?'** by Nicholas Bloom in the July 2012 TNIT newsletter:*

www.idei.fr/tnit/newsletter_1207.pdf

➔ *'Peaches, Lemons, and Cookies: Designing Auction Markets with Dispersed Information'*

Susan ATHEY
(with Ittai Abraham, Moshe Babaioff and Michael Grubb)

'Cookies,' which allow individual advertisers to recognize advertising opportunities for users who are customers of their websites, create substantial information asymmetries in online advertising auctions. This study investigates the role of these asymmetries in second price, common value auctions, typically used in online advertising. The researchers seek to understand what types of information asymmetries lead to substantial reductions in revenue for the auctioneer.

They find that if cookies identify especially good users, revenue may not be affected much, but if cookies can (even occasionally) be used to identify very poor users, the revenue consequences are severe. The research also considers richer market designs that ensure greater revenue for the auctioneer, for example, by auctioning the right to participate in the mechanism.

www.research.microsoft.com/pubs/147174/lemons-peaches.pdf

Work in progress:

➔ 'Essential Facilities'

Suzanne SCOTCHMER (with Stephen Maurer)

Should antitrust authorities force the sharing of privately built infrastructure? If so, when should the doctrine of 'essential facilties' be invoked rather than other regulatory bodies of law, such as common carrier regulation or rate regulation? If so, what should the antitrust remedies be? This study examines the main cases and categorizes them in two ways: first as to economic content; and second as to whether the doctrine is either changing the nature of intellectual property rights or substituting for transactions that the market should sensibly produce.

➔ 'The Internet and the Used Book Market'

Glenn ELLISON (jointly with Sara Fisher Ellison)

The used book market seems to be one that could see enormous welfare gains from internet search: there is a great deal of product variety; and products are easily describable. Improvements in search technologies would be expected both to improve the efficiency of the allocation of books to high-value consumers and to create increased price competition. This study analyzes these effects in a dataset containing information on 350 titles at both online and traditional used book dealers.

➔ 'A Proposed Double Auction for Electromagnetic Spectrum'

Ilya SEGAL

The development of mobile internet access in the US is impeded by the lack of available spectrum. To solve the problem, the Federal Communications Commission is preparing to acquire broadcast spectrum licenses from TV stations, to repack the stations that continue broadcasting to free up contiguous spectrum for mobile broadband uses and to auction off the resulting spectrum. This study provides the theoretical underpinnings for designing the auction.

➔ 'Internal versus External Growth in Industries with Scale Economies: A Computational Model of Optimal Merger Policy'

Michael WHINSTON (jointly with Ben Mermelstein, Volker Nocke and Mark Satterthwaite)

This study explores optimal merger policy in a model in which firms can reduce costs either through internal investment in building capital or through mergers, and an antitrust authority is able to block mergers at some cost. The researchers examine the optimal policy when the antitrust authority can commit to a policy rule and when it cannot commit, and they consider both consumer value and aggregate value as possible objectives for the antitrust authority.

➔ 'Network Security and Contagion'

Daron ACEMOGLU (jointly with Azarakhsh Malekian and Asu Ozdaglar)

This study develops a theoretical model of investments in security in a network of interconnected agents.