

Crowd funding

Radio Stations

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Master IREN

Publications

Editorial

The academic year 2013-2014 has been very active for the "Innovation & Regulation in Digital Services» Chair, both in the conduct of its research program, in the organization of conferences open to the public or teaching in the Master "IREN" (Network Industries and Digital Economy)."

Thus, Frank Verboven and Yutec Sun continued their work on fixed-mobile substitution in telecommunications in Europe, with a particular focus on the role of broadband. They also address the issue of consumer behavior in tariff choice and the decision to switch carriers or tariff plan.

Researchers associated with the Chair undertook work in addition to research conducted by the Titular Professor, including economics of content facing the digital evolution. The work of Philippe Chantepie resulted in presentations or conferences on "radio stations facing the digital evolution" or "ecosystem of video games" that are the subject of reports in this newsletter. Further works have begun on the governance of robots and on the economics of platforms, which also lead to conferences and / or articles.

The Chair will also be a center for animation of relationships between researchers in French universities. In July, under the guidance of Nicolas Curien, the Chair will hold a "Summer workshop" where these researchers will share their views on many aspects of the digital economy.

(...)



Social frictions and informational phenomena on crowd funding

Crowdfunding is a growing phenomenon on the Internet that promises an alternative to project owners to overcome difficulties experienced in the traditional financing market.

Defined as "an open call, essentially through the Internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights in order to support initiatives for specific purposes" (Belleflamme, Larralde and Schwienbacher, 2013a, p. 6), this model is estimated to account for US\$ 5,1 billion in crowd funding investments in 2013, a 240% growth from 2011 (Massolution, 2012).

Even if the numbers are still far from the US\$ 29 billion assigned to micro financing initiatives in 2012 (Dashi, Lahaye and Rizvanolli, 2013), they can reach US\$96 billion a year by 2025 only in developing countries (infoDev, 2013).

Launched in the music business, first with ArtistShare (2003) then with Sellaband (2006), the crowdfunding model serves to finance a myriad of different projects category – films, books, exhibitions, live performances, new products and services, academic research, and local events in more than 500 platforms in the 5 continents (Massolution, 2012).

As other two-sided markets, crowd funding platforms match *projects owners* (also called

"creators", "founders"), who look for capital access for early-stage ventures, and *contributors* (also called "backers", "supporters", "investors" or "funders"), who decide to invest on these ideas.

Reaching more potential contributors

The more straightforward benefit of such model is the possibility of reaching more potential contributors by stretching the campaign beyond the social network and the geographical location of the project owner.

At the ICT Conference in Paris last January, Avi Goldfarb gave a keynote speech on his on-going research program about crowd funding.

In order to investigate whether empirical evidence supports this idea, Ajay Agrawal, Christian Catalini and Avi Goldfarb (2011) use information gathered from Sellaband. The platform assembles young artists with limited reputation and generally no signed contract with a label, characteristics comparable to the ones of entrepreneurs in early stage ventures.

Besides, cultural industries in general and the music domain in particular suffer from market failures common to other sectors – namely strong concentration and considerable entry barriers (Caves, 2000). What is learned from the music market can be useful to other markets as well.

The initial dataset contained information about 4,712 artist-entrepreneurs that received at least one \$10 investment on the platform from August 2006 to September 2009. They focus on the 34 projects that received \$50,000 to pair project owners with their respective investors, reaching 18,827 artist-investor pairs. The geographic information provided primarily by the crowd funding platform, and eventually crosschecked with other sources, allowed them to calculate the distance between project owners and investors. The pairs within 100 km distance are categorized as "local" and the others, as distant.

Overcoming geographical Barriers

One of the main findings of the paper is that crowd funding allows project owners to overcome geographical barriers. The mean distance between the artists and their investors is of 5,000 km whereas with traditional methods it is approximately 112 km when funders are VC firms (Sorenson and Stuart, 2005). In the case of angel investors, the contributions to a round decreases when the closer investor is 80 km away from the target firm (Wong, 2002).

Geography frictions are highly mitigated by the new digital tools, but data suggests that social connections remain extremely important for the success of an enterprise. Goldfarb and his coauthors discover, for example, that friends and family are (...)

(...) During the past year, this is a total of over 25 articles that have been published or proposed in international journals and presented at international conferences that researchers associated with the Chair produced.

Master IREN (M2), jointly accredited by the Paris-Dauphine University, Paris-Sud University, Ecole Polytechnique, Supelec and Telecom ParisTech has seen its authorization renewed during the summer of 2013. Therefore it continues education with a fifth class of over 70 students from varied geographical origins.

Partners supporting for the Chair will continue their involvement so that the Chair will pursue its activities in 2014-2015, with a program equally loaded, starting with the conference on June 16th on the economics of personal data with speakers of international reputation.

All information on the activities of the Chair is presented on the site :

[Innovation-regulation.eu](http://innovation-regulation.eu)

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(...) responsible for 34% of the first US\$500 in a project, and when the project hits its threshold, the total participation decreases to a 22% level.

The conclusion is that in the beginning of the project, this group of close investors brings not only money but also signal to other investors the quality of a project owner. *"To the extent that distant investors disproportionately rely on information revealed in the investment decision of others, friend and family play an important role in making early investments that generate that information"*. In other words, information sent by the first investors is read as a quality signal by other investors with less information about the project owner.

The authors' findings demonstrate that, if online tools may break some communication barriers, the social network structure of an individual remains crucial for their success in entrepreneurship. If Goldfarb and his coauthors show the importance of the traditional networks – i.e., friends and family – another paper presented at the ICT Conference, by Zvilichovsky, Inbbar and Barsilay (2013), finds empirical evidence to support the idea that social contacts established on the platform may also play a role in providing funding for project owners.

The authors make the hypothesis that crowd funding investors evaluate not only the information they receive about the project creators' qualities, but take also into account the attitude of such project owners regarding the crowd funding community.

The authors use information collected from 78,061 projects on Kickstarter ending before March 2013. Launched in 2010 in the United States, the platform is today present in five English-speaking countries and accepts projects in 13 major categories

(Art, Dance, Design, Fashion, Film and Video, Music, etc.) and their respective subcategories (for example, 17 subcategories for "Music", 19 for "Films and Video").

Being part of the crowd funding community

From this dataset, Zvilichovsky and his coauthors find that project owners that had previously supported other ideas are more likely to see their own enterprise succeed. The result is interpreted as reciprocal behavior – contributors receive a positive sign from a creator who has supported other projects in the community and are more likely to support this individual's projects too.

Besides the "indirect reciprocity", i.e., the fact that a previously contributing creator will receive more support from the community as a whole, authors also find a positive relationship to what they call "direct reciprocity", i.e., individuals directly support projects whose owners have backed them. The work also examines the effect of past success of project owners on the results of new projects, finding a significant increase in the odds of achieving the goal set for subsequent projects after having reached one success. The opposite is also confirmed – showing past failures decreases the probability to achieve the goal set for subsequent projects. The authors' interpretation is twofold – past experience can serve as a separating mechanism identifying better entrepreneurs, and it can be a signal of quality to investors.

Both studies contribute to the starting literature in the crowd funding area, that seem very focused in the informational phenomena in crowd funding and the effect of such information to the performance of a project. For example, Mollick (2013) gathers data from Kickstarter to analyze how the interplay between the projects' result (success or failure) and the

possible signals of quality such as the presence of a presentation video, the correct writing in the titles presentation (i.e., no misspelling), and the number of updates a project owner gives to the supporters and potential backers. Ahlers, Cumming, Guenther and Schweizer (2012) use a similar approach of measuring quality signals for equity crowd funding. Mitra & Gilbert (2014) test how the words and expressions used in the projects' description are linked with success, while Marom & Sade (2013) to analyze the of the founder's mention in the project description for its success.

Crowd funding platforms have also been exploited to know more about the influence of other people's choices on individual decisions. Ward and Ramachandran (2010) investigate information from SellaBand to model the effects of peers in the demand of experience goods. Zhang & Liu (2012) observe herding behavior in Prosper.com while Kuppaswamy & Bayus (2012) identify similar effects on Kickstarter.

The literature also documents models on new products launch strategies (Belleflamme et al., 2013), suggesting that pre-order model is preferable to enterprises that demand a smaller amount of money; otherwise an equity model would be more suitable.

As a new research field, crowd funding still leaves many open questions regarding notably the formation of a new ecosystem, the type of enterprise it is able to fund and the interactions of the community and the project owner, to mention a few.

Jordana Viotto

Presentations at the ICT Conference organized by the "Innovation 1 Regulation in Digital Services Chair on January 24-25, 2014.

Find all the papers and references on the web site of the Chair : www.innovation-regulation.fr

Radio Stations in the Digital Age

In the digital age, while music and information are available free of charge at any time on the Internet, radio might seem like an obsolete media. Radio seems to have changed slowly when compared to other media (television, telephone). The "old" radio receivers still work, where the "old" TVs or computers are quickly out of use. Yet, the audience always seem to be at the rendezvous. What are the advantages of radio in the digital

age even though the penetration of digital terrestrial radio as a means of transmission is low or non-existent?

Digitization does impact the entire ecosystem of the radio.

The roll out of digital terrestrial radio as broadcasting technology is quite chaotic. While it has many advantages in principle (ergonomics, stability and reliability of re-

ception, availability of metadata) barriers to progression are numerous (defects and fragmentation of standards, lack of political support and economic incentives, need to change receiving equipment ...).

Nevertheless, the radio stations have been forced to innovate, diversify and expand their services on the web, on social networks, on mobile devices. They had to respond to new needs, particularly (...)

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(...) in mobility: more than half the volume of radio listening is done outside the home (transportation, at office,...) where it became easier to listen to the radio... Internet, mobile phones, multimedia players, TV or even game consoles are all "new" media equipment that helped increase listening time. Listeners' behaviors changed with digitization: for example, they use more than one equipment at the same time and have a practice that is more "cherry-picking". At the end, the listeners have increased their listening volume and number of contacts with the radio stations.

Internet in particular offers several ways of distributing radio: simulcast (real-time streaming or downloadable podcast) or webcast (exclusively on Internet radios). Tens of thousands of Internet radio are available today worldwide with a large thematic diversity. Time-shifting listening, through digitization and downloading podcasts (conversion of a sound or video in media file) is increasing. At last, new consumers can be qualified as ATAWAD (Anytime, Anywhere and Any Device), that is to say they consume media on the move, on deferred time, and on various media.

Finally, the radio media seems to have benefited from the Internet, new technologies, convergence and the dematerialization of media to maintain, if not improve its audience.

But the radio is first and foremost the program!

If digital technologies are changing the demand of radio services, they also help to improve the offer. They allow the radio to preserve or enhance its programming functions of identification (social networks), and discovery. This is true for music whose new ways of listening with digital tools seemed to threaten traditional radio but could also draw its future. Music has indeed become a very important if not essential content for the future of media in general and radio in particular. It is the first product in common in the world, with a diffusion that is now mostly through video (Youtube, Daily-Motion, ...)

This music consumption is also more personalized, people choosing to listen to their "own" radio, so that the role of the radio can and should remain a guide to help consumers discovering new products. Combined with new forms of listening, this kind of music consumption could satisfy younger audiences who tend to give up.

The radio offerings are structured in a particular way. This area is a dense and fragmented universe, with many players who can target their offers, both in terms of thematic and geography. The radio programs are broadcasted on variables territories and see diversity distributed across all operators. Conversely, the television industry, received almost universally in the country, has a small number of players on the supply side, and diversity of content has to be proposed by each of them. So that digital radio even more specialized than analog radio, can strengthens its identification function. The offer, which already has a wide range of programs in digital quality, can now propose interactive program guides. Supplementary programs, sound, text or graphics, depending on fun, educational purposes or documentaries that appear, will be added. These programs could also be customized on request, possibly for a fee. Thus, digital technologies play an important role in ensuring the persistence of radio media using new tools allowing the listener to be "in the present" and ultimately facilitating the awareness of radio attractiveness and the growth the audience.

What economic model for the radio in the digital world?

The radio remains globally a media in good economic health. However, conventional financial resources (especially advertising) decreased, although the enlargement of the audience is positive and that the radio also remains a source of interest to advertisers who are looking for vectors dissemination and effective and efficient communication.

In addition, the FM frequency band is saturated and the number of those who provide entertainment services increase in a now fully digitized media environment.

The "web radio" refers to another economy where variable costs are high: the greater is the number of listeners, the higher is the distribution costs paid to the telecom operator are. For radios only on the Web, the costs of copyright are also high (as outside the scope of "legal license"). Listening on the move remains problematic: the 3G can only support a limited number of listeners per cell and geographical continuity of listening is not guaranteed. The competition is strong and without limits.

With Deezer as an example, emphasis is on new subscription models. The benefit of some new digital services can only be accessed via a freemium subscription. It remains difficult and essential to convert consumers to this type of business model and getting consumers "free" to "fee".

The solution seems to be in the diversity of supply to meet the diversity of expectation and consumer preferences: passive listening, creation of playlists, and "smart" radios.

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The radio remains an important player in the media world while its ecosystem is shake by the digital revolution. It seeks to maintain its culture, its quality, and its values by integrating technical and social developments of the digital world. It adapts to new practices of auditors: deferred time listening, services on request, or, for music, customized services by setting up their own "playlist". The "radio on video" also gives radio a more global dimension for this media and even like a "show" for some program. It enhances the reputation of the stations where these images are shown on traditional TV channels. But the real question for the radio remains to make exceptional traditional content from the perspective of the listener

Find the [summary](#) of the conference organized by the "Innovation & regulation in Digital Services" Chair, June 6th 2013.

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Video games ecosystem mutations

The video games industry is a young industry, which appear with the computer in the 70s. His dependence on technological innovation is originally from a sector in constant evolution. However, this trend seems to have even accelerated in recent years: new media, new players and the Internet have significantly disrupted the business models of the industry.

New media

Digitization quickly created opportunities for an increase of supports for video games. This is especially true for games on smartphone, tablet and online games.

If in a relatively recent past, access to Internet was the monopoly of the personal computer, today it is available on many equipments. Console manufacturers were among the first to successfully exploit a connection on their machine. With their increased speed and 4G networks, the games that have been successful on computer are transposed on mobile and calibrated for the terminal - phone or other mobile device- including massively multi-player games. The porting to smart-phone and mobile platforms of the game blockbuster "Grand Theft Auto" is a perfect illustration. In addition, applications "gateways" between the mobile phone and fixed terminals will also increase. They will multiply for complementary synchronous or asynchronous games with respect to the fixed platform, but also for related services: trade of virtual items, alerts, community tools...)

New content

"Browser-games" played from a web browser and "customers' games" requiring installation of an application and games on social networks are growing rapidly. The developers provide to players content publishers, enabling them to create their designs, their objects, their characters, their levels and see the result included in game or shared with the gaming community via the Internet.

This trend is based on three components: cooperative play online, the "User Generated Content" which implies further the player in the game world, creating communities based on the shared created content, and on the communication between players.

New players

Beyond the regular and experienced players, the public now seems more inclined to use video games for fun. Its tastes, its desires are varied and lead undoubtedly to a multitude of possible answers from content publishers. This consumer audience willing to pay is larger than the audience of the experienced players. The market it represents is potentially larger, although still remains highly fragmented.

The traditional business models disrupted by digitization.

The traditional business models were disrupted by the spread of fixed and mobile high speed. High speed has open up opportunities for the implementation of new ones.

Digitization allows a significant disintermediation: a developer is not required to go through all the usual intermediaries (distributors, retailers...) for the distribution of their games. It can put the game on direct download on its website and then distribute the game directly to players. This industry goes on the one hand from a traditional system built on the physical sale and a value chain with four levels (developer, publisher, distributor, retailer) to a model gradually dematerialized, and on the other hand, a pay-back in cascade on revenues and a value chain considerably shortened and eventually fully integrated with a single player in the market that supports the development of the game, edition, distribution and sales.

At the same time , developers have sought new business models allowing them to take full advantage of new opportunities (lower distribution costs, multi-player situations , opportunities for monitoring and extending the lifetime of a game) while adapting better to the new constraints (mainly hacking) .

Among these new models, the «free- to-play» is now the one who has had the greatest success: it has established itself quickly on all new markets ("browser games" social and mobile networks) and now begins to settle on the traditional markets (consoles and PC). In «free- to-play", the player has free access to the entire game and an uncapped growth.

It can still access services and virtual pay well, via an integrated online store in the game and allowing it to grow differently in the game These sales of complementary goods and services permit, from the point of view of the developer, profitable game, but more importantly, the association free / micro-transactions to test the willingness to pay players who nevertheless always keep the possibility to play for free . The principle of micro-transactions also grows on media and traditional games since the arrival of the new generation of game consoles salons. In the case of «Freemium" business model combines a free offer, open access , and offers a "Premium" , upscale, paying access.

Other means of funding are emerging, which may allow a developer to pass an editor. The «crowd funding" and "early access" fee (early access to games developed) allow to rely on the gaming community to fund the development of a product.

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The development of information technology and communication has considerably evolved creative industries and in particular video games. As in the areas of print media or music, the video games industry sees developing a multitude of business models induced in particular by changes in the market structure itself generated by the dematerialization of services. In this context, control platforms, which moves downstream of the value chain, could become the key issue of the video gaming industry.

Find the [summary of the conference](#) organized by the "Innovation & regulation in Digital Services" Chair, December 4th 2013.

Master « Network Industries in the Digital Economy »: 2013-2014 Year

The master IREN has enrolled last September its fifth class and graduated its fourth class.

This new year confirm the success of this Master program, following the restructuring of the Master partnership.:

. the Master received 142 candidates and the ratio selected candidates/total candidates is about 51%,

. the geographic origins of the students are diverse including students coming from Asia and Latin America.

. still a majority of students with scientific background, including many third-year students of the engineering schools part of the master.

These results are on line with the encouraging conclusions from the Agency for the Evaluation of Research and the Higher Education, issued last year.

More information :
www.masteriren.eu

Coming events

Next **June 16th**, the Innovation & Regulation in Digital Services will organize an International Conference on “**Economics of Personal Data**”. The conference will address economic issues of personal data and their legal and institutional framework.

Participants include A. Aquisti, F. Etro, P. Seabright, N. Dubois,

G.Lucetta, C. Reimsbach-Kounatze C. Levallois and P. Waelbroeck.

In **October 2014**, the Chair will propose a working day on the **economics of platform**.

On **July, 7th and 8th**, academics will meet in a “summer program” in order to share their views on many aspects of the digital economy.

The next edition of **ICT** will take place beginning of 2015, under the now usual academic format.

You can find all information about these events on the web site of the Chair, and all papers and presentations of the previous conferences.

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Publications

- **Marc Bourreau**, Carlo Cambini et Pinar Dogan (2013) : Access regulation and the transition from copper to fiber networks in telecoms, à paraître dans le Journal of Regulatory Economics.
- Maya Bacache, **Marc Bourreau** et Germain Gaudin (2013) : Dynamic Entry and Investment in New Infrastructures: Empirical Evidence from the Fixed Broadband Industry, à paraître dans la Review of Industrial Organization.
- Steffen Hoernig, **Marc Bourreau** et Carlo Cambini (2013) : Fixed mobile integration, à paraître dans le Journal of Regulatory Economics.
- Irène Bastard, **Marc Bourreau** et François Moreau (2013) : L'impact du piratage sur l'achat et le téléchargement légal : une comparaison de quatre filières culturelles, à paraître dans la Revue Economique.
- **Marc Bourreau** et Christian Grèce (2013) : The Impact of an Advertising Quota on Public Television, en révision à Information Economics and Policy.
- **Marc Bourreau**, **Frago Kourandi** et **Tommaso Valletti** (2013) : Net Neutrality with Competing Internet Platforms, en révision à Journal of Industrial Economics.
- **Marc Bourreau**, Pinar Dogan et Souman Hong (2013). Making Money by Giving It for Free: Radiohead's Pre-Release Strategy for In Rainbows. Mimeo.
- **Frago Kourandi**, Jan Kraemer et **Tommaso Valletti** (2013). Net Neutrality, Exclusivity Contracts and Internet Fragmentation, en révision à Information Systems Research.
- **Marc Bourreau** et Joëffrey Drouard (2013). Progressive Entry and the Incentives to Invest in Alternative Infrastructures, en révision à Journal of Regulatory Economics.
- Mattia Nardotto, **Tommaso Valletti** et **Frank Verboven** (2013). Unbundling the Incumbent: Evidence from UK Broadband, en révision pour Journal of the European Economic Association.
- **Nicolas Curien** : The theory of reflexivity facing and backing regulatory practice through the mirror of digital development
- Benghozi P.-J., **Salvador E.** (2014) “Strategies and business models of online platforms in CCIs: convergence or differentiation in the e-book sector?”, in Schramme A., Kooyman R. (Ed.), Hagoort G. (2014), “*Beyond Frames. Dynamics between the creative industries, knowledge institutions and the urban context*”, Eburon Academic Press, Delft, ISBN 9789059728844, pp. 96-104;
- Benghozi P.-J., **Salvador E.** (2014) "Are traditional industrial partnerships so strategic for research spin-off development? Some evidence from the Italian case", Entrepreneurship & Regional Development,
- Benghozi P.-J., **Salvador E.** (2013) “R&D in creative industries: some lessons from the book publishing sector”, Tafter Journal n. 64, October,

- **Salvador E.**, Mariotti I., Conicella F. (2013) "Science Park or Innovation Cluster? Similarities and differences in physical and virtual firms' agglomeration phenomena", *International Journal of Entrepreneurial Behaviour&Research*, vol. 19, n. 6, pp. 656-674 ;
- **Salvador E.**, Montagna F., Marcolin F. (2013) "Clustering recent trends in the Open Innovation literature for SME strategy improvements", *International Journal of Technology, Policy and Management (IJTPM)*, vol. 13, n. 4, pp. 354-376;
- **Salvador E.**, Montagna F., Marcolin F. (2013) "Clustering recent trends in the Open Innovation literature for SME strategy improvements", *International Journal of Technology, Policy and Management (IJTPM)*, vol. 13, n. 4, pp. 354-376;
- **Salvador E.**, Pinot de Villechenon F., Lopez-Rizzo H. (2014) "European SMEs and the Brazilian market: the key role of social networks", *European Business Review*, vol. 26, n. 4;
- Mariotti I., **Salvador E.** (2014) "On-park and off-park research spin-offs: some insights from an empirical investigation on Italy", *International Journal of Entrepreneurship and Innovation Management*, Special Issue on Inspired by Silicon Valley: a Cheap Copy or a Masterpiece? forthcoming;
- Ludivine MARTIN, **Nessrine OMRANI** : An assessment of trends in technology use, innovative work practices and employees' attitudes in Europe, 2013, article soumis pour publication.
- Adel Ben Youssef, Ludivine Martin, **Nessrine Omrani** : "The Complementarities between ICT Use, New Organizational Practices and Workers' Contextual performance - Evidence from Europe in 2005 and 2010", *AFSE* 2013
- Adel Ben Youssef, Mounir Dahmani and **Nessrine Omrani** : "Information technologies, students' e-skills and diversity of learning process", *Education and information technologies*, August 2013, DOI 10.1007/s10639-013-9272-x
- Toker Doganoglu, **Lukasz Grzybowski**, Dynamic duopoly competition with switching costs and network externalities, with, *Review of Network Economics*, 2013, 12(1), pp.1-25
- Magali Dauvin, **Lukasz Grzybowski**, Estimating broadband diffusion in the EU using NUTS1 regional data", with, *Telecommunications Policy*, 2014, 38(1), pp. 96-104
- **Lukasz Grzybowski** : Fixed-to-mobile substitution in the European Union, resubmitted to Telecommunications Policy
- **Lukasz Grzybowski**, with Rainer Nitsche, Lars Wiethaus and **Frank Verboven** : Market definition of broadband Internet services in Slovakia: are fixed and mobile in the relevant market? under revision *Information Economics and Policy*
- **Lukasz Grzybowski**, with Julienne Liang and Vincent Tena , From mobile voice to quadruple-play: estimation of willingness to pay for ADSL and FTTH in France",
- **Lukasz Grzybowski**, with **Frank Verboven** Substitution and complementarity between fixed-line and mobile access",
- **Lukasz Grzybowski** : Impact of Internet on the pricing of CD titles in France, with **Marc Bourreau** and Francois Moreau