

**Summary ICT Sessions at the fourth EMAEE
Sponsored by NWO-MES and NWO-NVN**

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From 19 till 21 May 2005, the fourth European Meeting on Applied Evolutionary Economics (EMAEE) was held in Utrecht. The Section of Economic Geography at Utrecht University hosted this conference. For more information including an archive with all papers presented, see <http://econ.geog.uu.nl/emaee/emaee.html>.

Among the sessions, two were especially devoted to ICT and sponsored by NWO-MES and NWO-NVN. In total, six papers on ICT have been presented. The presented papers covered various topics, for example: Internet strategies, IT services, mobile telecommunications, and broadband. A short summary of each presentation is given below.

1. The Evolution of E-commerce Strategies in Dutch Retailing: Does Geography Matter?

Authors: R. Boschma, J. Weltevreden, Utrecht University;

Discussant: L. Bertoloni, University of Amsterdam;

Date & Time: Friday May 20, 9:00 – 9:30;

Boschma and Weltevreden presented the first, preliminary results of an ongoing research project about the Internet adoption of city centre retailers from an evolutionary perspective (N = 930). Key questions in their research are: where do new organisational routines arise, how do they diffuse in space over time, and does geographical proximity, controlling for other factors, affect the diffusion process of Internet strategies. They have constructed various evolutionary variables, for example, technical (i.e., Internet experience) and entrepreneurial experience of the shop owner. Moreover, they were able to include important external factors, like local rivalry (i.e., number of competitors) and local demand (i.e., percentage of online shoppers). Results show that local knowledge spillovers matter: the more locally available, the higher the probability of having an information and an online sales strategy. Furthermore, local critical demand matters. The more demanding Internet users in the catchment area of the city centre, the higher the probability of having an online sales strategy. Finally, local rivalry matters. Local rivalry negatively affects the probability of having an information and online sales strategy.

2. Growth and Spatial Evolution of the Danish IT Service Industry: Random Growth or Urban Effect?

Authors: C. Pedersen, Aalborg University;

Discussant: M. Maggioni, Catholic University, Milan;

Date & Time: Friday May 20, 9:30 – 10:00;

Pedersen investigated the growth and spatial evolution of the Danish IT service industry from 1992 to 2002. Results indicate that the spatial employment specialisation pattern of the Danish IT service industry in 1992 seems to be only moderately changed a decade later in 2002. The employment has increased 131% and the number of firms has also more than doubled. According to Pedersen these large changes could imply a shift in the industry structure. However, the Danish IT service industry continued to be concentrated and the spatial specialisation pattern remained fairly stable. The leading regions in 1992 have kept their position, the ranking of the followers has changed moderately, while the remaining regions kept lagging behind. The spatial evolution of the industry clearly reveals a non-random growth and points towards the existence of agglomeration economics.

3. Explaining the Territorial Adoption of New Technologies: A Spatial Econometric Approach

Authors: A. Bonaccorsi, L. Piscitello, C. Rossi, University of Pisa;

Discussant: M. Maggioni, Catholic University, Milan;

Date & Time: Friday May 20, 10:00 – 10:30;

This interesting paper investigates the existence of a regional digital divide by modelling the level of ICT adoption at the Italian regional level (NUT3) using spatial econometric techniques. The main research questions in this research are: (1) do Italian regions exhibit significant differences in their patterns of ICT adoption?, and (2) if so, how local structural specificities interact with spatial effects in explaining these disparities? To answer these questions the authors use domain name registrations by firms in 2001 as a proxy of ICT adoption at the regional level. The results show that sectoral composition, technological endowment and absorptive capacity at the regional level, as well as firms' characteristics, do play a crucial role. In addition, pure spatial effects contribute to regional disparities.

4. Network Effects, Network Structure and Consumer Interaction in Mobile Telecommunications

Authors: D. Birke, P. Swann, University of Nottingham;

Discussant: B. Sadowski, Eindhoven Technical University;

Date & Time: Friday May 20, 11:00 – 11:30;

This demand side paper investigates the importance of (induced) network effects in the use of mobile telephones and the impact of the structure of social networks on a consumer's adoption decision. For this research Birke and Swann use social network data obtained from a survey of second year undergraduate students at the University of Nottingham Business School (N = 175). The authors find that students strongly coordinate their choice of mobile phone operators, but do this only for operators, which charge a price difference between on- and off-net calls. Coordination is strongest within groups of students who frequently interact with each other, but rather less with students from outside their group (for example Chinese students).

Furthermore, the students did not coordinate their choice of mobile handsets – there rather is a tendency to choose a different handset than the one used by their friends.

5. Innovation and Schumpeterian Competition in the Mobile Communications Service Industry

Authors: N. Corrocher, L. Zirulia, Bocconi University, Milan;

Discussant: B. Sadowski, Eindhoven Technical University;

Date & Time: Friday May 20, 11:30 – 12:00;

Corrocher and Zirulia make a theoretical contribution to the literature on the role of demand in affecting innovative strategies and competition in sectors characterized by high uncertainty and heterogeneity of users. In particular, the authors emphasise innovation (defined as a new tariff plan) as the key element of firms' strategies in the mobile communications sector. The authors choose this industry because the existence of exogenous and endogenous switching costs in this sector makes price competition not much attractive to firms, which drives them towards a process of Schumpeterian competition (i.e., competition through innovation). When developing new tariff plans, firms may either decide to target new users or concentrate on existing users. In analysing the strategic options, the authors propose a taxonomy of firms' innovative strategies that is based upon the identification of two variables: (1) the installed base of customers (firm size) and (2) the stage of industry evolution. In their conceptual framework, demand affects firms' choices in two ways. First, the ability of designing different tariff plans is related to the level of information firms have on users' needs and behaviour: relatively large firms are more able to segment the market than small firms. Second, the incentives to introduce innovations depend upon the level of market saturation: as market grows, firms concentrate more and more on their existing users. The authors plan to test their conceptual framework empirically in the near future through a systematic and detailed analysis of innovative strategies and industrial dynamics on a small sample of European analysis (i.e., Italy and other European countries with different characteristics).

6. Emergence and Growth of Broadband in the French Info-communications System of Innovation (FISI)

Authors: J. Krafft, French National Center for Scientific Research;

Discussant: B. Sadowski, Eindhoven Technical University;

Date & Time: Friday May 20, 12:00 – 12:30;

In this article Krafft describes the various factors that contribute to explain the current performance of France in broadband. These factors explicitly include industrial dynamics into the French Info-communications System of Innovation (FISI). Among the factors that have tended to stimulate performances in the development and growth of broadband in France is certainly the early introduction of competition, both at the level of technologies and companies. However, the fierce and uncoordinated process of competition that was introduced generated the dominance of the incumbent technology, and the underdevelopment of alternative technologies. Thus, in the French case, competition favoured innovation, but not necessarily varied innovation,

and this may limit opportunities for future growth, according to Krafft. In her perspective, the general tendency to develop a new vision of regulation, highly connected to new recommendations in the domain of competition policy, may also lead to the assimilation of the broadband industry, which is still in its development phase, to a mature industry. However, the compatibility and sustainability of this regulation policy in France is still largely dependent on the European new regulatory framework. In view of recent changes implemented in France, the recurrent dilemma of promoting competition or protecting the (national or European) competitors still apparently applies. This also shows that, if in each country, industrial dynamics in the domain of broadband shapes and is shaped by the NISI, yet the European information system of innovation (EISI), which is still under construction, will definitely transform the growth of broadband industry of member states.