

Seminar - The Economics of Information and Communication Technologies

University of Mannheim

Spring Term 2013

Prof. Dr. Irene Bertschek, phone 1235-178, bertschek@zew.de

Organisational meeting: January 31, 2013, 11:00, ZEW, L7,1, room 110

Block seminar: March 21 and 22, 2013, ZEW, L7,1 room 2, additional meetings by arrangement

Course Language: German or English

Prerequisites: Microeconomics, Basic Econometrics, Applied Microeconometrics

Examination: seminar paper + presentation

ECTS-Credits: 6

In the seminar we will discuss the role of information and communication technologies (ICT) for the economy. The following topics will be discussed:

- The contribution of ICT to productivity at the macro and the micro level
- The contribution of broadband Internet to economic growth
- Labour market effects of ICT
- Complementarities between ICT and workplace organisation
- ICT-enabled research collaboration
- User-generated content (Wikipedia)
- Online advertising

The seminar will particularly focus on empirical work. It will build on the estimation of production functions, innovation models, labour market models, models of user-generated content or online advertising.

Topics for seminar papers:

1. *The contribution of ICT to productivity and growth*

Starting point:

Draca, M., Sadun, R. and J. Van Reenen (2007), Productivity and ICT: A Review of the Evidence, Chap. 5 in *The Oxford Handbook of Information and Communication Technologies*, 100-147. Oxford University Press.

Jorgenson, D.W., Ho, M.S. and K.J. Stiroh (2008), A Retrospective look at the US Productivity Growth Resurgence, *Journal of Economic Perspectives*, 22(1), 3-24.

Kretschmer, T. 2012. Information and communication technologies and productivity growth: a survey of the literature. OECD Digital Economy Papers, No. 195, OECD Publishing. Available at: <http://dx.doi.org/10.1787/5k9bh3jllgs7-en>.

Van Ark, B., O'Mahony, M. and M. Timmer (2008), The Productivity Gap between Europe and the United States, *Journal of Economic Perspectives*, 22(1), 25-44.

2. The role of broadband for economic growth

Starting point:

Czernich, N., Falck, O., Kretschmer, T. and L. Woessmann (2011), Broadband Infrastructure and Economic Growth, *Economic Journal*, 121, 505-532.

Koutroumpis, P. (2009), The Economic Impact of Broadband on Growth: A Simultaneous Approach, *Telecommunications Policy*, 33(9), 471-485.

Röller, L.H. and L. Waverman (2001), Telecommunications Infrastructure and Economic Development: A Simultaneous Approach, *American Economic Review*, 91(4), 909-923.

3. ICT and Wages

Starting point:

DiNardo, J. E. and Pischke, J.-S. 1997. The returns to computer use revisited: have pencils changed the wage structure too? *Quarterly Journal of Economics*, 112(1), 291–303.

Entorf, H., Gollac, M. and Kramarz, F. 1999. New technologies, wages, and worker selection. *Journal of Labor Economics*, 17(3), 464–91.

Krueger, A. B. 1993. How computers have changed the wage structure: evidence from microdata, 1984–1989. *Quarterly Journal of Economics*, 108(1), 33–60.

4. ICT and the Composition of Job Tasks

Starting point:

Autor, D. H., Levy, F. and Murnane, R. J. 2003. The skill content of recent technological change: an empirical exploration. *Quarterly Journal of Economics*, 118(4), 1279–333.

Spitz-Oener, A. 2006. Technical change, job tasks, and rising educational demands: Looking outside the wage structure. *Journal of Labor Economics*, 24(2), 235–70.

Borghans L., and B. ter Weel (2005), How Computerization has Changed the Labour Market : A Review of the Evidence and a New Perspective. In Soete and Ter Weel (eds.), *The Economics of the Digital Society*, pp. 129-247.

5. Complementarities between ICT and Workplace Organisation

Starting point:

Bartel, A., Ichniowski, C. and Shaw, K. 2007. How does information technology affect productivity? Plant-level comparisons of product innovation, process improvement, and worker skills. *Quarterly Journal of Economics*, 122(4), 1721–58; doi: 10.1162/qjec.2007.122.4.1721.

Black, S. and Lynch, L. 2001. How to compete: the impact of workplace practices and information technology on productivity. *Review of Economics and Statistics*, 83(3), 434–45.

Bloom, N., Sadun, R. and Van Reenen, J. 2012. Americans do IT better: US multinationals and the productivity miracle. *American Economic Review*, 102(1), 167–201.

Bresnahan, T. F., Brynjolfsson, E. and Hitt, L. M. 2002. Information technology, workplace organization and the demand for skilled labour: firm-level evidence. *Quarterly Journal of Economics*, 117(1), 339–76.

6. ICT-enabled research collaboration

Starting point:

Agrawal, A. and A. Goldfarb (2008), Restructuring Research: Communication Costs and the Democratization of University Innovation. *American Economic Review* 98(4): 1578-1590.

Forman, C. and N. van Zeebroek (2012), From Wires to Partners: How the Internet has fostered R&D Collaborations within Firms, *Management Science* 58(8), 1549-1568.

7. User-generated content

Starting point:

Ransbotham, S., G. C. Kane, and N. H. Lurie (2011), Network Characteristics and the Value of Collaborative User-Generated Content, *Marketing Science*, forthcoming.

Ransbotham, S. and G. C. Kane (2011), Membership Turnover and Collaboration Success in Online Communities: Explaining Rises and Falls from Grace in Wikipedia, *MIS Quarterly*, 35(3), 613-627.

8. Online advertising

Starting point:

Goldfarb, A. and C. Tucker (2011), Online Advertising, *Advances in Advances in Computers*, Ed. Marvin Zelkowitz, Volume 81..Elsevier.

Goldfarb, A. and C. Tucker (2011), Online Display Advertising: Targeting and Obtrusiveness, *Marketing Science*, 30(3), 389-404.

Each paper should have about 10-15 pages. The typical structure of the paper is:

- a. Introduction into the topic / Motivation
- b. What does the literature say?
- c. Discussion of the models or theoretical frameworks
- d. What kind of data sets are used for the analysis?
- e. Discussion of empirical methods applied and results obtained
- f. Conclusions / Caveats

The papers should be finished and delivered one week before the presentation. Each participant is expected to discuss the paper of another student.

The grade composition is as follows: seminar paper (50%), presentation (25%), discussion of another presentation (25%).

If you are interested in the seminar, please send an e-mail to bertschek@zew.de mentioning two or three seminar topics with a ranking of your preferences.