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## To Whom it May Concern: Letter of Recommendation for Michael Kummer

I am pleased to write a letter of recommendation for Michael Kummer regarding his application on the job market 2014/2015. I have known Michael Kummer since September 2009 when he joined our research department "Information and Communication Technologies" at the Centre for European Economic Research (ZEW). At the same time, he started as a doctoral student at the Center for Doctoral Studies in Economics (CDSE) of the University of Mannheim. During the first two years of the course phase of the CDSE Michael worked part-time in our department, but has been actively involved in ongoing project work. Since September 2011 he has been working full-time at ZEW.

He has contributed to the ICT department's work in various ways. He has been involved in an interdisciplinary project and worked together with economists, media psychologists and computer scientists. He thereby considerably contributed to setting up the research on networks and usergenerated content and the work with platform data in our department. Moreover, he has proven excellent communication skills within this interdisciplinary context. He spent a lot of effort in collecting, preparing and handling data from Wikipedia and in learning how to analyse this huge dataset by social network analysis and to combine this with microeconometric analysis. His job market paper "Spillovers in Networks of User Generated Content - Pseudo-Experimental Evidence on Wikipedia" builds on the project work with Wikipedia. Michael has put a lot of effort to develop a convincing identification strategy in order to measure how hyperlinks in Wikipedia articles that refer to other articles affect users' search and contribution behavior. He uses featured articles on Wikipedia as internal as well as natural desasters as sources of exogenous variation. He presented this paper on various prominent conferences and workshops such as the EARIE conference, the EEA-ESEM conference, the IIOC in Chicago and the NBER summer institute in Boston. The paper has the potential to be published in a top journal.

For the paper "Money for Privacy – Android Market Evidence", Michael worked with Patrick Schulte, a doctoral student who started his doctoral studies in 2011. So Michael had the "senior position" in this work. In the paper, they analyse the role of privacy in the market for mobile applications. The analysis is based on the theoretical paper "Competing with Privacy" by Casadesus-Masanell/Hervas-Drane (2014) relating privacy to competition in a two-sided market framework. Michael and Patrick exploit a huge data set comprising information on about 300,000 mobile applications. Moreover, to take account of potential endogeneity and selection issues, they identified 1,000 pairs of apps, which are

provided by the same supplier. These apps are available in two versions, for pay and for free. Otherwise they differ only in their privacy intrusiveness. First results show that consumers generally prefer apps which request many permissions, but at the same time do take into account whether apps request rights that could potentially be abused. With respect to the supply side, the authors find a robust negative relationship between the willingness to pay for the services of an app and the required amount of private information a user has to share with the app. The paper addresses a very topical and relevant issue and is based on innovative data. It gives novel insights into the role of privacy in the market for mobile apps. The paper has been accepted for the EARIE 2014 conference and for a poster presentation at this year's WISE conference. However, the paper is still in an early phase and will have to be further developed and revised before being submitted to a journal.

From the very beginning, Michael has actively contributed to fundraising activities of the ICT research department. He has been awarded two grants by the SEEK research programme (SEEK Strengthening Efficiency and Competitiveness in the European Knowledge Economies, a program designed to support the international cooperations of ZEW researchers).

For the first project, "Firm Behaviour over the Product Life Cycle. Entry, Exit and Pricing Strategies on Online Price-Comparison Sites" (total budget 95 thousand euros), he prepared and submitted a proposal jointly with his cooperation partners from the University of Linz (F. Hackl, R. Winter-Ebmer, C. Zulehner) where he had worked as a researcher for two years before joining our department. The main result of this project is the paper "Market Structure and Market Performance in E-Commerce" published in European Economic Review this year. The second project he successfully applied for is "Side Effects of Economic Crises in Europe and the Provision of Online Public Goods" (total budget 200 thousand euros). For this proposal, Michael and his ZEW colleague Olga Slivko, Ph.D., elaborated a very interesting idea on the effects that the economic crisis might have on people's contribution to Wikipedia. Moreover, they put together a great international project team (M. and T. Hinnosaar from Collegio Carlo Alberto in Italy, M. X. Zhang from Hong Kong University of Science and Technology, P. Gloor from MIT). Their proposal was selected to be funded, next to 5 others, out of 26 submitted proposals. The selection procedure was based on a scientific review process. Further fundraising activities have lead to a project on the analysis of a Russian price-comparison website (joint with Olga Slivko) and were targeted to submit a proposal on patent citation networks to the National Science Foundation (joint with Olga Slivko and with ZEW Research Associate Michael Ward from University of Texas at Arlington).

Michael has proven his capacity for teaching in an applied microeconomics course on the Master level at University of Mannheim. Every spring term since 2011, he has been a teaching assistant for Prof. Martin Peitz. Beyond that he repeatedly has demonstrated his ability to design courses on efficient programming techniques for obtaining and handling big data sets for researchers at the ZEW. In January 2013, he organized a 6-day intensive course on Python for economists (6h/day) which was taught by an external lecturer. Together with Dr. Marion Lehnert, he prepared the design of the course and helped to fine-tune the curriculum as the course went along. In summer 2014, he designed and taught a 12h (1.5 days) short course on data handling in SQL and Python together with his colleague Olga Slivko, Ph.D., This course was designed as a preparation class for the subsequent workshop on data handling techniques taught by Peter Gloor, Ph.D., from the Massachusetts Institute of Technology (MIT), which was to be taught as part of their joint SEEK Project 2014: "Side Effects of Economic Crises in Europe and Provision of Online Public Goods."

Michael Kummer is a highly creative, motivated, competent and self-confident researcher. He is very dedicated and hard-working and willing to stick with his goals. He possesses outstanding analytical skills and has excellent knowledge of industrial organization and applied econometrics. Moreover, he has excellent programming skills. He is an extremely good team worker and a very inspiring person. He always actively and constructively contributes to discussions in our department on other doctoral students' and postdocs' research, for example in our internal seminar (currently, there are 5 doctoral students and 5 postdocs working in the ICT research department). But also on international conferences and workshops, held at ZEW in Mannheim or abroad, he is an outgoing person discussing and interacting with other researchers. Michael is easy to work with and a very friendly person.

I fully support Michael's academic aspirations. I enthusiastically recommend him for a position as assistant professor at any good to excellent department in economics or information systems. If you need further information about Michael Kummer and his work in our research department, do not hesitate to contact me.

Sincerely,

Irene Bertschek

John Bertschele

Head of Research Department Information and Communication Technologies, ZEW Professor of Economics, University of Mannheim