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Electronic Markets on platform dualities

Rainer Alt¹

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Much has been researched and written on the implications of information technology (IT). This is particularly relevant in an environment where IT is indispensable as never before. Driven by constantly converging technologies, the reach as well as the functionalities of digital platforms are still increasing (Alt, 2021a). Although there has been some movement regarding the most valuable companies (e.g., Meta left the top 10 listing in early 2022), at least half of these top 10 companies are now based on the platform business model. In a platform economy (e.g. Kenney & Zysman, 2016; Schenker, 2019, Jung et al., 2021), such businesses have at least two essential roles: on the one hand, they operate platforms that organizations and individuals may use to innovate and to transact. For example, digital platforms have become key infrastructures for e-commerce and social contacts. In the sense of Hoffmann et al. (2004), these platforms are today as indispensable as the internet was in the early 2000s. On the other hand, they offer software and services to pursue platform-strategies. Among the examples are cloud computing (“as-a-service”) solutions that enable an entire stack of platform services comprising technological operating platform services, application platform services, artificial intelligence (AI) platform services and assistant platform services (Alt, 2021b). As a representative of these platform software and platform service providers, the CEO of Palantir has recently “highlighted the benefits and dangers associated with its [i.e., Palantir’s] technology and said that lives have both been “saved and taken” as a result of its software”. He continues that “we understand that technology, including ours, is dangerous, and that software can be used as a weapon.” (Barnett, 2022). This statement indicates a dual nature of digital platforms that has reached broad awareness and concerns with the dominance of platform providers. However, dualities are not new to the information systems domain and this editorial

aims to distinguish three views on duality in the context of digital platforms (see Figure 1). They represent the general notion of a duality, which denotes a “situation in which two opposite ideas or feelings exist at the same time” (Collins Dictionary, 2022).

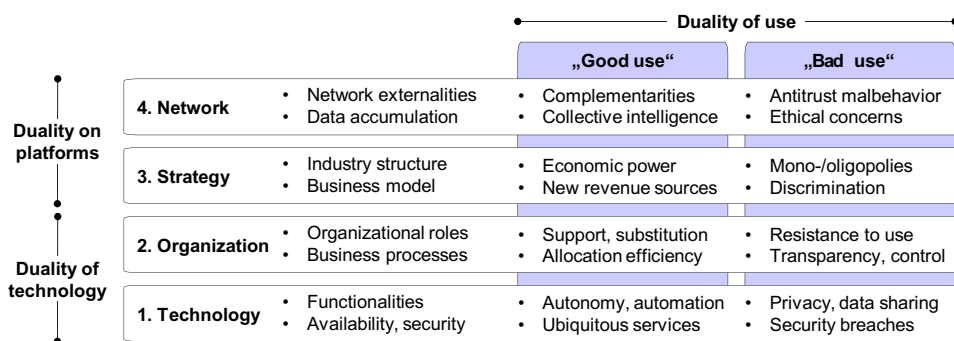
Innovation and consequences

To discuss the three views, some key characteristics of technological innovations shall be introduced first. Already the Schumpeterian notion of “creative destruction” implies that change is inherent to innovation and that new technologies and ideas will constantly challenge existing solutions and market structures (Parker et al., 2020). A successful diffusion of an innovation always has two sides since it will create new opportunities and replace existing structural properties at the same time. It is in the nature of these dynamics that the consequences will not be welcomed by all parties, in particular, the incumbent actors. The judgement whether the consequences are regarded as opportunities or risks is often not an absolute measure, but rather a relative assessment that depends on individual actors and their individual goals. In the literature on (technological) innovations this is reflected in the consequences of the diffusion of innovation. This diffusion may be described as a process that occurs when “(1) an innovation (2) is communicated through certain channels (3) over time (4) among the members of a social system” (Rogers, 1983, p. 10). During this process, innovations may either be adopted or rejected with the consequences being diverse and reflected in three opposite dual pairs (p. 31f): consequences may either be desirable or undesirable, direct or indirect, and anticipated or unanticipated. A key aspect is the embeddedness of an innovation in a social system where many stakeholders interact in a dynamic way. Rogers suggests the metaphor of “a bowl of marbles: move any one of its elements and the positions of all the others are also changed” (p. 388). It leads to three implications: First, it means that the outcome of an innovation may be desirable for one actor (group) and undesirable for another, making the

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Fig. 1 Three platform dualities



assessment of the consequences depending on “the point of reference” (p. 381), i.e. the perspective of individual actors. Second, an innovation typically has direct or first-order consequences within a specific socio-technical system, but also multiple indirect or second-, third- or even fourth-order effects, which are known to be more difficult to assess and influence. Third, the novelty of an innovation is almost per se linked with unanticipated consequences, which emanate from uncertainties that are associated with the innovation itself (i.e., the still limited knowledge on a technology).

The duality of technology

Regarding the consequences of analog and electronic information technologies, multiple examples may be found. For example, Chandler (1977) described how modern IT such as typewriters and adding machines increased the efficiency of information processing and decreased the costs of administrative coordination, thereby enabling the organization of tasks within larger (bureaucratic) organizations. Malone et al. (1987) reported how the telegraph allowed information to travel faster than physical goods and made larger distribution networks as well as markets possible. More recently, Lusch and Nambisan (2015) have recognized service platforms as an important element for service innovation since these facilitate resource liquefaction (i.e., the decoupling of information from its related physical form or device) and resource density (i.e., the “best” combination of resources for a particular situation). The first duality now contests the existence of clear causalities along the reductionist theory of technological determinism. Neither the typewriter nor the telegraph or digital platforms have clear deterministic consequences. It supports an early finding, whereas IT might serve to foster centralization or decentralization as well as to increase or decrease the vertical or horizontal dimension of firm size (Gurbaxani and Whang 1991, p. 72). In this sense, the duality of technology (Orlikowski, 1992) recognizes the close interplay of technology with the “non-technological”

organizational and social system. If human activity affects technology and human activity is affected by technology (López-Muñoz & Escribá-Esteve, 2017), the outcome of this interaction process will not be pre-determined and rather be open-ended. For example, the result may be the adoption or rejection of an innovation as well as the move to hierarchical or market-like coordination structures alike (Malone et al. 1987). There are ample examples for technological innovations where the outcomes differed from the expectations. This applies to the Dvorak keyboard design that was not adopted despite being regarded as more efficient than the Qwerty layout (Rogers 183, p. 9), data science initiatives that were not used or adopted by decision-makers (Brous & Janssen, 2020, p. 1) or the repeated discontinuation of electronic markets in the road transport domain (Alt & Klein, 1999). The latter were attributed significant improvements in reducing information asymmetries that were present in the allocation of cargo and cargo space among logistic service providers. Although some systems featured technological shortcomings (e.g., the limited diffusion and functionality of the Videotex terminals), most problems were encountered with “non-technological” aspects such as the transparency on offerings in the market, the role of the agents in the transportation companies or fragmented (digital) business processes. What was considered beneficial to one market side might not have been regarded as beneficial from the perspective of another market side. For example, some actors valued the improved transparency of competing offerings while others feared increased price competition, the loss of customers to competitors or the substitution of their jobs.

The duality on platforms

A second duality refers to the business models on digital platforms. Typical roles are the buyers and sellers as well as the platform providers. In the seller category, competitors and complementors are important to offset externality effects that are vital within platform ecosystems. Duality

occurs when actors assume two roles (or business models), which is often the case with platform providers. In this case, they not only operate the platform and act as gatekeepers and collectors of ad-valorem fees, but they also enter the market by offering competing services to other third parties on the platform. For example, this occurs when Amazon operates (and regulates) the platform with the shopping functionalities and also acts as a seller of products under its own Amazon Basics brand. This duality has been recognized a field of action for regulators due to ambivalent effects: on the one hand, the dual mode has the potential to spur competition and thus favor consumers. On the other hand, it bears the risks of self-preferencing or the discrimination of other sellers. Common measures to contain these effects are to ban gatekeepers from this dual role as well as to limit the ad-valorem fees. For example, the European Commission proposed the Digital Markets Act in December 2020 to contain the market power of large platform providers (EC, 2020). However, an economic analysis has shown that the effects of such measures are closely linked to the presence of network effects. As described by Gautier et al. (2021), platform providers will likely use their position to offer product bundles, which will be more attractive when ad-valorem fees are low and platform providers have an incentive to achieve larger returns from their dual role. Thus, in such situations with large network effects, platform duality might disadvantage buyers and other sellers on the platform. Possible counter-measures to this negative side of platform duality are improvements in interoperability among product offerings, which would facilitate third-party sellers or even buyers to bundle products themselves. More equality among sellers might ensue from decentralized digital platforms that work on the basis of distributed ledger technologies without a centralized platform operator. At the same time, this is a challenging path, which is highlighted by the difficulties that were encountered during the meanwhile discontinued decentralized e-commerce project Openbazaar.

The duality of use

A third duality recognizes the generic nature of technologies. Following the notion of general purpose technologies (GPT), IT is application agnostic and able to support information processing purposes across industries, i.e., application domains. Recent converging GPT, such as cloud computing (Brynjolfsson et al., 2010), AI (“the most general of all general-purpose technologies” (Brynjolfsson, 2022, p. 2))

or decentralized ledgers (there is “preliminary evidence that Blockchain is a GPT” (Ozcan & Unalan, 2022, p. 807)) are catalysts for innovation (Brynjolfsson et al., 2010, p. 34) and important building blocks of digital platforms. Such technologies unfold dual use characteristics, when they feature “an intended use or primary purpose which is good (or at least not bad) and a secondary purpose or use which is bad and is not intended by those who developed the technology in the first place” (Forge, 2009, p. 111). Obviously, this raises the question whether determining a “good use” and a “bad use” is always possible. While there might be technologies that lack a dual use (e.g., some military technologies might not have positive uses), the duality of technology posits that the consequences of innovations will per se not be perceived as positive by all stakeholders. It is in the nature of healthy competition and innovation dynamics that the consequences of technological change (or digital transformation) are not bright for everybody (in particular for incumbents). Although a “bad use” or the “dark sides” should not be confused with challenging market conditions, researchers have nevertheless called for measures to contain negative effects. These mainly comprise policy measures and regulation due to antitrust, legal or ethical reasons, which arise due to the pivotal position of the platform provider in accessing and using data from their platforms. Among the examples are identity theft, privacy concerns and offensive messaging (Hoffmann et al. 2004) as well as biased or incorrect data and fraud on sharing (Malhotra & Van Alstyne, 2014) and open data platforms (Zuiderwijk & Janssen 2014). Most of such problems are summarized in the social and ethical values that are evoked by digitalization (Royakkers et al., 2018), which include privacy, autonomy, safety and security, balance of power, human dignity and justice. Gatekeepers and governments are critical due to their dual role in defining the rules of how data is used on digital platforms and in drawing on data for their own purposes. Again, the picture is ambivalent as illustrated by the recent Data Act of the European Commission (EC, 2022): on the one hand, platform data should be accessible to enable services as well as service innovation for many parties (i.e., not only for the gatekeepers) and on the other hand, rules are necessary for the ownership and use of this data. The Data Act explicitly mentions the goal to strengthen the sovereignty of consumers to take control of their data, which has been recognized as an important move to safeguard human values. Questions in this domain have meanwhile received broader attention with dedicated conference tracks as well as journal special issues, such as the present and a forthcoming (Clemons et al., 2022) special issue of Electronic Markets.

Framework for platform dualities

Figure 1 summarizes the three platform dualities and shows the duality of technology and the duality on platforms in the vertical and the duality of use in the horizontal dimension. The duality of technology reflects the interplay of technological and socio-organizational aspects with the two modes of usage. On the technological level, an increasingly interconnected infrastructure of devices and application systems creates the basis for data collection, sharing and processing. This infrastructure may enable time and location independent services as well as automated scenarios, such as predictive maintenance, object tracking or autonomous driving, but also involves numerous risks such as data theft, privacy violations or non-transparent sharing of data. The organizational layer reflects the usage context of the technologies and encompasses social as well as organizational factors, such as user perceptions, task profiles or business and coordination processes. On the positive side are numerous improvements from process redesign, decision support to allocation efficiency, which on the negative side may represent sources for users that fear to be controlled by organizations or governments. The duality of platforms may be conceived as “sitting” on the top of the first duality since business models comprise socio-organizational as well as technological factors and since network externalities are only triggered once multiple actors interact. On the upside are the sources of economic power and revenue generation that come with successful digital business models and the use cases that emanate from digital platform ecosystems where complementors are present and where large volumes of data are generated as a basis for collective intelligence. On the downside are the concerns regarding negative implications on competition as well as human, in particular ethical, values. Finally, it should be emphasized that:

- IT is known to be paradoxical in nature, which means that two effects may be present simultaneously. For example, the same crowdworkers have been found to feel empowered and marginalized by crowdsourcing platforms at the same time (Deng et al. 2016).
- Effects depend on the specific use case, which means that the purpose of use determines whether it is attributed “good” or “bad”. For example, tracking cargo might be desirable in many supply chain use cases, but tracking humans might differ from “good” (e.g., in a medical context) to “bad” (e.g., when used to suppress individuals).

Articles of present issue

Following up to the initial quote on software being a weapon, the special theme in this issue comprises a first collection of papers on the dark sides of AI. The special issue was organized by the Xusen Cheng, Xiao Lin, Xiao-Liang Shen, Alex Zarifis, and Jian Mou, who introduce the six papers in their separate preface. Starting with a view on the bright sides of AI, they state that “the dark sides of AI are receiving relatively little attention” and structure potential dark sides along the three perspectives of digitalization (individual, organizational, societal) to frame their special issue papers (Cheng et al., 2022). It is the merit of the guest editors that their conference track held at the Americas Conference on Information Systems (AMCIS) has offered a platform for promoting research in this direction and that they were successful in developing these selected papers during the peer review process at Electronic Markets. Among the topics addressed in these articles are the negative or challenging sides of personal virtual assistants and recommender systems, which create negative emotions, technostress as well as “filter bubbles”. In addition, an analysis of guidelines is provided that aim to contain the negative consequences of AI by regulatory measures.

Besides the special issue articles, the general research section of this issue includes thirteen contributions, which feature diverse links to the special issue theme. This applies in particular to the first six papers. The first of them is an interview, which focuses on the potentials of AI in curating heterogeneous data and in offering these algorithms as dedicated information objects on digital platforms. As founder of the Squirro AI platform, Dorian Selz emphasizes that supporting human decision makers is more relevant than automating decision making and reports on these bright sides of AI with several use cases (Alt & Zimmermann, 2022). Following his closing statement that the solutions “should be in the interest of the humans using these systems”, the second article presents the approach of digital humanism. Titled “From absolute nonsense to the world’s operating system” Hannes Werthner looks back to the early days of electronic markets when the future of these systems was still questioned. He takes on “the double-sided role of IT” whereas digital platforms have now become the world’s operating system, but have attained a dominance that comes with concerns in anti-trust, privacy, cybercrime, fairness and ethical questions. In view of the difficulty of effectively regulating these multinational platform companies, the article describes the Vienna Manifesto, which coins the term “digital humanism” to denote an interdisciplinary approach “that describes, analyzes, and most importantly, influences the complex interplay of technology and humankind, for a

better society and life, fully respecting universal human rights” (Werthner, 2022).

The third general research paper is a compelling example of how the bright and the dark sides go hand in hand. Starting with the recent pandemic since 2020, videoconferencing platforms experienced a substantial rise and enabled virtually mediated face-to-face interactions, which also had positive effects on travel expenses and the environment. At the same time, many problems surfaced with video conferencing sessions that occurred over longer periods of time. Using the term “Zoom fatigue”, René Riedl investigates the stress potential and causes of this negative side of video conferencing (Riedl, 2022). Based on a literature review that draws on research from the fields of e-collaboration and technostress, he derives a definition, four characteristics as well as six root causes for Zoom fatigue and proposes a conceptual framework that should serve future research to better understand the negative consequences of videoconferencing. The fourth paper addresses regulation, which is acknowledged as an important strategy to contain the negative consequences of IT. Like indicated in the introduction above, regulation has two sides since it creates both trust and administrative effort. Using a literature review, Roger Clarke analyzes “Research opportunities in the regulatory aspects of electronic markets” and presents a seven-layer hierarchical framework to structure research results from 41 articles (Clarke, 2022). They pertain to regulatory mechanisms in the areas government, self-governance and systemic governance. An example of the Uber platform illustrates these dimensions of the framework together with the opportunities of so-called Regtech services.

The fifth paper focuses on the offerings of complementors, which have been mentioned in the duality on platforms 4 dimension above as key for triggering positive network effects. The authors Evgheni Croitor, Dominick Werner, Martin Adam and Alexander Benlian recognize these potentials, but also that a large and heterogeneous variety of offerings from complementors creates risks regarding the quality of these services. In their research on “Opposing effects of input control and clan control for sellers on e-marketplace platforms” they investigate input and clan control as two possible control mechanisms. Input control aims to ensure an adequate quality of complementor services prior to making the service publicly available on the platform and clan control to ensure content quality once a service has been published (e.g., by giving feedback in communities). From their quantitative survey studies on two electronic market platforms, they identify intrinsic motivation as an important factor for complementors to comply with the requirements of the platform (Croitor et al., 2022). The sixth paper in this issue links to the duality of technology and the social embeddedness of technology. Titled “An

experimental examination of credible information disclosure, perception of fairness, and intention to do business in online multi-bilateral negotiations” the authors Bo Yu, Gregory E. Kersten and Rustam Vahidov investigate the role of negotiations on the intention to do business. In their experiment of an inter-organizational procurement case they find that perceived fairness in the conduct of negotiations and the disclosure of best offer information is critical for repeated transactions within a business relationship (Yu et al., 2022).

Another set of even papers focuses on applying AI for customer interaction, in particular chatbots and service robots:

- Severin Weller, Christian Matt and Thomas Hess analyze the problem that conversational agents often fail to provide meaningful responses to user requests when these systems are unable to understand or to process spoken language. In an experimental setting with 558 users they reveal that the users’ inclination to discontinue the use of chatbots can be mitigated by adding messages on the chatbot’s functionality and on possible consequences if there is a risk of response failure (Weiler et al. 2022).
- Taekyung Kim, Hwirim Jo, Yerin Yhee and Chulmo Koo investigate the attitudes towards robot, AI and service automation (RAISA) applications in the hospitality industry. While they recognize that some users are positive about these RAISA applications, they concede that other users would be reluctant or even reject them. Based on an analysis of sentiments on the Youtube platform, they conclude that “creating positive buzz about RAISA-based services”, especially if videos are from authentic users, is an effective lever to alleviate the negative effects (Kim et al. 2022).
- Shengliang Zhang, Xinfeng Lin, Xiaodong Li and Ai Ren focus on anthropomorphic service robots that are applied in customer interaction. They state that “the perception of anthropomorphism can facilitate and deepen human-robot interaction, [but that] inappropriate design of anthropomorphism will cause consumers’ discomfort”. In their interview-based study they develop a multi-dimensional model that serves to understand and design anthropomorphism as a result from task, interaction, technology as well as the user (Zhang et al. 2022).
- Ransome Bawack, Samuel Fosso Wamba, Kevin Carillo and Shariar Akter then turn to the application of AI in e-commerce and identify that AI is in particular an element of recommender systems to improve personalization by learning from data on e-commerce platforms. In their comprehensive literature review of 4335 articles,

they reveal that businesses are able to derive competitive advantage from sophisticated recommendation algorithms that are fed with data from their own platform and that are used for advanced customer interaction, e.g., via chatbots and voice assistants (Bawack et al. 2022).

- Christian Engel, Philipp Ebel and Jan Marco Leimeister shed more light on the concept of cognitive automation. In their Fundamentals article, they present a structured overview on the main applications of AI to automated business processes. Cognitive automation is conceived as probabilistic and as complementary to classical deterministic rule-based automation systems. Among the major forms of cognitive automation are workflow management, robotic process automation, and machine-learning-facilitated business process automation. They offer important implications for digital ecosystems as well as for interorganizational processes (Engel et al. 2022).
- Ana Alina Tudoran presents how recommendations in e-commerce systems may be developed from user behavior by applying unsupervised machine learning algorithms. The model processes clickstream data that is created when browsing through e-commerce sites and develops three decision-making styles based on the distinction of satisfiers and maximizers. For each style different search and decision patterns (e.g., searching intensely for the best deal) exist, which may be included in real-time to improve customer experience, in particular “to prevent adverse outcomes like dissatisfaction and post-decision regret” (Tudoran 2022).
- The issue closes with a broad literature review on the research in the digital platform domain that comprises a total of 11,049 papers over 44 years. Christian Barthelheimer, Philipp zur Heiden, Hedda Lüttenberg and Daniel Beverungen apply a combined approach of text mining and unsupervised learning to derive the 26 most influential platform terms, six research streams on platforms and a set of platform concepts that are designed as a decomposed lexicon of platforms. They expect that this model is helpful in overcoming a reductionist perspective on platforms towards an integrated perspective, for example, as posited by the duality of technology mentioned above (Barthelheimer et al. 2022).

who were involved. In the same vein, all general research articles received multiple reviews from at least two reviewers and were overseen by an associate or senior editor. To additionally appreciate this substantial and critical effort for an academic journal, Electronic Markets has introduced the outstanding reviewer and the paper of the year awards. Based on the amount of reviews and, notably, on the elaborate and constructive nature of the repeated reviews, it was an honor to nominate Luba Torlina from Monash University, Australia, and Ricardo Büttner from the University of Bayreuth in Germany, as *outstanding reviewers 2021*. To determine the candidates for the *paper of the year award*, citations and download figures were analyzed for papers published in 2020 and after a qualitative pre-screening by the editorial team, senior and associate editors voted on their candidate. Congratulations go to the authors of two papers:

- Jörg Weking, Michael Mandalenakis, Andreas Hein, Sebastian Hermes, Markus Böhm and Helmut Krcmar for their research on “The impact of blockchain technology on business models – a taxonomy and archetypal patterns” (Weking et al., 2020).
- Daniel Szopinski, Thorsten Schoormann, Thomas John, Ralf Knackstedt and Dennis Kundisch for their paper on “Software tools for business model innovation: current state and future challenges” (Szopinski et al., 2020).

Finally, Electronic Markets is grateful to all reviewers who contributed to the quality of the journal in 2021 by reviewing papers. The comprehensive list in Table 1 provides a glimpse on the workload that was involved in the past year to handle the steadily rising volume of submissions to Electronic Markets. In addition, several colleagues who have provided repeated reviews have agreed to join the editorial board or team of senior and associate editors at Electronic Markets (see Table 2). Thank you to all of them and also to James Richard from Victoria University of Wellington, New Zealand, who received the outstanding reviewer award in 2016 and terminated his position as associate editor after having served for six years on the board of Electronic Markets.

EM awards and editorial board

In summary, this issue reflects another joint effort of editors, authors and reviewers. Many thanks go to the guest editors of the special issue and the authors as well as the reviewers

Table 1 Reviewers in 2021

Amir Zaib Abbasi	Raija Halonen	Ada Pateli
Nizar Abdelkafi	Maik Hammerschmidt	Tobias Pauli
Babak Abedin	Shengnan Han	Krassie D Petrova
Amjad Abu ELSamen	Robert R Harmon	Christian Peukert
Lailatul Faizah Abu Hassan	Rabiul Hasan	Matti Pihlajamaa
Abubakar Mohammed Abubakar	Marikka Heikkilä	Jens Poeppelbuss
Martin Adam	Andreas Hein	Elena G. Popkova
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Petri Ahokangas	Timo Himmelsbach	Aimilia Protogerou
Shahriar Akter	Hartmut Hoehle	Andreja Pucihar
Juan Miguel Alcántara-Pilar	Wout Hofman	Christina Raasch
Mazen Ali	Peter Hofmann	Dorina Rajanen
Rainer Alt	Jianwei Hou	Isabel Ramos
Jörn Altmann	Tianhang Huang	Heritiana Ranaivoson
Hyun Sang An	Joris Hulstijn	Michael Rebstock
Pierre-Emmanuel Arduin	Ulla Hytti	Ulrich Reimer
Emílio José Montero Arruda Filho	Efosa Carroll Idemudia	Olaf Reinhold
Alexia Athanasopoulou	Stanislav Ivanov	Uwe Riss
Volker Bach	Christian Janiesch	Joan Rodon
José Ángel Bañares	Andreas Janson	Maximilian Röglinger
Snehasish Banerjee	Marijn Janssen	Matti Rossi
Ying Bao	Robert Keller	Rafael Rossi
Jörg Becker	Astrid Kemperman	Angela Roth
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Steven Bellman	Dong-Hyu Kim	Boriana Rukanova
Ivo Benke	Mathias Klier	Sunghan Ryu
Alexander Benlian	Helmut Krcmar	Morteza Saberi
Benedikt Berger	Tobias Kretschmer	Mijalche Santa
Daniel Beverungen	Kevin Kuan	Kaija Saranto
Markus Bick	Tyge-F. Kummer	Sofia Schöbel
Baidyanath Biswas	Dennis Kundisch	Detlef Schoder
Francisco Javier Blanco-Encomienda	Ulrike E. Lechner	Maximilian Schrieck
Ivo Blohm	Chien-Sing Lee	Gerhard Schwabe
Victor Wilfredo Bohorquez Lopez	Christine Legner	Kim B. Serota
Roger Bons	Christiane Lehrner	Marianna Sigala
Harry Bouwman	Jan Marco Leimeister	Åsa Smedberg
Michael Breitner	Uwe Leimstoll	Vladimir Sobota
Jan vom Brocke	Hongxiu Li	Wael Soliman
Hans Ulrich Buhl	Yang-Jun Li	Konstantina Spanaki
Ricardo Büttner	Yi Li	Martin Spann
Regis Cabral	Yuan Li	Newton Spolaôr
Francesco Cappa	Yuhong Li	Thorsten Robert Staaek
Christer Carlsson	Qinyu Liao	Katarina Stanoevska-Slabeva
Sohail Chaudhry	Weng Marc Lim	Dennis Marten Steininger
Langtao Chen	Yong Liu	Henrik Sternberg
Qiang Chen	June Lu	Toni Stucki
Christy Cheung	André Ludwig	Frantisek Sudzina
Youngjoon Choi	Bernhard Lutz	Ali Sunyaev
Anastasia Constantelou	Wolfgang Maass	Reima Suomi
Mark De Reuver	Maria Madlberger	Eric-Oluf Svee
Henk J. de Vries	Robin Mansell	Navid Tavanapour

Table 1 (continued)

Erik Den Hartigh	Carla Bonato Marcolin	Mena Teebken
Christian Dietzmann	Venkata Marella	Jose Teixeira
Yi Ding	Alessandro Margherita	Timm Teubner
Chuanwen Dong	Marjeta Marolt	Frédéric Georges Thiesse
Sara D'Onofrio	Mauricio Marrone	Paul H. Timmers
Christian Dremel	Malte Martensen	Luba Torlina
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Paulo Duarte	Christian Matt	Daniel Trabucchi
Nestor Duch-Brown	Pascal Mehrwald	Polyxeni Vassilakopoulou
Katharina Ebner	Tobias Mettler	Daniel Veit
Ioannis Emirs	Karl Jacob Mickelsson	Doug Vogel
Ayşegül Engin	Andreea Cristina Mihale-Wilson	Adam Vrechopoulos
Ramazan Esmeli	Qingfei Min	Heinz-Theo Wagner
Christian Fikar	Milad Mirbabaie	Samuel Fosso Wamba
Jerry Fjermestad	Jian Mou	Yun Wan
Sebastian Floerecke	Jan Muntermann	Ping Wang
Gilbert Fridgen	Matthias Murawski	Christof Weinhardt
Hanno Friedrich	Dana Naous	Markus Weinmann
Yoshiaki Fukami	Barbara Neuhofer	Karsten Wenzlaff
Daniel Fürstenau	Petra Nylund	Lauri Wessel
Judith Gebauer	Anna Maria Oberländer	Paul Wiegmann
Richard Glavee-Geo	Shintaro Okazaki	Manuel Wiesche
Elena Gorbenkova	Jan Ondrus	Maria A. Wimmer
Lazaros Goutas	Nadine Kathrin Ostern	James Richard Wolf
Michael Grabatin	Boris Otto	Felix Wortmann
Lorenz Graf-Vlachy	Sven Overhage	Liudmila Zavolokina
Michael Johannes Greineder	Vincent Pang	Ji Zhang
Ulrike Gretzel	Georgios Papachristos	Tingting Zhang
Ali A. Gündüz	Andrew Park	Yin Zhang
		Hans-Dieter Zimmermann
		Steffen Zimmermann

Table 2 New members of the Electronic Markets editorial board

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