

Preface

This volume contains papers presented at ECG 2015: Embracing Global Computing in Emerging Economies held during February 26–28, 2015, in Almaty, Kazakhstan.

There were 25 submissions. Each submission went through two phases of reviewing: the first phase being before the workshop; and the second phase beginning one month after the workshop. Each paper was reviewed by on average 2.3 Programme Committee members, with accepted papers receiving three reviews. The committee decided to accept 14 papers for presentation at the workshop and 10 papers for these proceedings. Three papers by invited speakers also appear: in particular, papers by networking and distributed computing experts Yehia Elkhatib and Gareth Tyson from Lancaster University and Queen Mary, respectively; and by theoretician Nikolay Shilov from A. P. Ershov Institute of Informatics in Novosibirsk.

The computer science workshop “Embracing Global Computing in Emerging Economies” was co-located with the economics workshop “The Impact of Emerging Economies and Their Multinational Enterprises on the World Economy” supported by a Researcher Links workshop grant from the British Council. The workshop was also partially funded by the Faculty of Information Technology and Business School at Kazakh-British Technical University. Registration was free to participants, and grants covering travel and expenses were awarded to participants with accepted or invited papers.

The workshop focused on modern problems in computing particular to relevant emerging economies such as Kazakhstan. Kazakhstan is a region with high investment and a well-educated workforce. However, the remote location of Kazakhstan compared with the world’s datacenters raises challenges for organisations making the transition to cloud computing. Cloud computing brings serious economic and technological benefits, including the immediate scalability of resources on demand and the high availability through a global network of data centres. Issues such as low population density, poor communications infrastructure, and vulnerability to natural disasters augment the risk of investing in Kazakhstan’s IT industry and supported services. The workshop aims to boost innovation by identifying relevant research problems, providing a forum for cross-sector interaction, and a platform where experienced and early-stage researchers can comfortably interact.

The papers contained in this volume are relevant to the themes of the workshop in two ways: they are directly relevant to the problems of delivering cloud services in an emerging economy such as Kazakhstan; or they represent ICT innovation by scientists in the region. The directly relevant papers are those by Elkhatib, Tyson et al., Shilov, Abdrau, Popa et al., Trubitsin, Hadley et al., and Aman et al.. The papers indirectly relevant require a little more justification. The paper by Sarbasova et al. proposes an approach that can be applied to medical diagnosis over a cloud and mobile-based infrastructure, thereby reaching remote underprivileged regions. The paper by Umarov et al. presents a data-centric methodology developed by scientists in Kazakhstan. The

paper by Kornev is applicable to industry. The paper by Fish et al. represents a cluster of theoreticians operational in Kazakhstan. Finally, the paper by Bakibayev et al. presents ICT support for a real problem faced by city planners; indeed a related bus route opened in Almaty in the time between the workshop and the production of these proceedings.

The workshop featured speakers and panelists from industry including Sergey Khalyapin representing Citrix, Moscow; Olzhas Tolegen representing Microsoft, Kazakhstan; and Dias Kadyrov representing EMC, Kazakhstan. The third and final day of the workshop focused on an invited talk from Sergey Khalyapin followed by a panel discussion featuring invited academics and professionals from industry. The panel discussion addressed the challenges involved in building data centres in Kazakhstan. The three companies represented are currently making strategic investments in cloud infrastructure and expertise in Kazakhstan, while several of the academics have been investigating community-driven alternatives to data centers. The problem that emerged was a need to quantify the risk of investing in data centers in Kazakhstan, taking into account the geographic and economic context. Stimulating dialog between industry and academia is an important step towards increased innovation.

We would like, firstly, to thank our Programme Committee, who have worked to tight deadlines to evaluate and provide constructive feedback to authors. We would also like to mention the members of the Faculty of Information Technology and Business School who contributed actively in the run-up to the workshop. We are particularly grateful to our good friend Prof. Ken Chairman, who suggested that the Faculty of Information Technology and Business School should combine efforts to maximise the impact of this event. We would like to acknowledge financial support from the British Council, who covered travel and expenses, and Kazakh-British Technical University, who financed refreshments and facilities for the event. We would like to mention the invaluable mentoring in preparation for this event received by esteemed members of the international scientific community, particularly Prof. Vladimiro Sassone, Prof. Alexander Romanovsky, and Prof. Gordon Blair. Last but not least, we would like to mention our team of graduate student helpers, who demonstrated a keen understanding of the necessity for further research while enabling the organisers to enjoy the workshop.

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