WE ARE EXCITED to present to you a unique March/April 2014 special issue of D&T. Many of you will recall last year’s Design Automation Conference 50th Anniversary. Fifty years of design automation developments have left a major impact on all of our lives (when one considers the world as we know it today), now well underway towards the realization and deployment of the “Internet of Things,” or the “Internet of Everything” as some prefer to label this trend. We anticipate that R&D in both academia and industry will continue to transform and enable the power of transistors to yield technologies and products that are highly beneficial to our human societies and to our planet in general. So, here in this issue, we bring to you an extraordinary selection of top-picked keynote presentation transcripts from last year’s 50th Anniversary DAC, as well as a few special topic articles from last year’s event.

To start things off, a keynote speech by the well-known Aart de Geus (Chairman and co-Chief Executive Officer, Synopsys) provides an eloquent account of 50 years of design automation, taking us through the history of this industry, which he refers to as the greatest “Tech-Onomic Push” in human history.

Next, a visionary talk that was presented by Lip-Bu Tan (President and Chief Executive Officer, Cadence Design Systems), who gives an uplifting view of our industry, describing the massive increase in innovation in recent years that has captured global popularity, and the enormous potential for the inclusion of future generations to enter the EECS workforce.

Next, another of last year’s DAC keynote presentations, by Wally Rhines (Chief Executive Officer and Chairman, Mentor Graphics), highlights the projected growth of our industry over the next 50 years, and the unique position of our industry in having immediate global impact.

Then comes Gregg Lowe (President and CEO, Freescale Semiconductor), and his keynote address. Gregg presents the challenges and successes that have come with embedded processing and networking infrastructure, encapsulating the phenomenal potential of the “Internet of Things.”

William H. Joyner, Jr. (Senior Director of Computer-Aided Design and Test, Semiconductor Research Corporation) next presents his own perspective on the early days of EDA and portrays how the goals of the very first DAC to foster growth and partnerships are still being fulfilled and emulated today. In a similar vein, a paper by Rob A. Rutenbar (Department Head of Computer Science at the University of Illinois) on his thorough survey of the second 25 years leading up to DAC 50, expresses the vibrant growth and optimistic future of the EDA industry to come.

Next, a piece by Leon Stok (Vice President, Electronic Design Automation at IBM Research) brings to light key components of cloud computing, and the exciting and productive future of the cloud in the EDA industry.

A second visionary talk is one that was presented by William H. Joyner, Jr. (Senior Director of Computer-Aided Design and Test, Semiconductor Research Corporation) next presents his own perspective on the early days of EDA and portrays how the goals of the very first DAC to foster growth and partnerships are still being fulfilled and emulated today. In a similar vein, a paper by Rob A. Rutenbar (Department Head of Computer Science at the University of Illinois) on his thorough survey of the second 25 years leading up to DAC 50, expresses the vibrant growth and optimistic future of the EDA industry to come.

Next, a piece by Leon Stok (Vice President, Electronic Design Automation at IBM Research) brings to light key components of cloud computing, and the exciting and productive future of the cloud in the EDA industry.
Following this, a special paper by Donatella Sciuto (Full Professor, Politecnico di Milano) and Alberto Sangiovanni-Vincentelli (Full Professor, UC Berkeley) compares the drastic advances of our industry with the state of EDA in 2003. As she discusses, our industry has “matured,” and her paper impressively describes how the marriage of industry innovation and business can expand through connecting us to our natural surrounding environment.

To close, a paper by Namsung Woo (President, System LSI, Samsung Electronics) directs the 50th Anniversary enthusiasm towards a concrete industry example: the opportunities and challenges for smarter mobile devices, and their impacts on semiconductor and EDA technology.

We end the issue with a special 50th DAC edition of The Last Byte by Scott Davidson.

I would like to express special thanks to Yervant Zorian for seeding the idea of this 50th DAC special D&T issue, and to thank Yervant and Soha Hassoun for architecting this special issue for us. We hope this D&T capture of last year’s DAC special keynote and visionary talks will allow many of our readers to reminisce about the past, but more importantly stimulate many of you, from around the world and coming from different views and expertise, to feel challenged and energized to contribute to the world of design automation in a big and significant way! Enjoy this issue—it’s a rare one of a special kind! ■

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