Letter from the Editor-in-Chief

TCDE Chair Election

There is a letter from the IEEE Computer Society Sr. Program Specialist Carrie Walsh reporting on the results of the recent election for TCDE Chair. The election was held in accordance with IEEE Computer Society procedures. Voting was held open from September 15 through December 1. The Computer Society collected votes via their election web site. Previously, a nominating committee had asked for nominations from TCDE members. Elections such as these are important for two reasons: (1) it is an opportunity for members to express their preferences for leadership positions; and (2) these positions matter as decisions made by TC Chairs do influence the effectiveness of a TC and its program of activities.

On My Election as TCDE Chair

It is an honor to be nominated to serve as Chair of the TC on Data Engineering, and now to be elected. I believe that jobs like this matter to the health and the relevance of an organization.

There are two main activities of the TCDE. (1) We sponsor the International Conference on Data Engineering, one of the premier database conferences. I will work with ICDE Steering Committee Chair Calton Pu in the on-going effort to preserve and enhance the quality of ICDE. (2) We publish a quarterly bulletin, the Data Engineering Bulletin. This informal publication is one of the most higly cited publications in the database field. At least for a while longer, I will continue as Bulletin editor in addition to serving as TC Chair.

I thank the nominating committee for giving me the opportunity to serve as TC chair, and the TC voters for electing me to this office. And I thank my predecessor and colleague, Paul Larson, for his fine job as TC Chair. My intention is to continue in his footsteps.

The Current Issue

Hardware platforms have changed substantially since database systems first made their appearance in the late 1960's. Many have commented that perhaps we should be revisiting DBMS architecture in light of these hardware changes. For a very long time (the last 20 years or so), such revisiting did not lead to new DBMS architecture. The fundamental technical issue continued to be the three orders of magnitude that separated main memory access from disk access. Processor speed improved, and processor cache utilization became more important, but mostly this produced local algorithmic changes. Recent processor changes are now substantial enough to trigger larger changes, but changes in storage technology have really brought database architecture to the forefront.

This issue focuses on persistent random access memory (PRAM), with access characteristics that are much closer to those of main memory technology. Interestingly, it was the consumer marketplace that made this class of memory economically viable, not the database or even the server business more broadly. There are several flavors of PRAM, flash, phase change, etc. How database architecture is impacted may well depend on which technology ultimately dominates. But any of them will require re-architecting systems to best exploit them. Some are block oriented, some require an erase cycle before they can be written, etc. They may have a limited number of writes, so "wear leveling" may be important.

The current issue covers several approaches to exploiting the new PRAM technologies plus an article focused on underlying PRAM technology. The thing about architecture is that it makes one re-think almost everything. So in the same way that storage has caused a re-thinking of architecture, architecture engenders new collections of techniques to enable the architectures. The issue contains some of the very latest thinking from both industry and academia. It's an exciting topic and the issue serves as a terrific gateway to it. I want to thank Peter Boncz for his fine job of handling this issue as its editor and bringing it to fruition.

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