The End of an Architectural Era
(It’s Time for a Complete Rewrite)

- Discussion of a paper by M. Stonebraker, S. Madden, D. Abadi, S. Harizopoulos of MIT in conjunction with N. Hachem of AvantGarde Consulting, LLC and P. Helland of Microsoft

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Overview of the Paper

1. OLTP Design Considerations
   - Main Memory
   - Multi-threading
   - High Availability
   - No Knobs
2. Transaction and Schema Information
3. Results
4. What about the future?

The End of an Architectural Era - Discussion
OLTP Considerations – Main Memory

• “Imagine… 20 nodes, each with 32 Gibytes of main memory now… and costing less than $50,000.”

• This would make OLTP databases inexpensive indeed, until you realize you need multiple different databases following the one-size fits all model.
• Why use multiple threads when you can use only one and remove the overhead of locking and latching?
• Peer-to-Peer is great! But only one site can be updated at a time.

• What if there is a failure?
OLTP Considerations – No Knobs

• What an interesting concept! Tell me more...
• No ad hoc queries and no changes to transactions after implementation?
• What happens as my small business grows?
Results - What more can be done?

- What about removing undo and redo logging?
- And latches and locks?
Results – Can they be compared?

• Wait… the TPC-C implementation was only partial!
• Can we confidently extrapolate these results and come to the correct conclusion?
What about the future?

- Is there really no one database for everything? Seems so.
- Can we really get rid of SQL? Maybe not.