Ben's Panel

Bill Camp
All data is personal opinion
-- and you should treat it as probably
wrong

Brueckner's theorem

- The world is a quantum mechanical many body system.
- Any attempt to predict its future evolution is approximate.
- Keith Brueckner showed many years ago that the overlap of any finite-order approximation to the wave function of a large QM system with the actual wave function goes to zero at least as fast as the system size grows.

$$<\psi_{true}|\psi_{approx}> = 0$$

So …

- The chances that anything I say is exactly right is close to zero

- But, the good news is that the Shadowing Lemma tells us that it will be correct in some parallel universe

- And since we are interested in parallel computing …

Ben's First Question
is really 4 questions

- Hypothesis 1. With users' relentless appetite for HPC we could expect systems with 100 PFlops peak soon after ~2012. How Soon, Ben?

- What type of systems do you think will first achieve this? Google

- Will they be general-purpose? No

- How much electrical power will they consume? Lots

- What will be the standard way of programming applications for these systems? Map-reduce ☺

Getting Better, his 2nd question is only 2 questions

- Hypothesis 2. The HPC industry faces huge challenges including mounting power consumption, maintaining system availability with increasing component volumes, decreasing memory bandwidth per core, software to scale to millions of processors.
- Yet vendors seem able to re-invent solutions on a regular basis.
- What paradigm shifts, if any, do you see occurring by 2012? Intel SRD
- Where might you look for new partners?
- Rob Immanuel

Ben's Third Question

- Hypothesis 3. The current world economy is drastically different to any ever seen in the lifetime of the HPC industry. Credit may effectively disappear, funds may become more centrally-controlled, hyperinflation may arise from capital injections, and markets shrink. Yet HPC users benefit from healthy competition sustained by the current market size.

- What do you think is your company's best strategy for survival? Form a Government. ☺

- How do you think HPC customers can realistically help you? Buy a new laptop today!