Exceptional service in the national interest
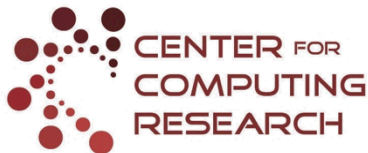
SAND2015-8960C

Beyond the Summit: NSCI/ECI Connections

James A. Ang, Ph.D., Manager
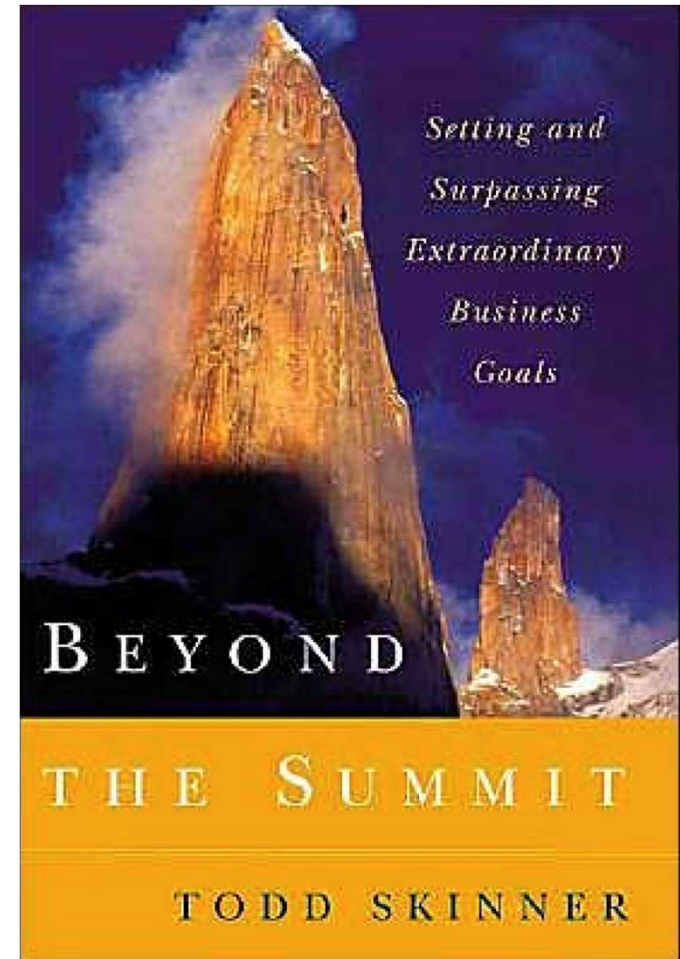
Scalable Computer Architectures

The Chesapeake Large-Scale Analytics Conference

Random Access Talk

October 14, 2015

Bold Challenges

- Rob Leland Recommendation
- *Beyond the Summit*
  by Todd Skinner
  - Skinner led a team to be the first to apply rock climbing techniques to climb Trango Tower in the Himalayas
  - The climbing metaphor has interesting parallels to management and teams
- This helps explain Rob's Interest in taking on *Bold Challenges*

Setting and
Surpassing
Extraordinary
Business
Goals

BEYOND
THE SUMMIT
TODD SKINNER

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Being the 1ˢᵗ Ascensionist

- *Choose the path of greatest gain*
    - Goals with the most rewards are often the most difficult
    - We pick challenging mountains not because the are hard, but because we have the most to gain there

- *My mindset for dreaming is to work continuously on the frontier, to be the first ascensionist*
    - If my piece of rock has been climbed anywhere, I have no desire to climb it myself because it has been shown to be achievable.

- *When you journey off the map, how you think is more important that what you know*

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Teams, Goals and Falling/Failing

- *I look for team members who are willing to begin without all the answers*

- *When choosing your mountain and defining its summit, remember to make your decisions based not on what the team* can *do, but on what the team* could *do*

- *Falling is not failing*
  - The most important attitude when leaving the ground in new terrain is to accept that there is a good chance you will fall off
  - If you don't fall you might not have gone far enough
  - Put in place a system of protection to keep your falls from being fatal, and each misstep can accelerate your ascent because you learn more quickly the correct way to climb

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Reconnaissance from the Leading Edge

- *Every time you move into new terrain, you must go as far as you can into the unknown in order to learn:*
  - What will work, or
  - What might work, or at least to have an indication of
  - What won't work
- *A fall provides you with data from the frontier*
  - It is reconnaissance, and there is no such thing as a failed recon because you always come back with more than you began
  - The next person into the frontier goes better armed, and in a true team, the setback of one leads to the advancement of all

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Beyond the Summit

- The DOE portion of NSCI is ECI

- The real impact of ECI is the Time and the Funding to Influence the Design of Future COTS Computing Technology

- Series of Multi-agency Workshops on SoC for HPC →
  - Not just to *influence* HW architectures,
  - Opportunity to *design* HW architectures

- ECI has a goal of a 2023 Exascale system – The Summit

- ECI also supports NSCI goals that are, Beyond the Summit