

HPC as an Ecosystem

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42nd IDC HPC User Forum

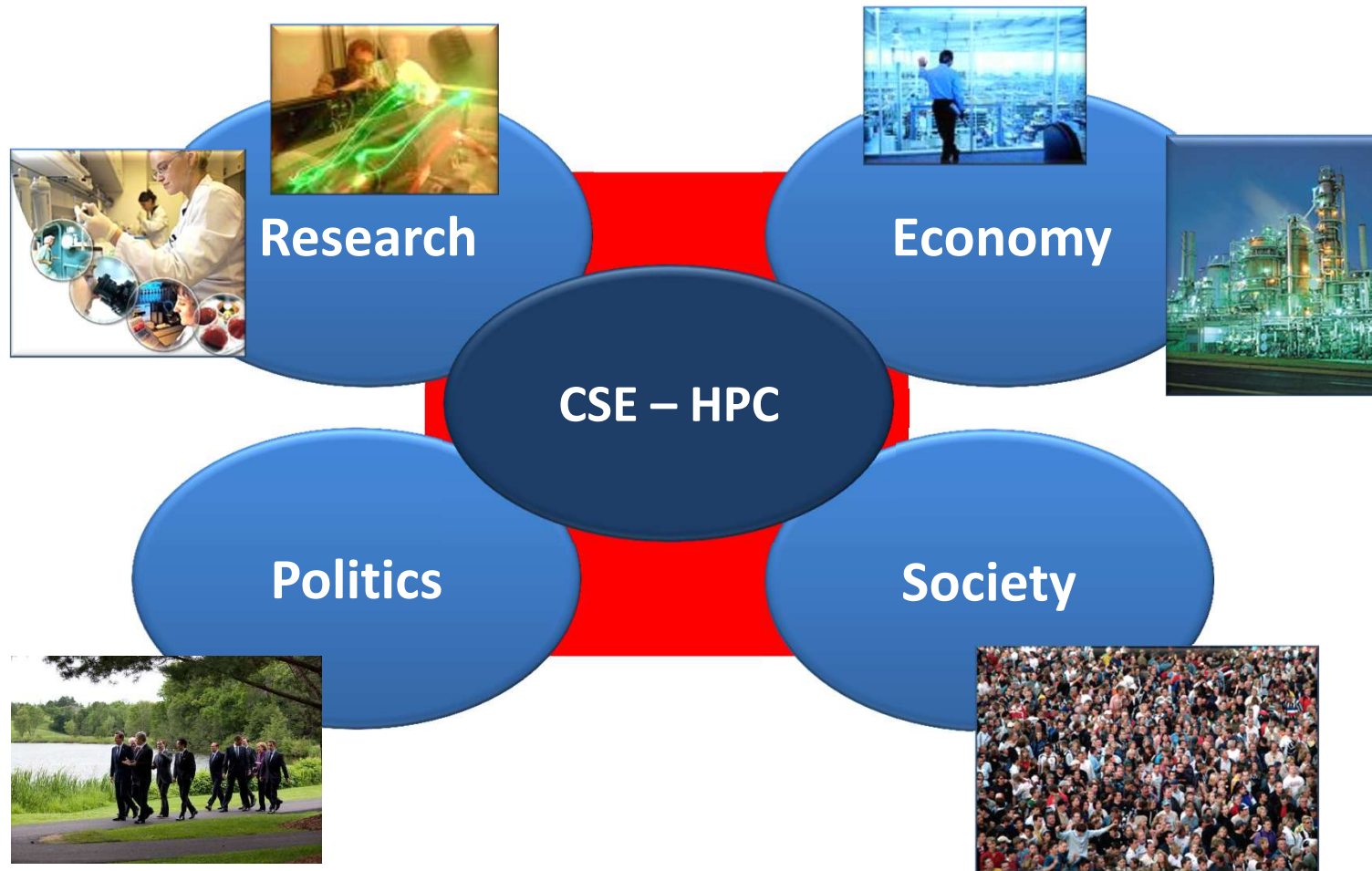
September 8, 2011, San Diego, CA, USA



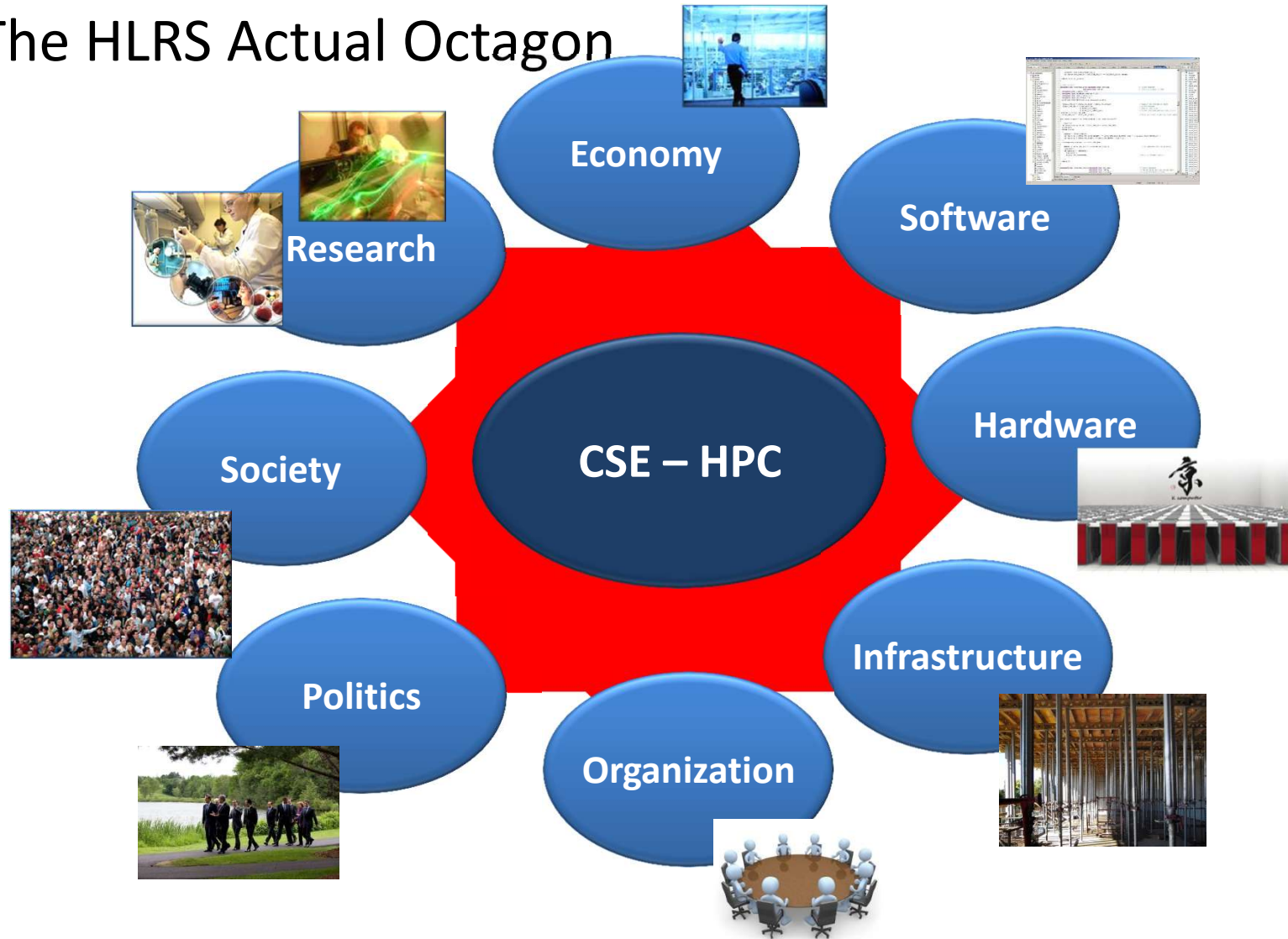
Outline

- The HLRS Virtual Square
- The HLRS Actual Octagon
- The Unbalanced Octagon
- The Regular Octagon

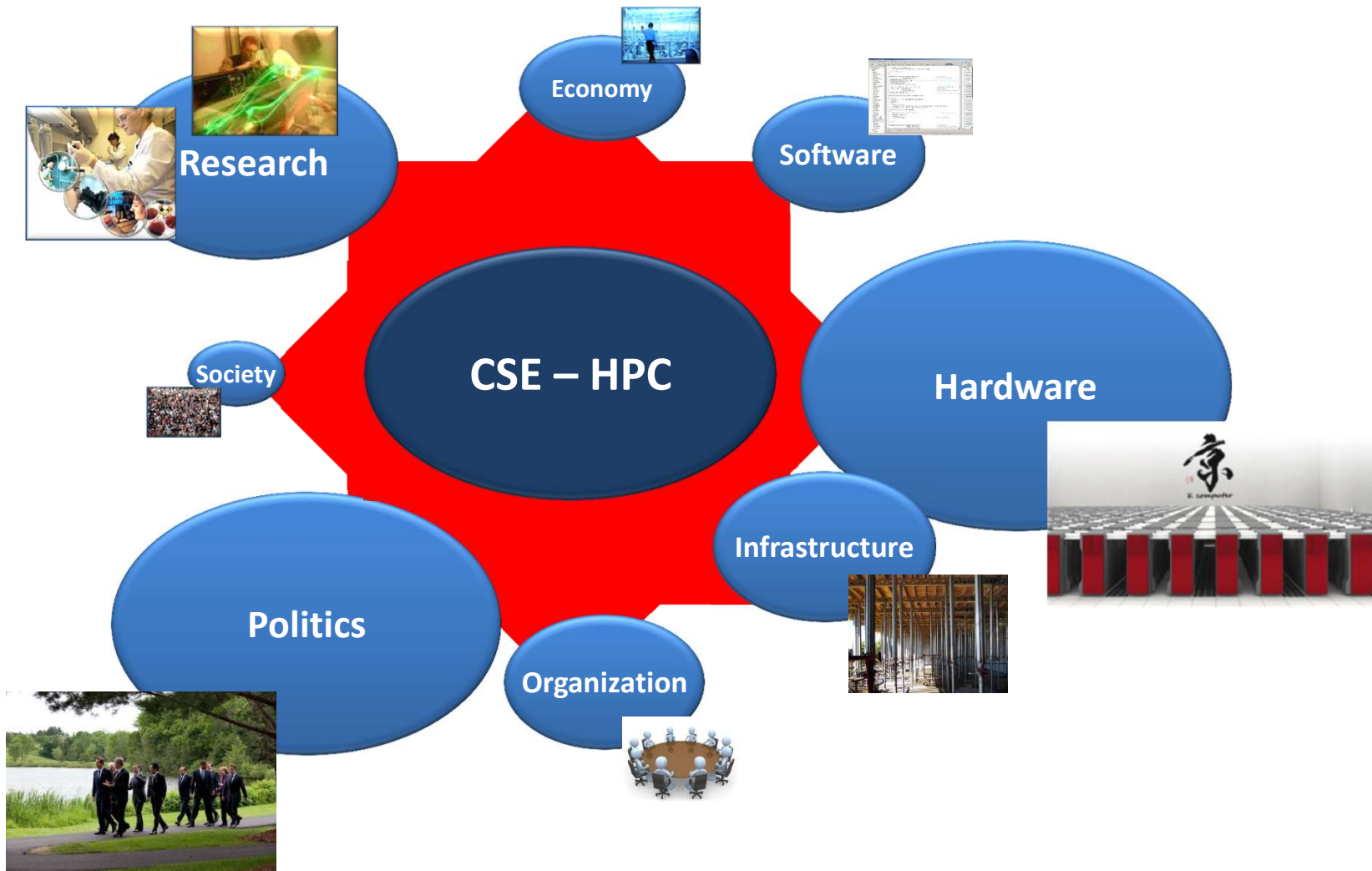
The HLRS Virtual Square



The HLRS Actual Octagon



The Unbalanced Octagon



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The Actual Octagon ctd.

- Research
 - Everything was grand challenges
 - Do we lead or follow?
 - Should we lead? Should research follow HPC?
- Economy
 - Everything was about innovation
 - Better, faster, cheaper products?
 - What is our contribution to national economy?

The Actual Octagon ctd.

- Society
 - There are a number of challenges (finance, energy, environment, health, mobility,...) and HPC was a promise for a better life
 - What is our promise today?
 - What can we deliver?
- Politics
 - HPC was important but not at the center of attention
 - What is our new political role? Arms race?
 - Are we becoming vicarious agents of politics?

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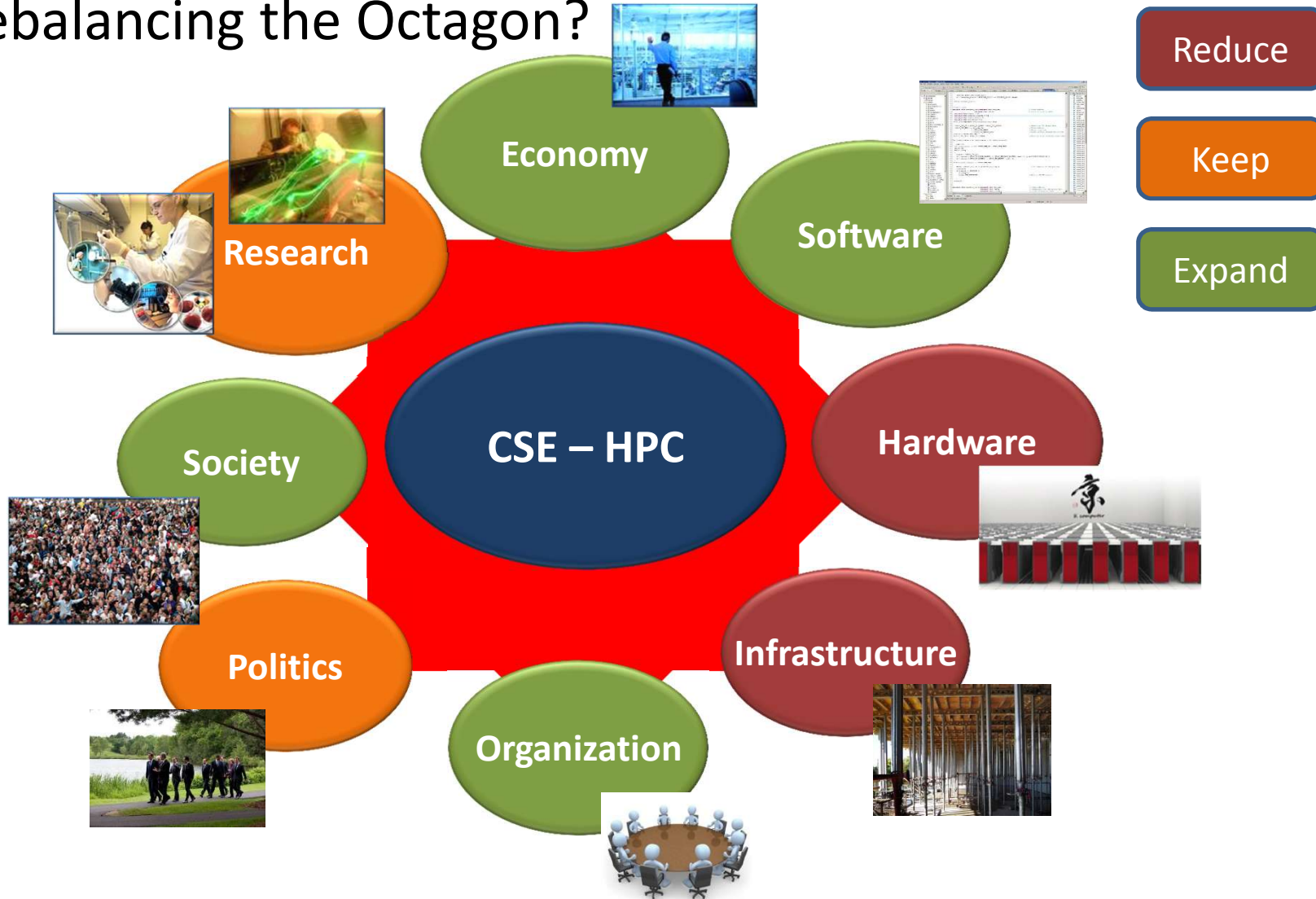
The Actual Octagon ctd.

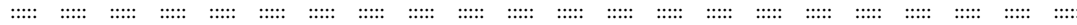
- Hardware
 - Moore and Parallelism solve all problems
 - Where are we headed without increase in speed?
 - How much time do we spend with play stations?
- Software
 - Algorithms were getting better
 - Software was focused on serial architectures
 - How long until we understand the meaning of software?
 - How long until we rewrite our software?

The Actual Octagon ctd.

- Infrastructure
 - Infrastructure had to be improved over time
 - Are we going to just grow our infrastructure?
 - Who is going to pay for 100 MW?
- Organization
 - Operate, Organize, Manage
 - Find nice people to work with you
 - What are the requirements for an HPC center organization?
 - When we change our octagon, how do we have to change the organization?

Rebalancing the Octagon?





Questions

Michael M. Resch

