HPC as an Ecosystem

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Outline

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

- Economy
- Software
- Hardware
- Infrastructure
- Organization
- Politics
- Society
- Research

CSE – HPC
The Unbalanced Octagon
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?
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

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