Grid & Cluster Computing State of the Union

A Sun Perspective

Fritz Ferstl

Director Sun Grid Engineering and HPC on Solaris

"Hype-Sequence" or Evolution?

Organic IT

The Next Computing Revolution | Technology Leadership Forum. Industry experts believe that this new architecture, called Organic IT, will address the needs of both IT and busi-

Autonomic Computing

In a separate statement

On-Demand

March 16, 2005

About three weeks after corporate computers and network

GRID COMPUTING

of the power grid, and the wipeout of vast data reserves. It's just a matter of time before industrial and power

Dynamic Systems Initiative

Applications versus Business Process Management Carr's article is about functional applica-

Meta-Computing

of the power grid, and the wipeout of vast data reserves. It's just a matter of time before industrial and power reserves

Adaptive Enterprise

Computing Clouds

The Next Computing Revolution | Technology Leadership Forum. Industry experts believe that this new architecture, called Organic IT, will address the needs of both IT and busi-

HPC

Dynamic IT

of the power grid, and the wipeout of vast data reserves. It's just a matter of time before industrial and power reserves

Real Time Infrastructure
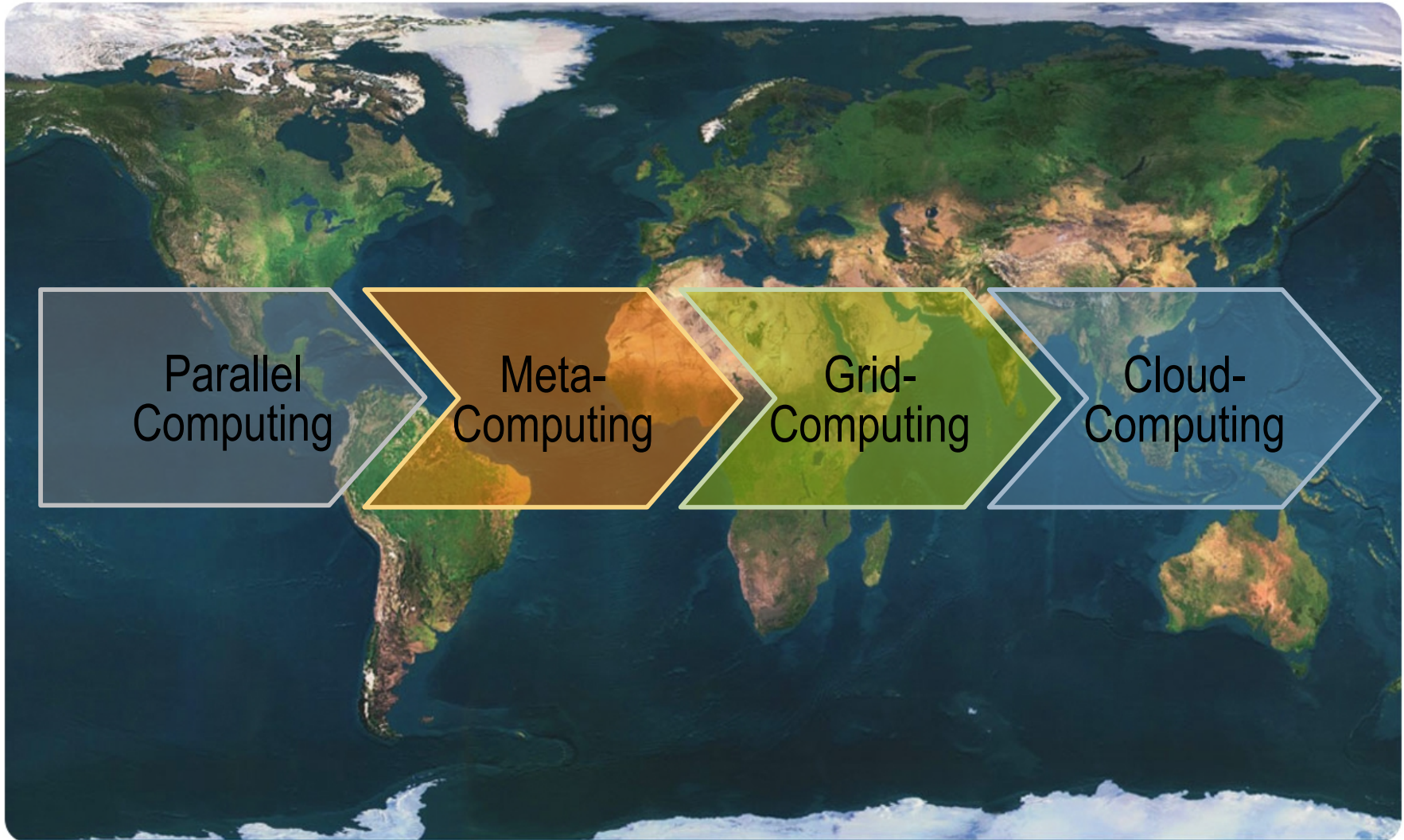
Utility Computing

A flood of corporate data, intensified by stock market impli delivering efficient, flexible computing infrastructure

A Case for the Hype-Sequence

Parallel Computing → Meta-Computing → Grid-Computing → Cloud-Computing

A Case for Evolution

New Applications enabled by Grid technology

What does it take ...

To discover a new drug?
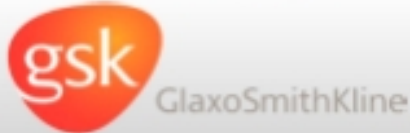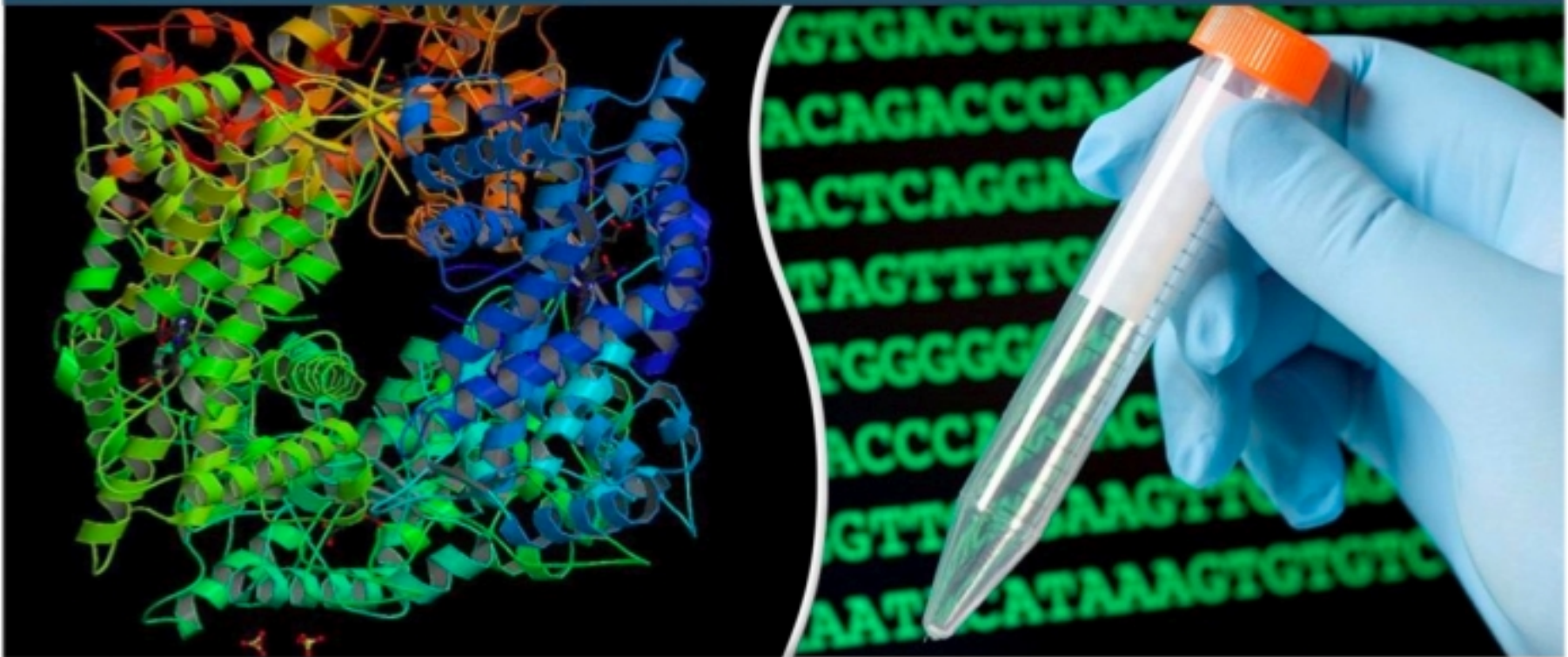
What does it take ...

To explore the universe? Or model an airplane wing?

What does it take ...

To connect hundreds of millions of consumers?

vodafone

CHINA MOBILE

RELIANCE

What does it take ...

To index and search the internet?

5,000,000,000,000,000,000 bytes

Google

Baidu百度

YAHOO!

What does it take ...

To fuel developing economies?

What does it take ...

To connect with your friends?

Dimensions of Scale

XTP = eXtreme Transaction Processing
FSI = Financial Services Industry
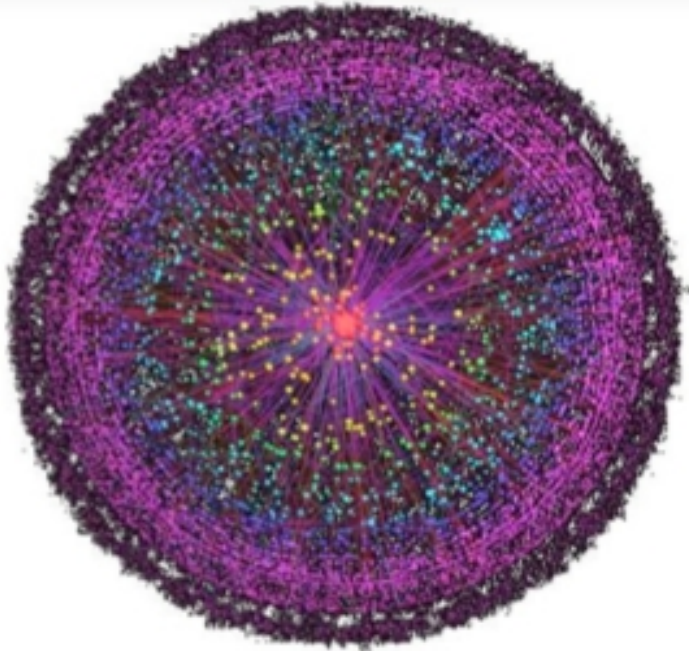EDA = Electronic Design Automation (aka Chip Design)
MCAE = Mechanical Computer Aided Engineering

parallelism

Batch Processing

Transactional Processing

Cluster Supercomputer (TACC)

massively parallel

Current Technology Boundary

moderately parallel

Typical MCAE

FSI Risk Portfolio or Typical EDA

Current Technology Boundary

single CPU

Typical XTP*

days/job   mins/job   μsecs/job   throughput
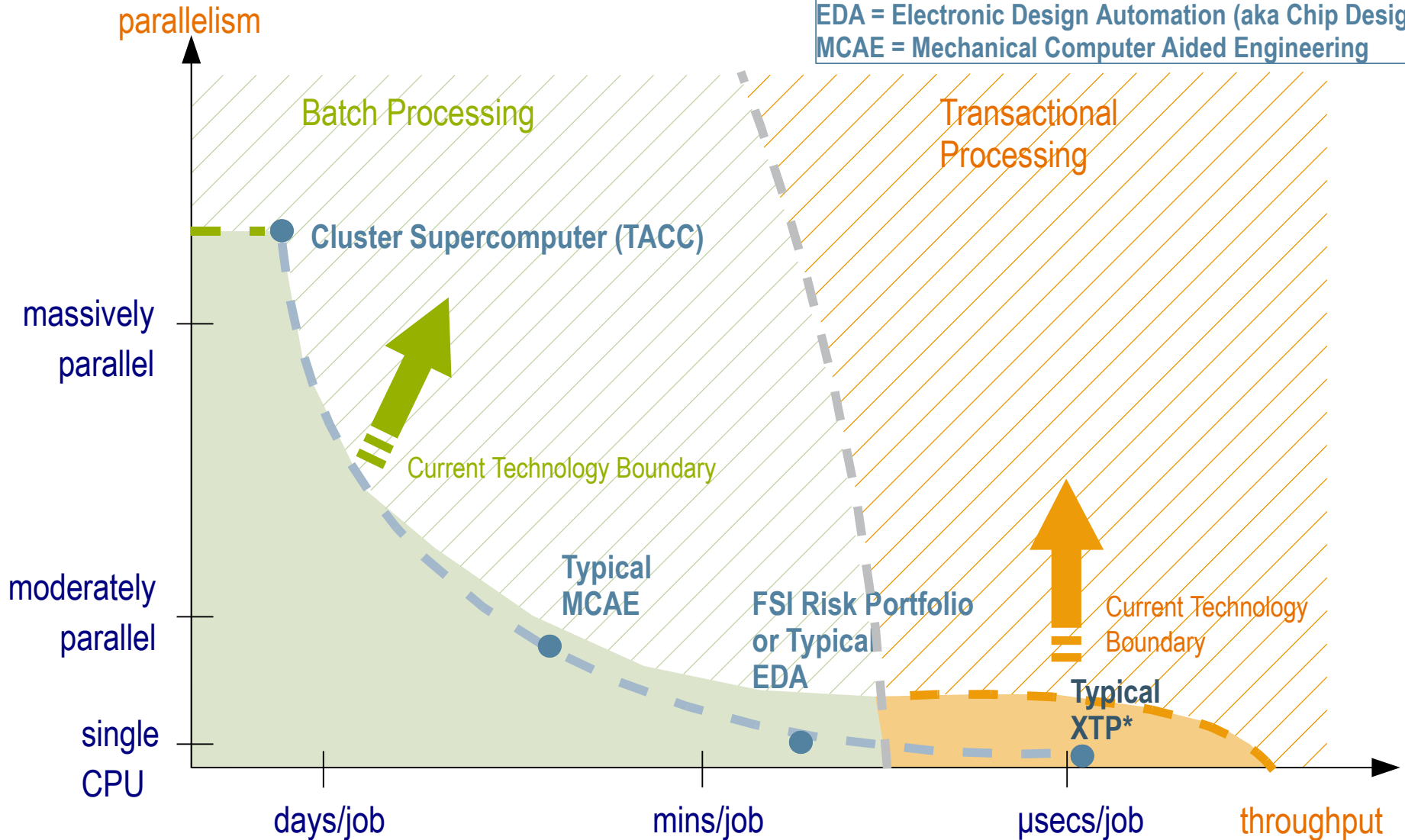
Sun Keynotes & Sponsored Talks

- Keynote: Call for Participation in Open Source Efforts in Grid Computing and HPC
  - > Bob Porras, VP Solaris Data, Availability, Scalability & HPC
  - > Wed, May 14: 3:15 – 4 PM

- Innovation and Openness Creating new Opportunities in HPC/Grid – an Update from Sun
  - > Bjorn Andersson, Sun Microsystems, Inc.
  - > Wed, May 14: 1:30 – 2 PM

Grid Engine Workshop & Tutorials

- ## Workshop on Tue & Wed
  - > Community status, new features in 6.2, TACC, Grid Engine XML, Grid Engine future plans
  - > Service Domain Management, Multi-Clustering, Accounting & Reporting, HA & Visualization with SGE, PluS Advance Reservation, Voice of Community BoF

- ## Tutorials & Training from Tue to Fri
  - > Using new features in SGE 6.2
  - > Service Domain Manager (Hedeby) Installation
  - > Multi-Cluster Accounting
  - > Managing Grid Engine Clusters

Other Grid Engine Related Talks

- Sun HPC Cluster Stack, Dan Templeton
- Grid Engine in EDA, Grid Heating, LSF vs. Grid Engine
- Virtualization: Grid Engine & EC2, OpenNEbula
- Lustre and OpenSolaris Storage

Thank You.

The Network is the Computer.™

Fritz Ferstl
ferstl@sun.com