



Closing the Gap

**Executing in a Continuous, Dynamic
Innovation Environment**

Achieving Quantum Improvements in Time to
Market and Product Innovation

Grid Consortium Japan, 17th Workshop
September 28, 2006

Univa Company Snapshot

- ▣ Founded in 2004 by “Fathers of Grid”
 - Ian Foster, Steve Tuecke, Carl Kesselman
- ▣ Mission: Deliver high value, business solutions that accelerate time to market for new products and services
- ▣ Solutions: Commercially supported products built on the open source, open standard Globus software platform
- ▣ Series A round of funding – August 2005
- ▣ Achievements and recognition
 - June '05: NetworkWorld Top 10 Start-ups to Watch
 - July '05: Announced first customer, Raytheon
 - October '05: Signed strategic partnership with IBM
 - February '06: Released first product, Univa Globus Enterprise
 - March '06: Illinois CityLIGHTS Newcomer award
- ▣ Vitals
 - Headquarters: Chicago
 - Headcount: ~35

Innovation is The Growth Engine of the 21st Century

Strategic Focus for the Fortune 1000

Ability to creatively and rapidly respond to market dynamics provides strategic control over market risk and brand

Requirement

Provide a set of dials for acceleration of time-to-market & quality innovation

IMPACT

- ▣ Compressed design cycle → higher design throughput and faster TTM
- ▣ Highest quality products consistent with business priorities
- ▣ Improved risk management for downstream supply chain
- ▣ Responsiveness to changing market conditions

Grid 2.0: Fixing the Distributed Computing Hangover

Grid Adoption Scale*

Univa focus

- ▣ **Level 5** - Enterprise-wide grids, SOA, shared internal utility, outsourced utility
- ▣ **Level 4** - Linked grids - within or between departments and with multiple applications
- ▣ **Level 3** - Siloed grids - single grid, or grids in multiple departments that aren't linked
- ▣ **Level 2** - Single applications running
- ▣ **Level 1** - Proofs of concept, trials

*Source: The 451 Group, July 2006

“Users want to eliminate silos and organize IT around shared resources; simplify access to data...Grid 2.0 is focused on the virtualization, aggregation and sharing of *all* compute, storage, network and data resources.” *The 451 Group, July 2006*

“Grid 2.0 will usher in a new world of distributed ubiquitous virtual computing, networking and storage in the enterprise that will allow a whole raft of new rich services.” *Tom Gibbs, Intel, April 2006*

Globus Background



Largest grid infrastructure in the world

- 102 teraflops of compute capacity
- >15 petabytes of online and archival storage
- 8 data centers nationwide (US)

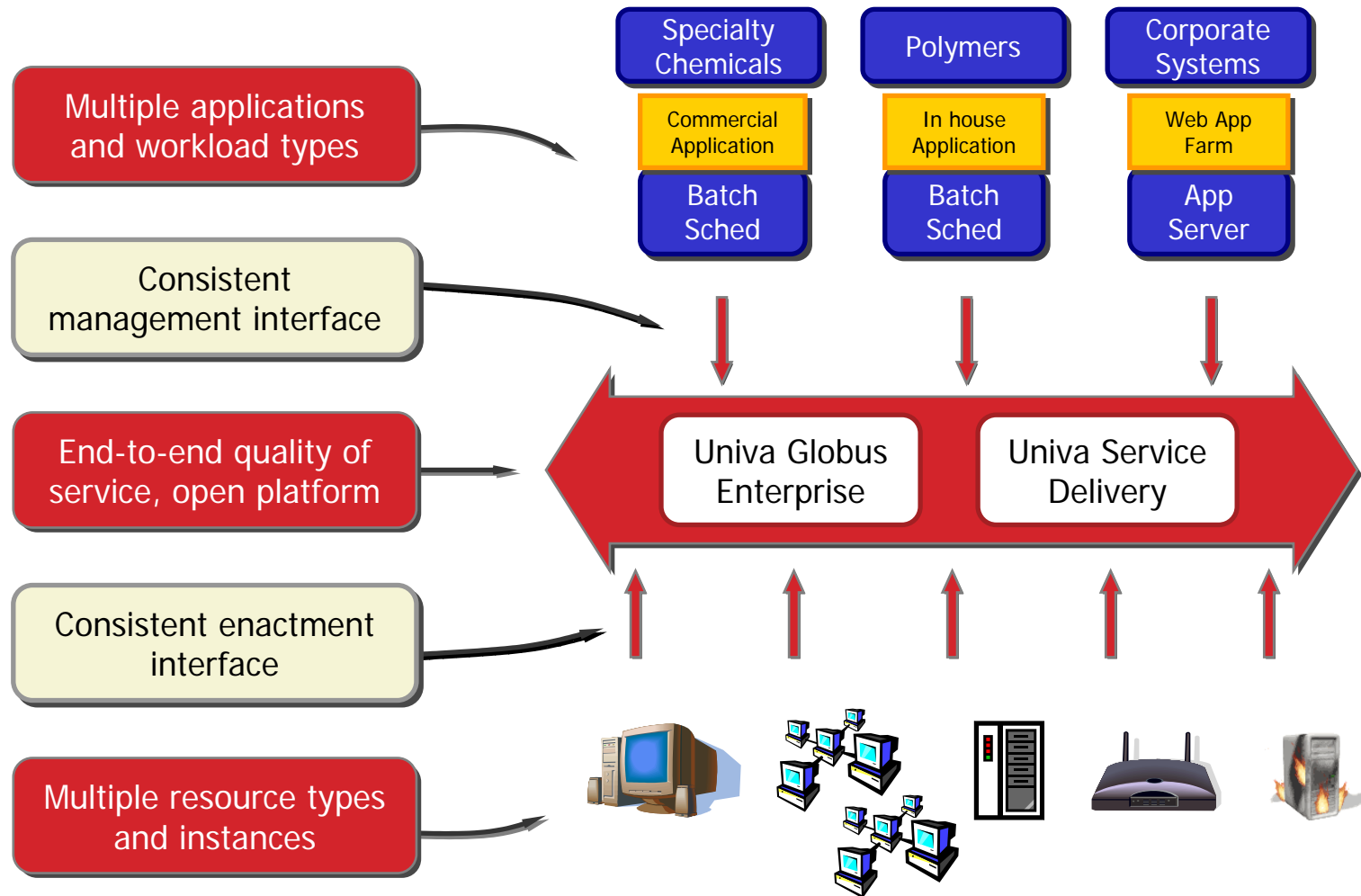


Application with massive scale distributed data

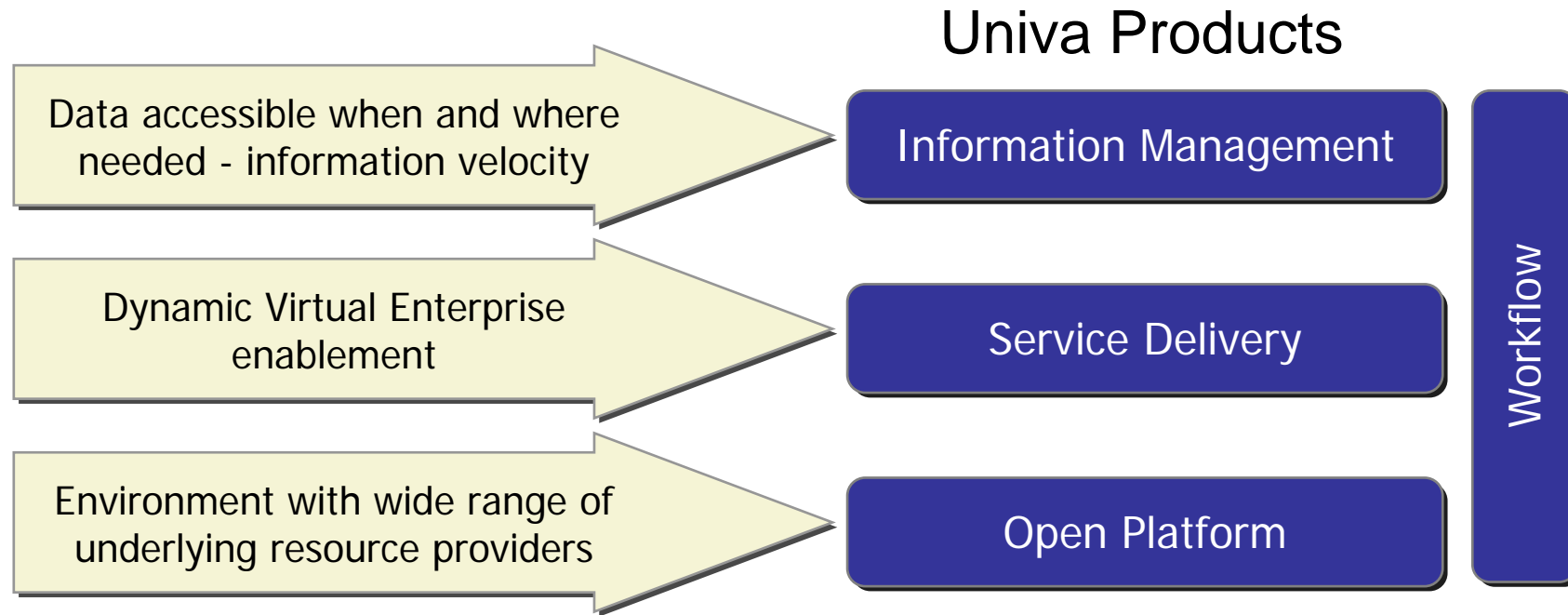
- ~15 petabytes of data annually
- >100 sites in 31 countries

- ❑ Globus is the only game in town for enterprise scale, distributed data + compute grids
- ❑ Globus is open source grid software
- ❑ 10 years in development led by Argonne and USC ISI
- ❑ ~500 active open source participants; >70 full-time staff
- ❑ Over \$50M in government and industry grants

Multiple Business Services Effectively Sharing Common Infrastructure



Univa Differentiation



The only comprehensive solution offering combining info management and service delivery - based on a proven, open standard platform

Open Source Platform: Univa Globus Enterprise

- ▣ Non-proprietary, open source, standards-based interfaces to data, security and execution resources
 - Service-oriented resource integration layer
 - ▣ E.g. Interface to scale-out, file storage resources
 - Interoperability across heterogeneous, proprietary environments
 - Builds on existing infrastructure - not “rip and replace”
 - Commercial open source with enterprise grade support and Univa Network

Business Impact

- ▣ Expands scope of resources available to meet business process requirements, while promoting re-use of existing infrastructure
- ▣ Enables sharing across product lines and functional groups, while shielding complexities and specifics of local resources

Information Management: Univa Data Distribution Manager

- ▣ Discovery, tracking, and transport of large, widely-distributed data sets to point of consumption
 - Coordinated with business process demand
 - Spans multiple storage technologies, organizations, data types
- ▣ Challenges addressed
 - Distributed teams with only ad-hoc sharing of data and results using manual tools
 - Data not coordinated with compute scheduler

Business Impact

- ▣ Reduces data management overhead - currently up to 25% of knowledge worker effort
- ▣ Enables rapid formation and management of intra- and inter-company collaborations

Service Delivery: Univa Service Delivery Manager

- ▣ Dynamic management of execution environments
 - Spans all resource types (compute, storage, network, software)
 - Deterministic or on-demand resource availability to address business needs, based on business policy
 - Orchestrates across organizational/ functional boundaries
- ▣ Challenges addressed
 - Addresses “spikey” demand which exceeds local capacity
 - Effective use of shared data centers
 - Delivers environment customized to project needs (OS & app)

Business Impact

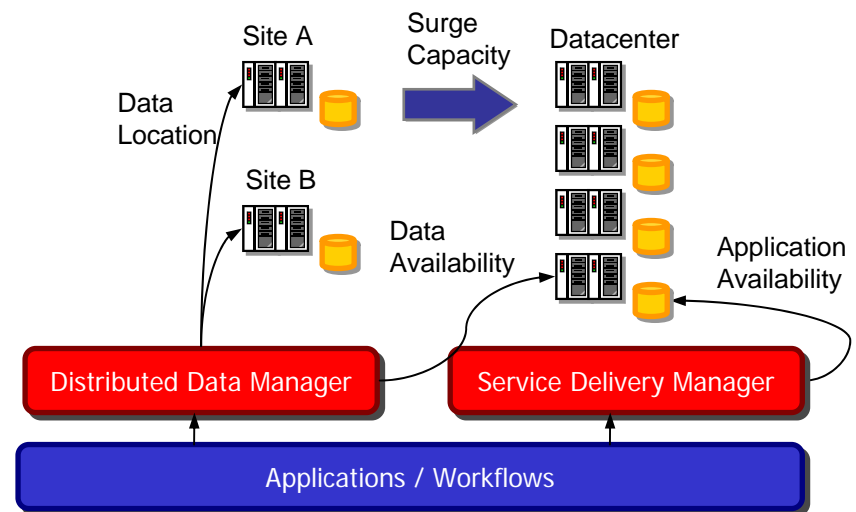
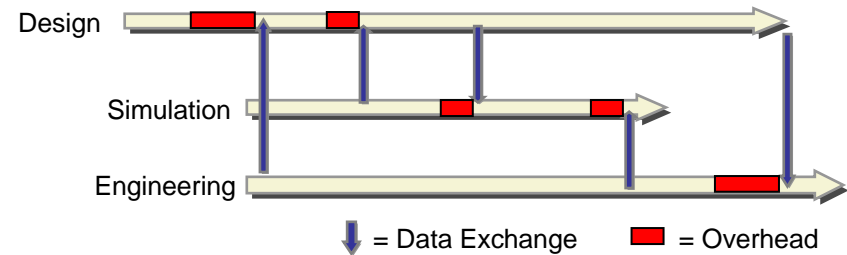
- ▣ Enables flexible response to business demand variability by solving resource constraints
- ▣ Provides flexible capacity management and utilization
- ▣ Delivers inherent business continuity

Customer Example: Semiconductor Design

- Increasing silicon, system complexity
 - => Quality designs cost more
- Changing dynamics of design process
 - => Need for broader collaboration

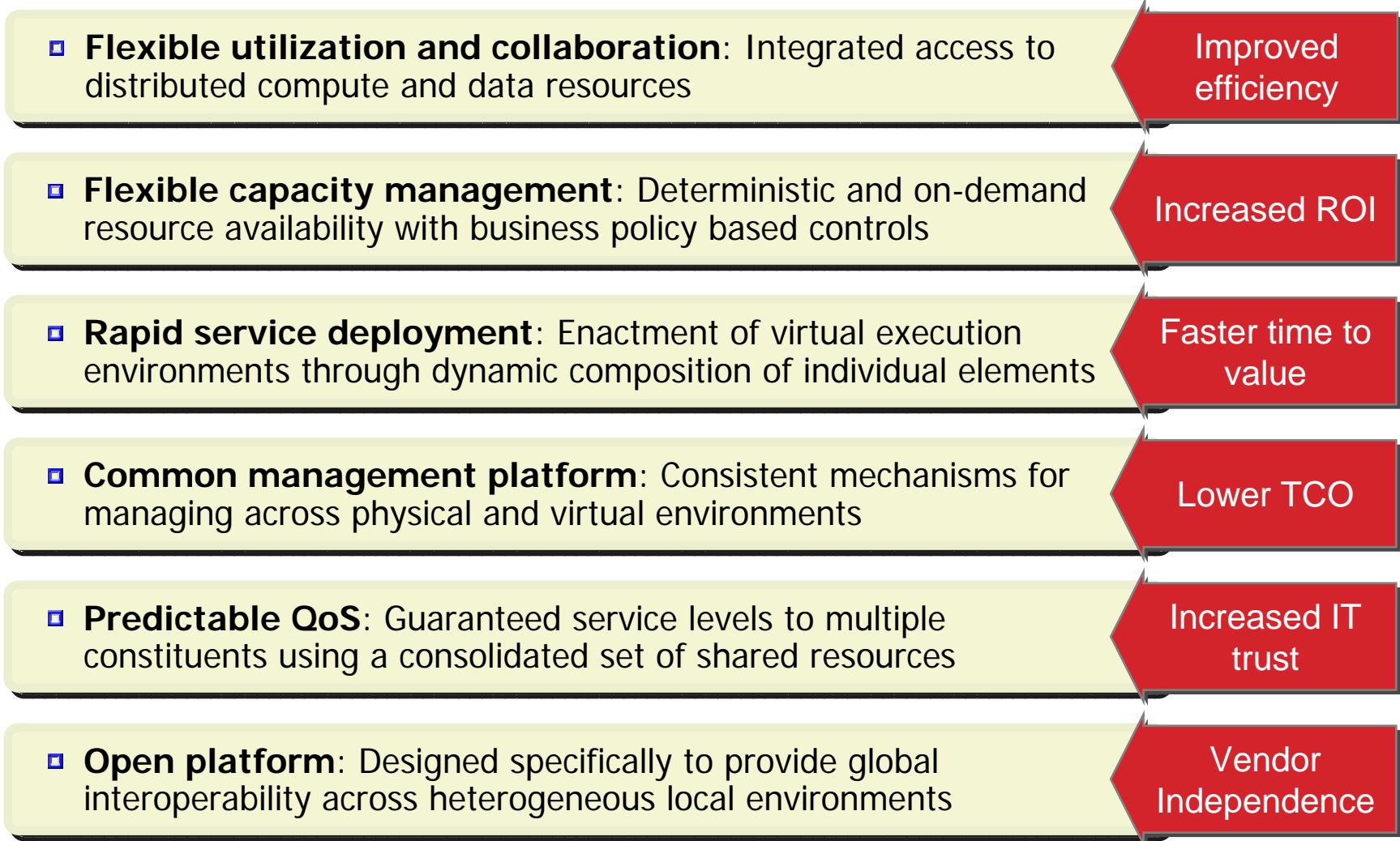
Impact: Time to market/quality tradeoff
3 month delay in TTM = \$500M*

- Requirements
 - Identifying and accessing the right data
 - Synchronizing process among distributed design streams
 - Increasing resource utilization across the global enterprise



* Source: "The Road Ahead", IEEE

Univa IT Value Proposition



Summary

- ▣ Univa solutions enable optimal delivery of new products/ services under conditions of continuous innovation
- ▣ Co-exist with and extend existing Grid and IT services investments
- ▣ Allow for immediate value delivery without “rip and replace” - and accommodates future process improvements
- ▣ Univa Value Methodology provides the roadmap
 - Identify and understand strategic opportunities
 - Plan delivery of transformational solutions to the enterprise
 - Ensure ongoing delivery of maximum business value