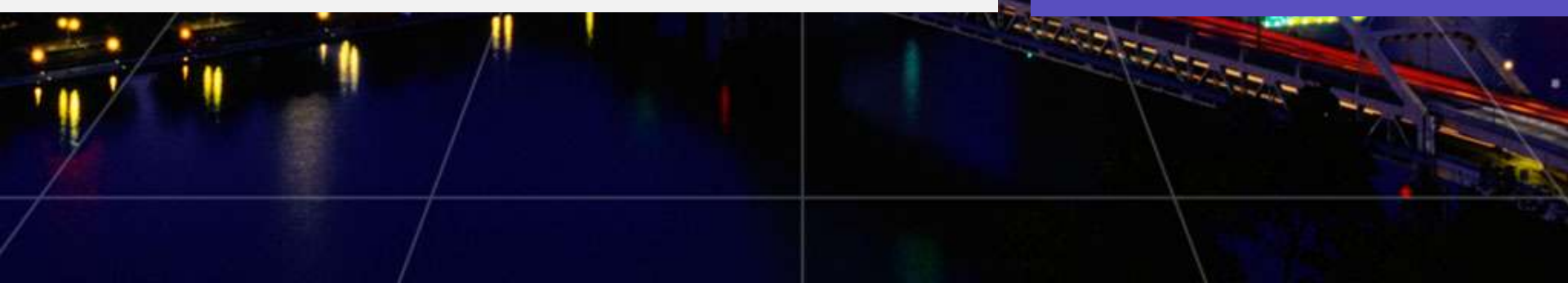




SunGrid Utility in action

Dr. Philip Bull
SunGrid Utility EMEA
Business Development Manager
Sun Microsystems, Inc.



Agenda

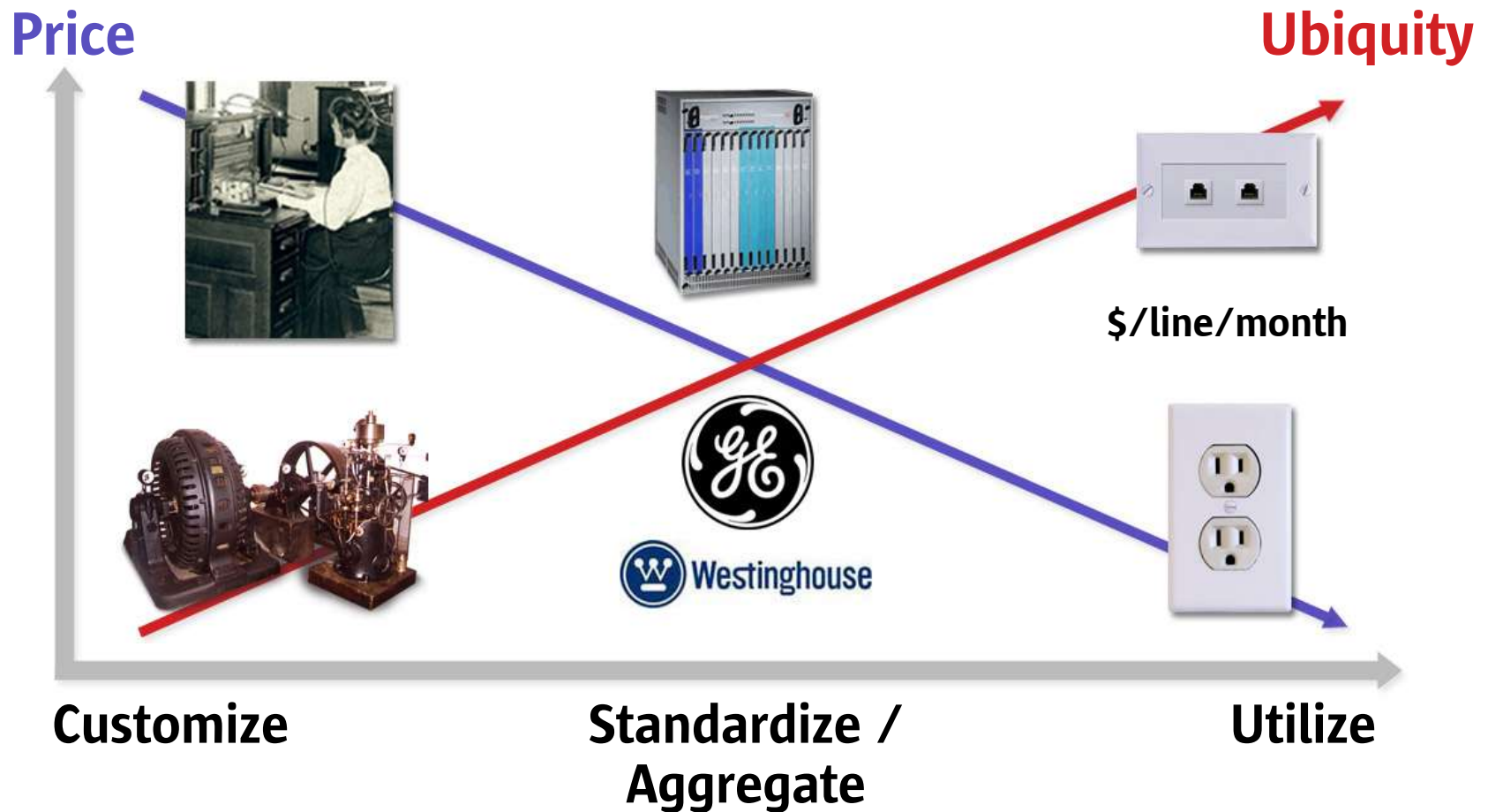
- SunGrid Utility vision
- Utility definition and the SunGrid
- Application characteristics and Industrial activity
- Service development



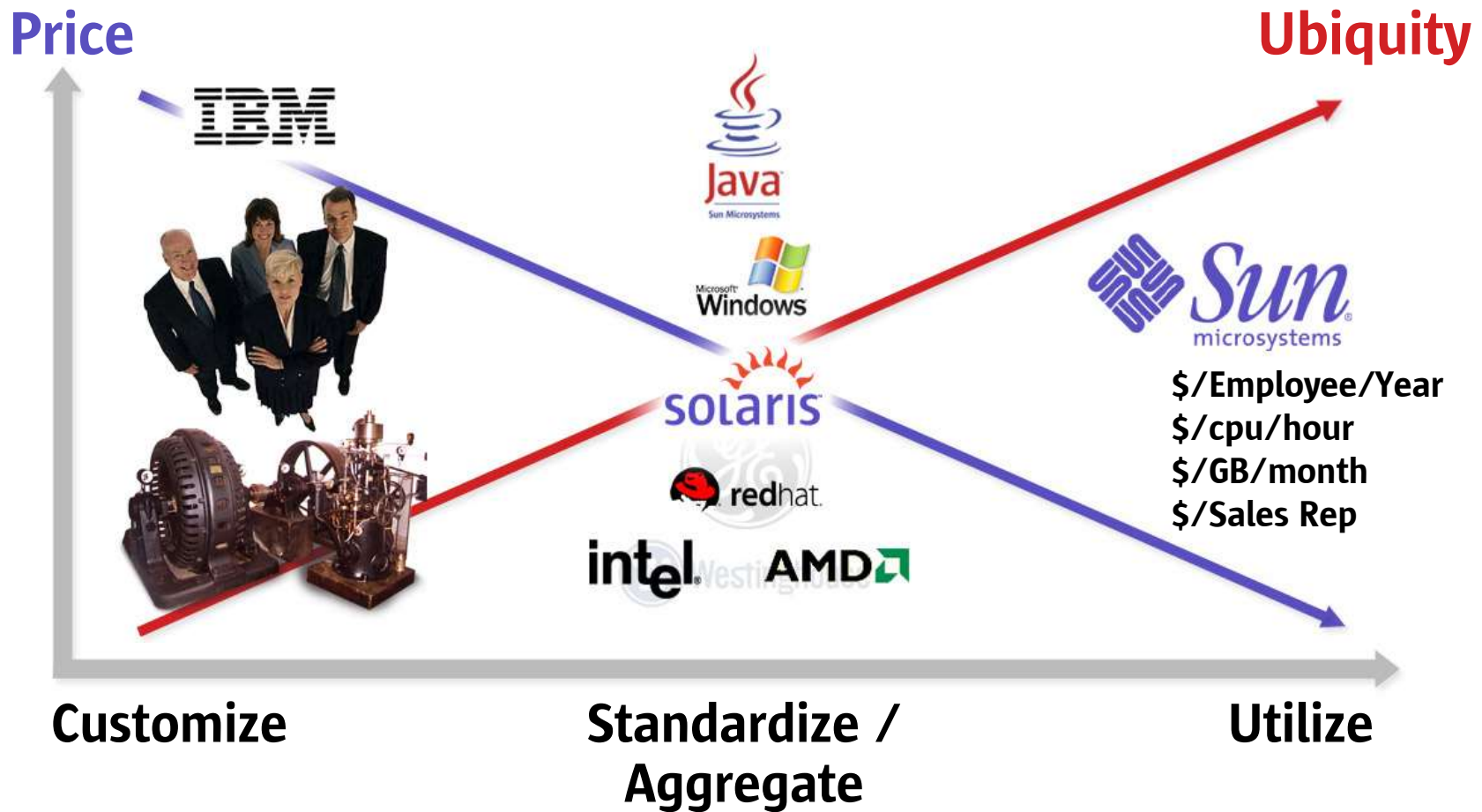
Today's News: SunGrid Utility

- **The Lights Are On!**
 - > Thousands of CPUs up and running today
 - > Aggressive build-out throughout the year
- **Sun Grid is redefining Utility Computing**
 - > Ultra-reliable, simple to use, powerful, sophisticated
- **It's financially compelling.**
No hidden costs.
- **Delivering a commodity**
 - > Electricity is a commodity but power plants aren't
 - > Oil is a commodity but oil rigs aren't
 - > *Computing is a commodity but computer systems aren't*

The Context: Industries Move from Custom to Utility Models



SunGrid: Leading the Move to Utility Computing



Utility Definition

- **A “Utility” is something that is:**
 - > Technologically complex, but simple at the point of use
 - > Standardized
 - > Reliable
 - > Scalable
 - > Metered delivery / pricing model
 - > Multi-tenancy support
- **Most “Utility” products, previously from Sun and our competitors, aren't true utilities**
 - > They're financing deals with a metered pricing model

SunGrid Compute Utility: What Is It?

- **Customers access compute power as needed**
 - > Pay only for the period they're using the systems
- **Each customer gets dedicated access to a set of systems for a defined time period**
 - > Operates today like the rental car model
 - > Move to retail model in near future
- **Provisioned with customer's image (OS, patches, apps, data) then scrubbed when done**
 - > No persistent state maintained on systems
- **Systems are owned and operated by Sun**
 - > Datacenter space offered/managed by partners

SunGrid Compute Utility Pay-Per-Use Service

US\$1/CPU/Hour

- Off-load computational (non-transactional) workloads that require 10s or 100s or 1,000s of CPUs
- Use compute power on an hourly basis, without ownership commitment or onerous outsourcing contracts
- Share the system & operational costs with others
- Benefit from regular technology refreshes
- Enabled by Solaris 10, N1, N1 Grid Engine, Sun Java Enterprise System



Target Application Characteristics

- Grid-aware apps or able to be ported to grid environment
- Run as a batch jobs
- Discrete jobs; little or no dependencies on other apps/jobs
- Minimal data upload/download during run
- Today Little/no use of 3rd party libraries/applications
 - > All 3rd party licenses responsibility of customer
- Apps (able to be) ported to Solaris or Linux
- No strict latency requirements (Gigabit ethernet interconnect sufficient)

Industrial activity

Industries

Computing Tasks

Financial Services

Risk and portfolio analysis, Monte Carlo simulations

Energy

Reservoir simulations, seismic processing

Entertainment / Media

Digital content creation, animation, digital asset management

Manufacturing

EDA, MCAD, fluid dynamics, crash-test simulations, aerodynamics modeling

Academic & Research

Weather analysis, nuclear yield simulation, bio, engineering.....

Health Sciences

Medical imaging, bio informatics

Activities - status

Financial Services

- Initial clients in production – next few months
- Defining next generation service offerings
- Continued POC projects

Energy

- Developing Seismic service partnerships
- Software vendor models for Reservoir modeling
- Global Service build-out plans

Academic & Research

- Service hubs for Academic communities
- Joint Industrial R&D outreach projects
- Software/POC Grid enablement

SunGrid Service Development

	Target	Price
Compute Utility	HPTC, "Batch" workloads, Retail model, network enhancements	\$/cpu/hour
Storage Utility	Short/Medium term storage for utility use	\$/xGB/month
Developer Utility	Community and Enterprise Application Development	\$/seat/month
Application Utility	3 rd party solutions hosting	\$/transactions
Desktop Utility	xSP, Call Centers, Education and Enterprise Compliance	\$/transactions



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