



Project Services Network

DISA Customer Partnership Conference 2009

Anaheim, CA - April 22, 2009

Snapshot of Bechtel Today



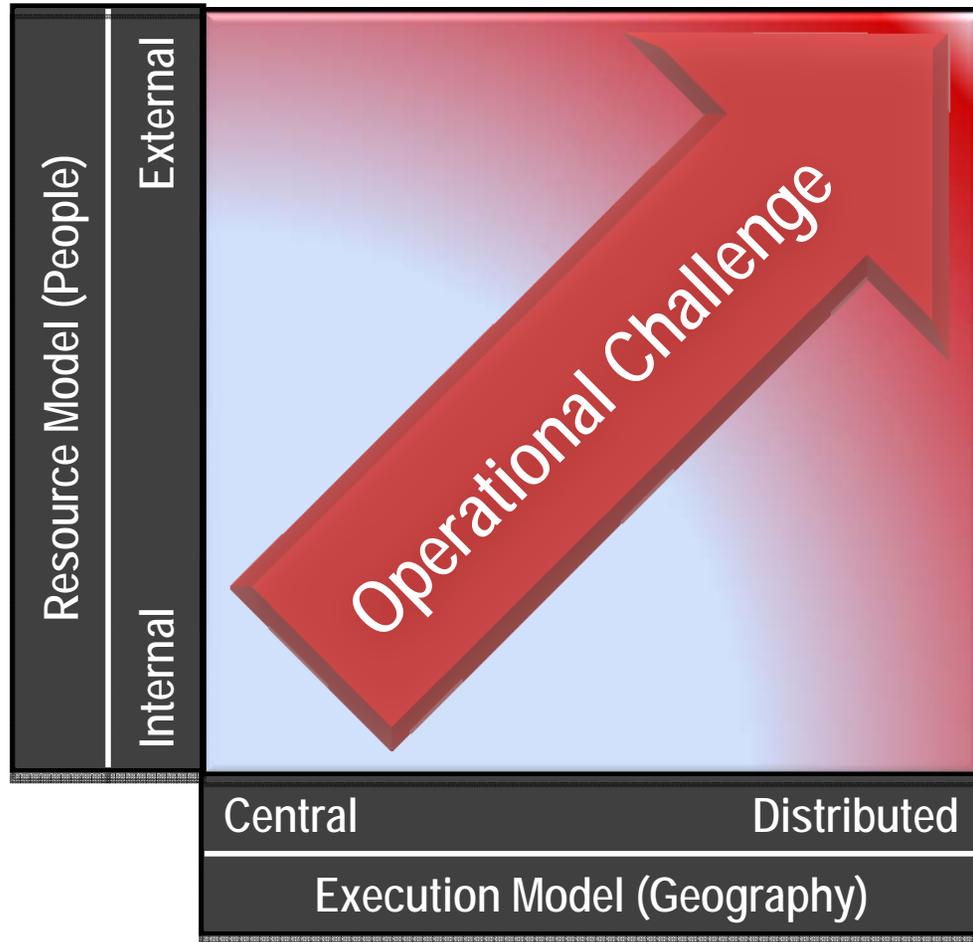
A vibrant company working worldwide

- Ongoing projects in nearly 50 nations
- 2008 revenue:
U.S. \$31.4 billion
- 2008 new work booked:
U.S. \$35.0 billion
- Some 44,000 employees worldwide
(manual and non-manual)
- 40 offices globally, with corporate
headquarters in San Francisco

Problem Statement



Business Changes and Challenges

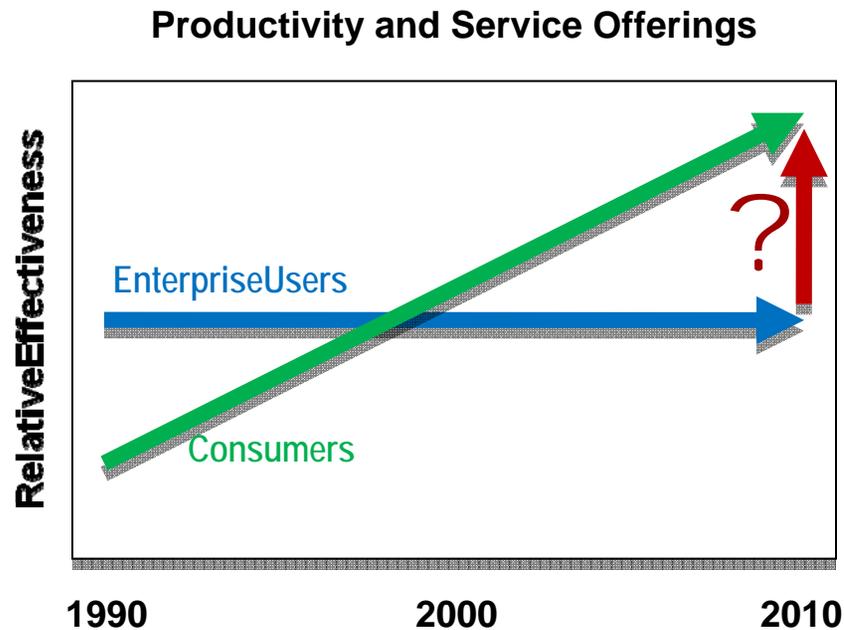


- Our business model is evolving to be more complex and distributed
- The two main challenges are related to:
 - Geography
Our projects are executed in many and distributed locations
 - People
Our resource model includes permanent and temporary employees, as well as vendors, customers, partners, and competitors

“Consumerization”



Enterprise Users vs. Consumers



- There is a growing gap between consumer and enterprise adoption of emerging technologies and their relative effectiveness
- We have opportunities to capitalize on emerging technologies and paradigms that deliver new meaningful services to our business
- The challenge is how to learn from the consumer-developed services and technologies and incorporate those to our enterprise environments

*“With a browser and Internet connection the world is open...”
and by the way...*

“Nobody goes to school to learn how to buy books from Amazon...”

Delivery Model Evolution



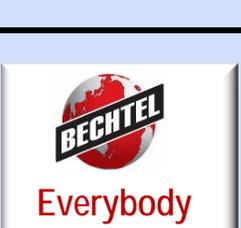
The Service Matrix

Application Delivery Model	Vendor Maintained	Outsourced Dev. & Maint.	Initial "SaaS" (Adv. ASP)	SaaS
	Off the Shelf	Common ERP Model	Initial ASP	Advanced ASP
	In-House	Traditional Mainframe Apps.	Time Share	Application Hosting
		In-House	Co-location	Full Service
Infrastructure Delivery Model				

- **The emergence of SaaS brings a model that can be applicable to small, medium, and large organizations**
- **The ASP model could not find a compelling economy of scale model to be accepted by the enterprise customers base**
- **IT product and service providers have evolved to be a broad based solutions service provider**



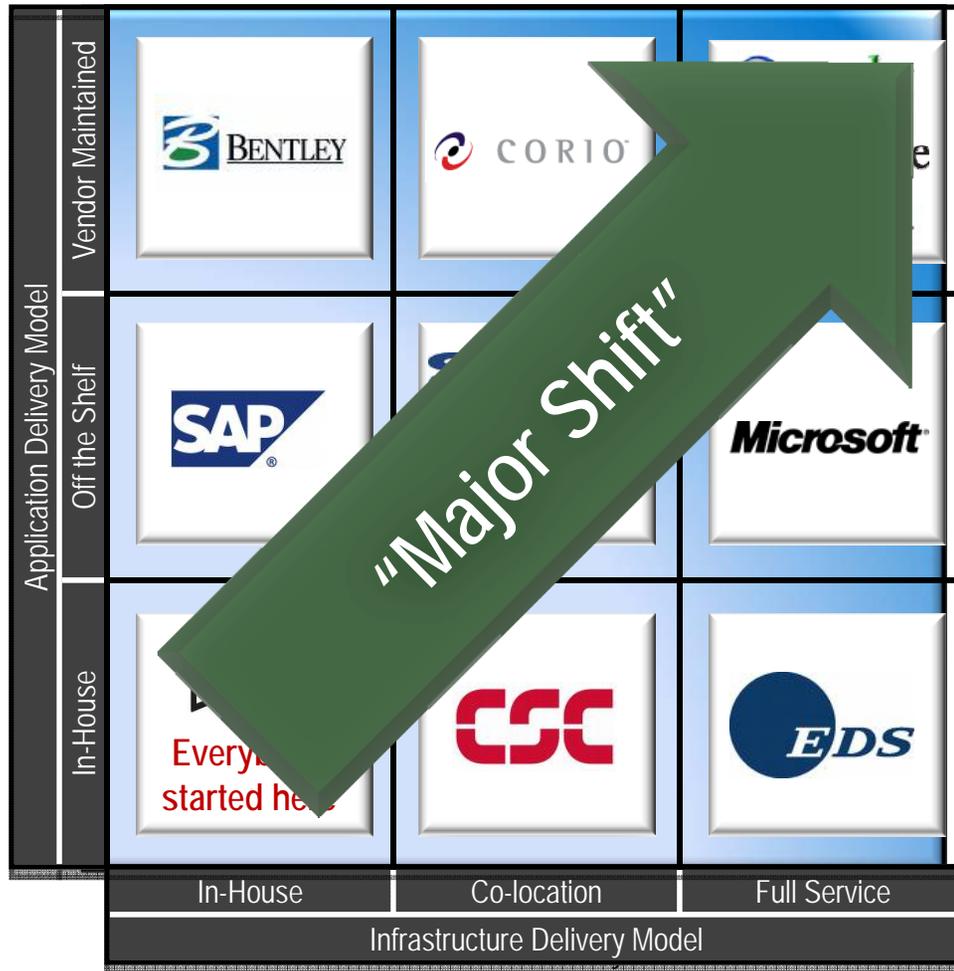
The Service Matrix

Application Delivery Model	Vendor Maintained			
	Off the Shelf			
	In-House			
		In-House	Co-location	Full Service
Infrastructure Delivery Model				

- Industry-leading innovators are currently using SaaS in delivery of mainstream products and services critical to their business success
- Increasing inter-corporate communications demand new ways of collaborating
- SaaS supports new models for sharing information processes, and workflows across organizations and geography
- “Complex leap” for large enterprises; initially suited for SMEs and divisional departments



The Service Matrix “Opportunity”



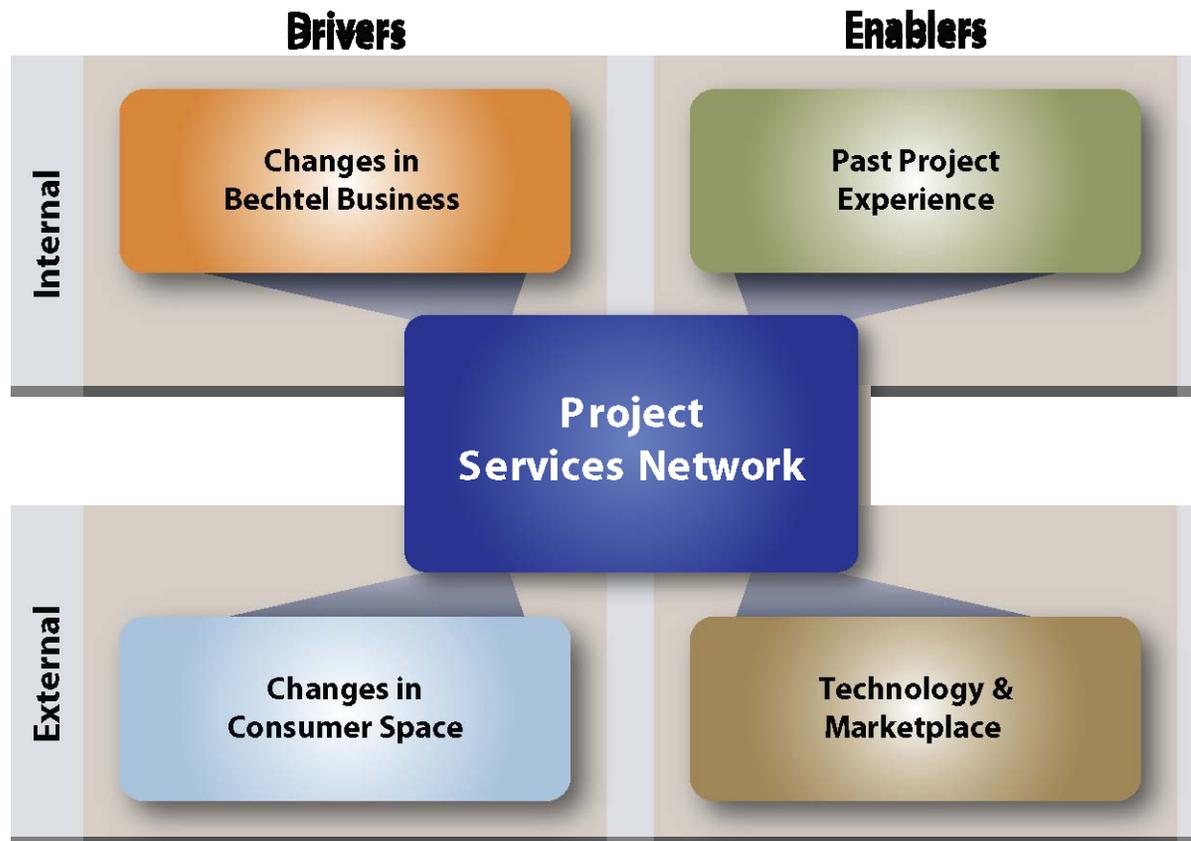
- The emergence of SaaS vendors have filled business needs and created reusable generic business solutions
- The Engineering and Construction industry has generally not taken advantage of SaaS
- To bring SaaS-like services to our projects, we will have to become our own SaaS provider and possibly integrate with other SaaS providers



Transformation Analysis



Compelling Reasons to Change



- The PSN takes advantage of our past experience, the consumer-based Internet, new technology and new business paradigms to solve the changes to our business
- Secure, ubiquitous access to information for any authorized people with a browser and Internet connection
- More intuitive user interface and easily customizable project work environment
- Faster startup and integration with project partners

Study of Internet Successes

YouTube cannot pay our network rates if they can send 100 million video streams a day for free...

*...
We found that they were paying a fraction of our rates...*



Google cannot provide free services running on several hundred thousand servers if they have our operational structure...

*...
We found that they operate servers dramatically more efficiently...*



Amazon cannot operate storage like us if they can offer disk space for 5% of our internal cost...

*...
We found that they were virtualizing their environment for full leverage...*



SalesForce.com cannot operate systems our way if they upgrade their system 4 times a year without downtime and customer disruptions...

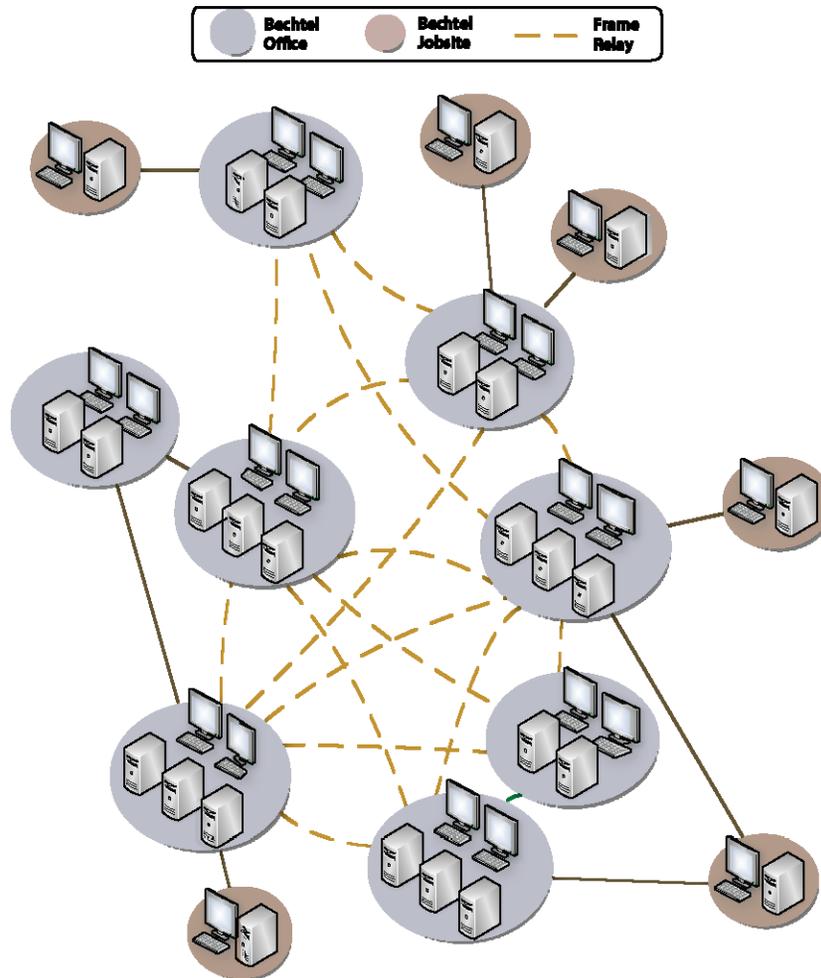
*...
We found that they operate one single application for 1 million users (i.e. one upgrade)...*



Infrastructure Transformation

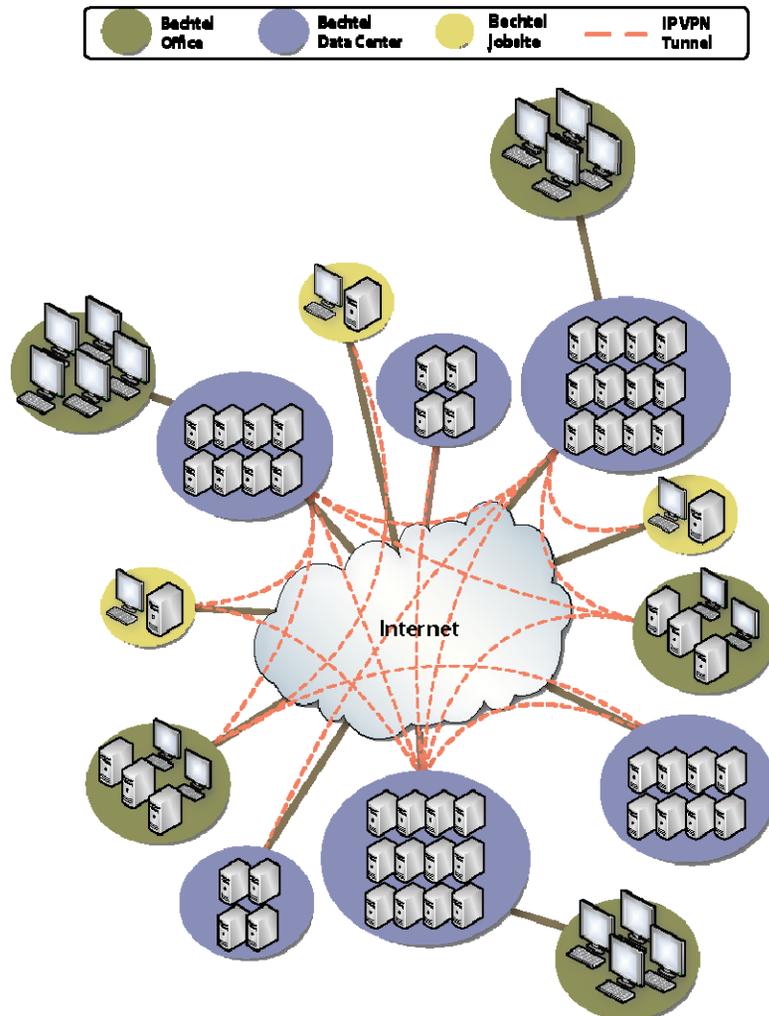


Distributed Foundation (1998)



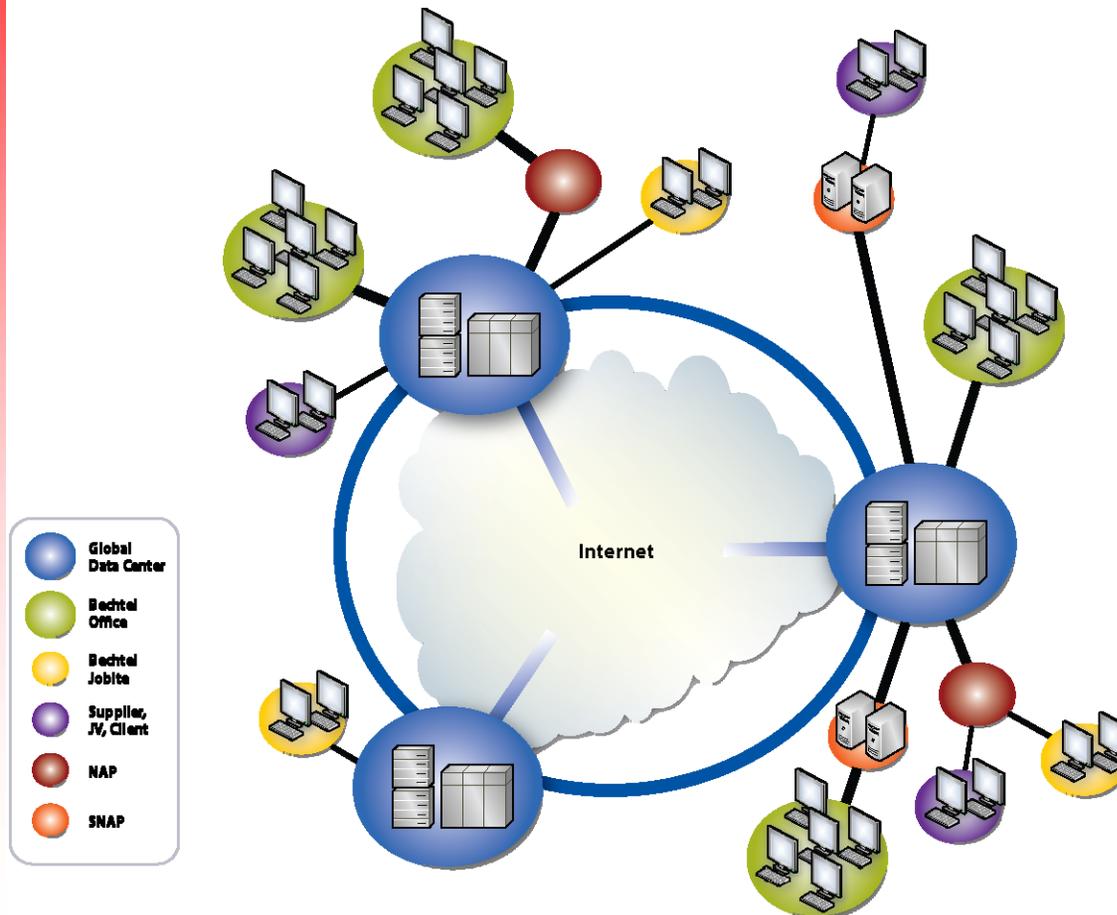
- Highly customized, highly distributed office and project centric environment
- Complex security model, difficult to manage
- Required individual, system-specific configurations
- Slow to configure and deploy
- Expensive network, low capacity

Consolidated Foundation (2003)



- Result of eSTOP, our cost reduction (25-30%) and change positioning program
- Data Center consolidation
- Reduced complexity of unique configurations
- Improved effectiveness of security model
- Lowered number of access methods
- The Internet used to connect Bechtel offices and projects globally, reducing cost and improving throughput

Virtualized Foundation (2008)

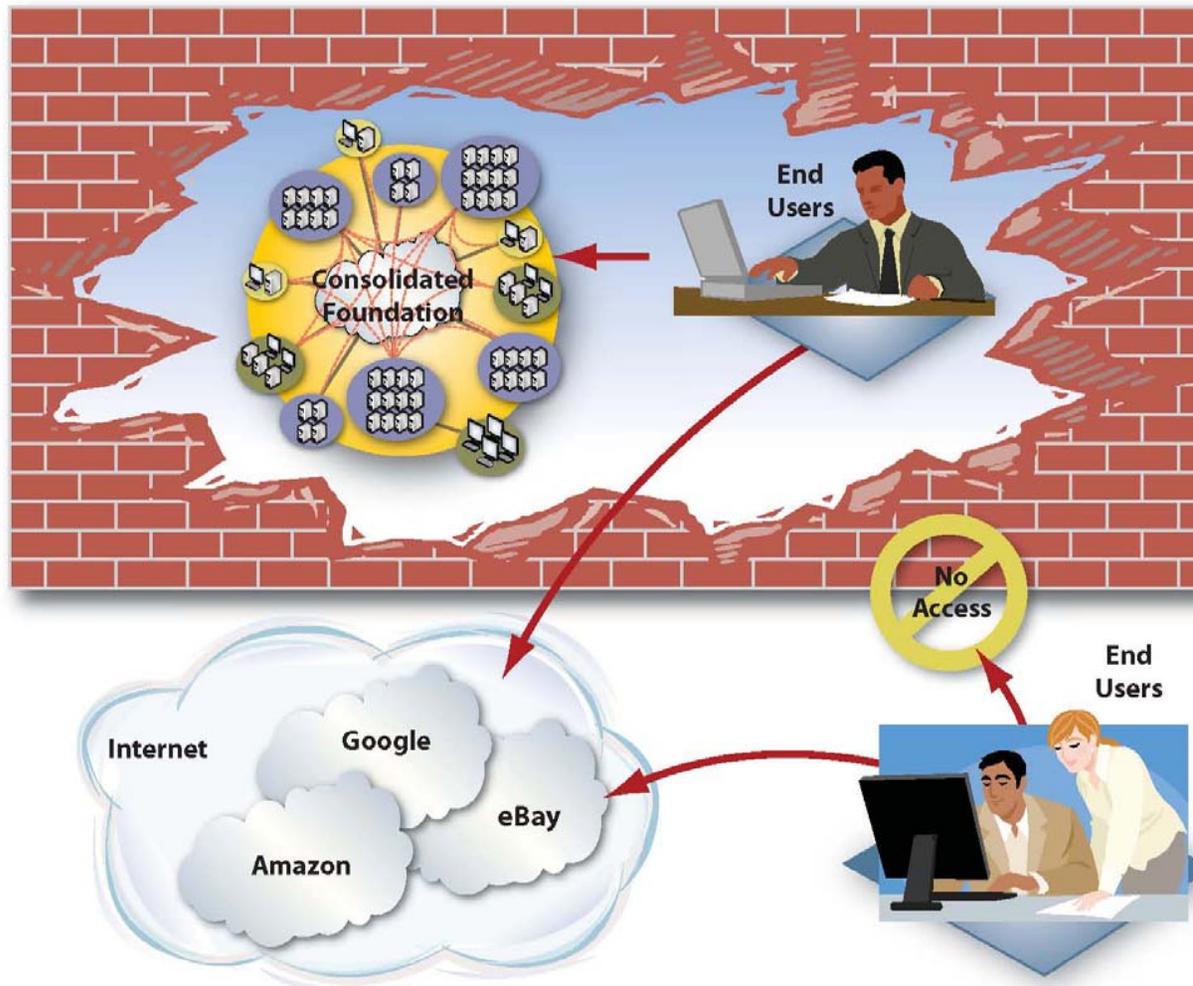


- “Consumerization” of Bechtel computing environment
- Simplified, “user-based” security model
- Provides consistent user experience
- Rapidly deployable, easier to configure and manage
- High-capacity globally redundant network enables new project execution models & paradigms
- Fully IPv6 enabled for future operability and integration

“User Environments” Transformation

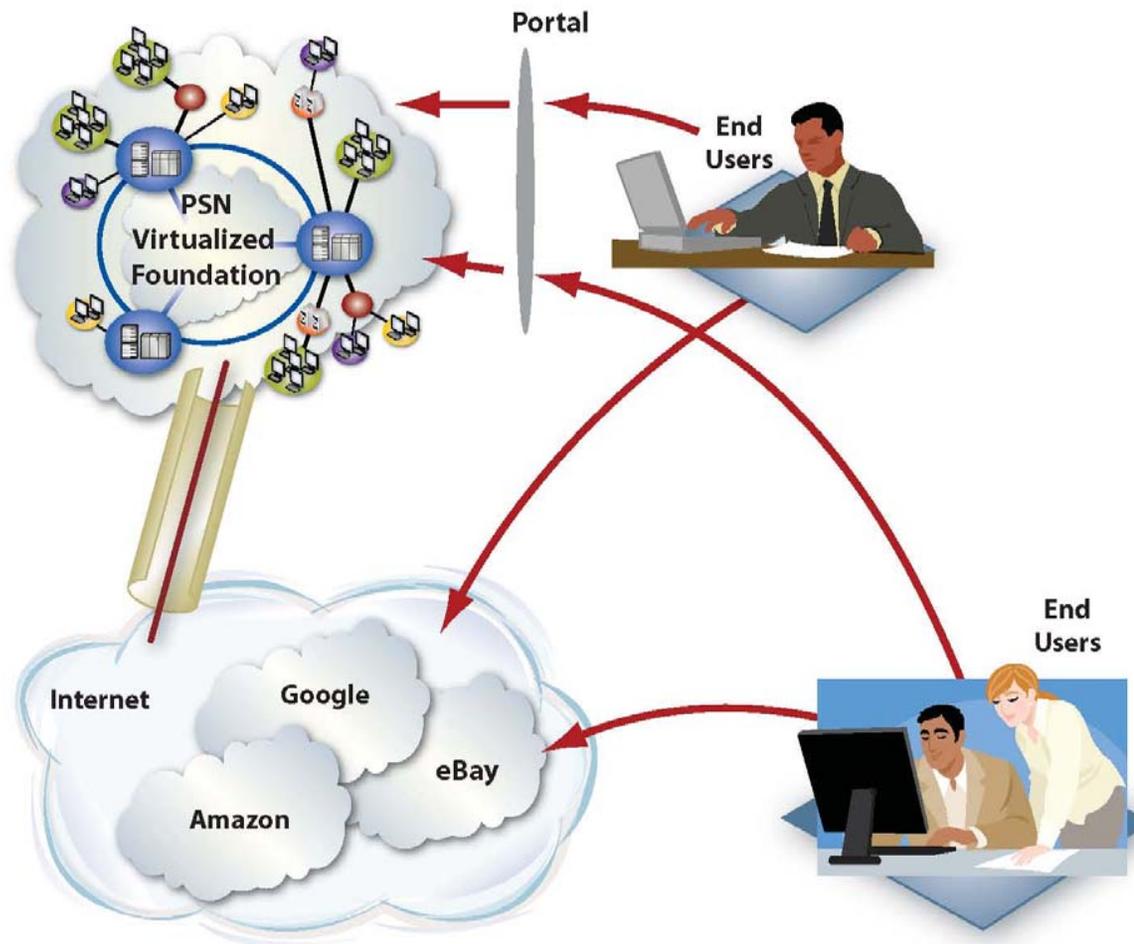


Conventional “User Environments”



- Enterprise users are constrained by internal boundaries (security models)
- External users have no or limited access to internal resources
- External Internet resources can be accessed from enterprises, but seamless integration is complicated and costly

Modified “User Environments”

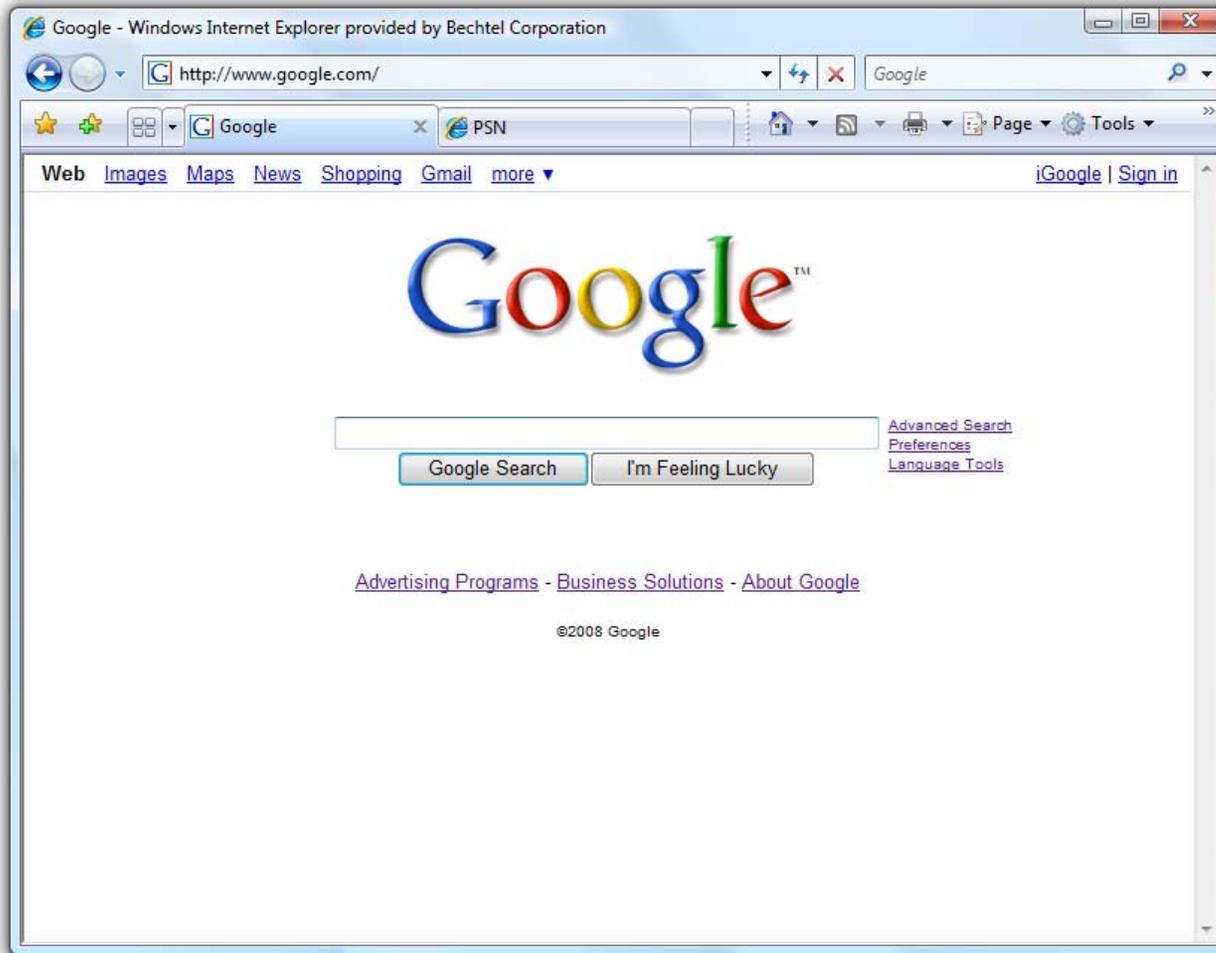


- New security models will bring all users to the outside
- Enterprise user devices will be “un-locked” by opening the user experience between inside and outside
- End-user device management will “un-tie” dependencies on current hardware and software standards

Application Transformation



This is Classical and Simple



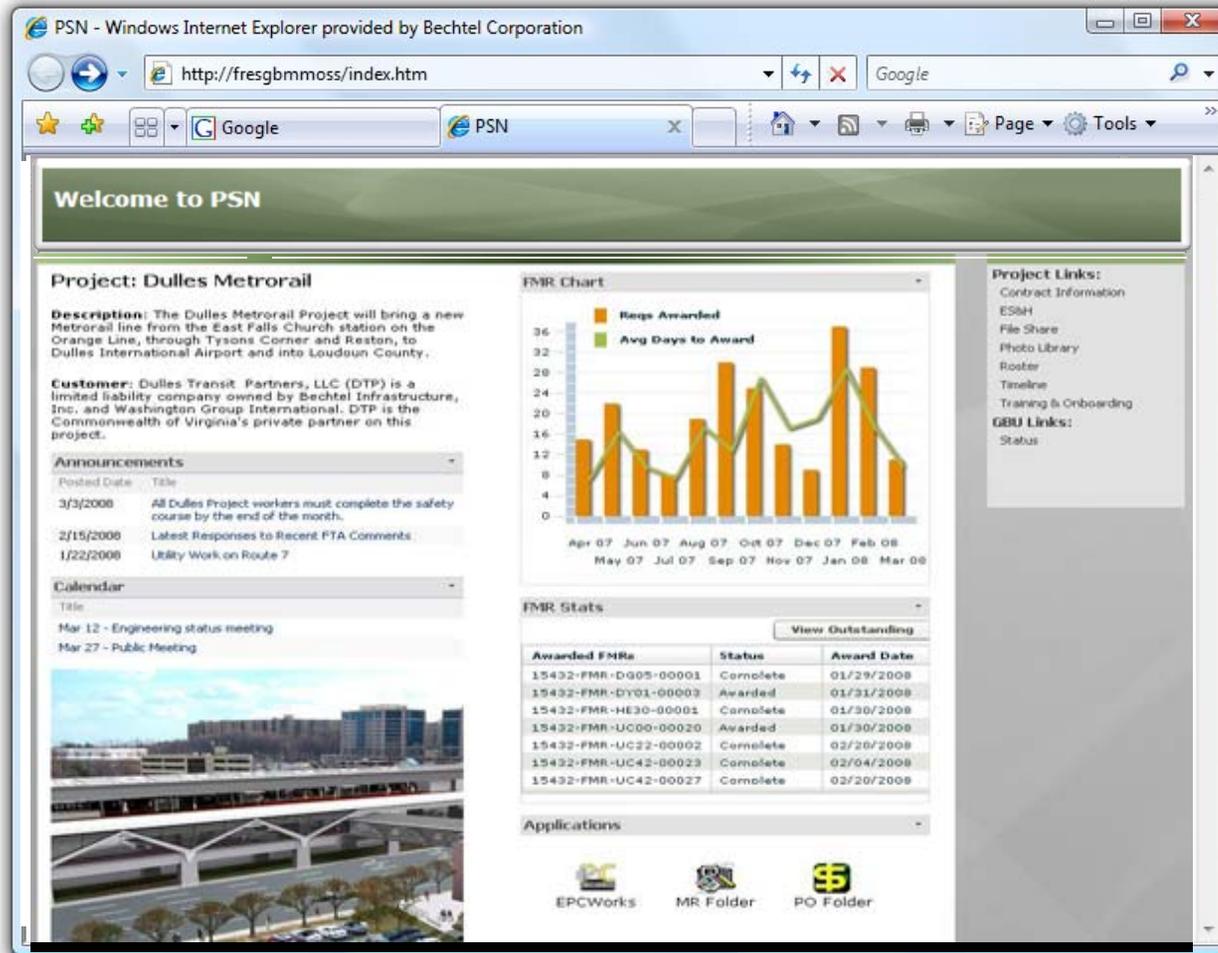
- “Zero Footprint” – nothing to download or install
- 100% compatible with all browsers
- Fast loading, consistent yet highly customizable interface
- Simple yet powerful branding
- Constant innovation for competitive advantage

Our Goal is for the Same Simplicity



- **Single point of entry to applicable PSN services**
- **Compatible with Windows, Mac, Linux**
- **Highly customizable, context-specific interface via Portal**
- **Highly redundant, globally available**
- **Project-controlled authorization**

PSN Portal View



- Reusable web parts and SharePoint solutions
- User-customizable screen
- Links to authorized projects
- Secure access to information managed by consolidated applications with minimal training



Application Transformation

Old Model

- **Development & Architecture**
 - Built for internal use (behind firewall)
 - Client/server-based computing
 - Individual/client-based application
 - Transaction focused
 - Application-based security model
 - Functional/project point solutions
 - RDBMS based
- **Maintenance & Operations**
 - Multi-version application portfolio
 - Configuration through customization
 - Islands of data and information
 - Project-centric deployment/support
 - Heavy IT involvement and support
 - Very dependent on client configuration

New Model

- **Development & Architecture**
 - Built for Internet use (ATASWN)
 - Web-based computing
 - Platform-based application
 - Information management focused
 - Unified security model
 - Multi-tenant solutions
 - XML based
- **Maintenance & Operations**
 - Single version applications
 - Customization through configuration
 - Simple access to disparate information
 - Rapid/leveraged deployment/support
 - End-user based support ("Google-like")
 - Ubiquitous client environment (browser)

Application Transformation

Old Model

- End User Experience
 - “One shoe fits all” user interface
 - Complex environment (heavy training requirements and long learning curve)
 - Inflexible, customized by code
 - Control user behavior
 - Personal/process productivity
 - Distributed work environments
 - Very data centric and little focus on consumers of information
 - Paper-based detailed reporting (hard to distil and get overall view)

New Model

- End User Experience
 - Separated user interface (expert/reviewer)
 - Unified web experience (reduced training and shortened learning curve)
 - Consistent/customizable user experience
 - Empower user capabilities
 - Group (project) based productivity
 - Collaborative work environment
 - Shift to information- and knowledge-based users/environment
 - Targeted information for consumers (you don't have to consume the entire app)

1998

2003

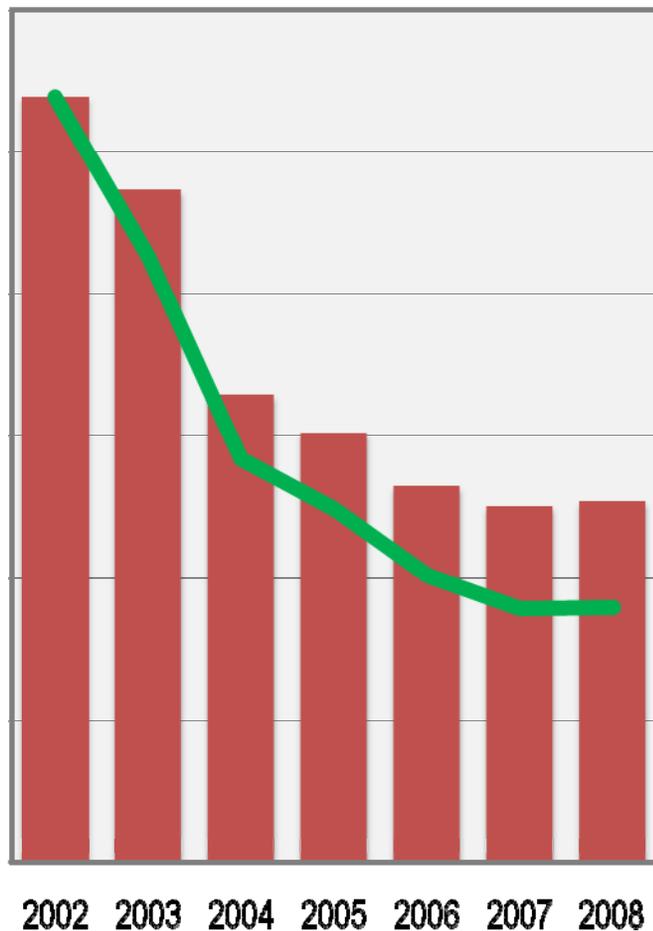
2008



Summary



Cost per Output Unit



- The “cost per output unit” is computed by dividing total global IS&T cost by the total work-off hours (output units)
- The reductions between 2002 and 2005 was caused by the eSTOP cost reduction program
- The reductions are:
 - 53% (on current \$)
 - 63 % (on CPI adjusted \$)

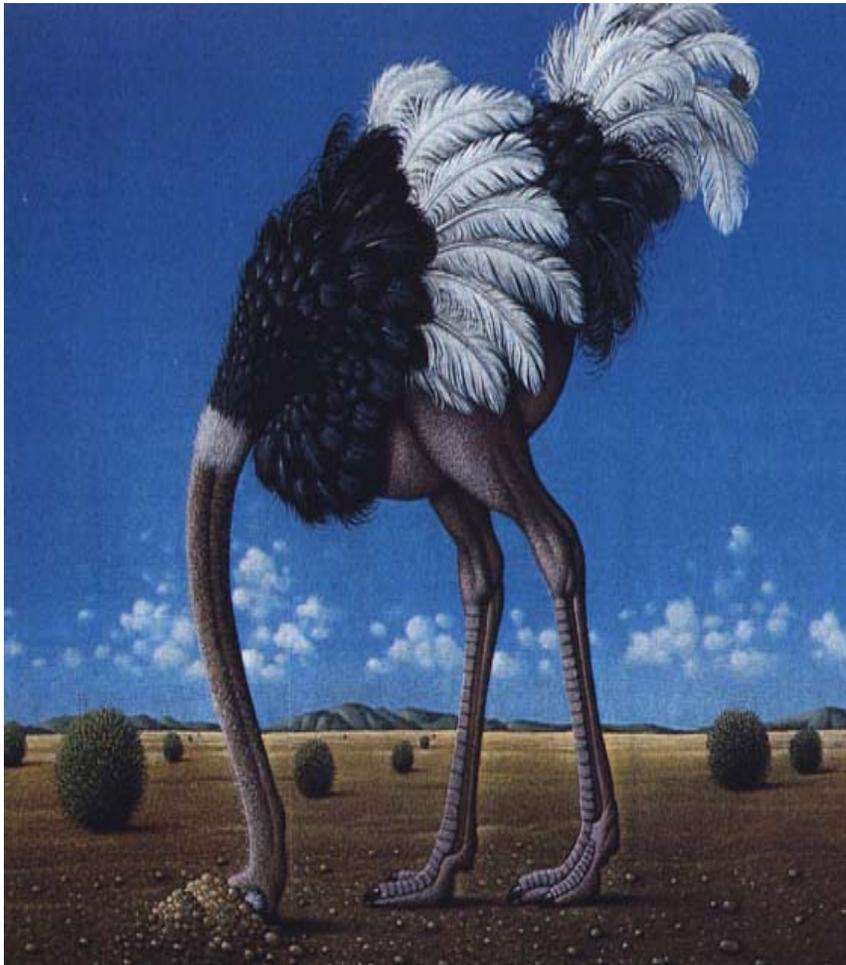
Legend

- Cost per work-off hour (current \$)
- Cost per work-off hour (CPI adjusted \$)

Note: CPI index for computer hardware and software



Model Changes



- **“Cloud” Community Model**
 - Integration and Collaboration
 - e.g. internal & external
 - Standards and Interoperability
 - e.g. fully compatible platforms
 - Sharing of Resources
 - e.g. utilization of best of in class
 - Distributed & Leveraged Enhancements
 - e.g. “open source” for infrastructure
- **Security Model**
 - Internet vs. Intranet Development
 - e.g. “firewall” placement
 - Identity Management
 - e.g. authentication & federation
 - Data Classification
 - e.g. what can and can not live “on the outside”
- **Vendors Operating Model**
 - Development
 - e.g. suite vs. incremental development/releases
 - Operations
 - e.g. global reach for easy upgrade & replication
 - Commercial
 - e.g. usage based licensing and pay-per-drink service consumption

Q&A

