SGI Solutions for Pharmaceutical and Biotech Industries

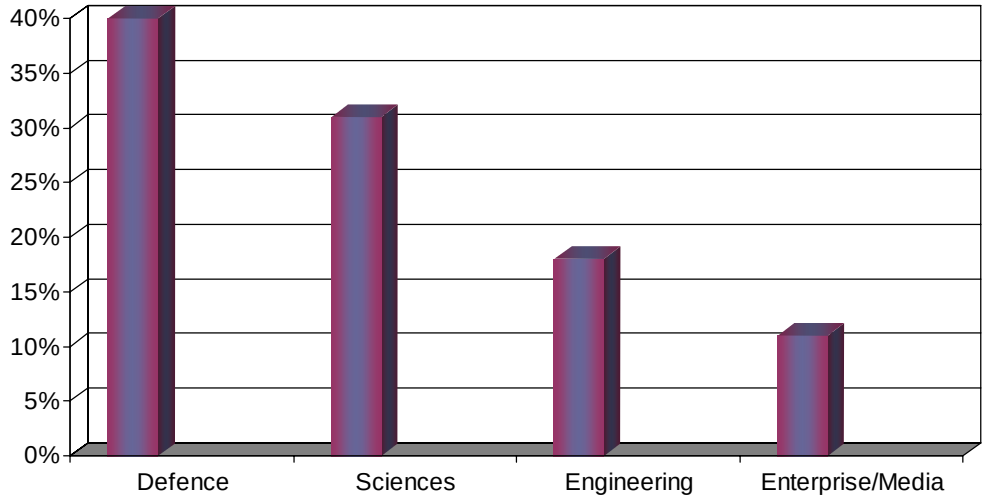
SGI Background

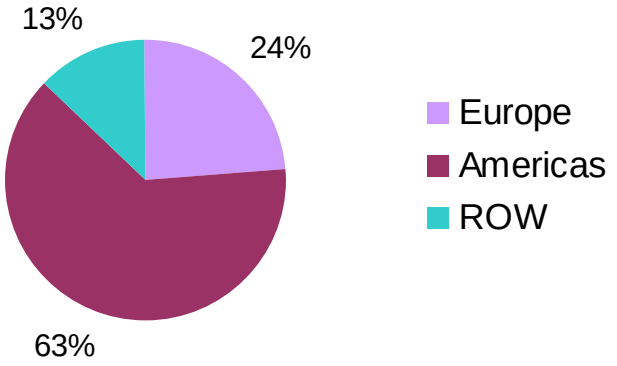
SGI is a leader in high-performance computing with a complete range of high-performance server and storage solutions along with industry-leading professional services and support

SGI's 1700+ employees have been servicing customers in over 50 countries for the last 20+ years

SGI is a $500M company, listed on NASDAQ® under the stock symbol SGIC

SGI Markets 2006-2007





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SGI Product Portfolio

SERVERS

High End Blade	Mid Range Blade	Cluster Based
Altix® 4700 Dual Core Intel ®Itanium®	Altix® 450 Dual Core Intel ®Itanium®	Altix® XE Intel® Xeon®

STORAGE

RAID and SATA	**NAS and SAN**	**Data Archiving**

SERVICES AND SOFTWARE

Professional Services	Optimization Software	Pre-After Sales Service
Custom Solutions Benchmarking, Deployments, etc.	Storage, File Sharing, Data Access, etc.	

SGI Product Portfolio

Industry Specific, Workflow Based, Optimal Targeted Solutions

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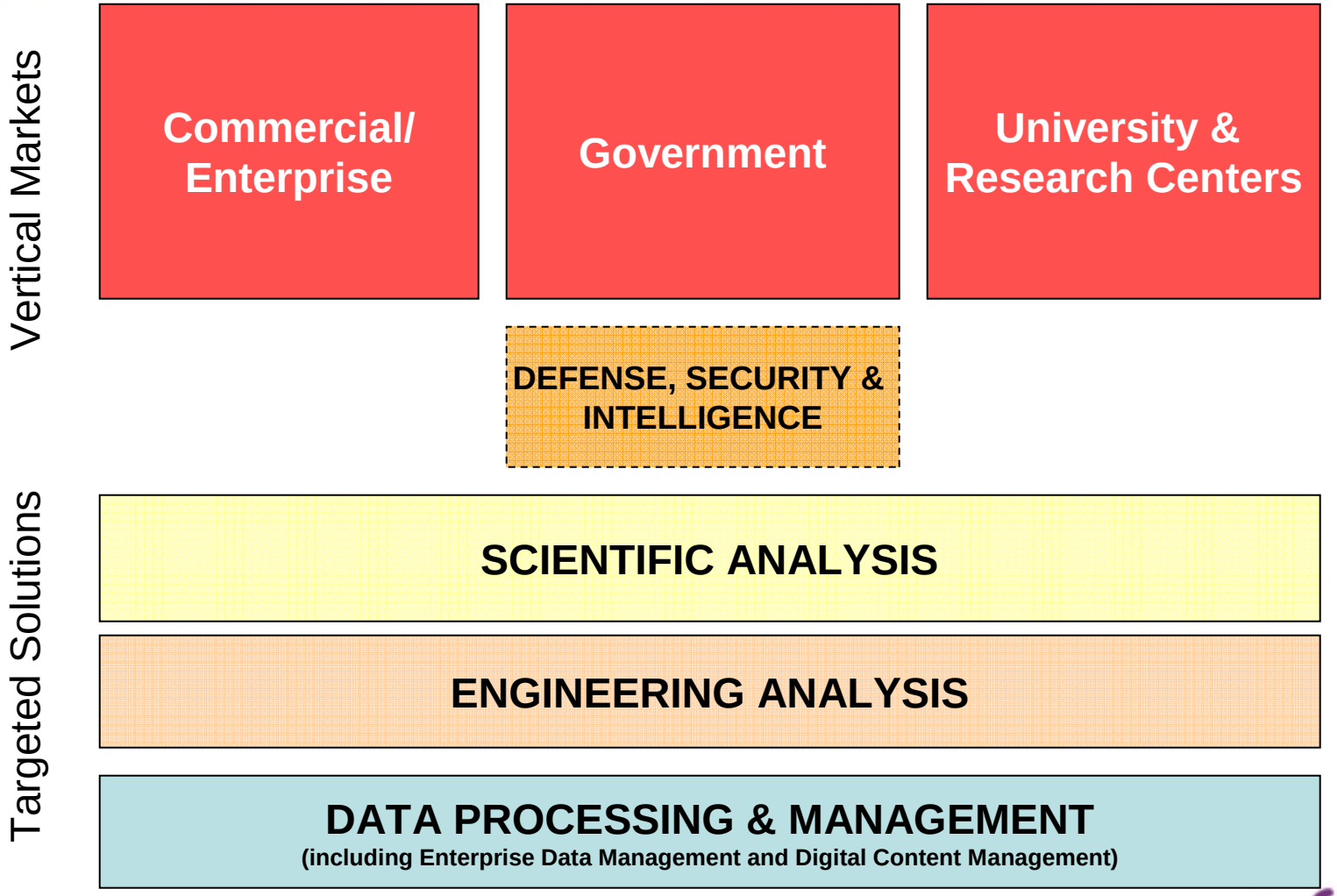
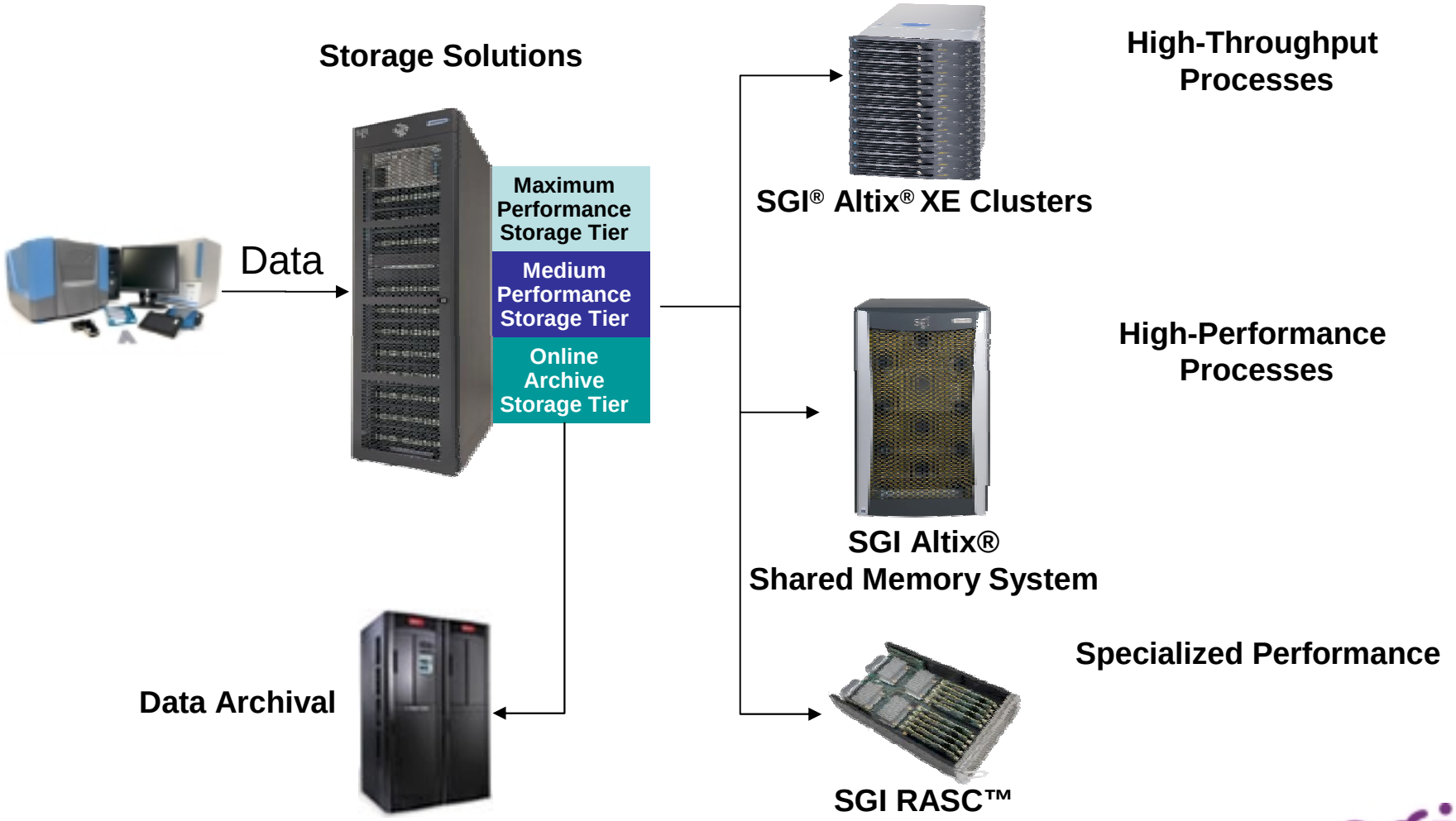
Customers & Application Segments



SGI Storage and Computing Solutions



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Pharma and Biotech Challenges

Top line pressures

- Shorten discovery pipeline
- More science to do, but not more scientists
- Critical focus on productivity
- Automating as much as possible

Bottom line pressures

- Spend less on hardware, software, administration
- Integrate new acquisitions
- Don’t outgrow your data center

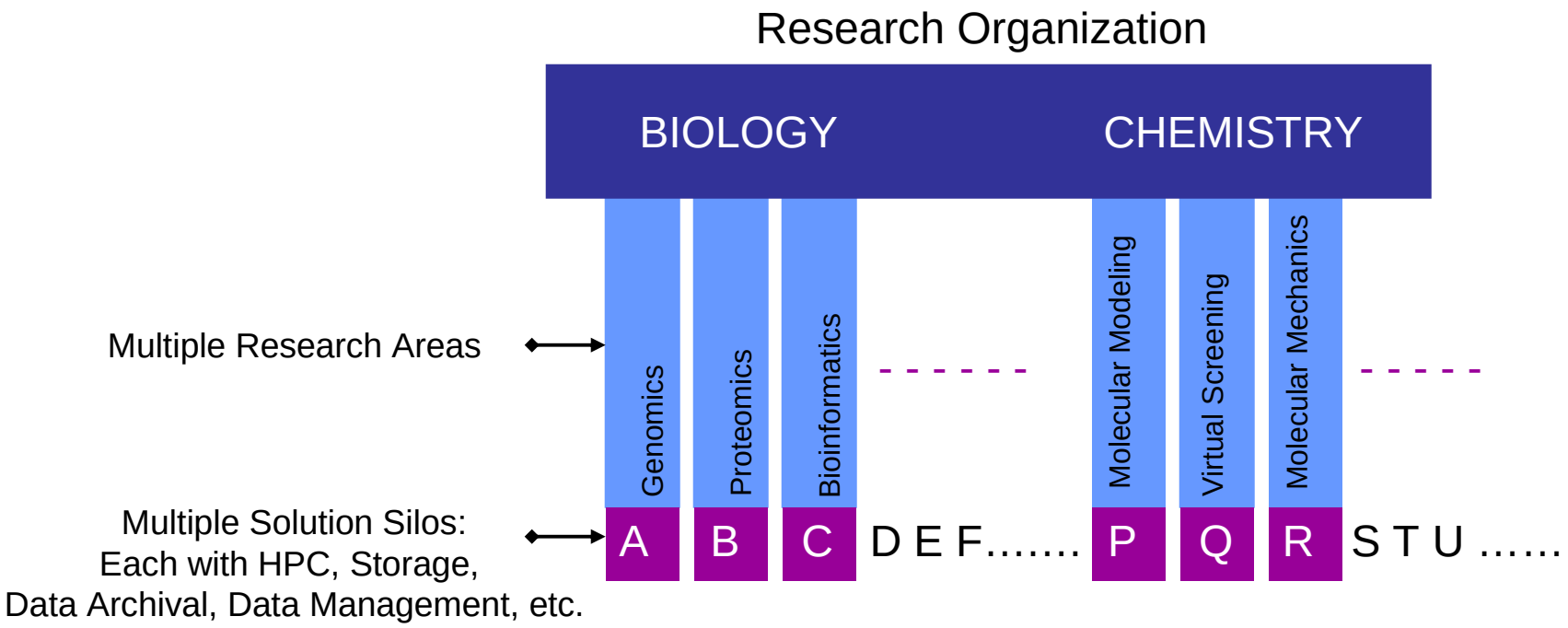
Major headaches dealing with complexity

- Enormous amounts of data, new sources, new users & uses
- Many different applications, different computing needs

Enormous data warehousing needs

- Scientific research data
- Clinical trials data
- Business data

Pharma and Biotech Challenges



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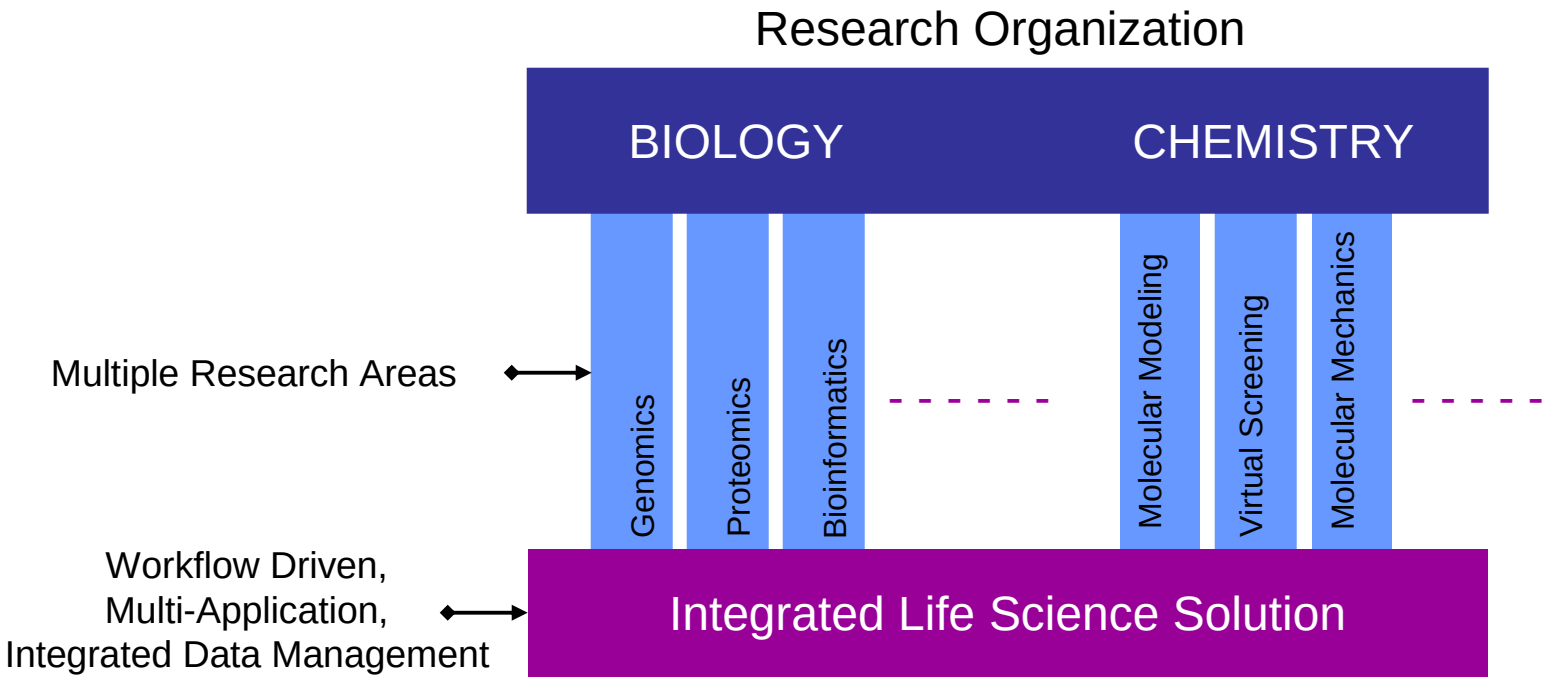
Integrated Life Sciences Solution



Benefits:
- Increased capability to solve larger problems
- Increased capacity to solve more problems
- Increased flexibility to support workload changes
- Simplified access to large amounts of data
- Lower TCO from greater utilization, simplified management

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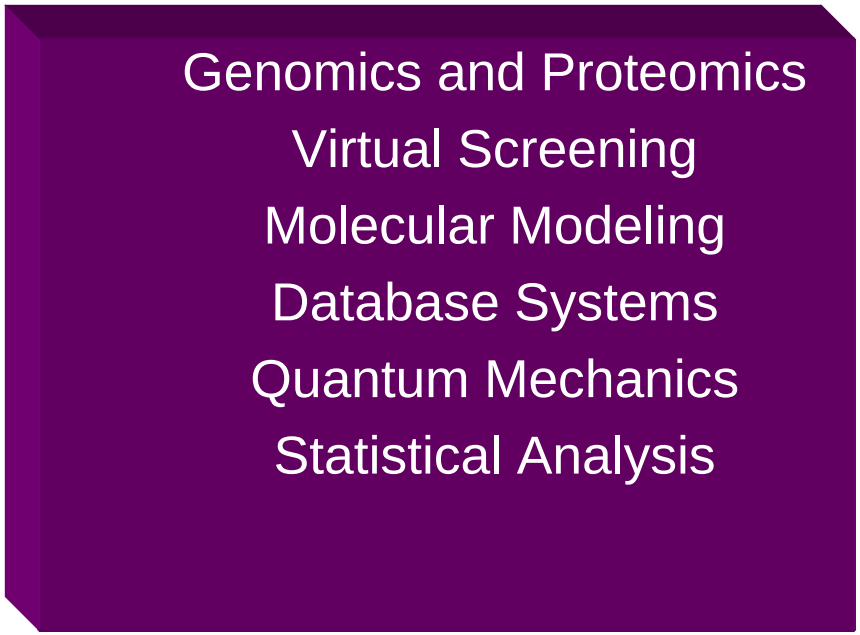
SGI Life Sciences Solutions

Optimized solutions comprising of computation platforms, storage, software, and service

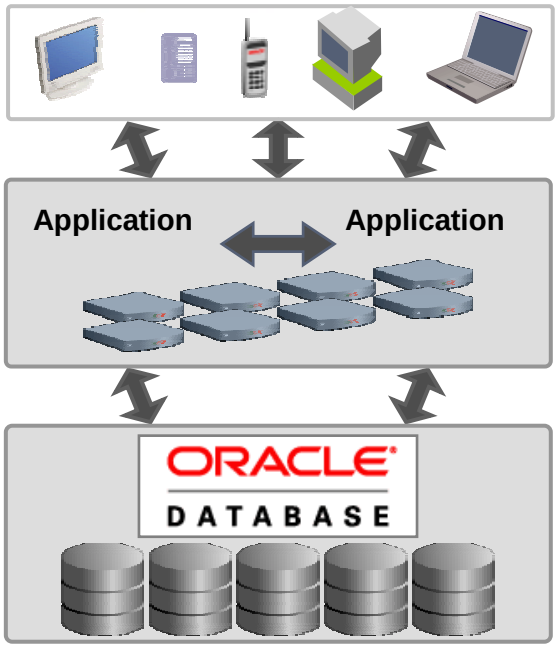


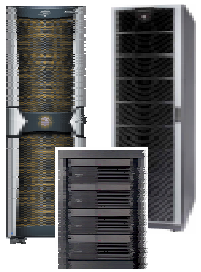
SGI Database Solution: Systems Biology Applications

- Customer Problem
  - Slow response time from multiple databases
- SGI/Oracle 10g Database Solution
  - Oracle 10g Database
  - SGI Altix 4700 or 450 server
  - SGI InfiniteStorage storage devices

Solution Advantage

- Offers leading performance at lower cost
- Large scale data warehousing
- High transaction rate environments





SGI Altix Servers
SGI InfiniteStorage

SGI Database Solution: Systems Biology Applications

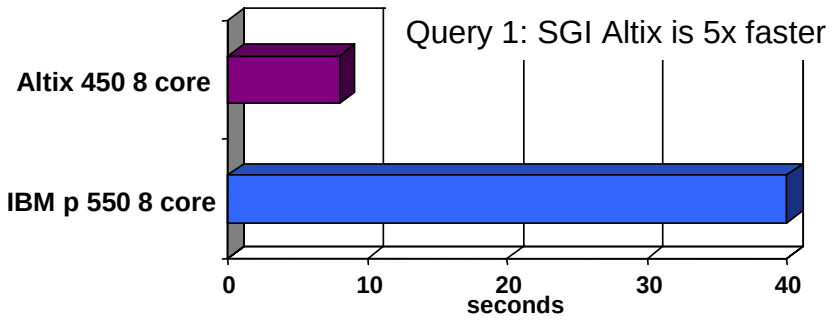
Data Warehousing: SGI Customer

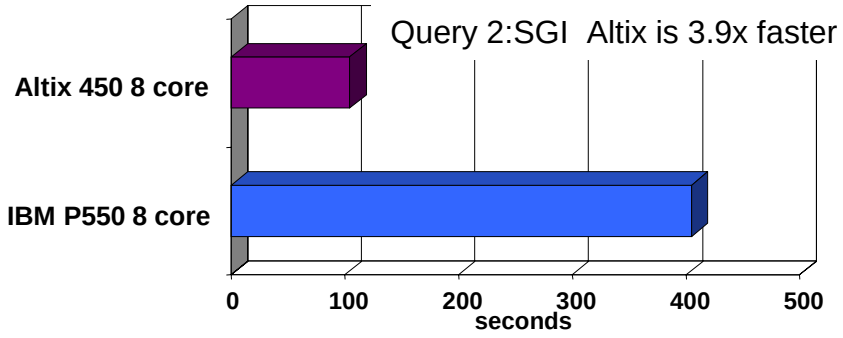
Goals:

1. Improve query response time against data warehouse
2. Scale system to support 50+ users

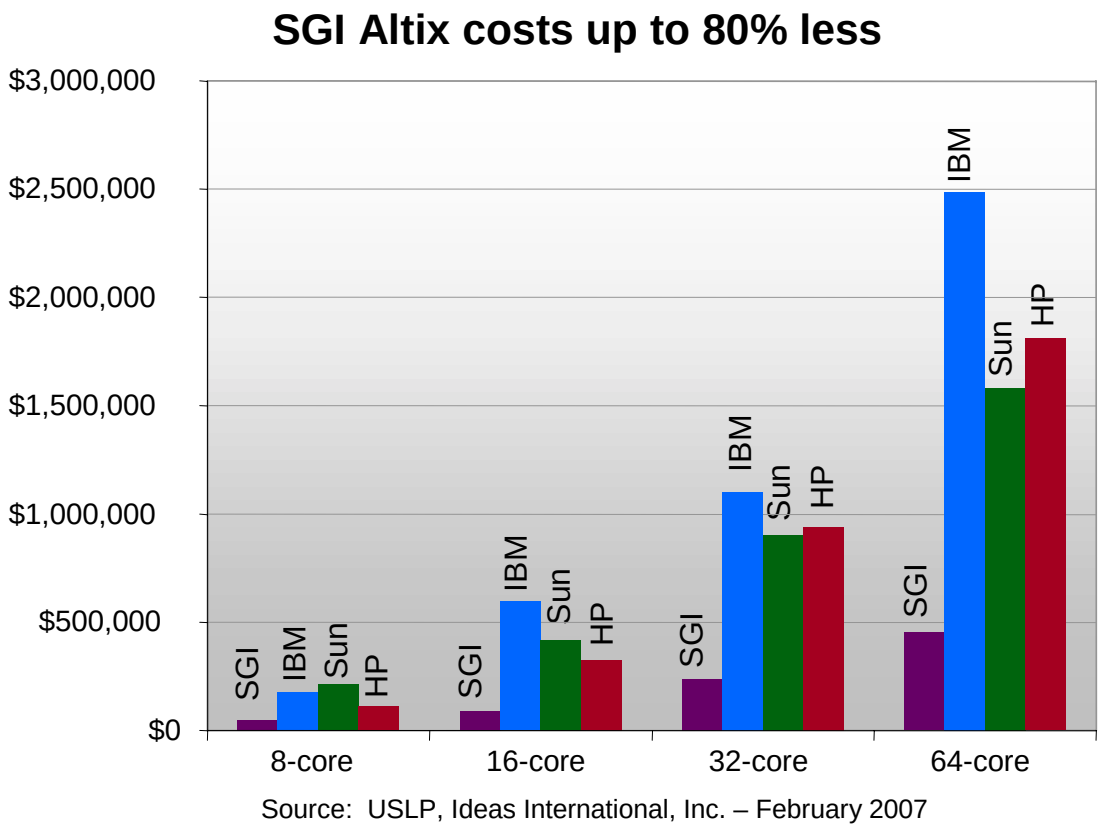
Queries:

1. Query #1: 500 concurrent users pull data from multiple views
2. Query #2: 35 concurrent users pull data from multiple views & tables, create a new table and counts table elements





SGI/Oracle 10g Database Solution



Source: USLP, Ideas International, Inc. – February 2007

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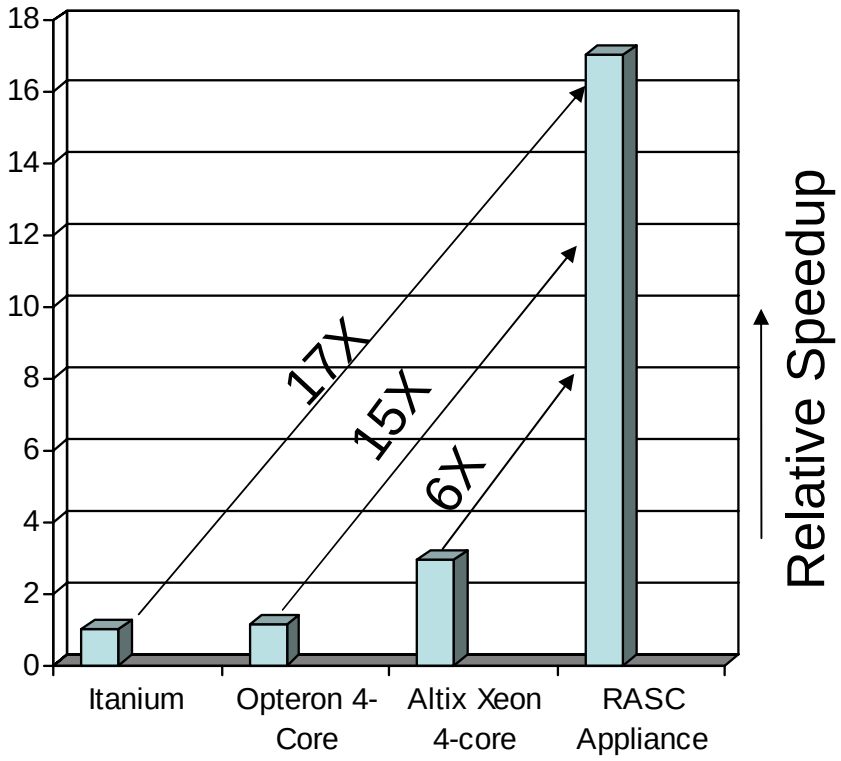
Case Study 1

Problem: Need for accelerated BLAST-n searches required by a large genome institute in Asia and a major pharmaceutical customer (top 10)

Solution: SGI's RASC-BLAST Appliance

Result:

1. Large (100K nucleotides+) BLAST queries at unprecedented speeds of **17X+** over conventional platforms
2. Small BLAST queries at speed of **90X**+ over conventional platforms



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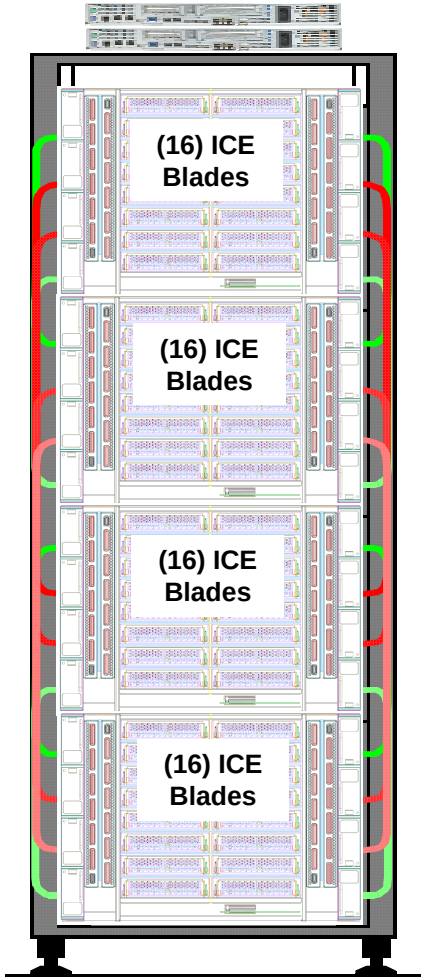
Case Study 2

Problem: Large biotechnology company (UK and US based) facing data center expansion problems due to space limitations

Solution: SGI's ICE® Product

Result: 50% more computation in the same space, with lower energy consumption



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SGI Solution Productivity Advantages

Workflow Integration

- Eliminate resource “stovepipes”
- Increase efficiency with workflow automation
- Provide uniform access to shared data

Optimization

- 20% higher throughput for genomics and virtual screening
- 15x BLAST-n acceleration
- 80x Chemical DB search acceleration
- Molecular dynamics simulation of the entire HIV protease
- Large Gaussian jobs running at 8x other platforms
- Accelerated statistical analysis with parallel R or Oracle
- Dramatic acceleration of Oracle databases

SGI Solutions: Price and TCO Advantages

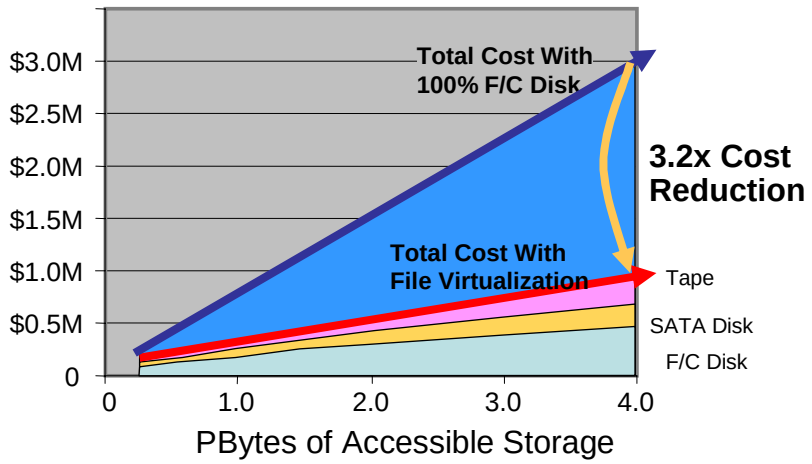
SGI Solutions are designed with:

- Lower infrastructure & expansion costs
- More flexible configurations
- Higher performance
- Higher levels of integration

This leads to:

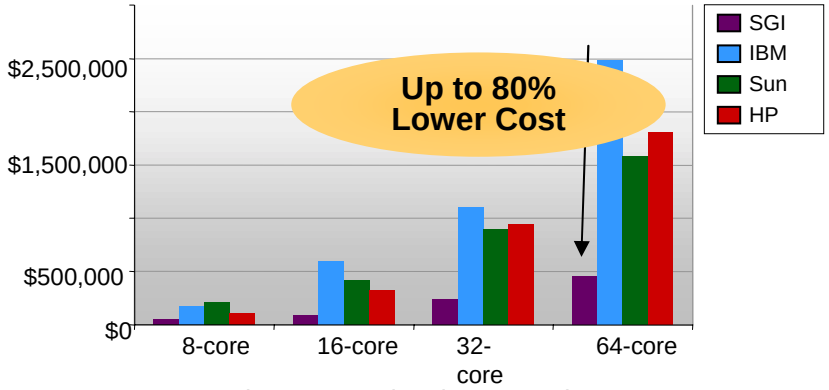
- Up to 80% lower prices for scalable systems
- Up to 2.6x better price/performance for storage
- Fewer system and storage purchases and administration costs
- Lower software acquisition costs for data intensive applications
- Greener solutions with lower power & cooling expenses

SGI Solutions: Price and TCO Advantages



Cost Reductions with File Virtualization

Scalable Servers



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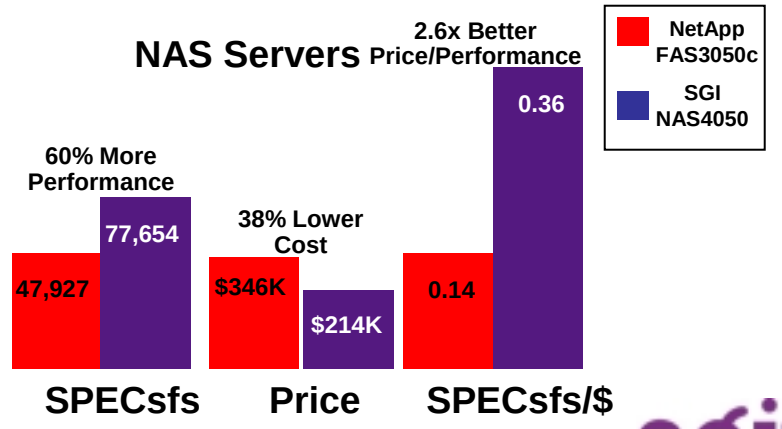

Source: IDC 10/2006

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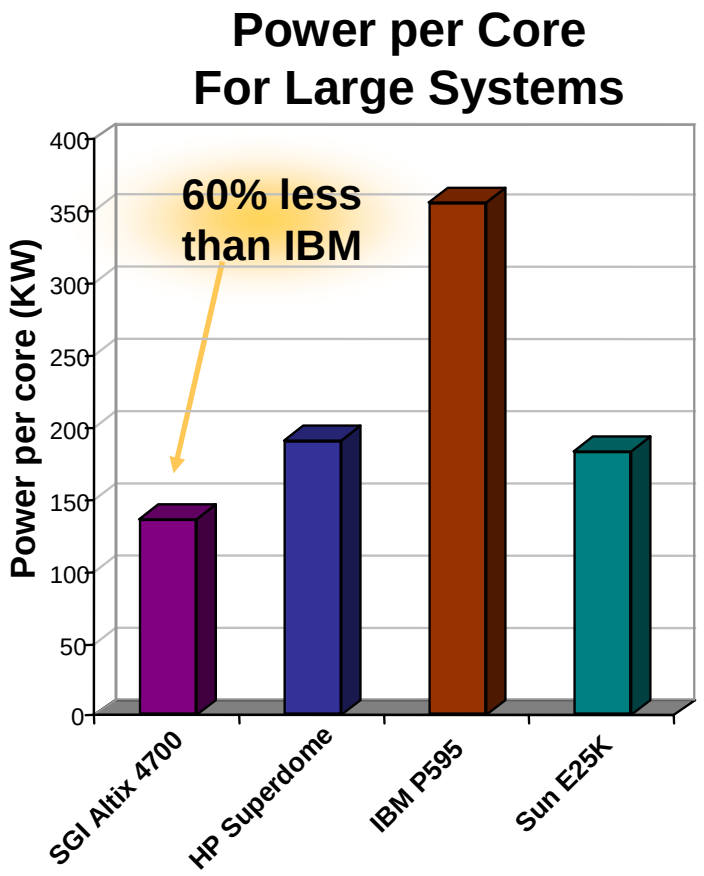
Technology Innovation: Green Computing

- SGI Altix systems use up to *60% less* energy per core than competitive systems
- SGI RASC Appliance for Bioinformatics uses FPGA technology to *reduce* power consumption by up to *90%*
- SGI's ICE® high-density X86 cluster platform increases energy efficiency by *over 50%*



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Technology Innovation: Space Savings

> RSS Liebert RSS

Emerson Network Power Presents Industry Survey Results That Project 96 Percent of Today`s Data Centers Will Run Out of Capacity by 2011

11/16/2006 ...

Data Center Users` Group survey confirms that increased densities, consolidation and energy efficiency are driving change in the industry

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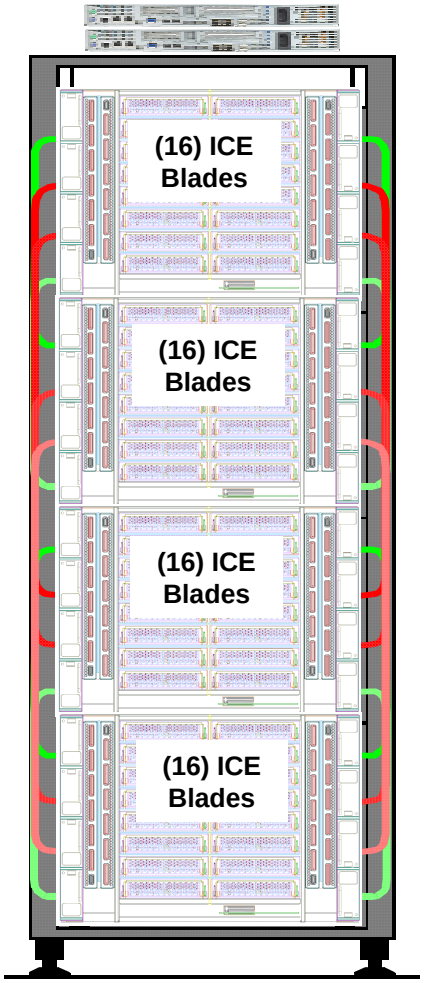
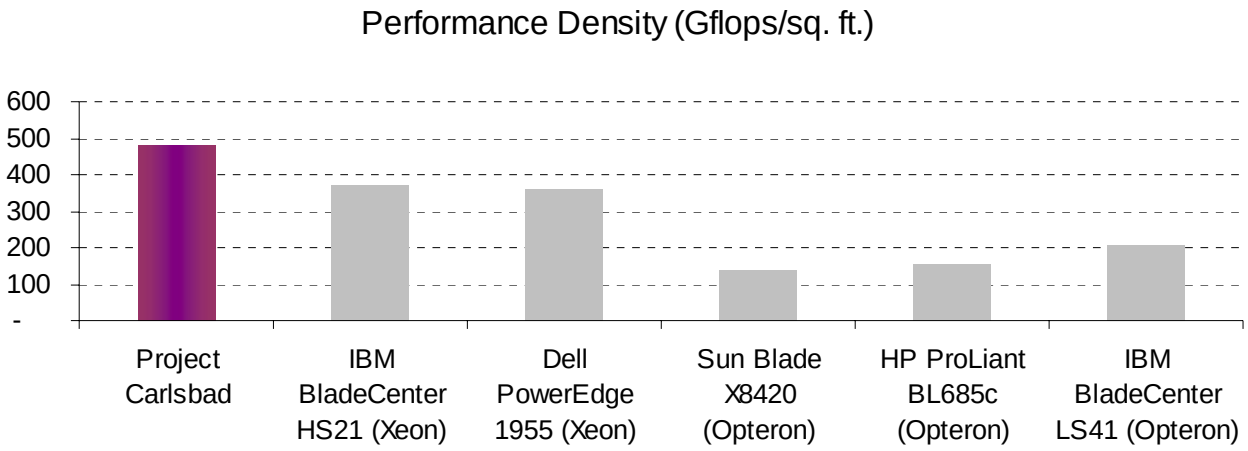
Technology Innovation: Space Savings



Introducing: Project ICE

Up to 512 Cores and 5.32 TFlops per Rack (50% less space)



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SGI Solution Productivity Advantages

Optimize each portion of the Drug Discovery workflow

Drug Discovery Application	High Performance Systems	High Throughput Systems	Specialized Systems	Storage Systems	Examples
Genomics / Proteomics	Large memory Bayesian Analysis	Optimized General Purpose	Optimized BLAST-n	Fast NAS *AND* File Virtualization	20% higher cluster throughput 23x faster BLAST-n (90% less power) Infinite on-line accessible data, 3x less $
Virtual Screening		Optimized General Purpose	Optimized Chemical DB Searching	Fast NAS	80x faster Chemaxon DB search 800 MB/Sec NAS read 2.6x better NAS price/performance
Molecular Modeling	Large memory, scalable Amber	Multiple 8-way & MPI apps	Currently in Research	NAS/SAN shared data	Simulate the entire HIV protease Higher resolution “docking”
Quantum Mechanics	Large memory, low latency, QM-MM links	Semi-empirical, Multiple 8-way		Multi-GB/S I/O on SSI systems	32-way parallel Gaussian runs Inductive structure prediction
Statistical Analysis	Large memory, parallel R, Oracle statistics	Workflow management, SAS		File Virtualization & Archiving	R analysis of Genomics & Clinical data “Locked workflows” for compliance On-line & off-line archiving, compliance
Database Systems	Optimize Oracle performance & price w/ Memory CPU, I/O scaling	Integrated Cluster Environment	SGI Database Accelerator with Oracle TimesTen	Fast I/O, File Virtualization & Archiving	Reduce S/W licenses 75% with fewer CPUs Optimize with large memory/CPU, fast I/O Reduce power consumption and floor space by 35% to 60%

Source: IDC 10/2006

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