

2010 IT산업전망 컨퍼런스

Dynamic Infrastructure를 통한 Green IT 전략



CIO Technology Priorities

CIO Technologies

Ranking of Technologies Selected by CIOs as One of Their Top Five Priorities in 2009

| | 2009 | | 2008 | 2007 | 2006 |
|--|------|---|------|------|------|
| <u>BI</u> | 1 | ↔ | 1 | 1 | 1 |
| Enterprise applications (ERP, SCM and CRM) | 2 | ↔ | 2 | 2 | * |
| <u>Servers and storage technologies (virtualization)</u> | 3 | ↔ | 3 | 5 | 9 |
| Legacy application modernization | 4 | ↔ | 4 | 3 | 10 |
| Collaboration technologies | 5 | ↑ | 8 | 10 | 4 |
| Networking, voice and data communications | 6 | ↑ | 7 | 4 | 8 |
| Technical infrastructure | 7 | ↓ | 6 | 8 | 12 |
| Security technologies | 8 | ↓ | 5 | 6 | 2 |
| Service-oriented applications and architecture | 9 | ↑ | 10 | 7 | 6 |
| Document management | 10 | ↓ | 9 | 9 | * |

*Item was not included this year.

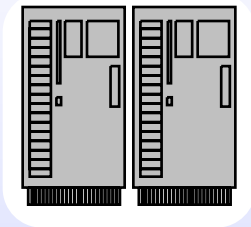
SCM = supply chain management

Source: Gartner (March 2009)

IT 패러다임의 진화

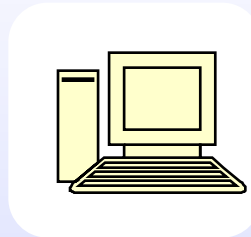
[클라우드 컴퓨팅은 IT의 진화이다.]

Mainframe
Platforms



**IBM
Digital**

Client / Server
& App Server Platforms



**Oracle
Siebel
PeopleSoft
SAP
Microsoft**

Cloud
Computing

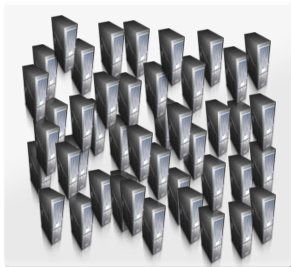


**Salesforce.com
Amazon
NETSUITE
RIGHTNOW**

다이나믹 IT를 향한 여정

다이나믹 인프라스트럭처는 클라우드의 서비스를 제공하는 보다 효율적인 플랫폼을 구축하는 훌륭한 근간을 제공

Server sprawl



Physical/Virtual Consolidation for Single Server



- Improve utilization
- Reduce costs
- Lower power usage

Advanced Virtual Resource Pools (Ensemble)



- Decouple complexity from scale
- Share resources optimally
- Automate workload management
- Simplify HA & DR

Service Management



- Discover, monitor, meter, secure and automate deployment of virtualized resources
- Assure SLA achievement
- Optimize service placement
- Integrated virtualization management with IT processes

Cloud

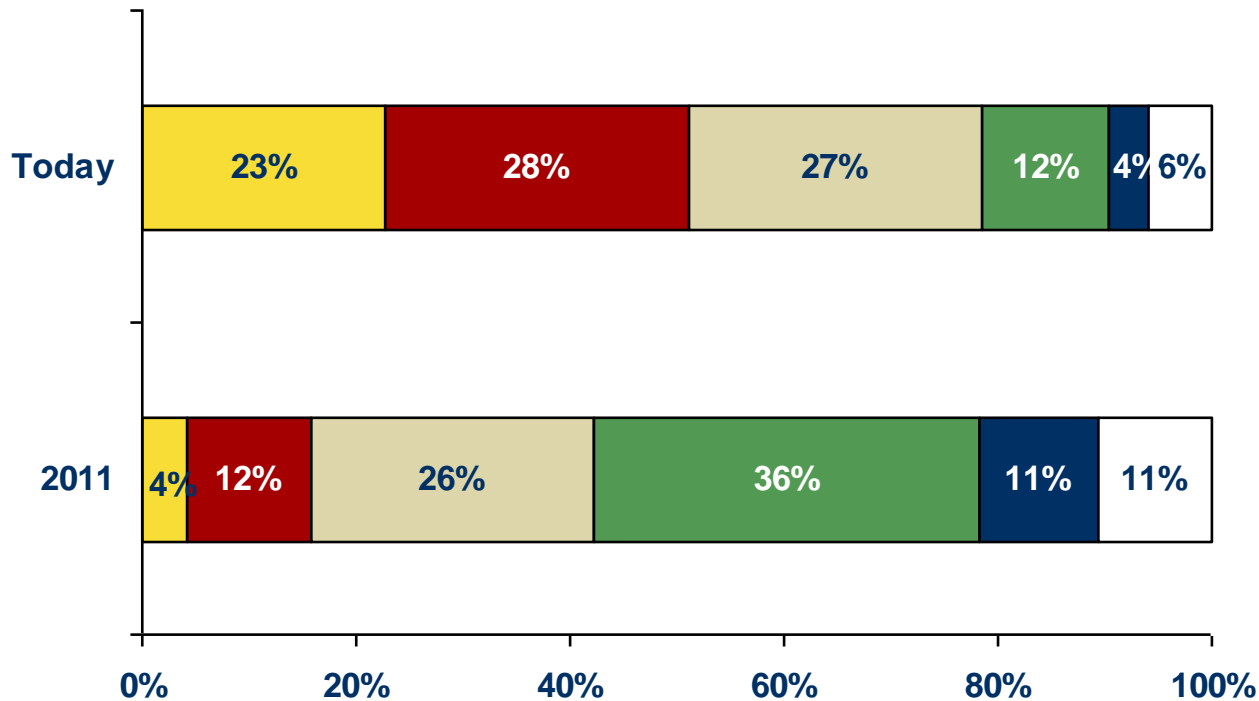


- Always available
- Elastic scaling
- Pay for use
- Automated provisioning
- Simplified user interface

Production Application Workloads on Virtual Servers: Today & 2011

- What percentage of ALL production application workloads do you estimate run on virtual servers today (excluding mainframes) and by the end of 2011?

Percent of Production Application Workloads on Virtual Servers

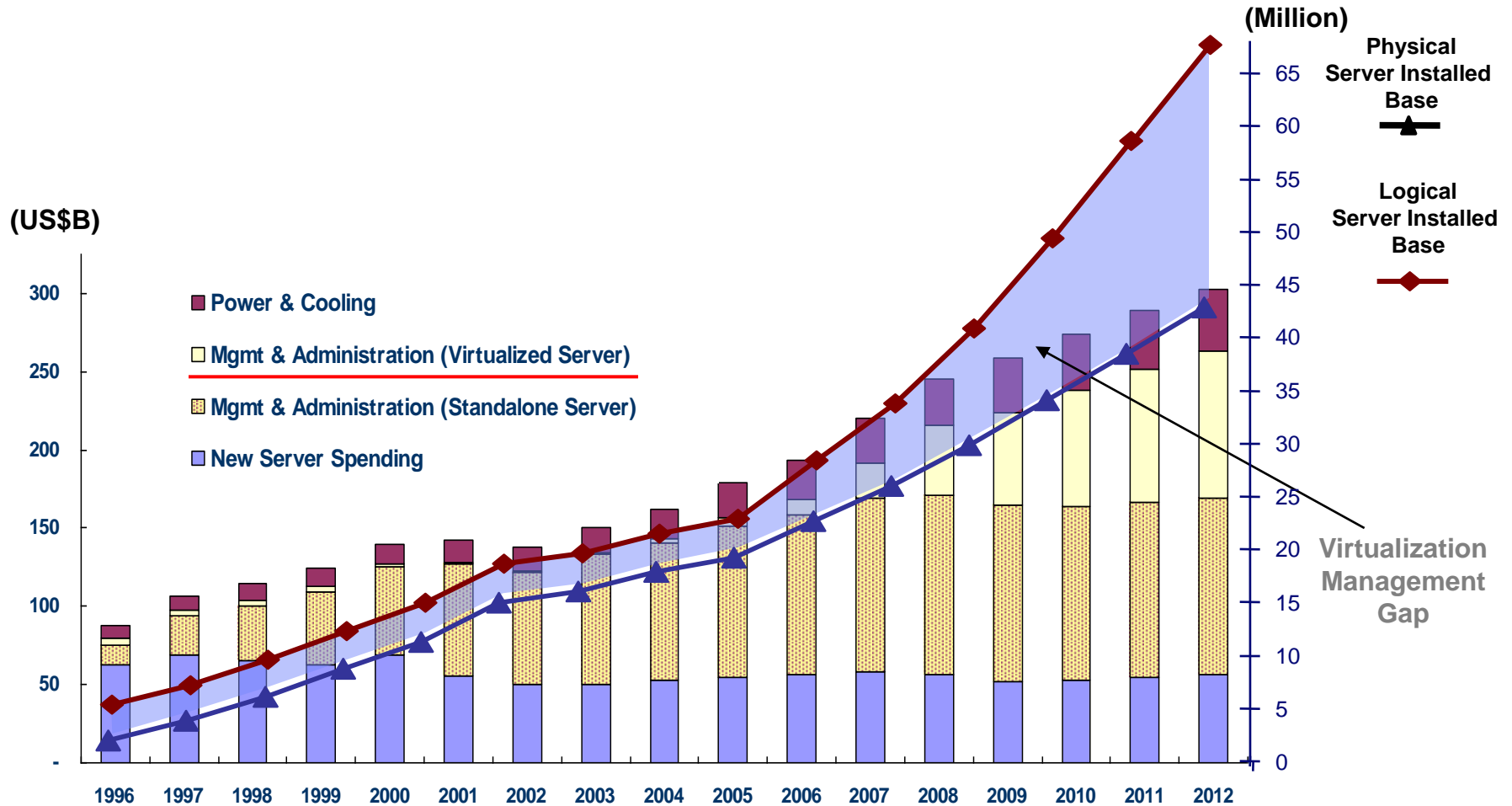


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■ 5% or less
 ■ About 25%
 ■ Roughly 50%
 ■ About 75%
 ■ Almost 100%
 ■ Unsure

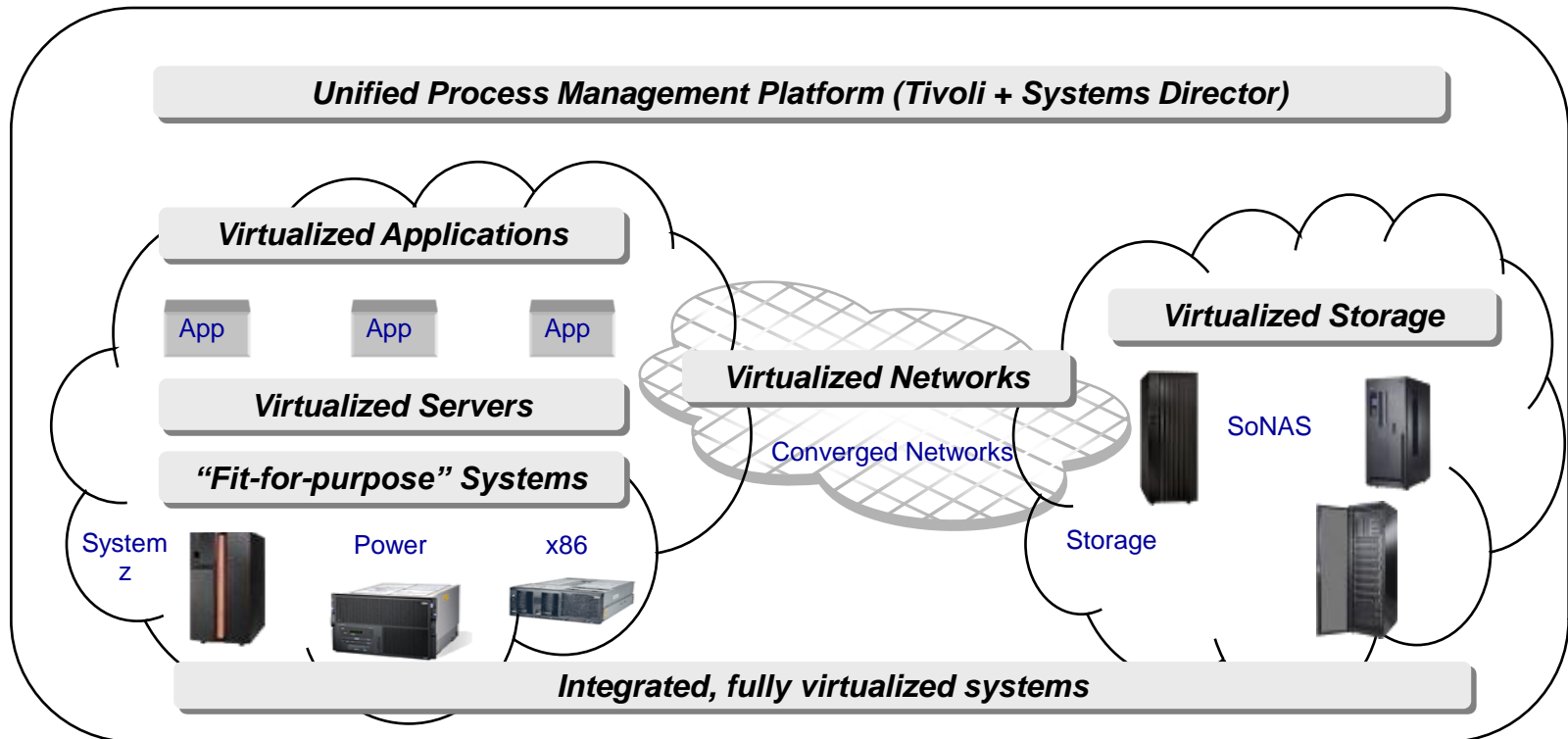
Sprawling Infrastructure: More Operational Costs & Virtualization

- Operational Costs Rise Dramatically Shifting Management Requirements – virtualization



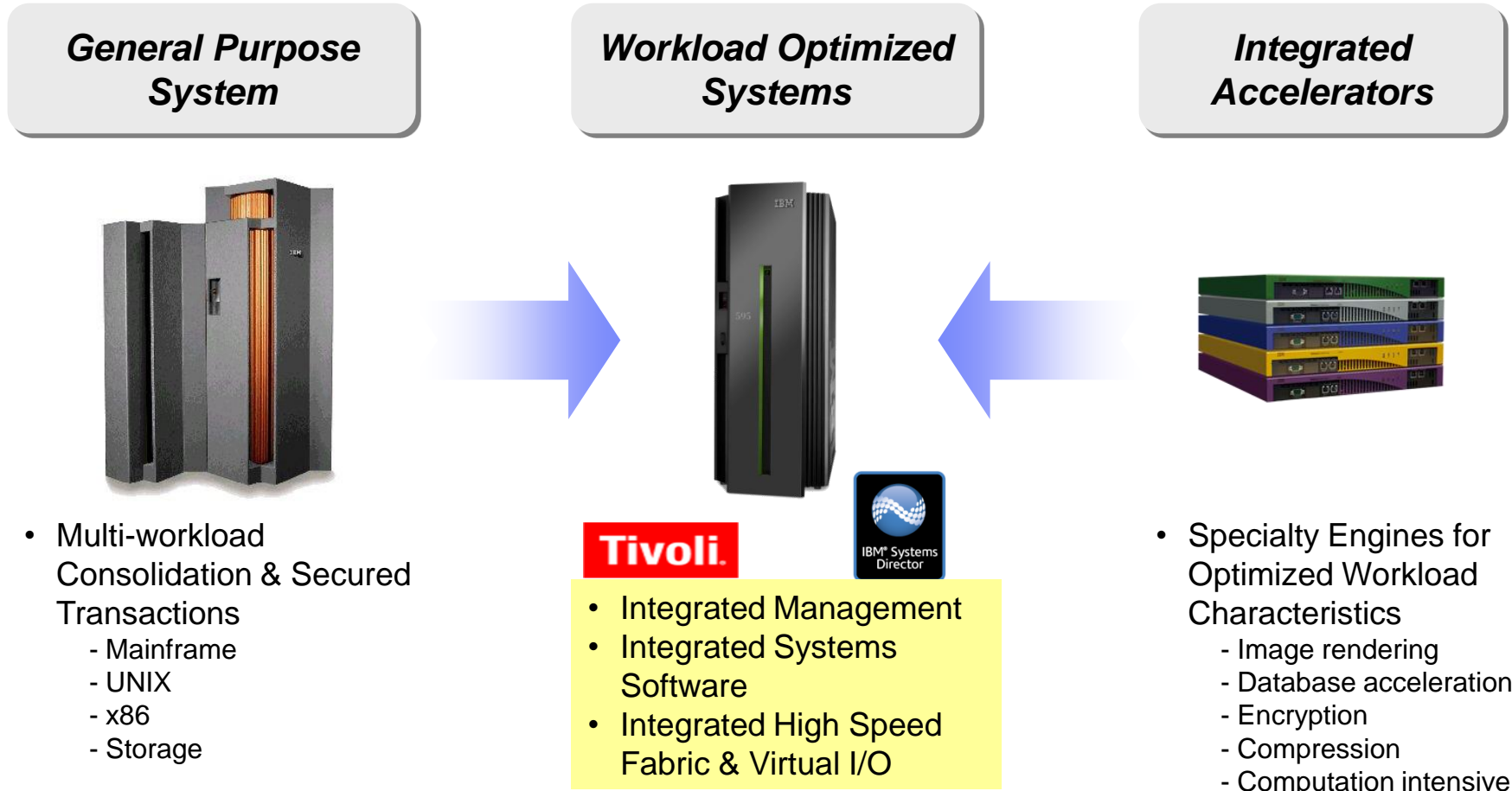
Infrastructure-wide Virtualization

- Virtualization is an IT-wide strategy
- Reduces cost in OPEX and skills (unified management, resource pooling, integration)
- Increased workload efficiency (pooling, fit-for-purpose)



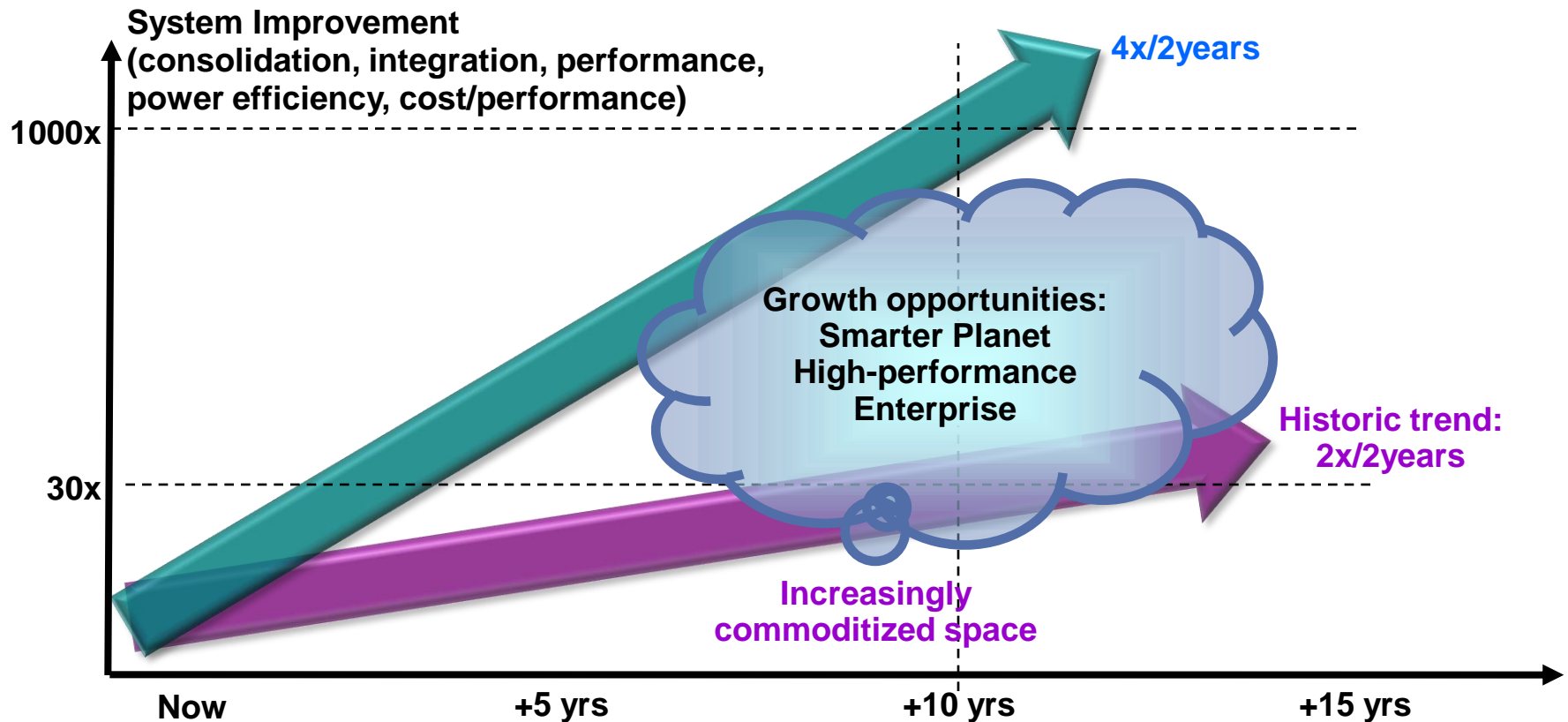
Purpose-built Solution for Emerging Workloads

- Hybrid architecture – enabling customers to run more efficiently run both traditional & emerging workloads



Transformational Hybrid Systems

- A large class of emerging applications, will require **significant improvement in systems characteristics** (consolidation, integration, performance, power efficiency, cost/performance). These applications represent a **significant growth opportunity**.



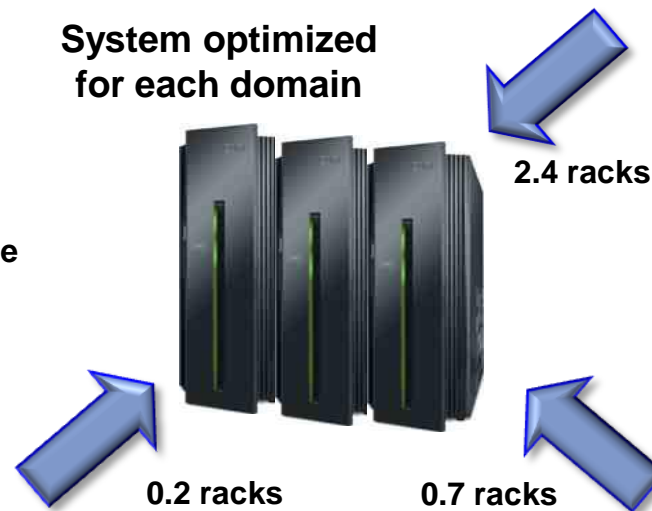
Transformational Hybrid Systems

- **Optimized systems** will lead to dramatic changes in the availability of computing. Simple illustrations of the magnitude of these changes can be inferred from the potential reduction in scale of large computer systems available nowadays.
 - The power of 1000x improvement
 - Beyond traditional system scaling through optimized systems
 - Assuming ability to exploit specialized functionality to achieve 3x-4x improvements every two years, at constant power



Google datacenter: ~70K servers
~700 Tops (compute only)

System optimized
for each domain



JPMC (JP Morgan Chase) Compute
Backbone datacenter
(~ 8K servers, 17 racks, 80 Tops)

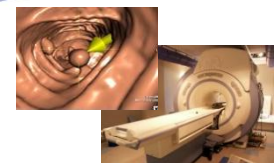
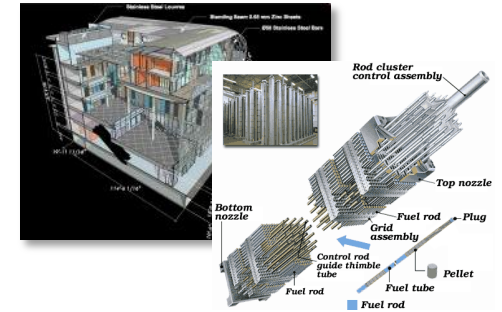
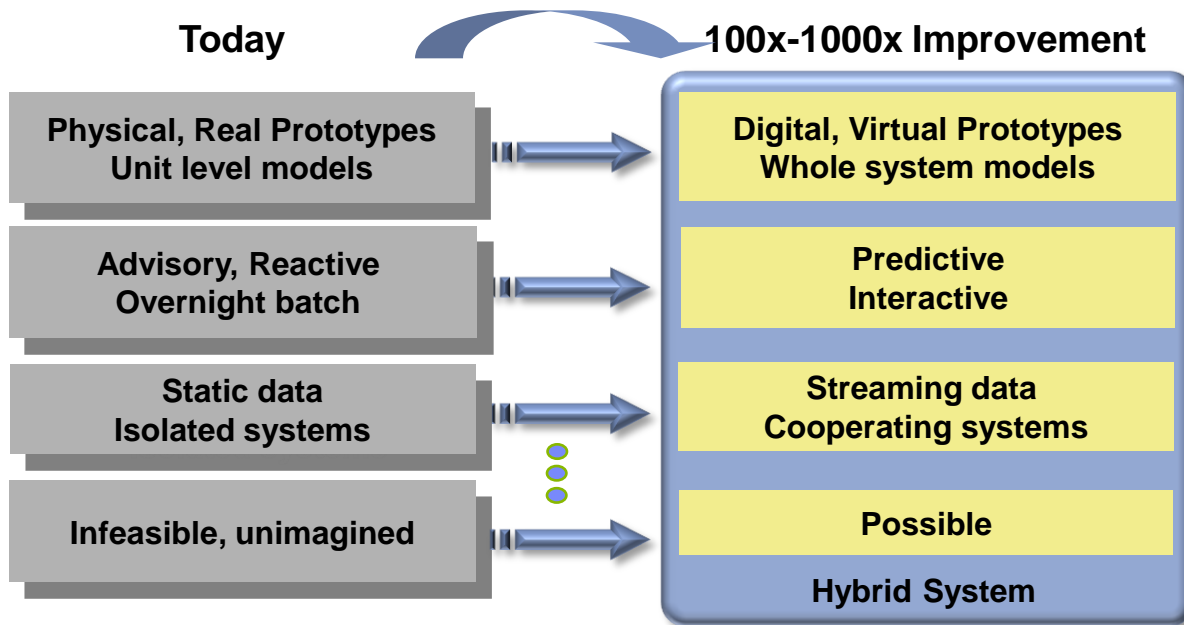


Roadrunner – 1.1 PF
(fastest supercomputer)



Transformational Hybrid Systems

- **Business and industries will be transformed over time by an optimized Hybrid System architecture**, as it enables substantially improved system characteristics.

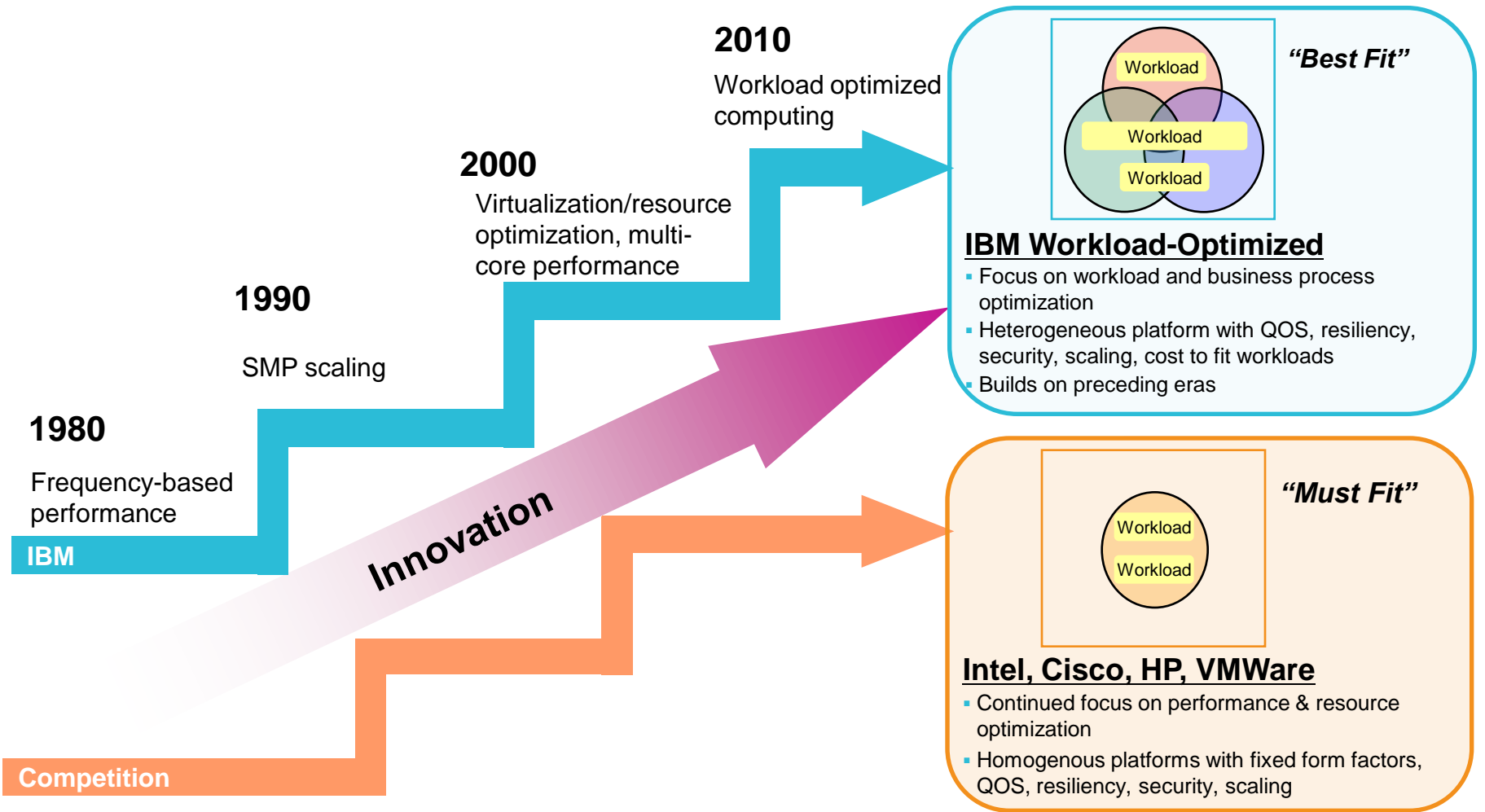


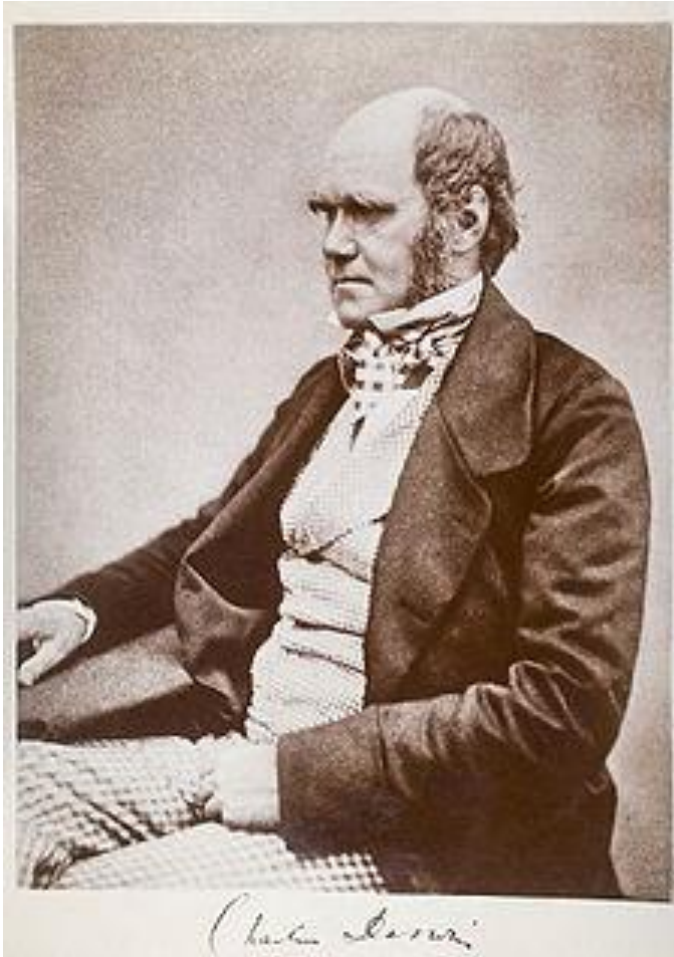
Examples of potential business transformations

- Extend life of nuclear reactor through modeling of aging characteristics
- Reduce cost in automotive/aircraft industry through whole system modeling
- Simulation of entire building for fire protection
- Chip development through virtual fab
- Financial batch processing becomes interactive
-

Setting an Industry Agenda

- Enablers of setting new agenda with purpose- or workload optimized systems





“It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change.”

- Charles Darwin