Cloud Computing, Grids, and the coming IT Cambrian Explosion

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The Internet: Industri → Knowledge Economy

Internet Evolution - 1996

Information

Communications

World Wide Web
e-business

Networking

e-business = Web + IT

Industrial Strength

Database

Transactions

Systems Mgmt

Scalability

Availability

Security

Universal Connectivity

Standards

TCP/IP

HTML

SSL

GUIs

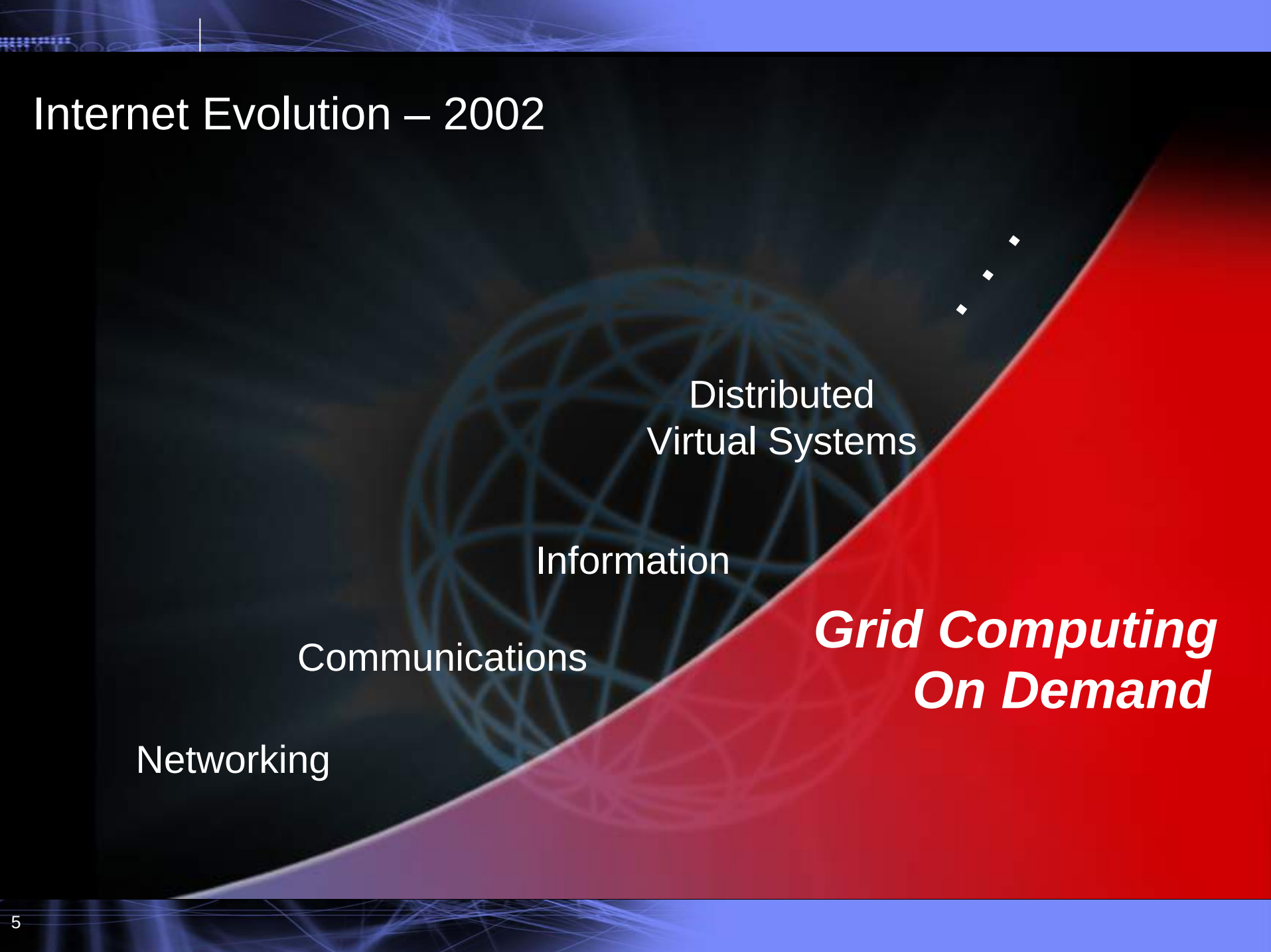
HTTP

Browsers

Java

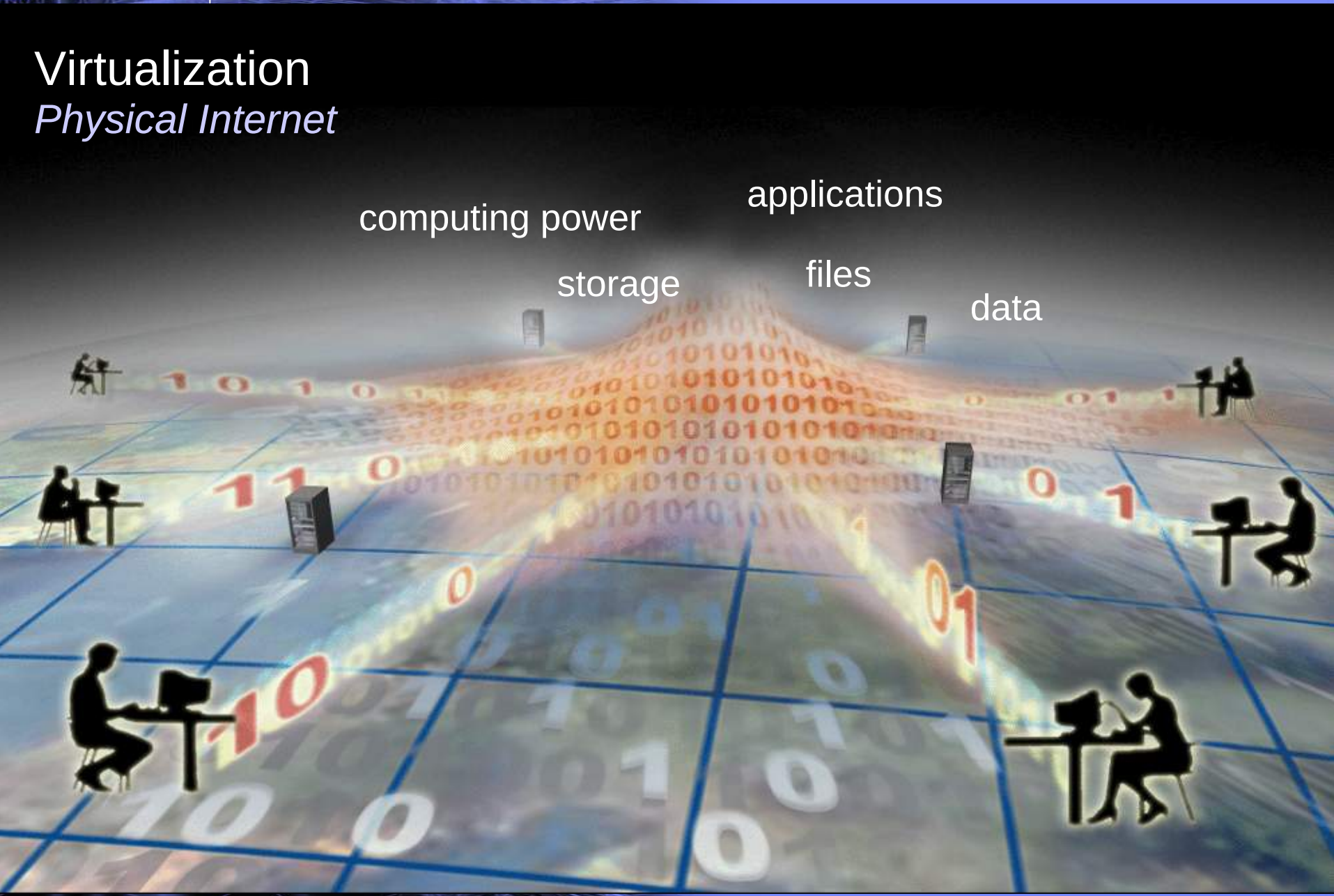
Web Servers

Internet Evolution – 2002



Virtualization

Physical Internet



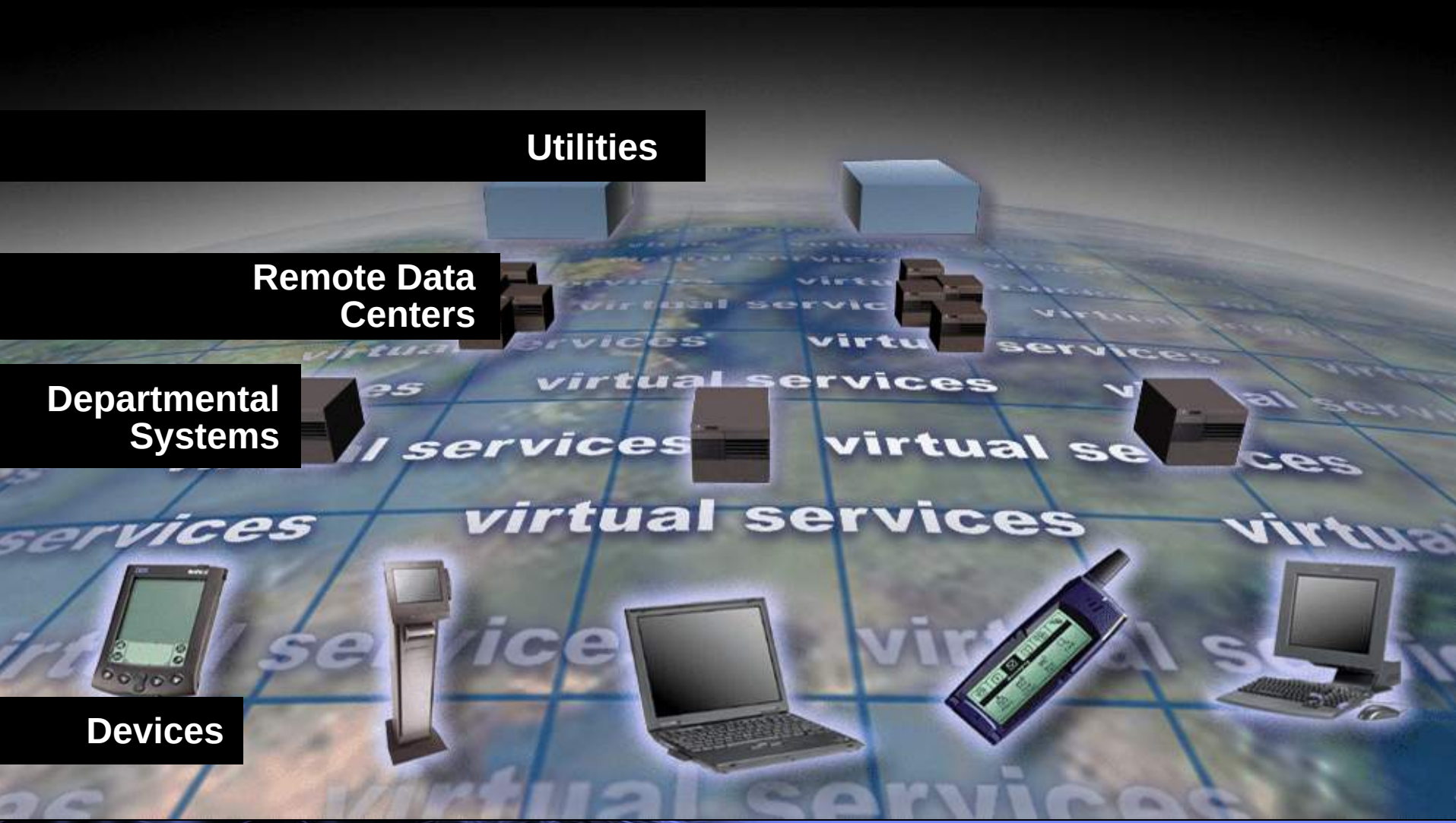
Virtualization: Grid Computing

Accessing and Sharing Resources over the Internet, or Private Intranets, based on Open Protocols

IT Merges with the Physical World

Pervasive Computing

Virtual Access to Computing



Internet Evolution – 2008

Massive Scalability
Services, Information, Devices

Distributed
Virtual Systems

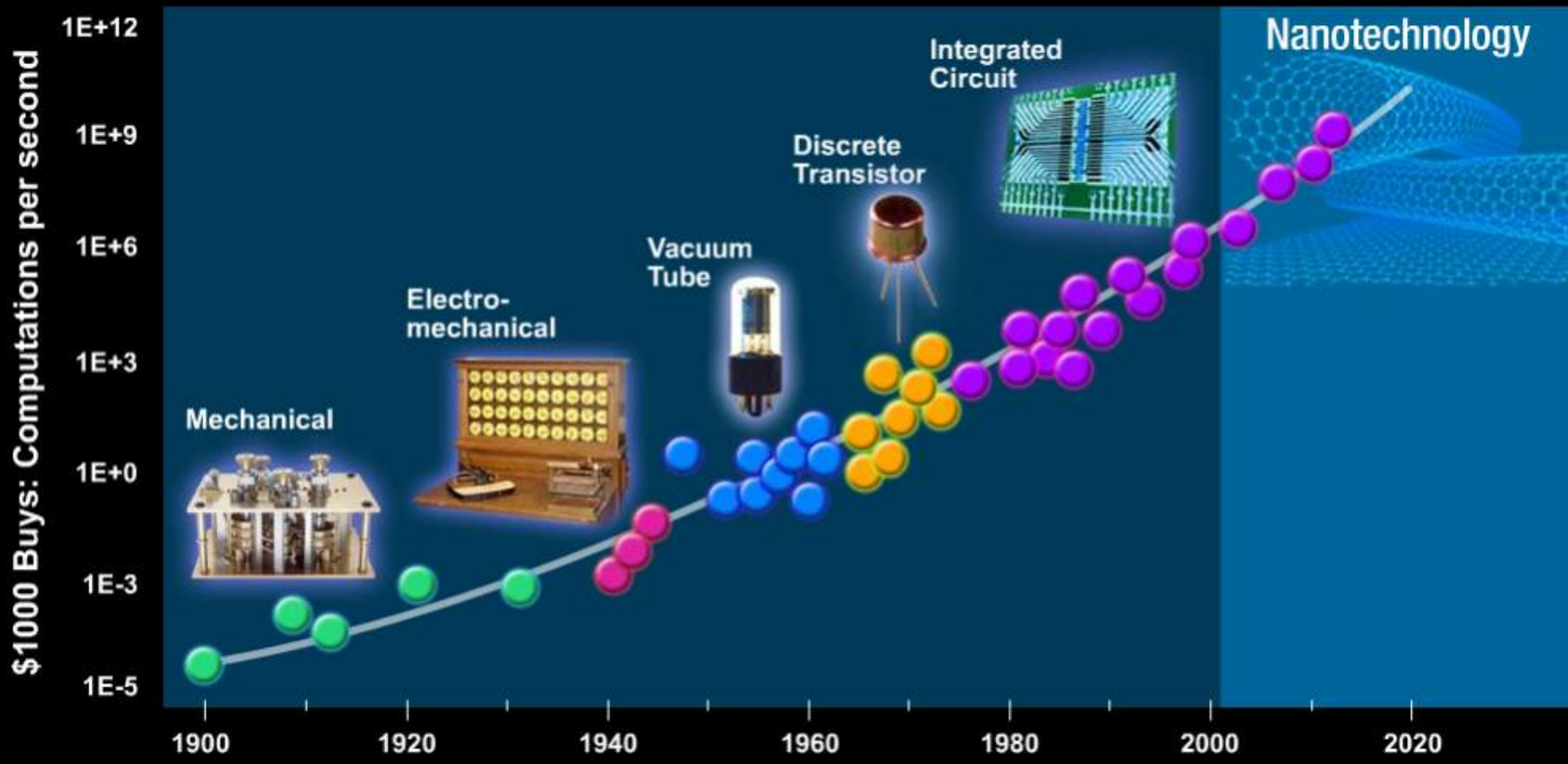
Information

Communications

Networking

Cloud Computing
New Enterprise Data Center

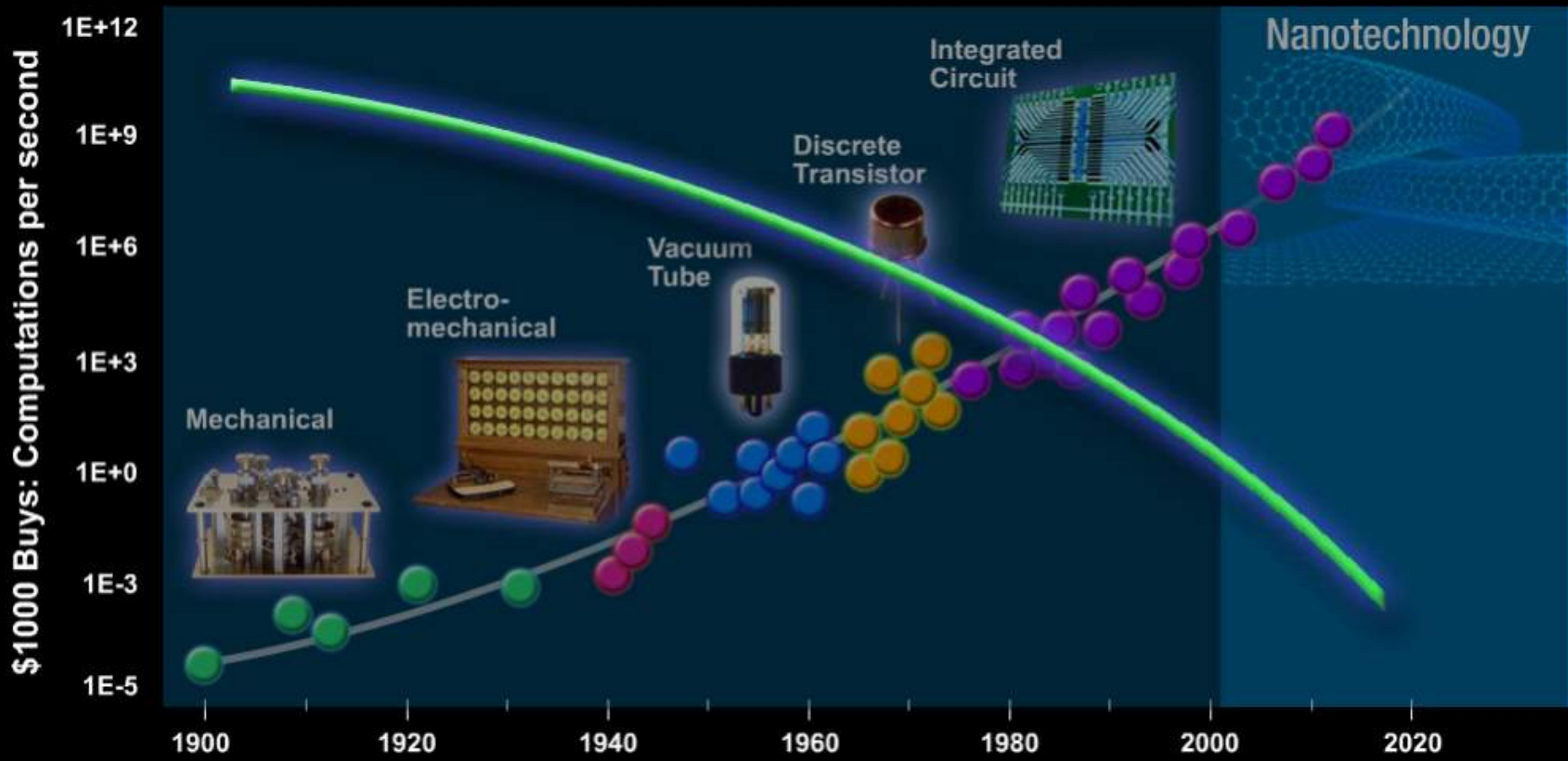
Accelerating Advances in Information Technologies



Source: Kurzweil 1999 – Moravec 1998

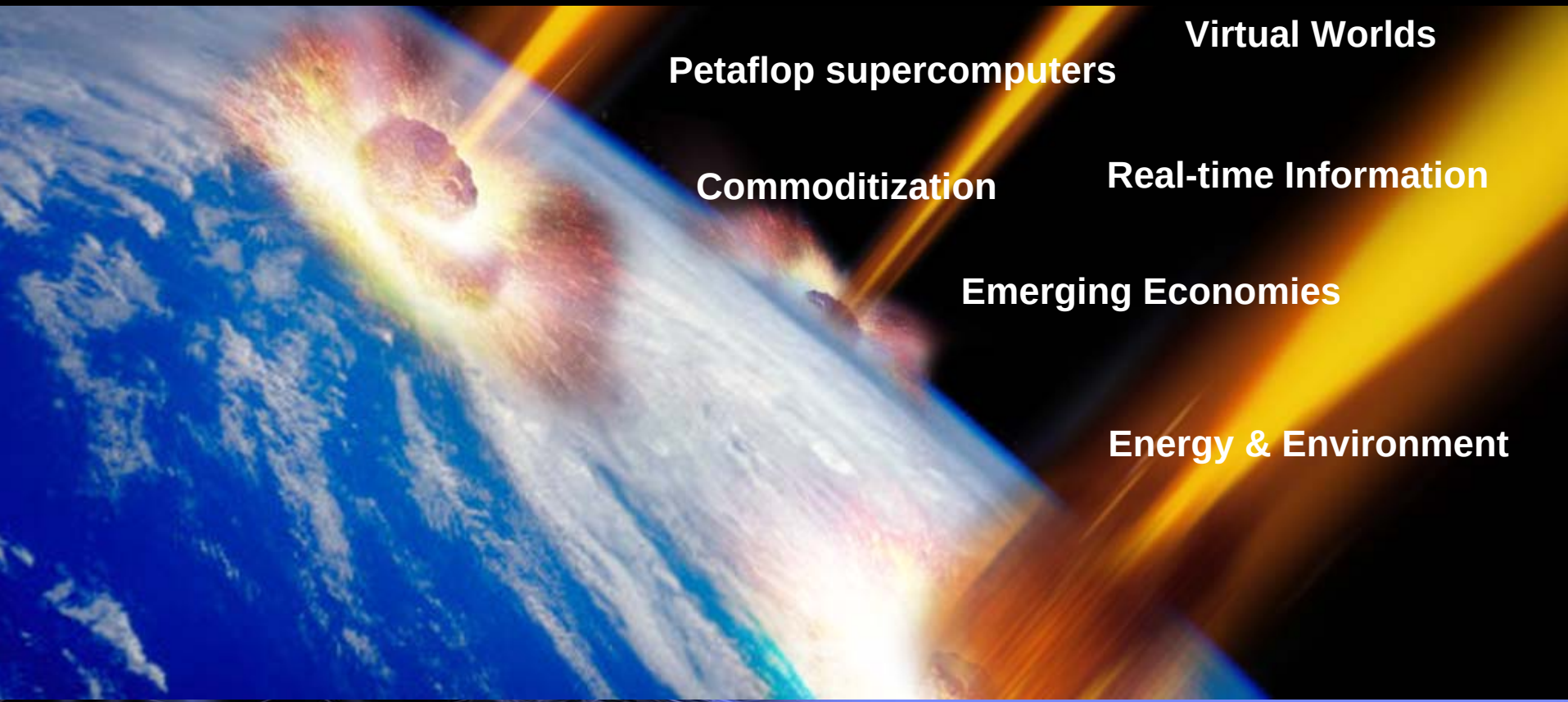
Accelerating Advances in Information Technologies

Driving Costs Steadily Downward



Source: Kurzweil 1999 – Moravec 1998

A Stream of Disruptive Innovations

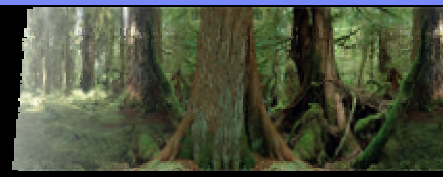


Cambrian Explosions

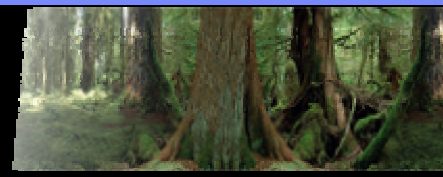
Massive Scalability, Rich Diversity

Cambrian Explosions

Business and Consumer Services

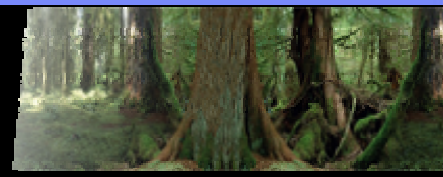


Real-time Information



Cambrian Explosions

Devices, Sensors, etc

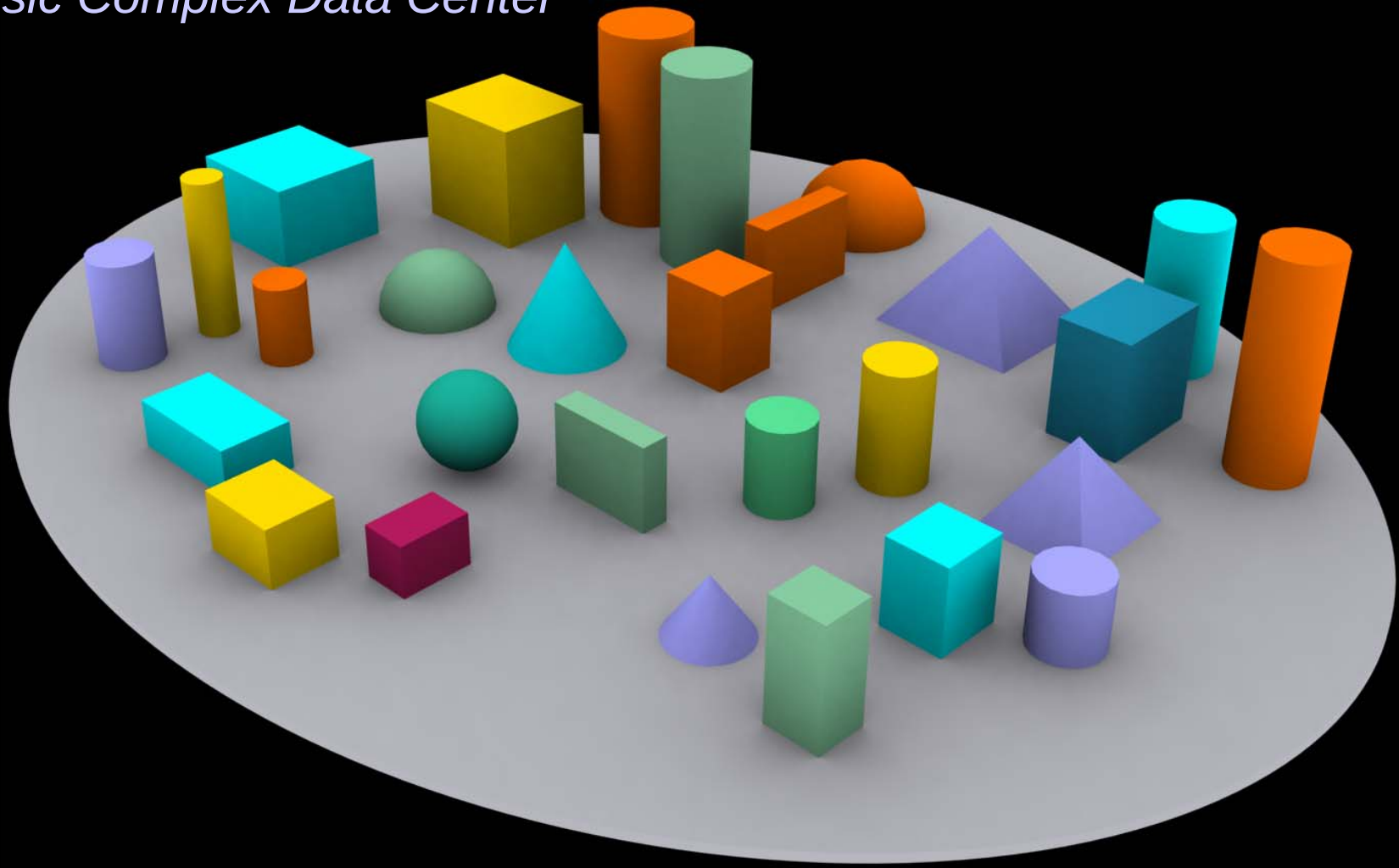


Cambrian Explosions

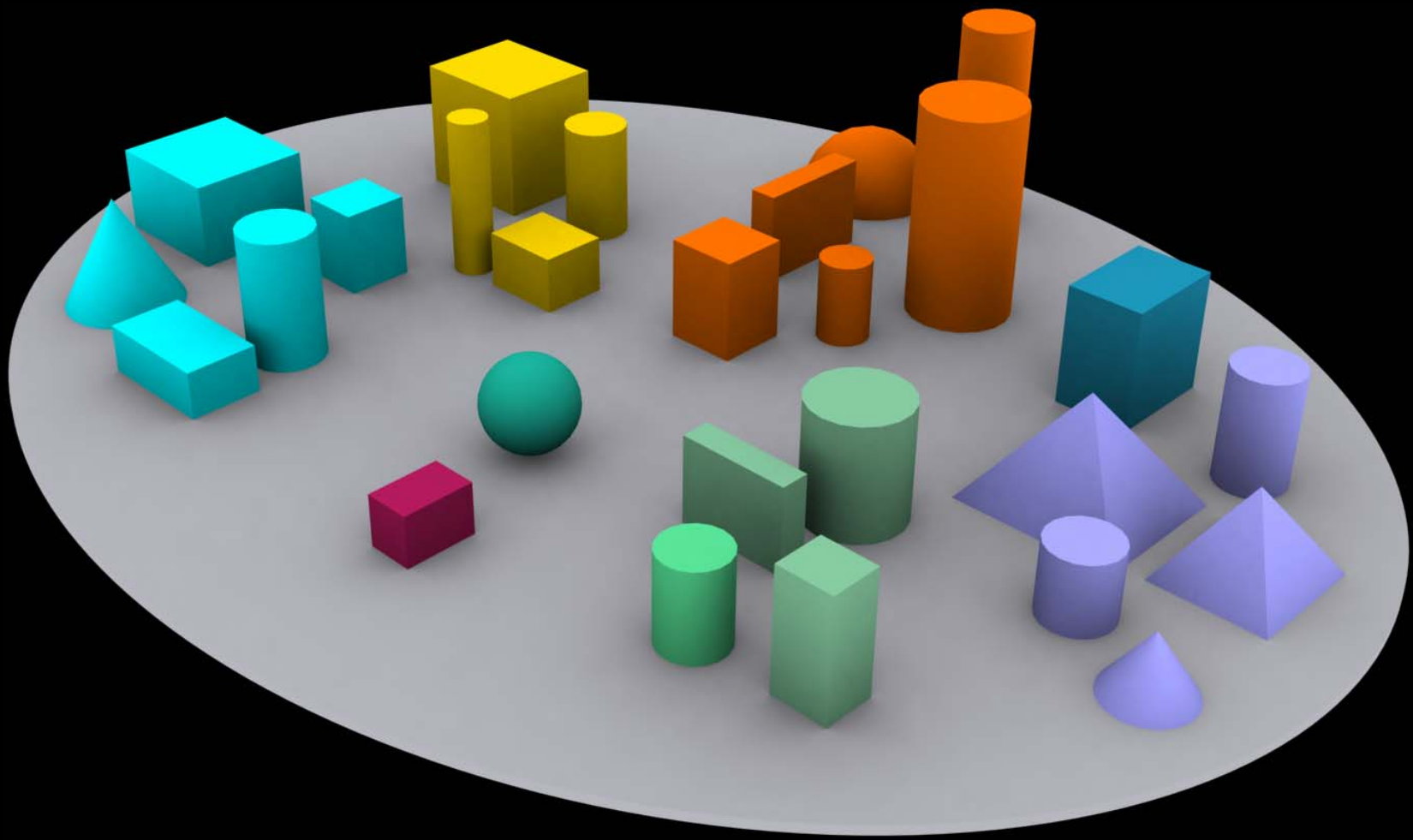
New Enterprise Data Centers

The IT Complexity Crisis

Classic Complex Data Center



Data Center “Ensemble” Approach To IT Simplification



Ensembles

Mainframe service

SAP application service

Hybrid service

Database service

Storage backup, archive… service

WebSphere service

x86 service

File system service

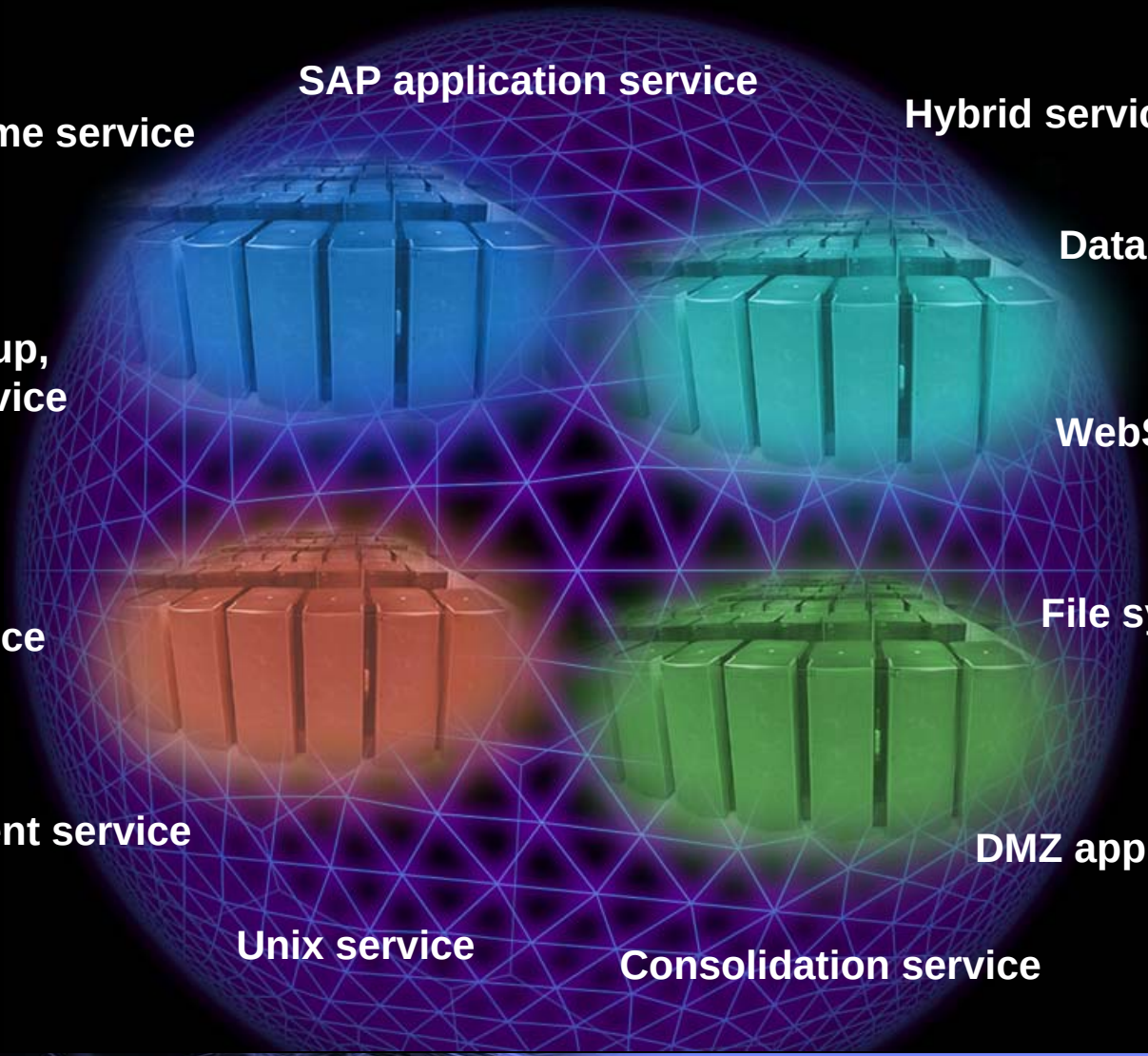
Virtual Client service

DMZ appliance service

Unix service

Consolidation service

Virtualized, Federated Ensembles – SOA/Grid Protocols



New Enterprise Data Center - Blue Cloud

Critical Requirements

Flexible, Adaptable Architectural Frameworks

Autonomic Computing

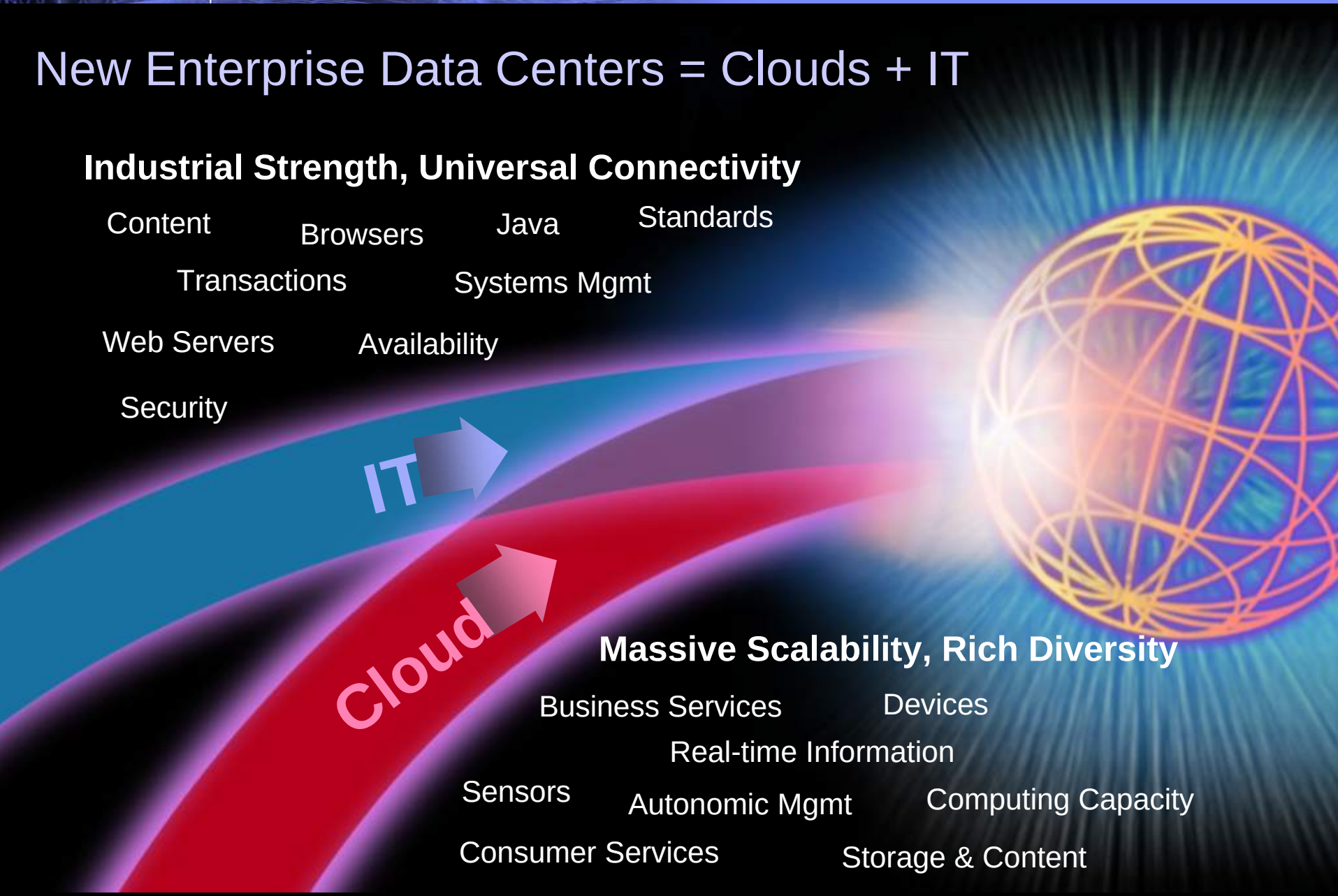
Self-protecting

Self-optimizing

Self-healing

Self-configuring

New Enterprise Data Centers = Clouds + IT



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