

Almaden Research Center



***Services-- The Next Major Frontier
for Research & Innovation***

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IBM Service Science Research

Agenda

- **Service Industry Growth**
- **IT Industry focus shift from Product to Services**
- **IT/Services --- Major opportunities**
- **SRII:**
 - Objective
 - Strategy
 - Road map
- **Open discussion**

The Service Revolution

- 1900 –30% employed in the U.S. service sector
- 1950 –62%
- Today –83%

Service Sector as Percent of GDP

- United States = 79%
- Japan = 72%
- European Union = 71%
- Taiwan = 71%
- Singapore = 67%
- * China = 40%
(source CIA Factbook)

Service Industry Growth

Labor- Intensive

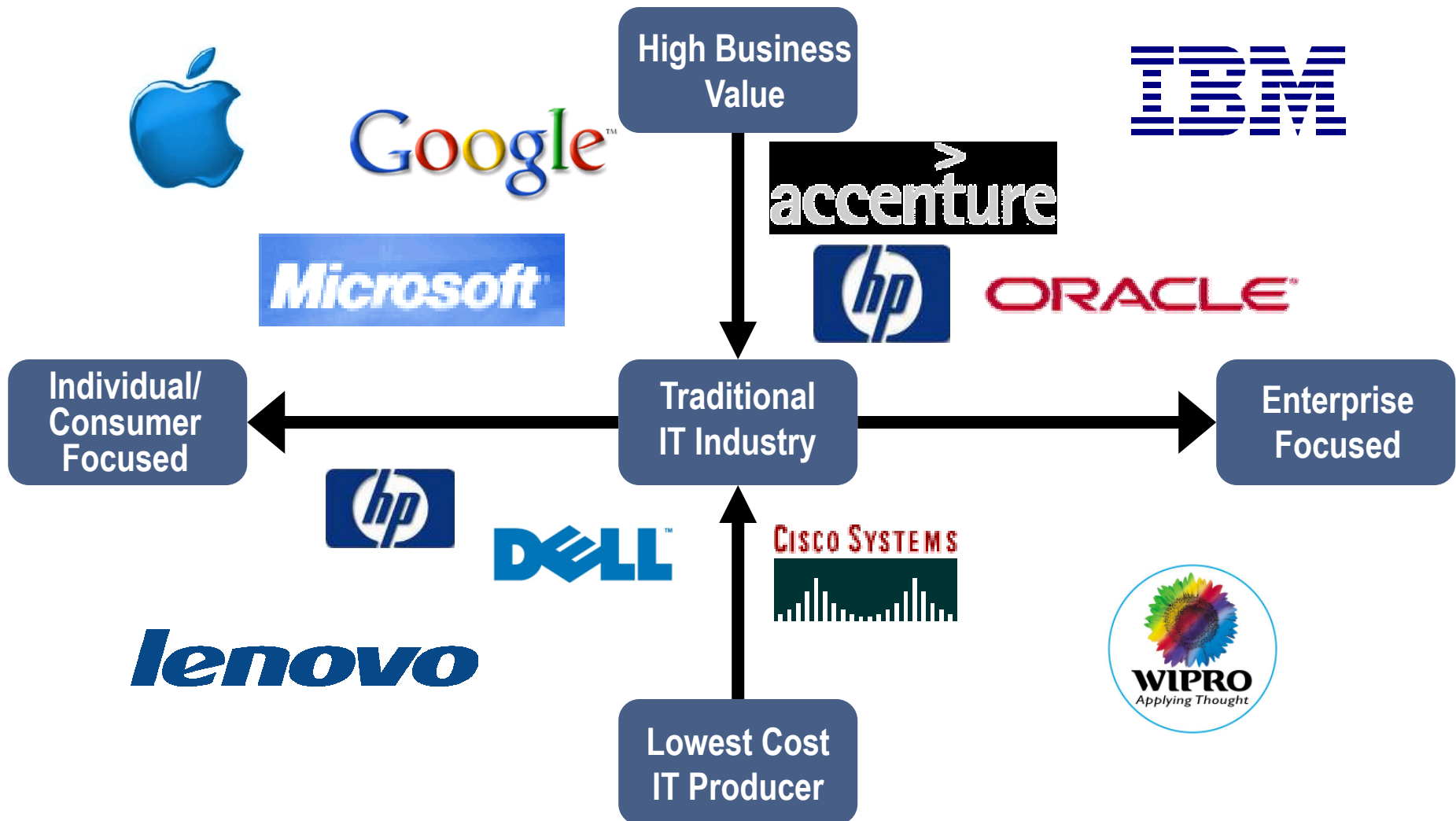
Technology- Intensive

Knowledge- Intensive

IT has been the major driver of the **Service Revolution**

Services Research will drive future **IT Innovation & Business Productivity**

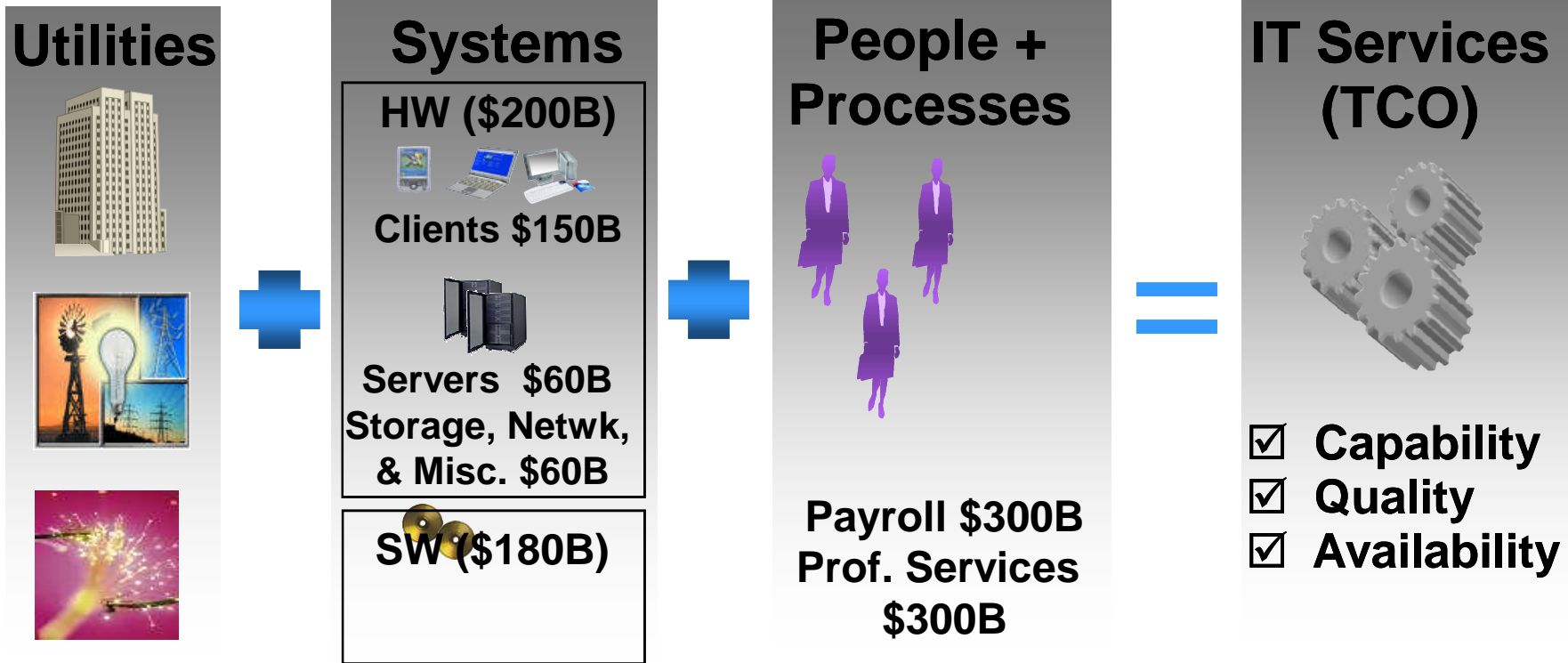
IT industry focus shift from Product to Services



IT / Services

Major Opportunities

IT – Total Cost of Ownership

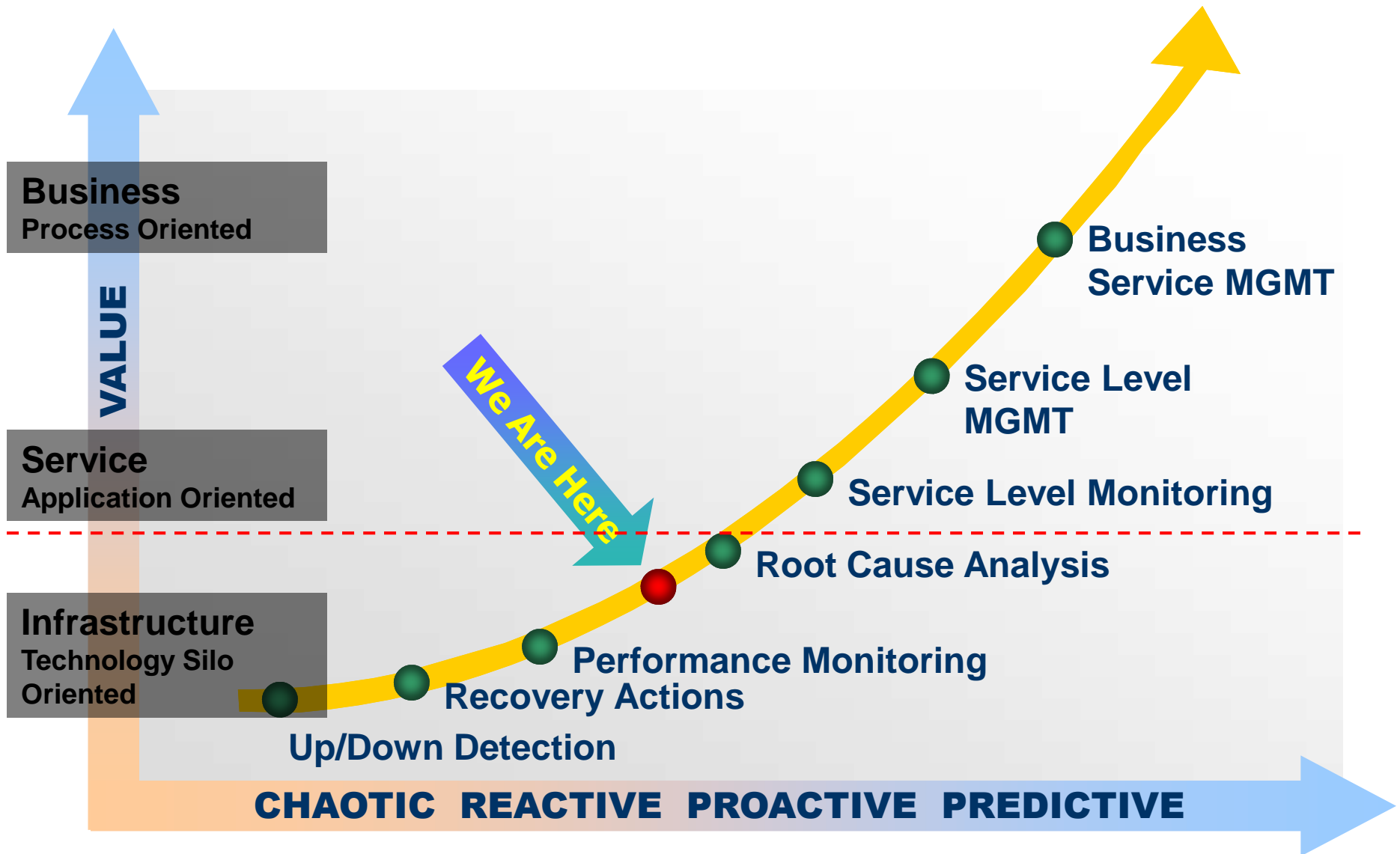


$$\text{\$50B} + \text{\$450B} + \text{\$600B} = \sim\text{\$1.1T}$$

(total annual world-wide IT expenditures are ~ \$1.1T -- US accounts for ~50% of total)

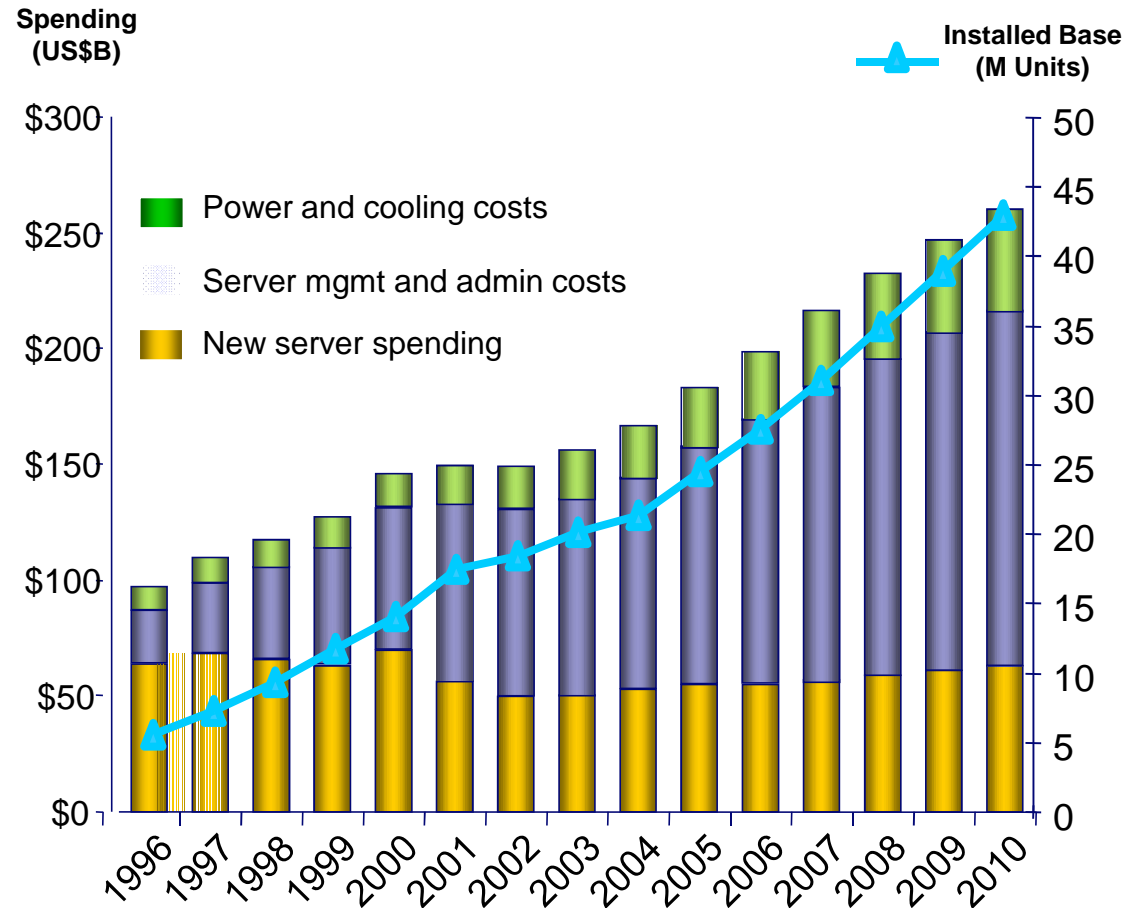
Source: Intel, Gartner, IDC

End to End IT Services



Service Management demands innovative solutions

- **Costs to manage systems has doubled since 2000**
- **Costs to power and cool systems has doubled since 2000**
- **Devices accessing data over networks doubling every 2.5 years**
- **Bandwidth consumed doubling every 1.5 years**
- **Data Doubling every 18 months¹**
- **Server processing capacity doubling every 3 years²**
- **10G Ethernet ports tripling over the next 5 years**

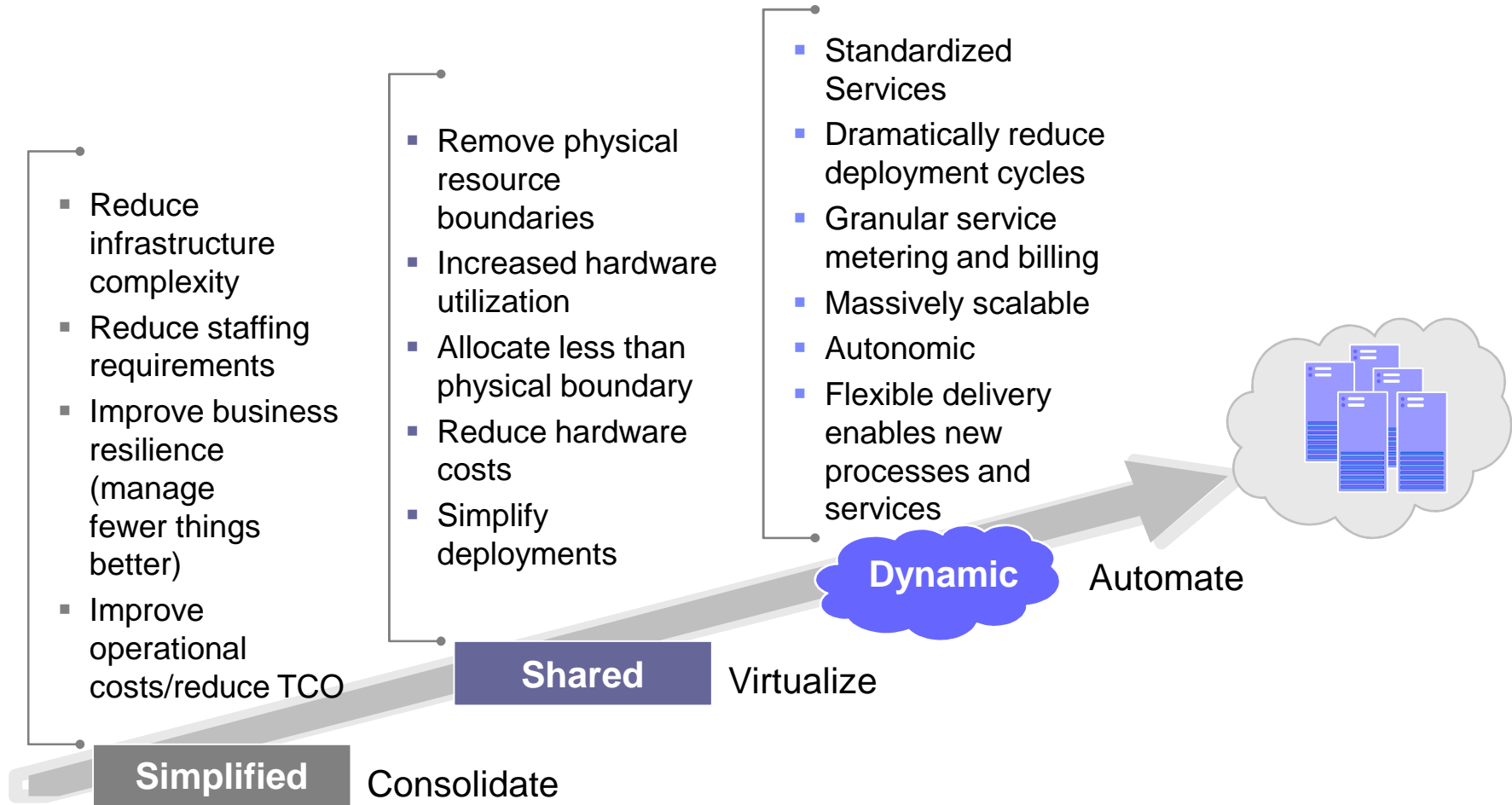


Source: IDC, 2008

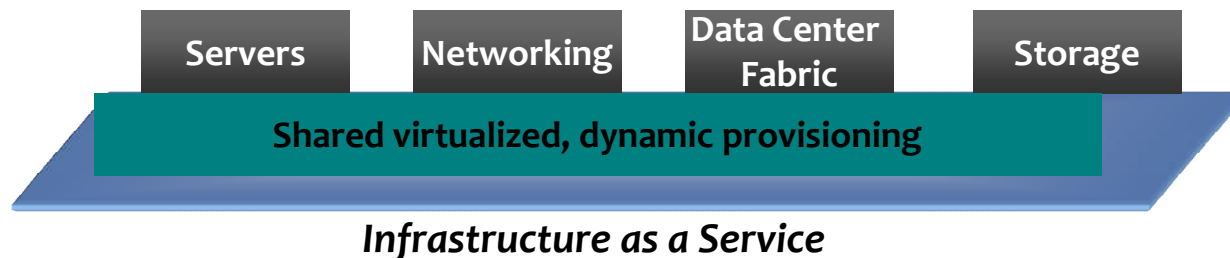
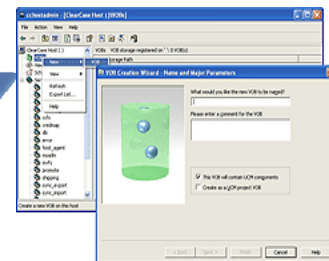
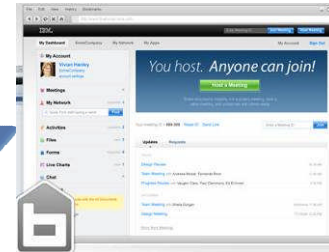
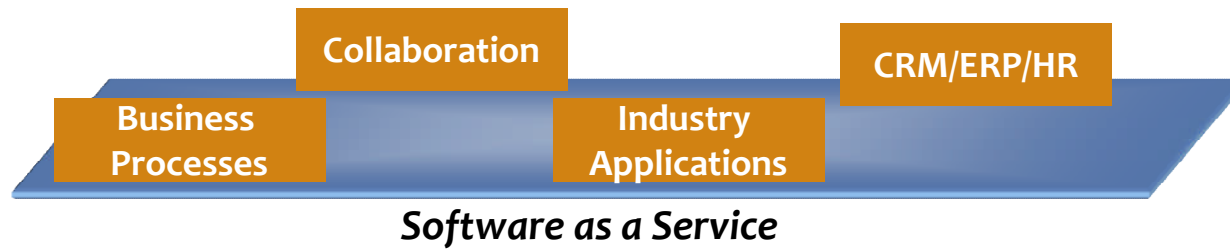
¹WW TB Capacity Shipped on Enterprise Disk Storage Systems

²Server processing consumption doubles every 3 years

IT Transformation Roadmap

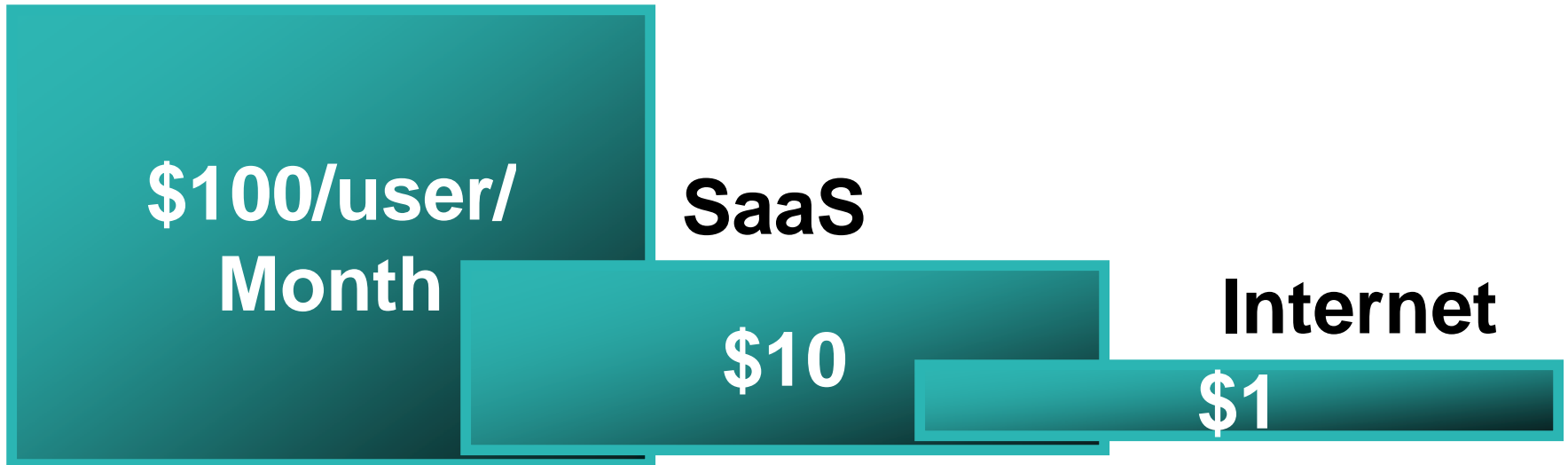


The layers of IT-as-a -Service



Moore's Law for Software

Traditional





Data Explosion

Transactions Per Day

NYSE
10M

VISA
100M

Google
200M

Mobile
????

Data Explosion

Large spectrum of data

Structured data

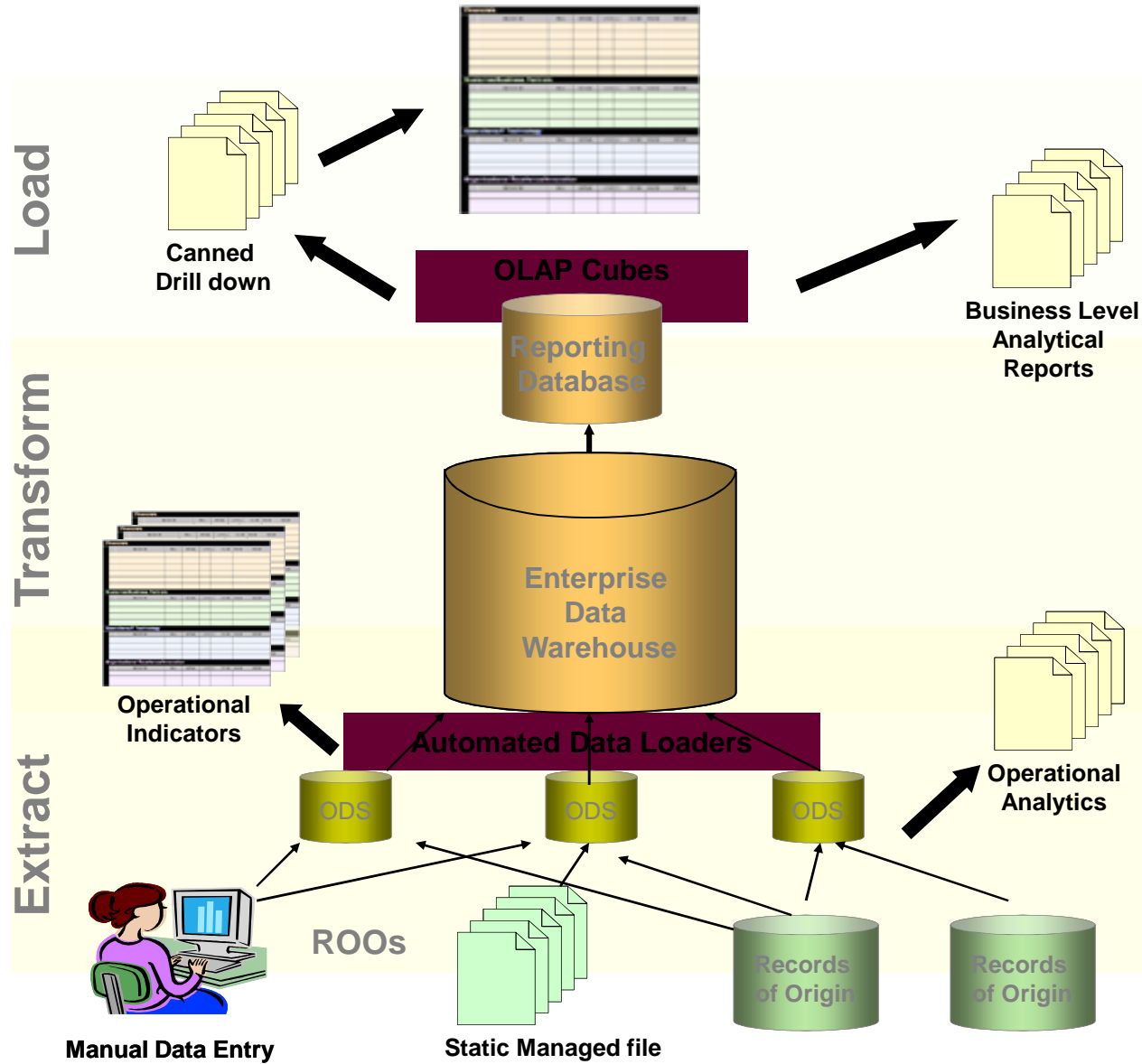
Unstructured data



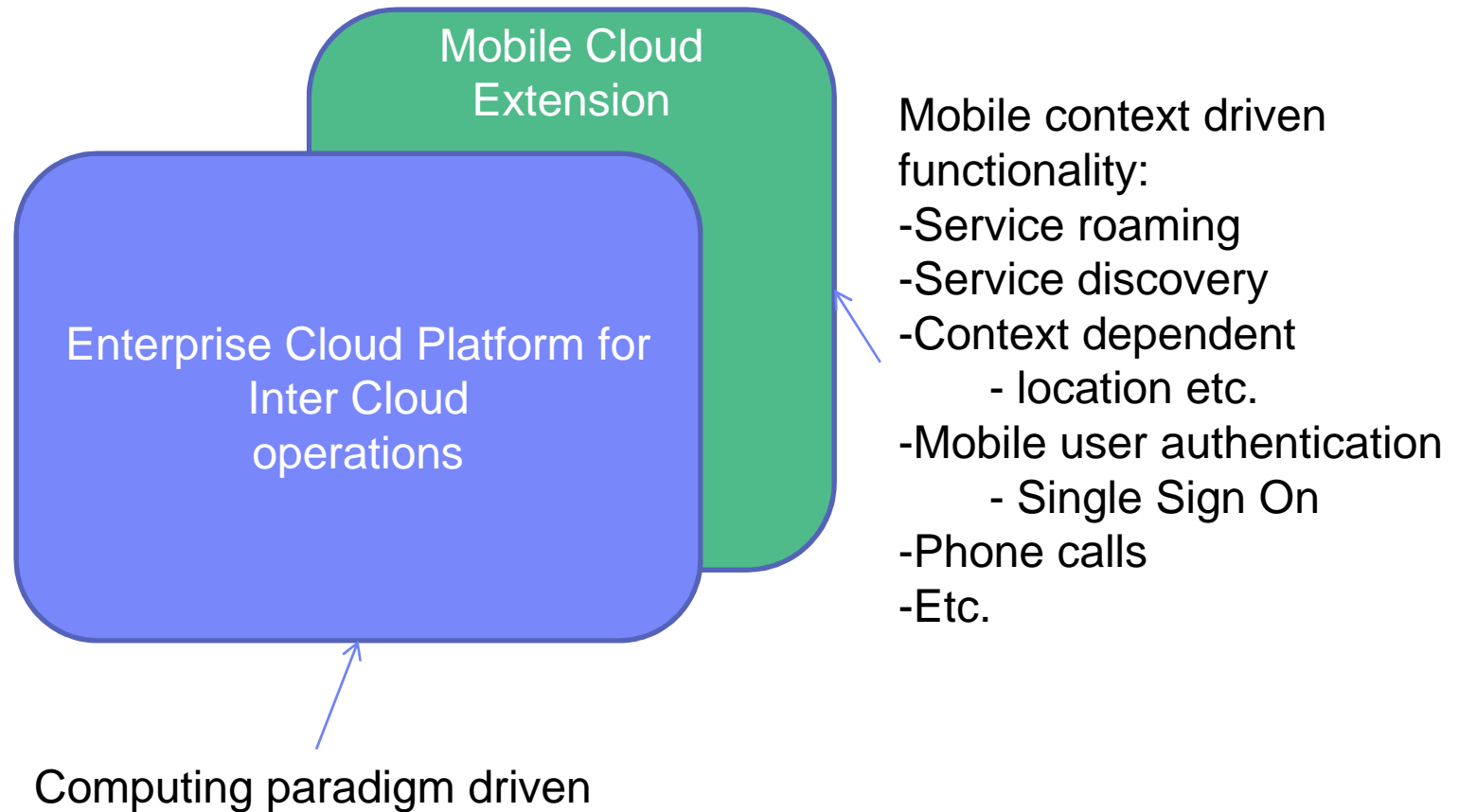
- High usefulness density**
- Simple analytics**
- Well defined event**
- High speed (million events per sec)**
- Very low latency**

- Lower usefulness density**
- Complex analytics**
- Event needs to be detected**
- High volume (TB/sec)**
- Low latency**

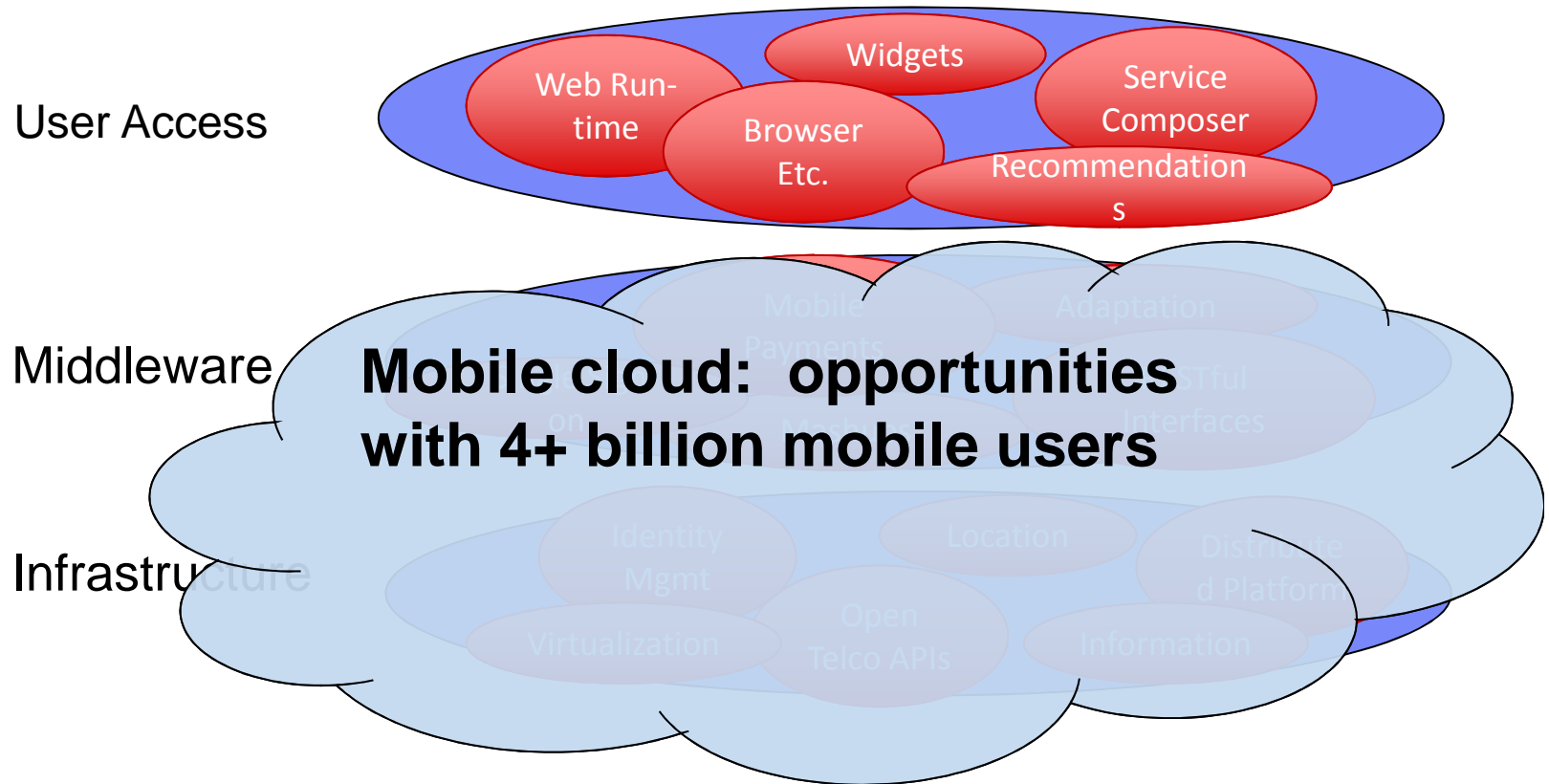
Business Intelligence/Analytics



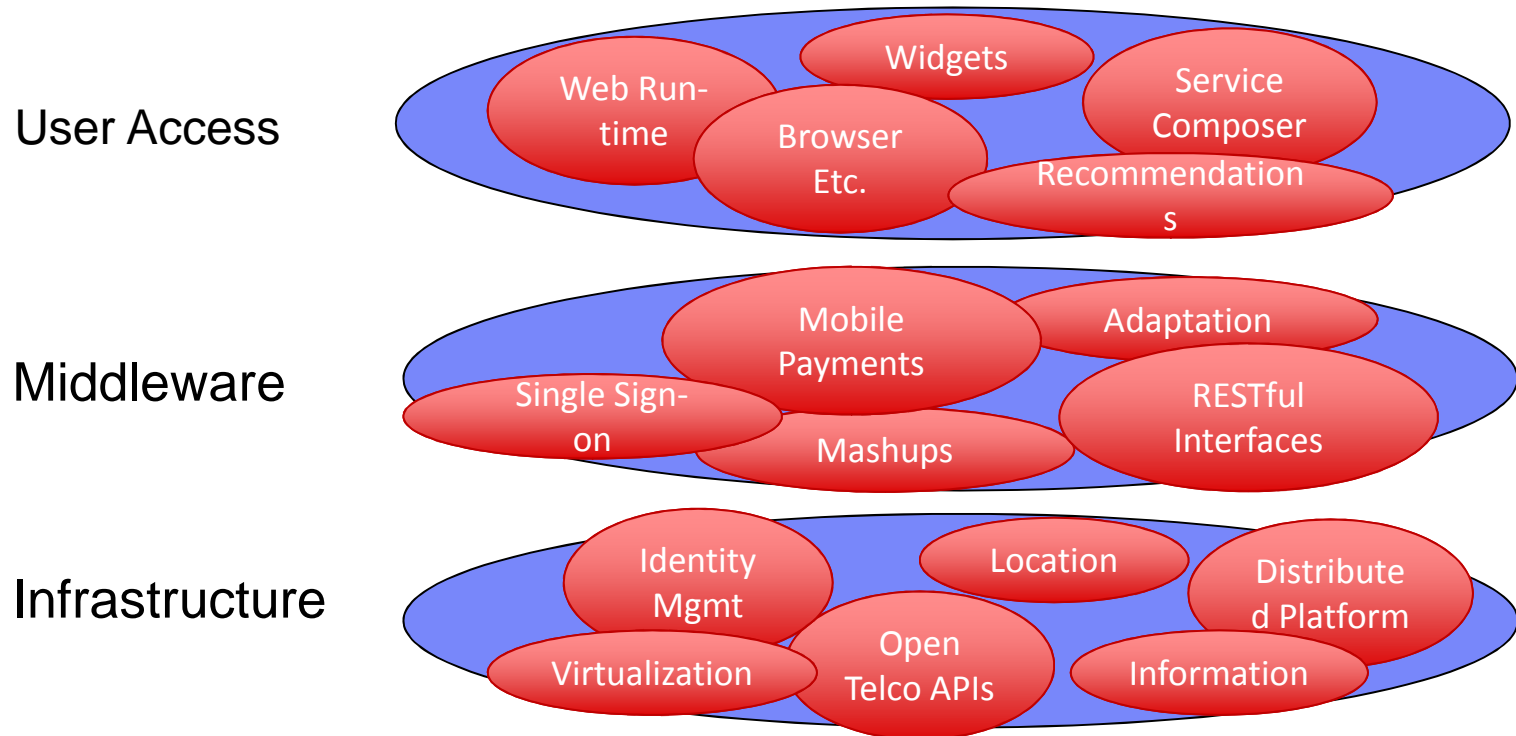
Mobile Cloud in this SIG = Enterprise Cloud with mobile extension



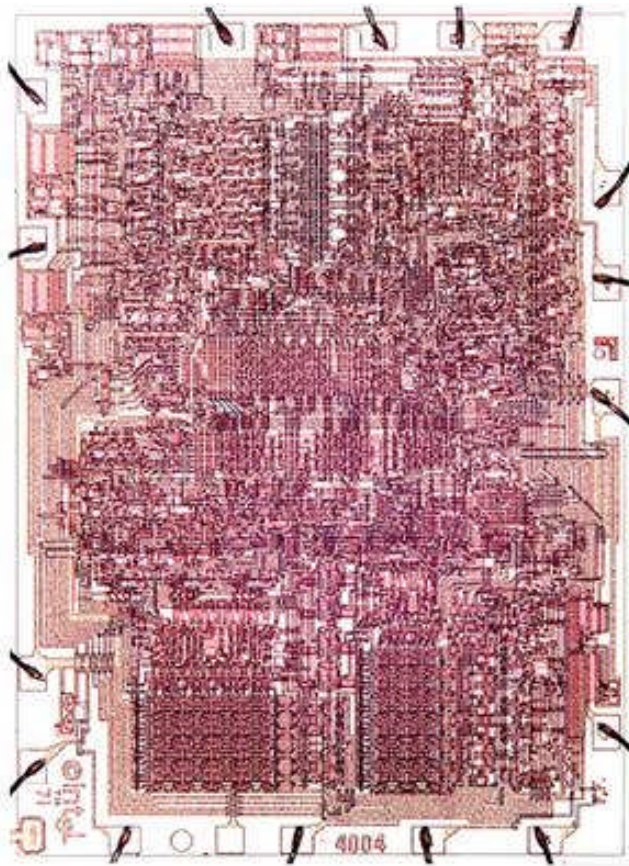
Mobile Cloud: Technological Enablers



Mobile Cloud: Technological Enablers

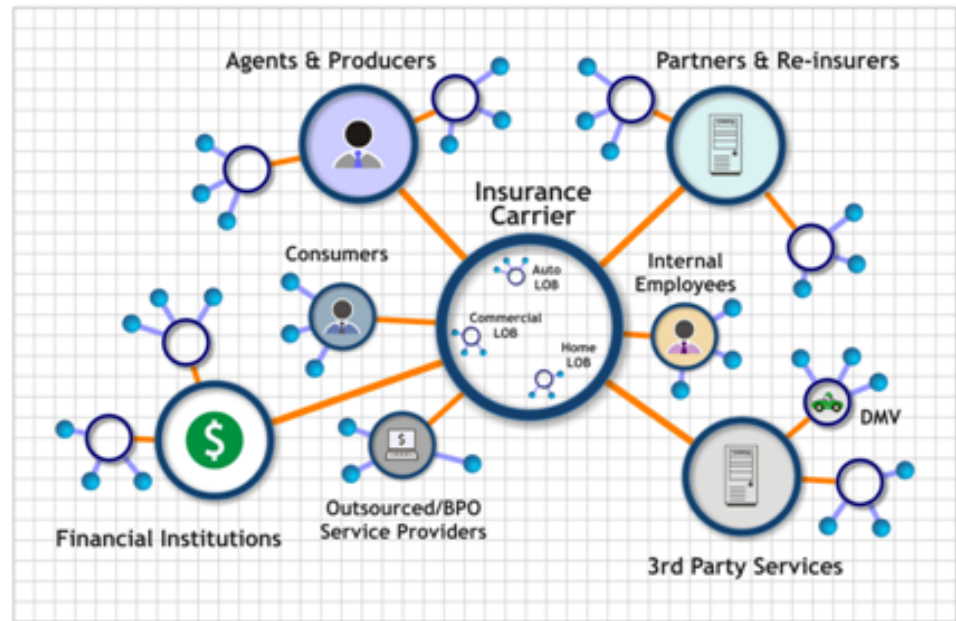


Someday, a CAD tool and a new Moore's Law ...
but first, systematic mapping and understanding mechanisms



Computational System

More transistors, more powerful
Requires investment roadmap



Service System/Network

1. People
2. Technology
3. Shared Information
4. Organizations

connected by value propositions

The World is Getting Smarter – New Services, often delivered on a cloud infrastructure, will be key components of the Smarter Planet Revolution



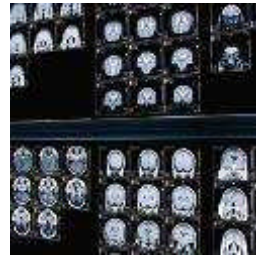
Smart traffic systems



Intelligent oil field technologies



Smart food systems



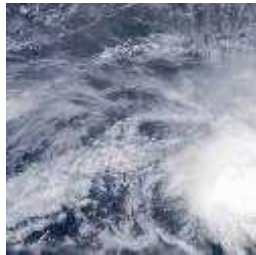
Smart healthcare



Smart energy grids



Smart retail



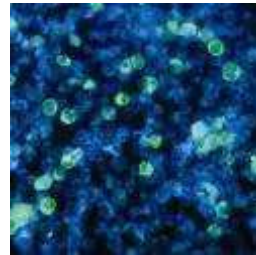
Smart water management



Smart supply chains



Smart countries



Smart weather



Smart regions



Smart cities

SRII Objective/Strategy/Road map

Service Research & Innovation Institute (SRII)

- **Mission:** SRII, a non-profit organization, is the world's leading professional organization for the advancement of **Service Science Research** required to drive **future IT Innovations, Business Productivity** and quality for the industry, Organizations and Society at large
- **SRII Lead by:**
- **IT Industry Leaders:** IBM, HP, Microsoft, Oracle, SAP, Cisco, Xerox..etc
- **In partnership with:**
- **Global Research Organizations**
- **Professional Societies**
- **Major Universities**

SRII Strategy

- **“Services” Scope:**
 - Major Service Industry Verticals
 - Major Domains/Disciplines
- **Build focused SIGs around major Service verticals and Service Domains**
- **Align existing Service Research Organizations/SIGs under SRII Umbrella**
- **Establish SRII Regional Chapters**
- **University programs for Service Science Research & Curriculum development**
- **Membership Model: Industry (large, medium, small), Institutions and Individual professionals**

Service Industry Verticals

- **Health care**
- **Financial**
- **Energy**
- **Education**
- **Government**
- **Telecom**
- **Transportation**
- **Retail**
- **Etc..**

Major Domains/Disciplines

- **Technology (Architecture/Platform, Hardware, Software, Infrastructure)**
- **Cloud Computing**
- **Information Management**
- **Professional Services**
- **Service Business--Process/Tools/Models..**
- **Service Operation management--- Delivery/Quality**
- **Service Management/Leadership**
- **Service Marketing**
- **Human Factor Engineering/ Skill sets**

SRII partnership with Global Research/Professional Organizations

- **ACM:** <http://www.acm.org/>
- **AMA:** <http://www.marketingpower.com/>
- **CSIRO:** <http://www.csiro.au/>
- **Fraunhofer:** <http://www.fraunhofer.de/en/>
- **IEEE:** <http://www.ieee.org/>
- **INFORMS:** <http://www.informs.org/>
- **ITRI:** <http://www.informs.org/>
- **NCIIA:** <http://nciia.org/>
- **NESSI:** <http://www.nessi-europe.com/Nessi/>
- **THESEUS:** <http://theseus-programm.de/>
- **TIVIT:** <http://www.tivit.fi/en/company>
- **VTT:** <http://www.vtt.fi/index.jsp>

SRII & University Programs

- **Service Research Agenda for major University**
- **MS Degree in Service Science (interdisciplinary)**
- **Service Science courses as electives for Undergraduate degrees**

Special Interest Group (SIG)

- **SIG Name:**
- **Background:**
- **SIG Lead/SIG members:**
- **Define Strategy: “what” & “how”**
- **Define Roadmap/Deliverables/Goals:**
 - “when” & “measurement metrics”
- **Define SIG Communications Process/Tools:**
 - Meetings, Web site, Research papers, Conferences...
- **Define SIG Budget/Sponsorship:**

SRII Regional Chapters:

- **India**
- **Taiwan**
- **Costa Rica**
- **Finland**
- **Spain**
- **Singapore**
- **Thailand**
- **Vietnam**
- **Philippines**

SRII Goals/Objectives:

Each SRII SIG will have specific objective but overall SRII goals/objectives will include the following:

- **Services Definition/Models/ Standards**
- **Service Business Process/Tools/Models**
- **Architecture/Technology Platforms for major Service Verticals**
- **Service Research papers/ Journals/ Conferences/ Case studies**
- **University Service Research/Curriculum Development**

Join the SRII Community

www.thesrii.org

SRII Global Leadership Conference

January 25-27, 2010

**Ritz Carlton Hotel
Half Moon Bay, CA**

Open Discussion

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www.thesrii.org



Thank
YOU

