

What is Cloud Computing?

Irving Wladawsky-Berger

What is Cloud Computing?

- The evolution of the Internet
- A new model of computing
- The mass customization of service consumption
- The industrialization of service delivery
- . . .

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The definition up top was established by the NII – but really applies to all institutions around the world. Advancing technology enables many things, but even more than pure technology and invention, the real measure of innovation is the ability to transform technology into products, services and solutions that transform institutions – and bring them a new value proposition.

- From innovation, entirely new industries and markets are born . . . entirely new forms of business value are created.

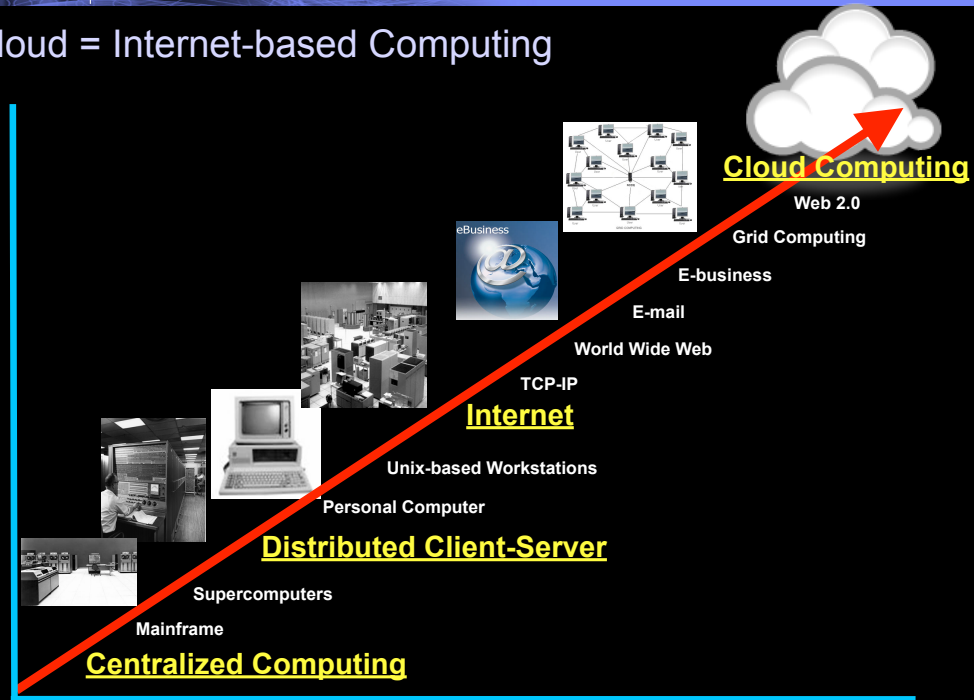
No single nation – or company – can expect to innovate in isolation. That's because the global adoption of the internet, as well as advanced pervasive technologies, have stripped away the traditional barriers to innovation --- such as proximity of natural resources, geographic constraints, and access to both information and insight.

All of this requires a significant shift in thinking.

We must embrace a dynamic, fast-paced global economy in which the very nature of innovation itself has changed in these four profound ways.

-- MORE --

Cloud = Internet-based Computing



Centralized Computing: 1960s -

Client-Server: 1980s -

Cloud: 2000s -

BEING DRIVEN BY THE GLOBAL ACCEPTANCE OF THE INTERNET

The Emergence of a New Model of Computing

- **Centralized Computing: 1960s -**
 - Optimized for sharing, industrial strength, systems management, . . .
 - Managed by central IT organization
 - Back office applications involving transactions, shared data bases, . . .
 - Mainframes, supercomputers, minicomputers, . . .
- **Client-Server: 1980s -**
 - Optimized for low costs, simplicity, flexibility,
 - Distributed management across multiple departments and organizations
 - Large numbers of PC based applications
 - PC-based clients and servers, Unix, Linux,
- **Cloud: 2000s -**
 - Optimized for massive scalability, distribution of services,
 - Managed by central IT organization, hybrid acquisition models
 - Supports huge numbers of mobile devices and sensors
 - Internet-based architecture

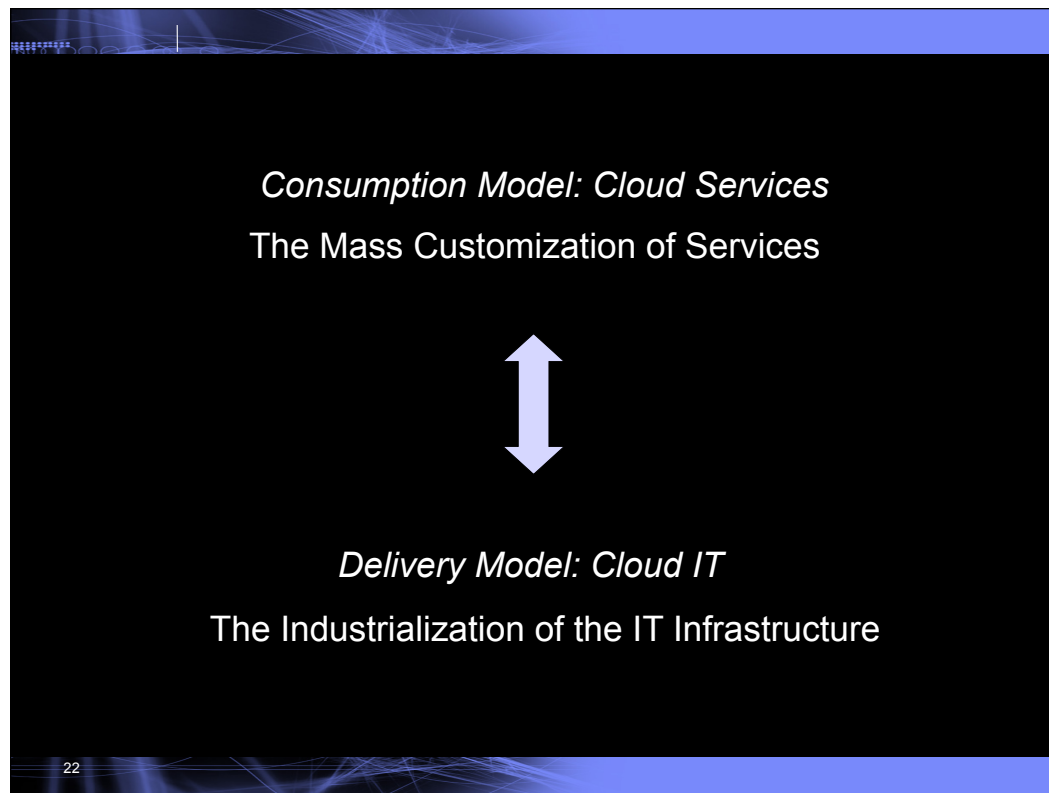
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From an economic standpoint, we're seeing innovation as the common thread woven into the fabric of more and more nations, as they tackle the challenges of an ever-changing world.

And with good reason. Economies everywhere have concluded that Innovation is the single greatest driver of competitive advantage today.

And markets being what they are, innovations that occur in the marketplace generate further innovations.

In the process, they give rise to new industries, they spur productivity and economic growth, fuel wealth-creation, create higher-paying jobs, and raise the standard of living for everyone.



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What is Cloud Computing?

Consumption model: focused on the overall end user experience

- Standardized service offerings
- Rapidly provisioned
- Flexibly priced
- Ease of access
- Self-service

Delivery model: focused on overall infrastructure management

- Virtualized resources
- Managed as a single large resource
- Delivering services with elastic scaling
- Economies of scale
- Deploy technology advances



Banking



IT



Retail

New Workloads → Massive Scalability, Quality of Experience

10X - 100X over the next decade

25% - 55% CGR for selected workloads

**Business, Consumer and
Government Services**

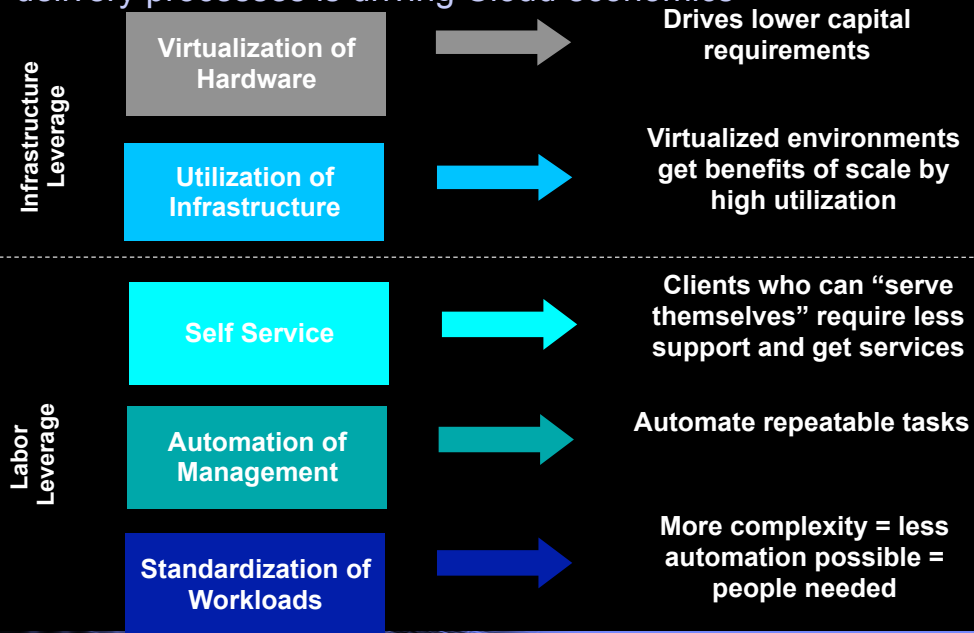
**Smart Applications,
Real-time Information**


**Social Networks, Visual
Immersive, Interactive Apps**

People, Devices, Sensors



Infrastructure, labor, and re-engineering of IT, business and delivery processes is driving Cloud economics





What is Cloud Computing?

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Society

Business

Technology