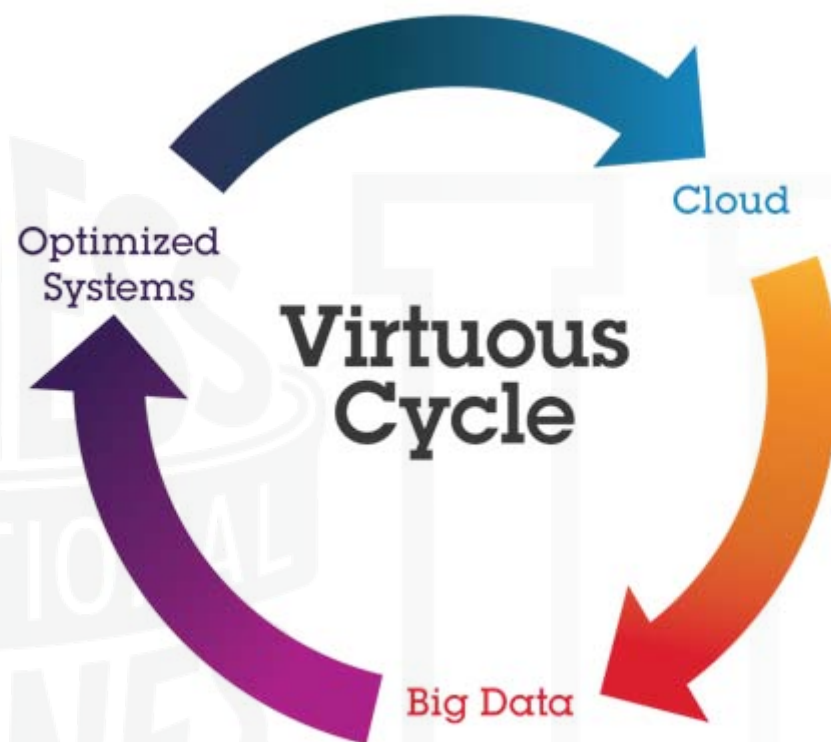


# Älykkäämpi IT

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*“Making the world work better”*





# The Planet is getting a lot Smarter ...

## INSTRUMENTED

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*Digital technologies (sensors and other monitoring instruments) are being embedded into every object, system and process.*

## INTELLIGENT

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*All the data generated by digital technology is providing intelligence to help us do things better, improving our responsiveness and our ability to predict and optimize for future events.*



## INTERCONNECTED


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*In the globalized, networked world, people, systems, objects and processes are connected, and they are communicating with one another in entirely new ways.*



### Banking


Industry leaders candidly discuss their new views on growth in the wake of recession, regulation and rebuilding reputations.

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### Communications

Traditional providers look beyond over-the-top to the cloud, and putting their most valuable untapped resource to better use.

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### Electronics, automotive, aerospace

Examining the common goal of using data to enhance product innovation, develop solutions and improve customer loyalty.

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### Energy and utilities


Modernization to handle smart grids, water concerns and other priorities will require collaboration and customer engagement.

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### Government

New rules for the "new normal" of globalization, demographic change, environmental issues, technology and occasional chaos.

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### Healthcare

Facing the complex challenge of becoming one globally connected system with EMRs at its core and a new focus on the patient.



### Insurance

Examining "smarter" in an industry that is heavily regulated, risk averse and, by its own admission, not very innovative.



### Oil and gas

Industry leaders regroup in the face of changing metrics and increasing demand for the fuel that drives the world.



### Retail

Retailers discuss listening and other keys to nurturing the trust of increasingly sophisticated and fickle customers.



### Transportation

Plenty of passenger data is being collected, but not enough is used to integrate and improve travelers' end-to-end experience.



## What is 'BIG' Data

**4 Billion**

# of cell phone users worldwide

**10x**

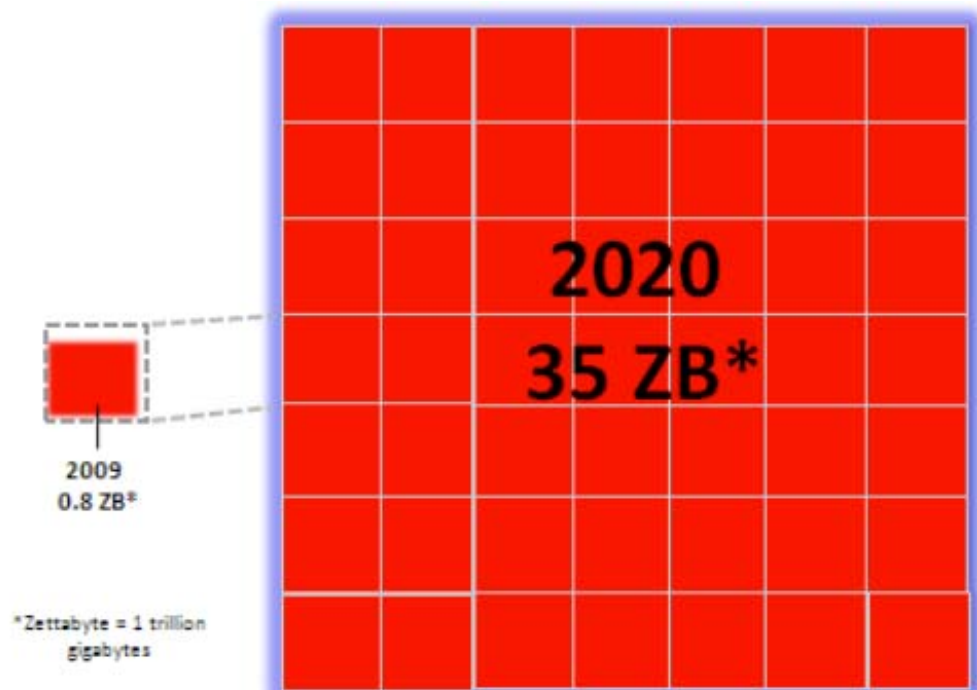
Growth in digital data every 5 years

**2 Billion**

# of Internet users worldwide

**5%**

New Information that is structured



Source: IDC Digital Universe Study

“ When physical assets such as cell phones, traffic sensors, cameras, PCs, RFID tags etc. become elements of an information system with ability to capture, compute and communicate information themselves on a massive sensor scale using common TCP/IP protocol.

-- Internet of Things by McKinsey Global Institute, 2010

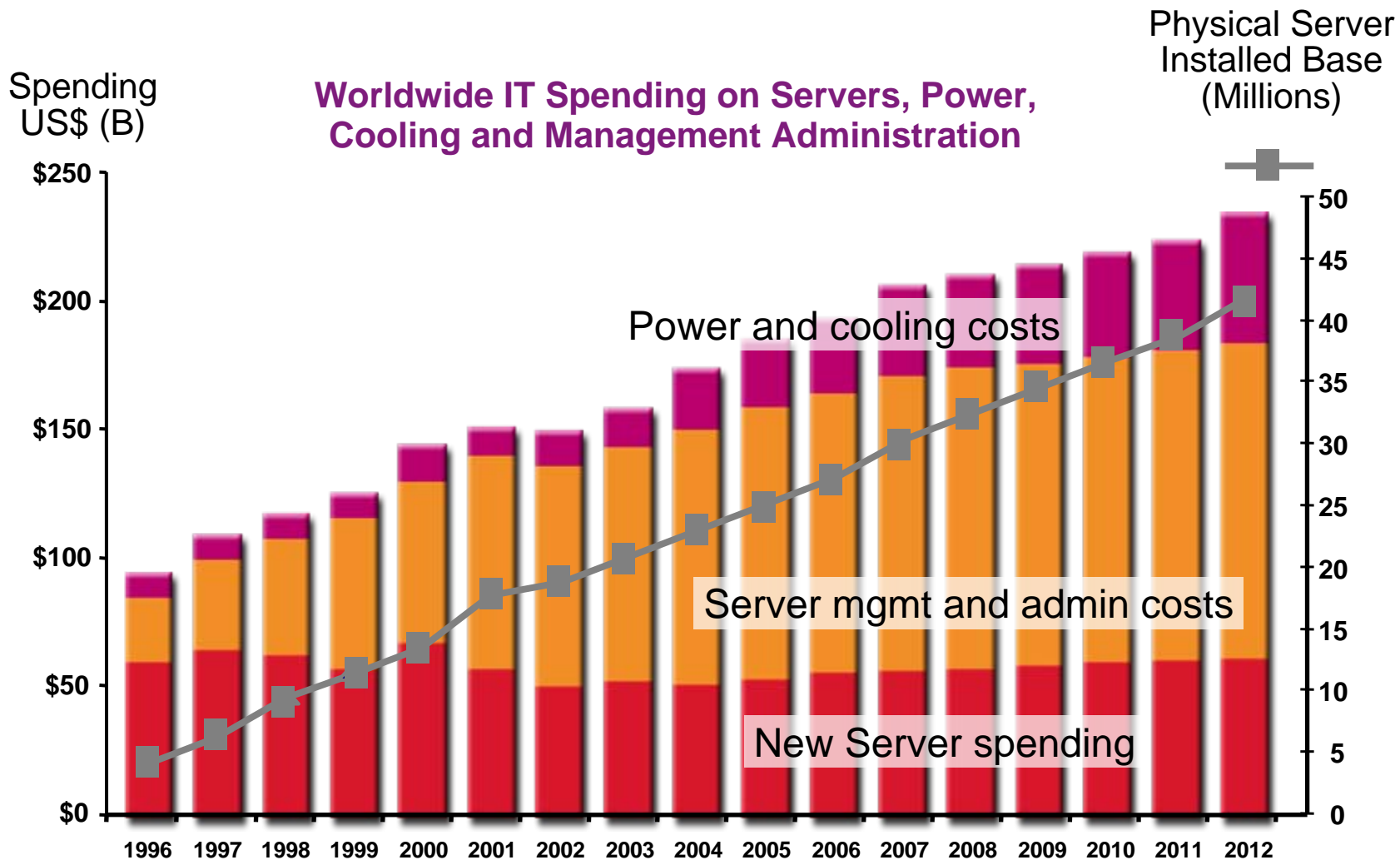
*The Industrial Revolution of Data.*

-- Dr. Joe Hellerstein, UC Berkeley





# IT Operating Costs Are Out of Control



# Smarter Planet Solutions Increase Demands on IT



**1.2 zettabytes (1.2 trillion gigabytes)** exist in the “digital universe

- **50%** YTY growth
- **25%** of data is unique; **75%** is a copy



Internet connected devices **growing 42% per year**



**32.6 million** servers worldwide

- **85%** idle computer capacity
- **15%** of servers run 24/7 without being actively used on a daily basis



Between 2000 and 2010 ...

- Servers grew **6x**
- Storage grew **69x**

Virtual machines growing **42% per year**



Data centers have **doubled** their energy use in the past five years

- **18%** increase in data center energy costs projected



**But IT budgets are growing less than 0.8% per year**

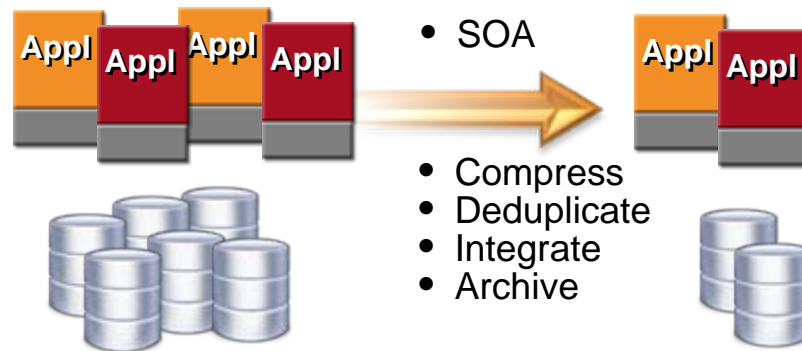
# Strategies to Reduce Costs and Improve Value

## Optimize the Overall IT Environment

**Consolidate Hardware Infrastructure**



**Eliminate Redundant Software and Data**



**Improve Service Delivery**

### Integrated Service Management



Visibility



Control



Automation



Cloud Computing



## Workload Segments – One size DOES NOT fit all

### Transaction Processing and Database



### Analytics and High Performance



Characteristics vary: ***Application Usage Patterns SLA Data Structure Integration***

### Business Applications

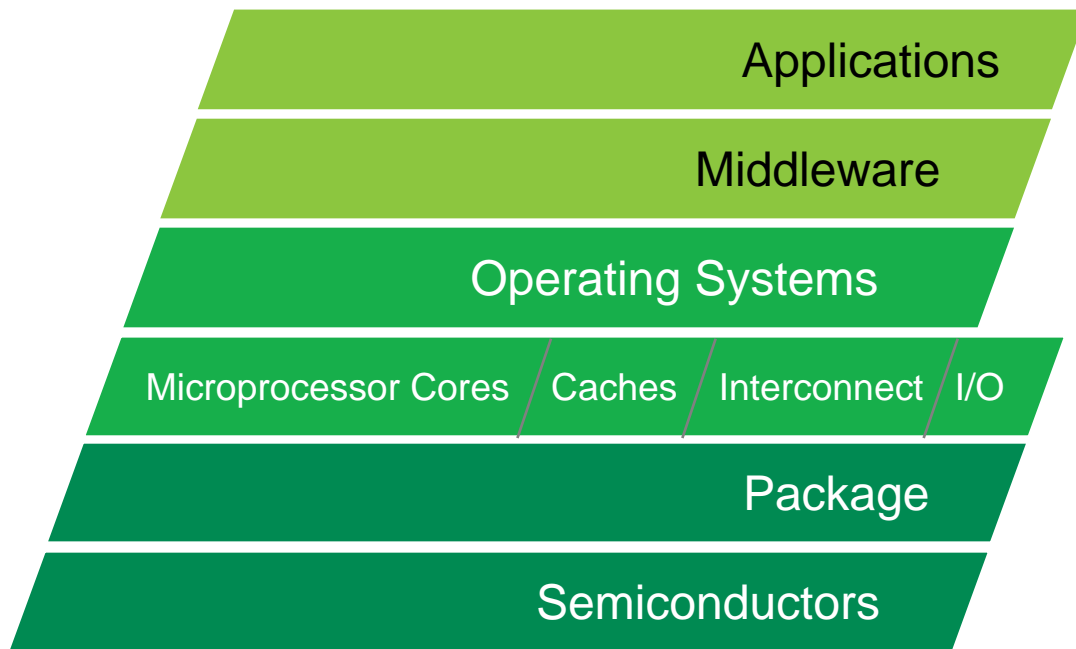


### Web, Collaboration and Infrastructure





Optimized Systems are tuned to help address the unique needs of any workload.



**Software**

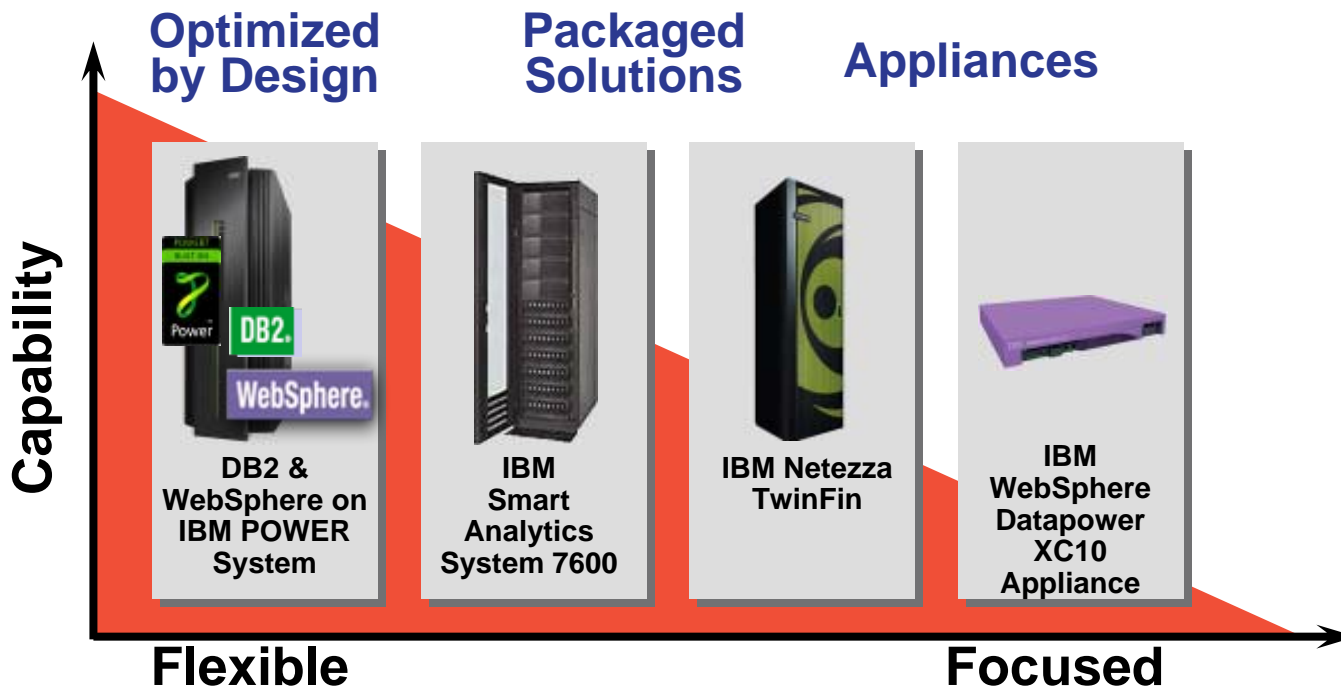
- Stack integration
- Middleware tuned for hardware
- Integrated management across architectures

**Hardware**

- Multi-core architectures
- Advanced threading
- Low latency



# Optimized Systems Drive Down Cost Per Workload



<b>Install Time</b>	Days → Weeks	Days	Hours
<b>Technical Skills</b>	Deep Product and Performance Tuning Knowledge	Basic Product Knowledge	Little or No Product Knowledge



Smarter Computing is an IT infrastructure that is designed for data, tuned to the task and managed in the cloud.

**Designed for data: Big Data**

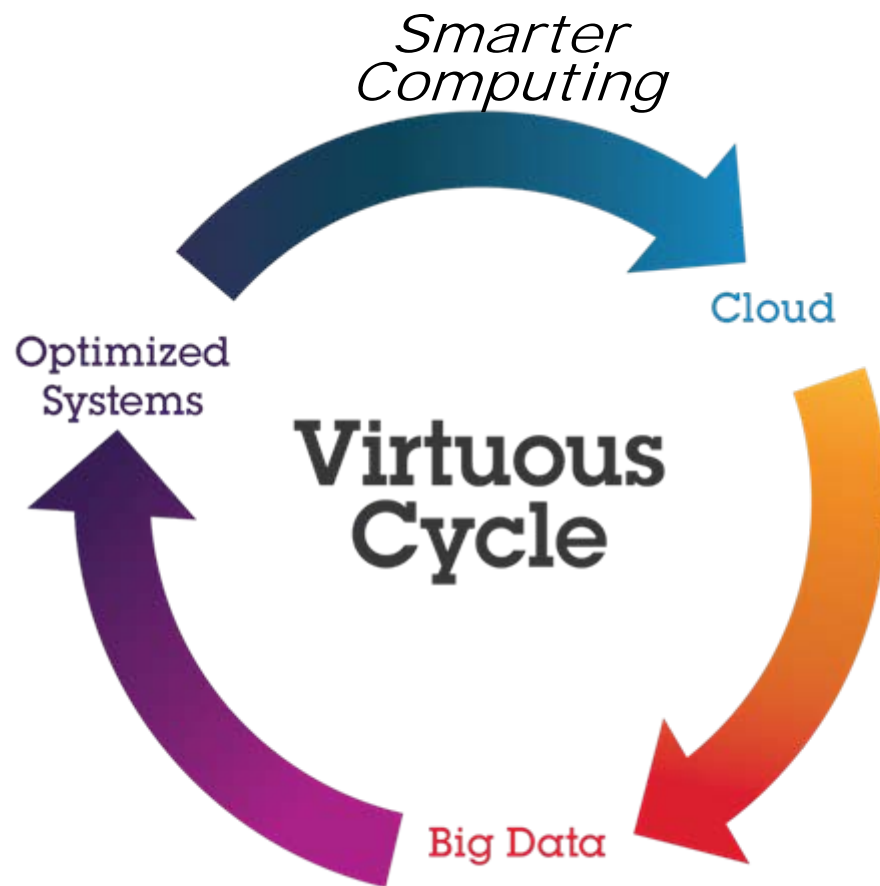
Remove barriers to harnessing all available information and unlock insights to make informed choices.

**Tuned to the task: Optimized Systems**

Remove financial barriers by driving greater performance and efficiency for each workload.

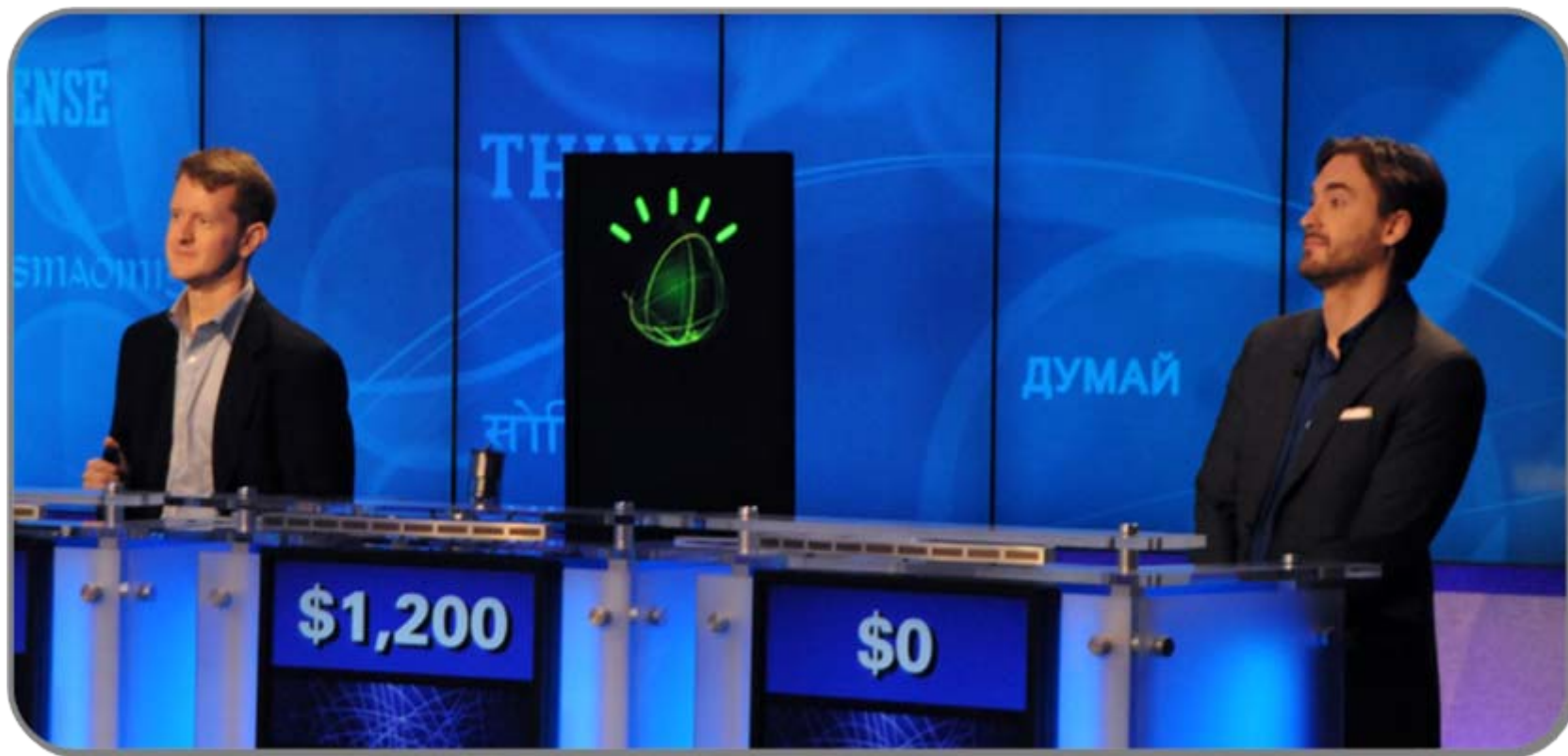
**Managed in the Cloud: Cloud**

Remove barriers to rapid delivery of new services and reinvent business processes to drive innovation.





Watson is prime example of what an optimized system deliver



<http://www-05.ibm.com/innovation/fi/ideasfromibm/library/watson/>



**Thank you!**  
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