



Dubai, UAE  
20th March 2013

# "The Internet of Everything and the Path Ahead"

Howard Charney, SVP  
Office of the CEO and COB





Power of the Connected



# Amazing Things Happen When You Connect the Unconnected



**99% of the  
World Is Still Not  
Connected**

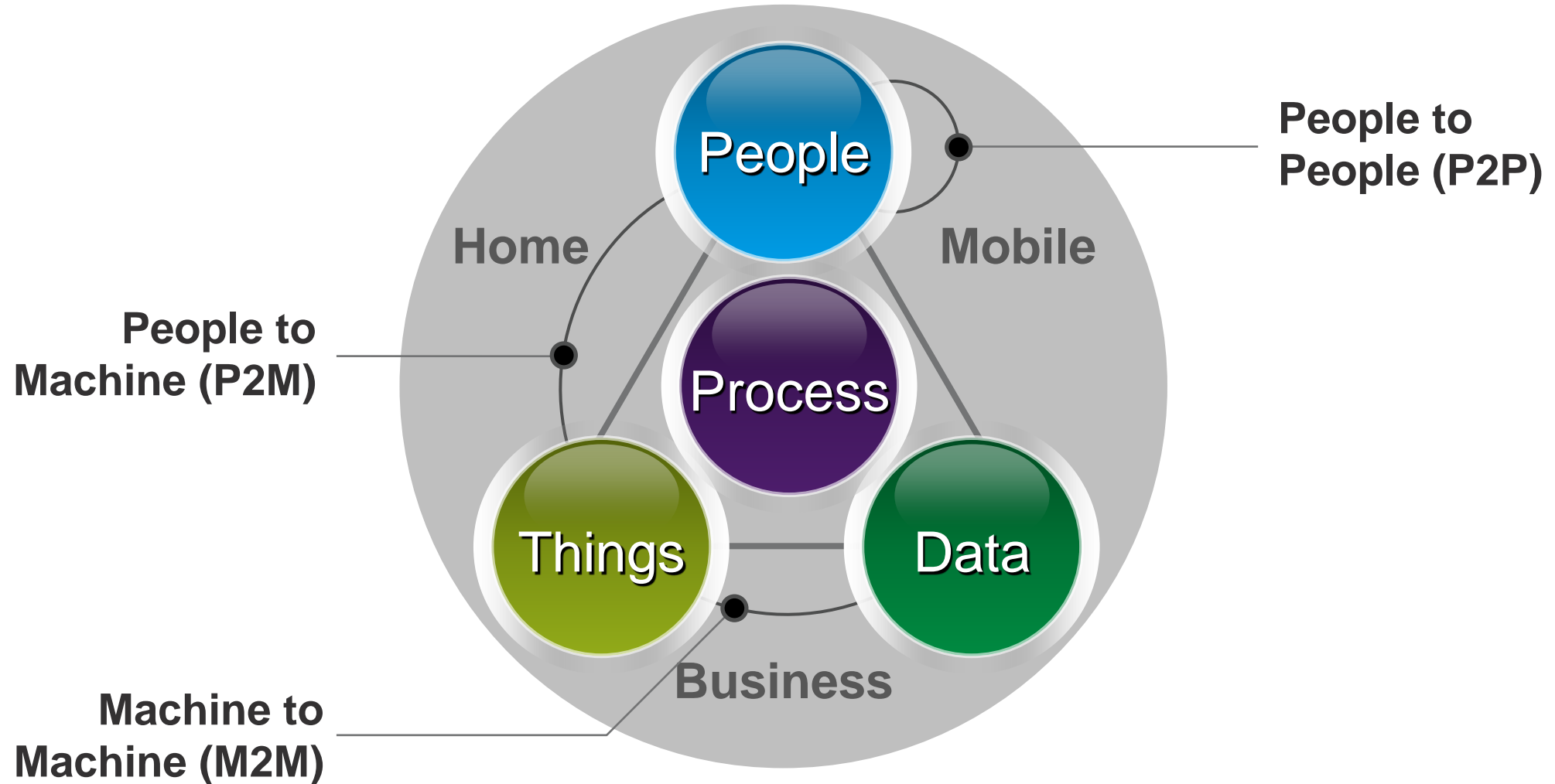


# The Internet of Everything

The Internet of Everything brings together people, process, data and things to make networked connections more relevant and valuable than ever **before—turning information into actions** that create new capabilities, richer experiences and unprecedented economic opportunity for businesses, individuals and countries.

*The Network: Cisco's Technology News Site*

# The Internet of Everything



# What Is the Value at Stake?

**\$14.4 Trillion**

```
graph TD; A["$14.4 Trillion"] --> B["$9.5 trillion"]; A --> C["$4.9 trillion"]
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**\$9.5 trillion**

From industry-specific  
use cases (66%):  
smart grid, connected  
commercial vehicles, etc.

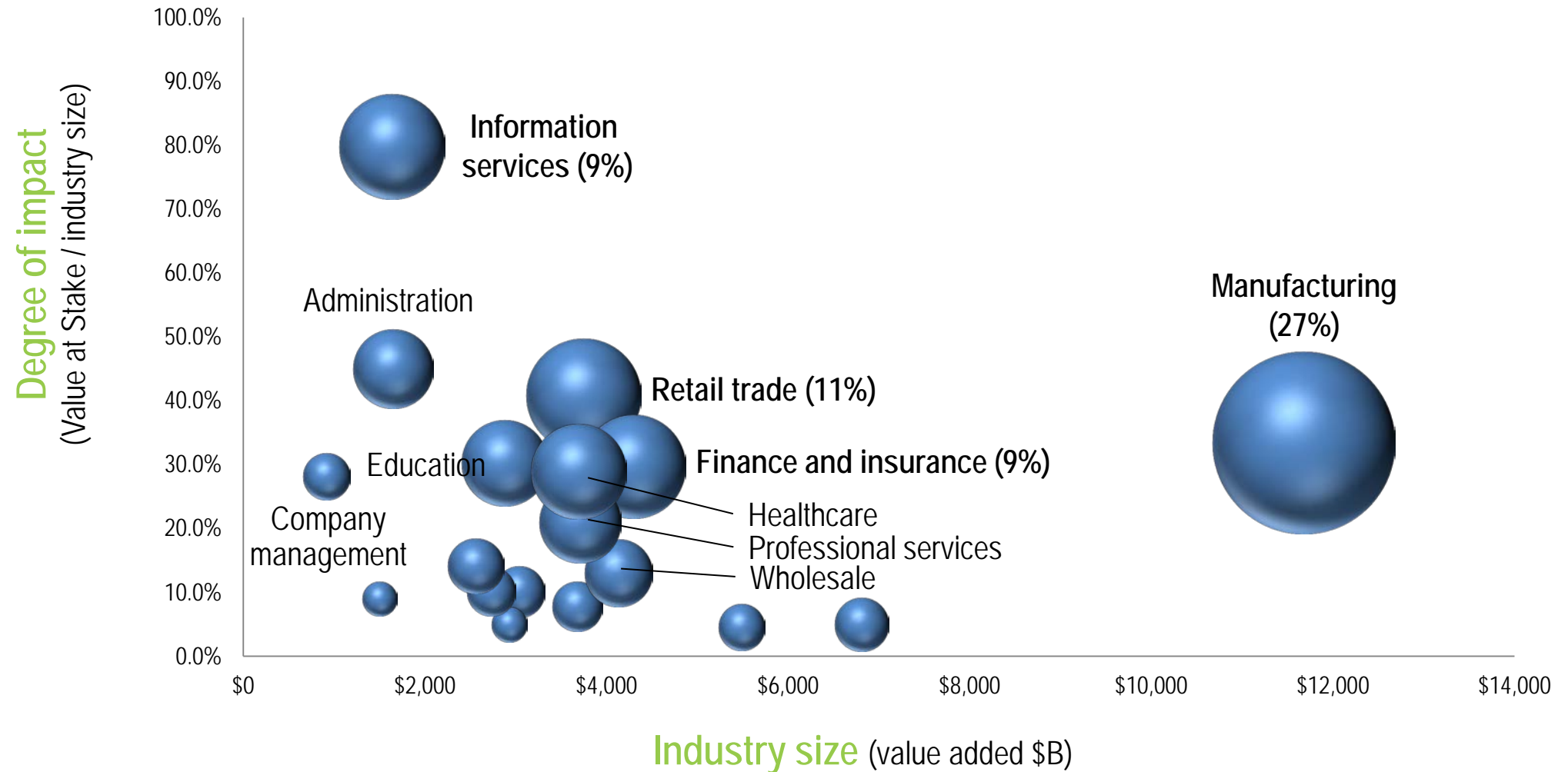
**\$4.9 trillion**

From cross-industry  
use cases (34%):  
future of work  
(telecommuting),  
travel avoidance, etc.

IoE represents an opportunity to grow aggregate  
global corporate profits ~21% by 2022

# Opportunity by Industry

Top 4 Industries Make Up More Than Half the New Opportunity

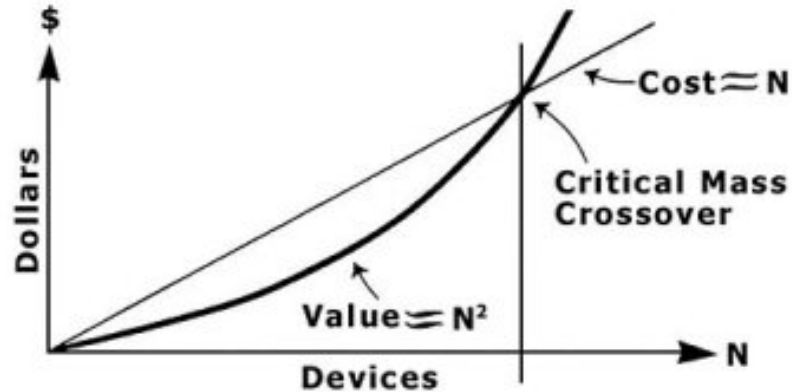




# Metcalfe's Law

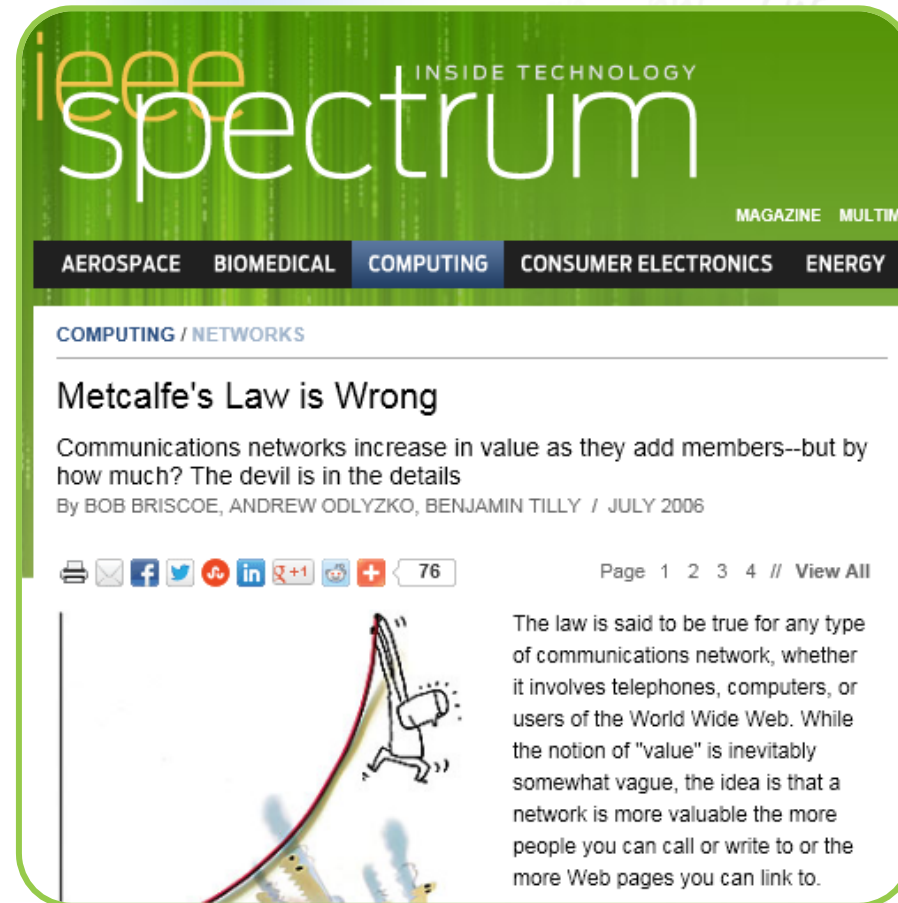
Metcalfe's law states that the value of a telecommunications network is proportional to the square of the number of connected users of the system ( $n^2$ )

**The Systemic Value of Compatibly Communicating Devices Grows as the Square of Their Number:**





# The Naysayers to Metcalfe's Law



# Prediction: 50B Connections by 2020



In Today's World,

What Metcalfe had  
no way of anticipating:

**ALL CONNECTIONS**

**ARE NOT  
CREATED EQUAL.**



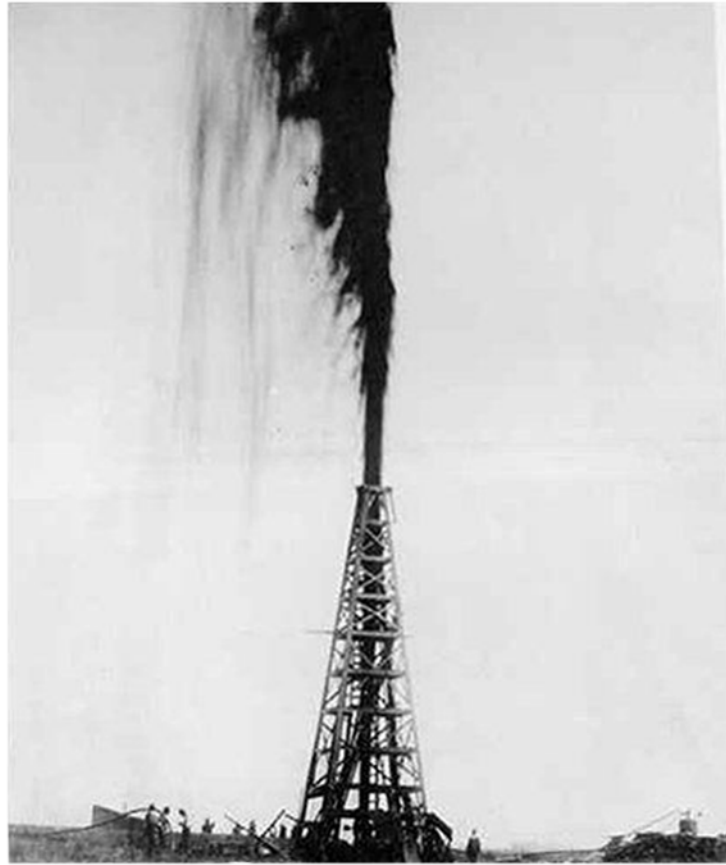


“We are in great haste to construct a magnetic telegraph from Maine to Texas; but Maine and Texas, it may be, have nothing important to communicate.”

- Henry David Thoreau







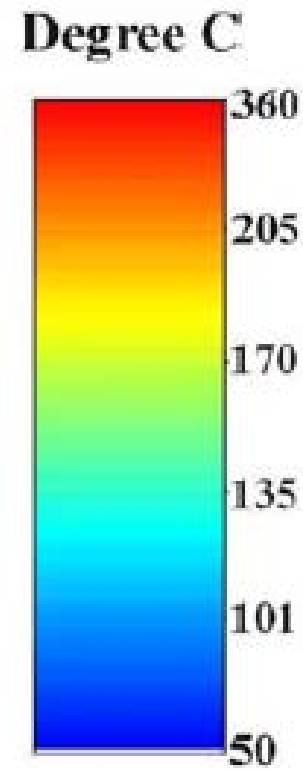
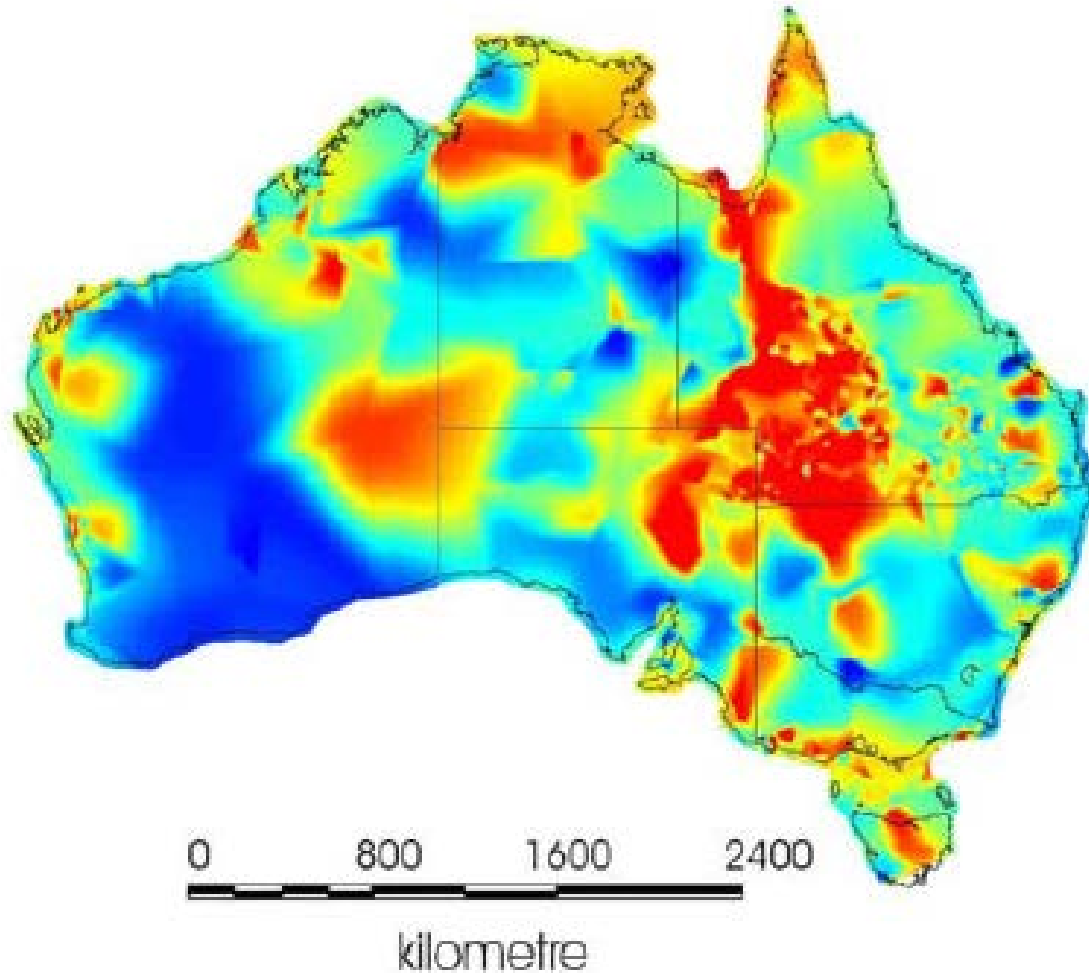




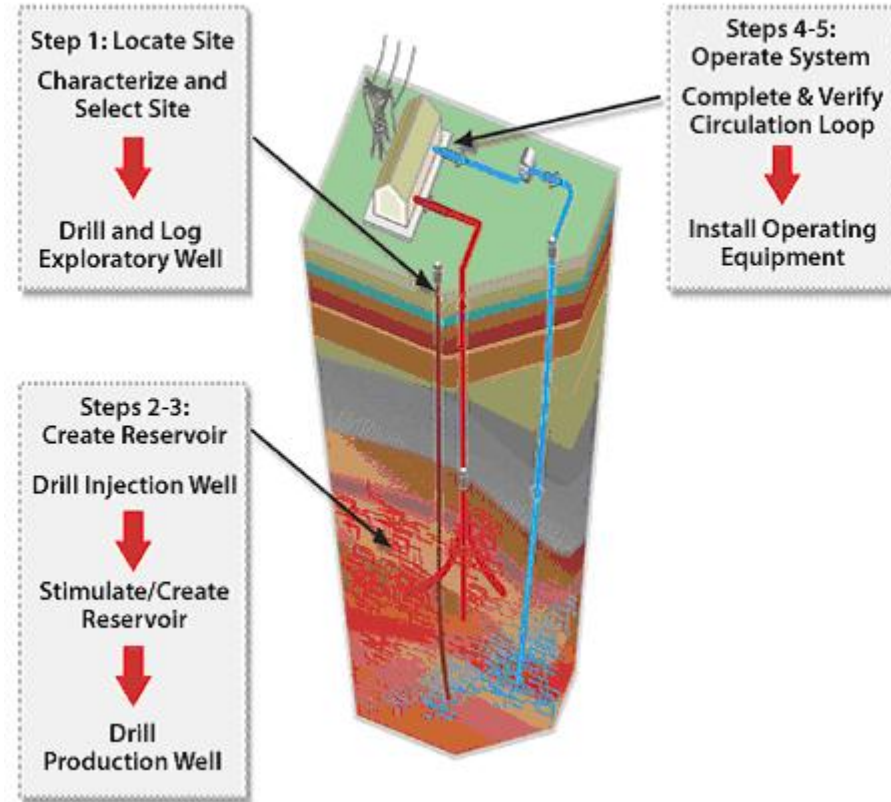
# Cisco Remote Expert Smart Solution for Manufacturing



# NICTA: Analyzing Data to Find Geothermal

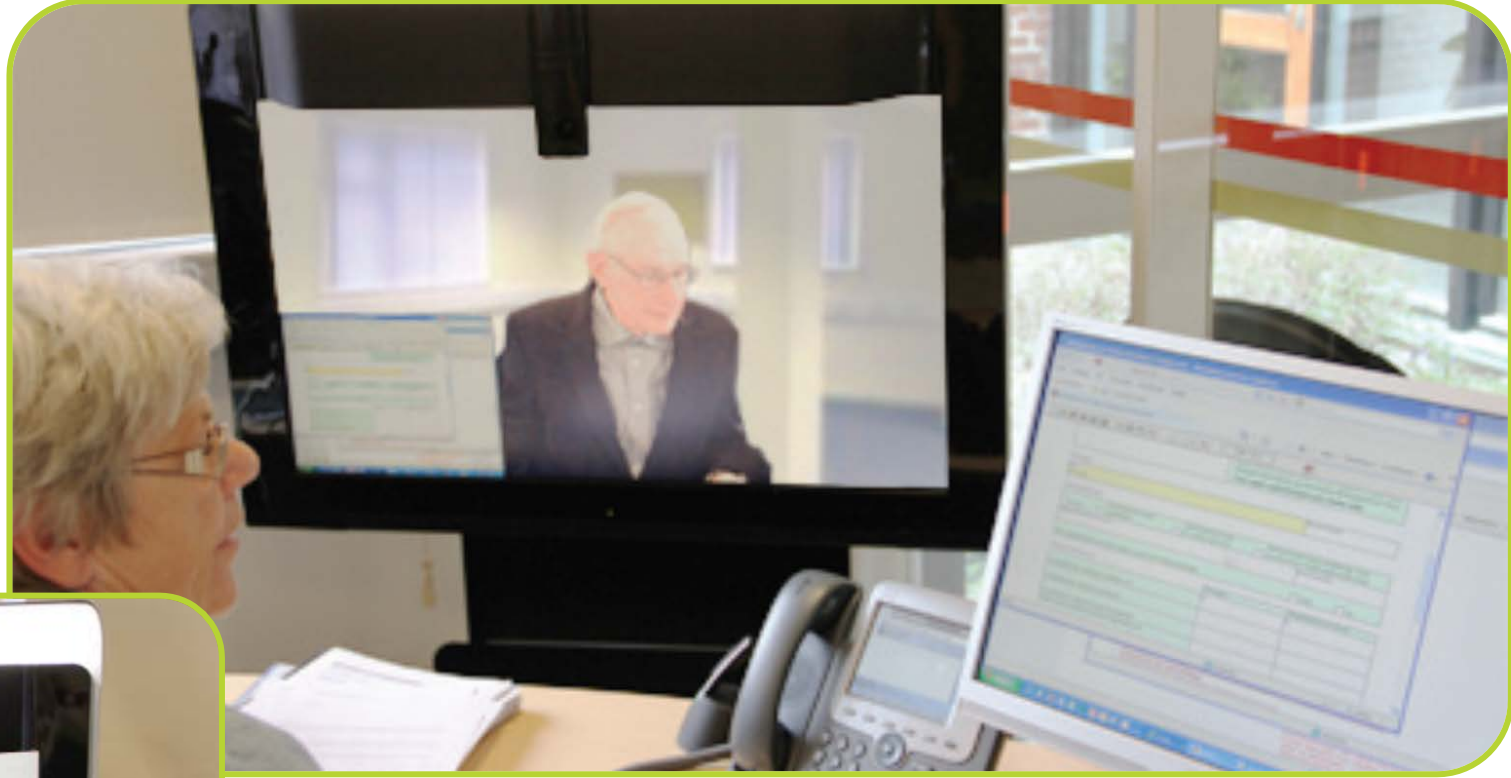


## EGS Development Sequence





# Citizen Services



# Translation Services



# Tesco Brings the Store to Shoppers

## Tesco builds virtual shops for Korean commuters

A visual experiment in mobile supermarket shopping has done very well for Tesco in South Korea

3:42PM BST 27 Jun 2011

1 Comment

Tesco: Homeplus Subway Virtual Store (Movie)



In Technology »





# Connected Retail: an \$855B Opportunity



Cisco IBSG Study: Digital Malls: the Next Generation of Self-Service Shopping, Nov. 2012



Only **0.05%** of the world's available **data** is being mined for value

- IDC



# THE HUMAN FACE OF BIG DATA

We often focus on the tracking and mining of vast mountains of static results, but **the dynamic interaction among complex agents in real time** ultimately will be more valuable. It is this latter form... that **has the greatest potential for revolutionary change.**”

– Esther Dyson, “Pulse of the Planet” from  
*The Human Face of Big Data*

# Smart Transportation



**Cohda Wireless™**  
Mobile Broadband

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## Welcome to Cohda Wireless™

Cohda Wireless is an equipment vendor in the Cooperative Intelligent Transport Systems (ITS) market. The company manufactures hardware products with acknowledged best-in-world performance and has developed complete software solutions (from network layer to applications layer) for this market. Cohda's hardware and software products are being used in Car-to-Car field trials worldwide today. Our customers include a large number of Car Makers, Tier One Suppliers, Automotive Chip Makers, Road Authorities, as well as New Market Entrants. Cohda's products are already in use in the USA, Europe, Australia, Japan, and Korea.

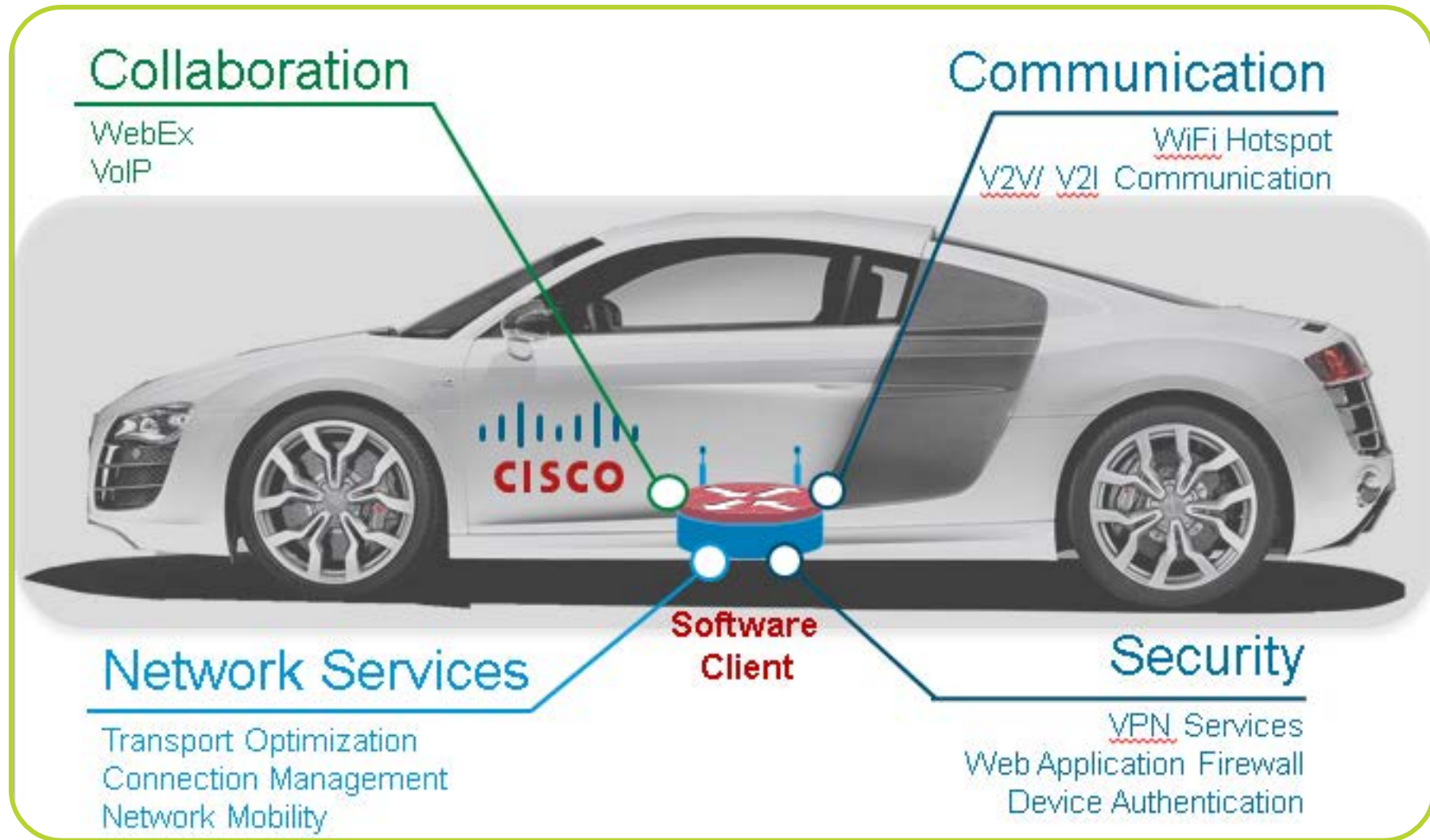
Cisco, NXP Invest in Cohda Wireless to Enable the Connected Car.

Cohda Wireless was a finalist in the National Innovation Challenge.





# Car-2-car, Car-2-infrastructure



# Stoplights Could Become Obsolete





# The Cloud





# Cloud and the Internet of Everything



Reference: J. Rabaey, "A Brand New Wireless Day," Keynote Presentation, ASPDAC Jan. 2008

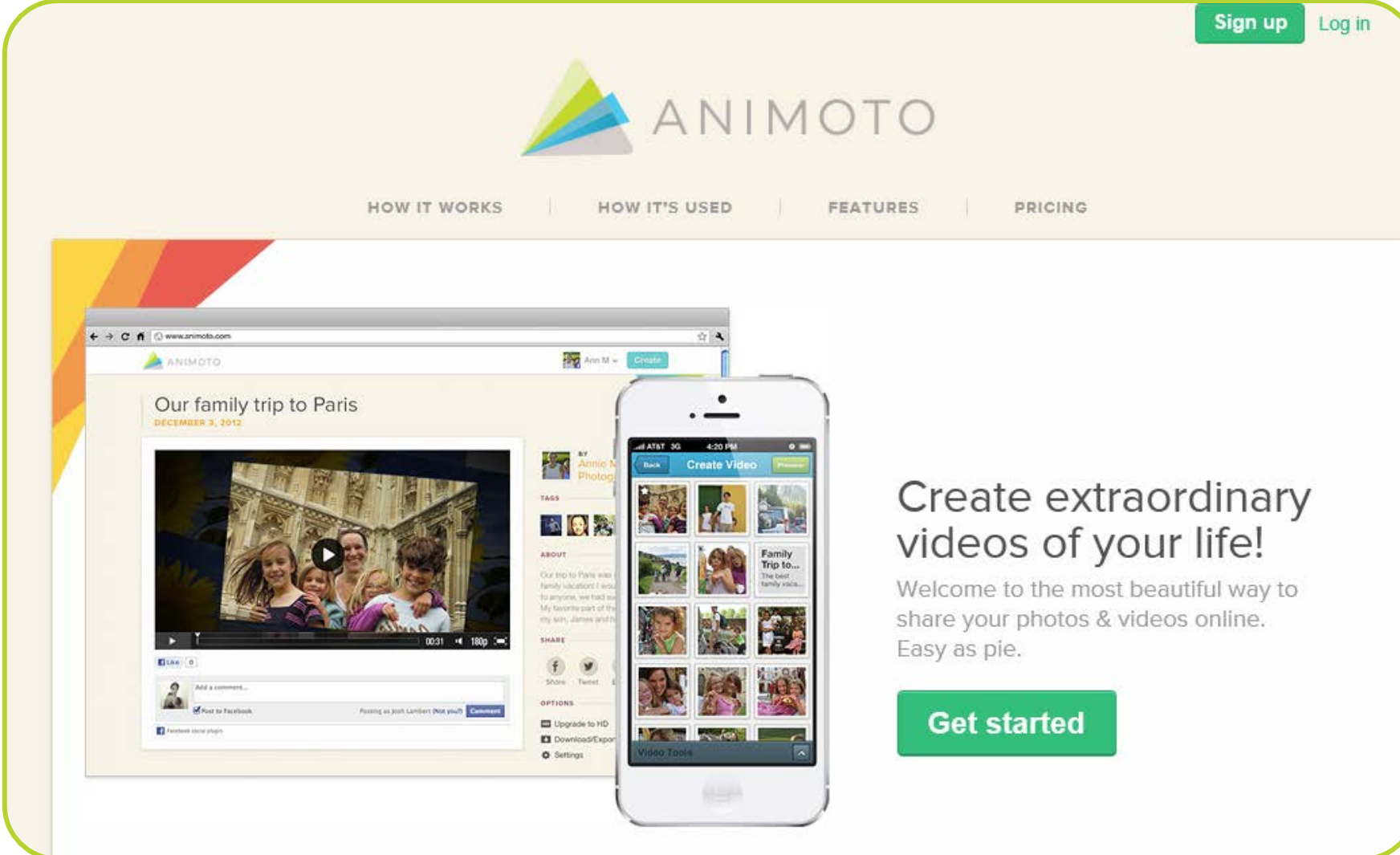
# Amazon S3

1 trillion objects...

**650,000 requests**

**...per second**

# Elastic Computing



The image displays a mockup of the Animoto website and its mobile application. The website header features the Animoto logo, navigation links for 'HOW IT WORKS', 'HOW IT'S USED', 'FEATURES', and 'PRICING', and 'Sign up' and 'Log in' buttons. The main content area shows a video player with the title 'Our family trip to Paris' and a date of 'DECEMBER 3, 2012'. The video player includes a play button, a progress bar, and a 'Like' button. Below the video player are social media sharing options for Facebook and Twitter, and a 'Post to Facebook' button. To the right of the video player is a sidebar with 'TAGS', 'ABOUT', 'SHARE', and 'OPTIONS' sections. The mobile app interface, shown on a smartphone, features a 'Create Video' button and a grid of photo thumbnails. The app also has a 'Video Tools' section at the bottom.

Sign up Log in

ANIMOTO

HOW IT WORKS | HOW IT'S USED | FEATURES | PRICING

Our family trip to Paris  
DECEMBER 3, 2012

Like

Post to Facebook

Tags

ABOUT

SHARE

OPTIONS

Upgrade to HD

Download/Export

Settings

Create Video

Family Trip to...

The best family video...

Video Tools

Create extraordinary videos of your life!

Welcome to the most beautiful way to share your photos & videos online. Easy as pie.

Get started



# Animoto.com

Virtual  
Servers

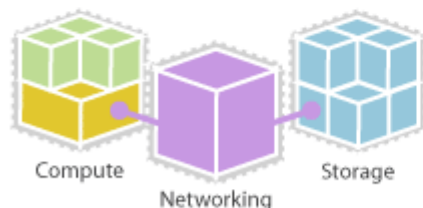




# Open source software for building private and public clouds.

## Software

OpenStack Software delivers a massively scalable cloud operating system.



[About OpenStack Software...](#)

## Community

Join our global community of technologists, developers, researchers, corporations and cloud computing experts.

8516

PEOPLE

87

COUNTRIES

[Meet Our Community](#)

## The OpenStack Summit is coming April 15-18.

Join us in Portland, Oregon

[More Info](#)

[Register Now](#)

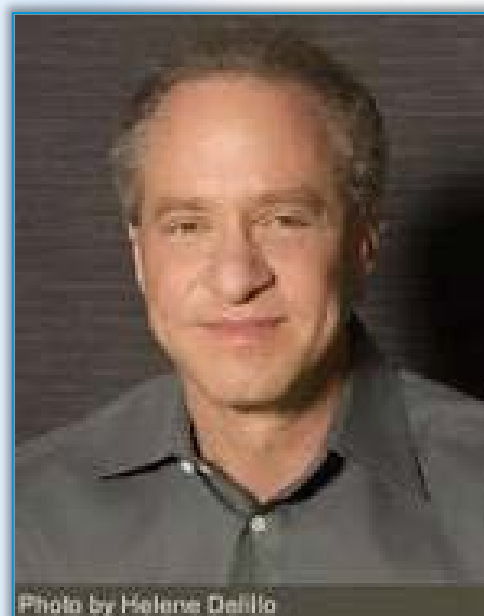
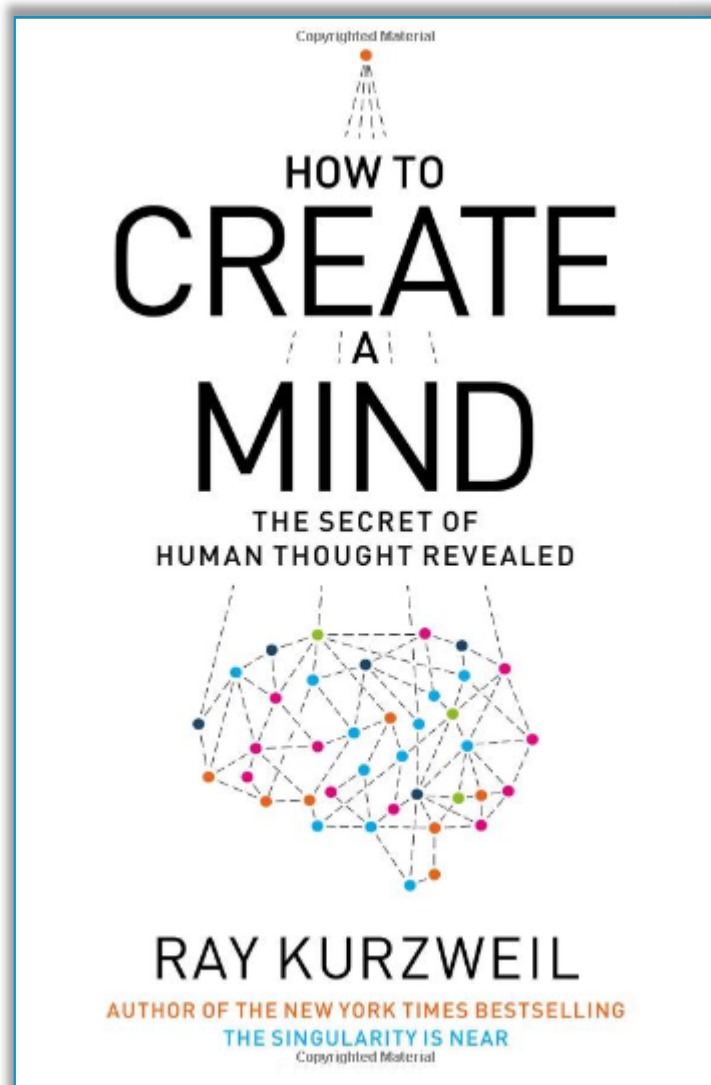
**OpenStack** OpenStack is a global collaboration of developers and cloud computing technologists producing the ubiquitous open source cloud computing platform for public and private clouds. The project aims to deliver solutions for all types of clouds by being simple to implement, massively scalable, and feature rich. The technology consists of a series of **interrelated projects** delivering various components for a cloud infrastructure solution.

# Open Source Cloud Platform

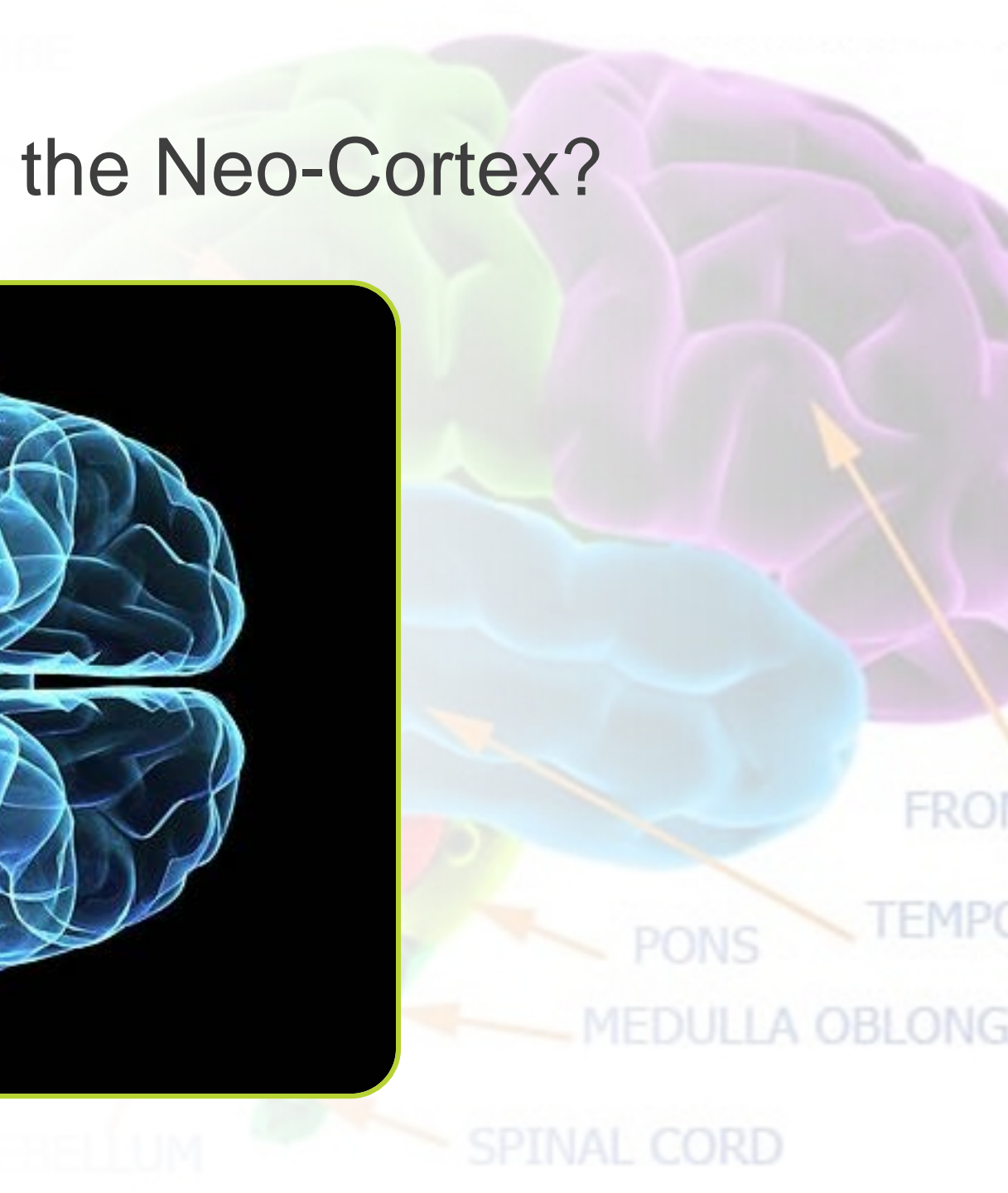
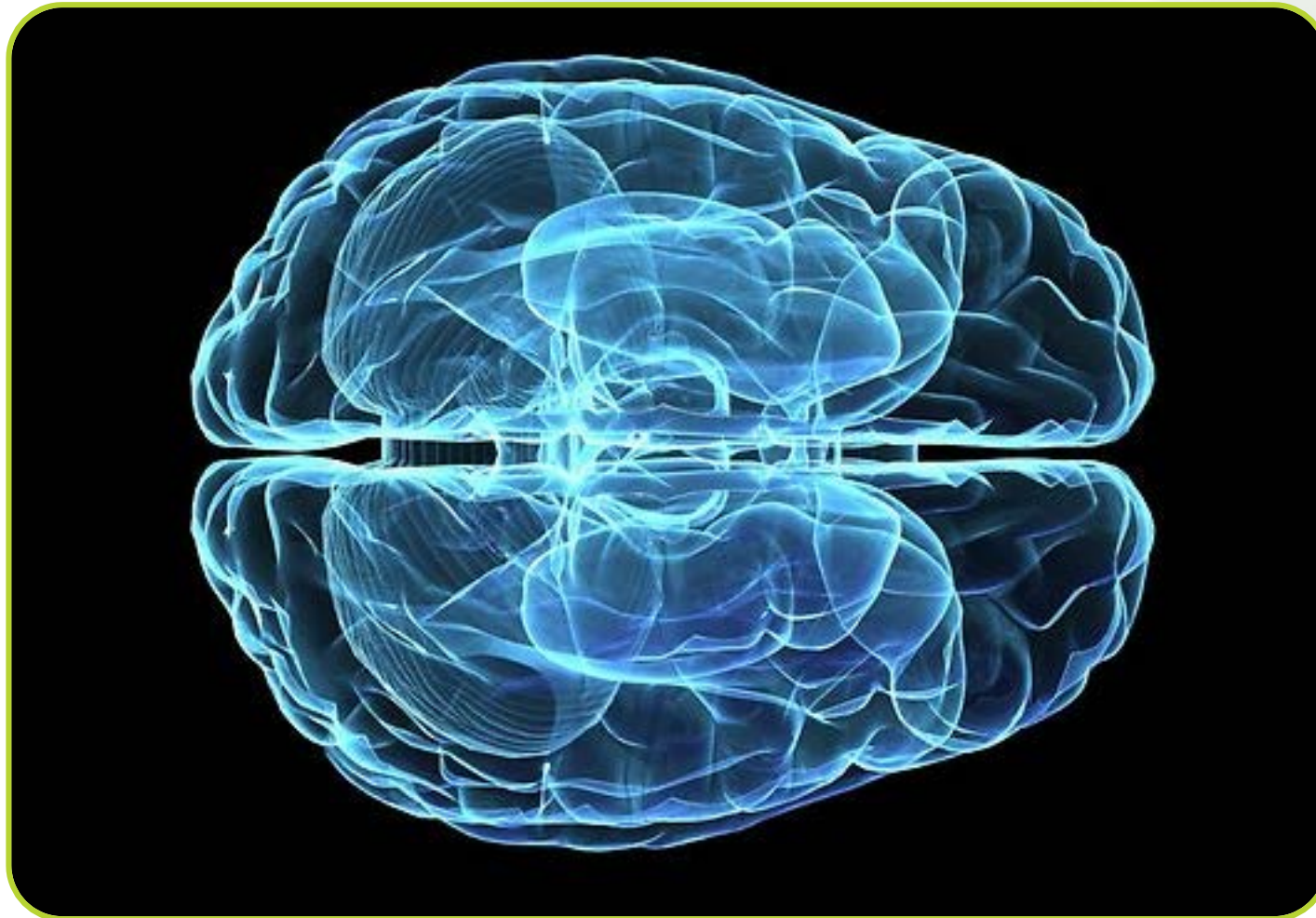
- OpenStack is open source software that allows any company to build their own public or private cloud
- Turns data center infrastructure into a service
- Think of it as: “*software that powers Amazon’s EC2+S3*”







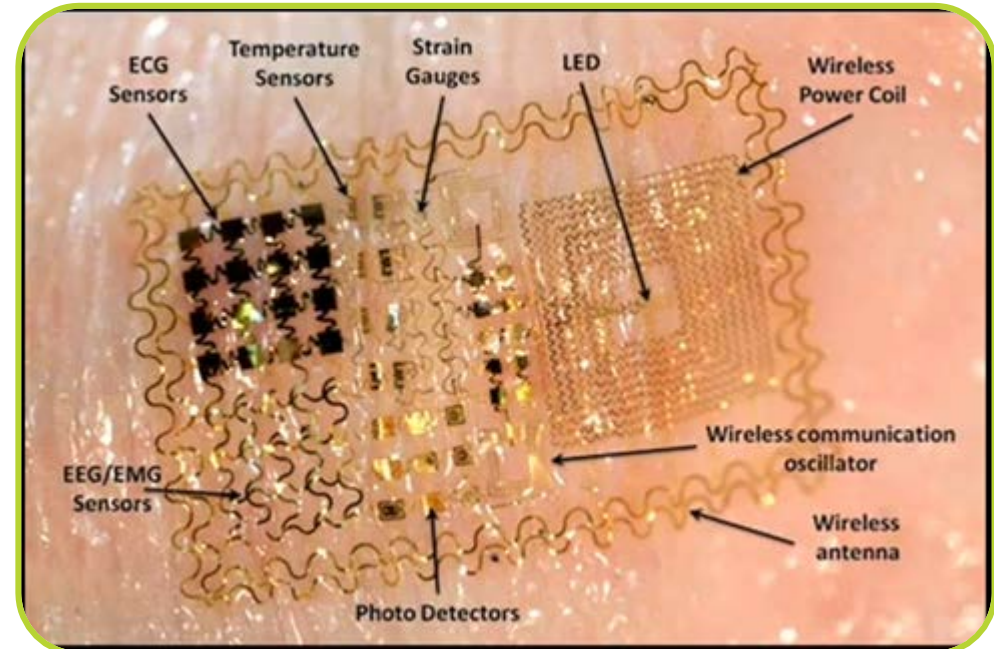
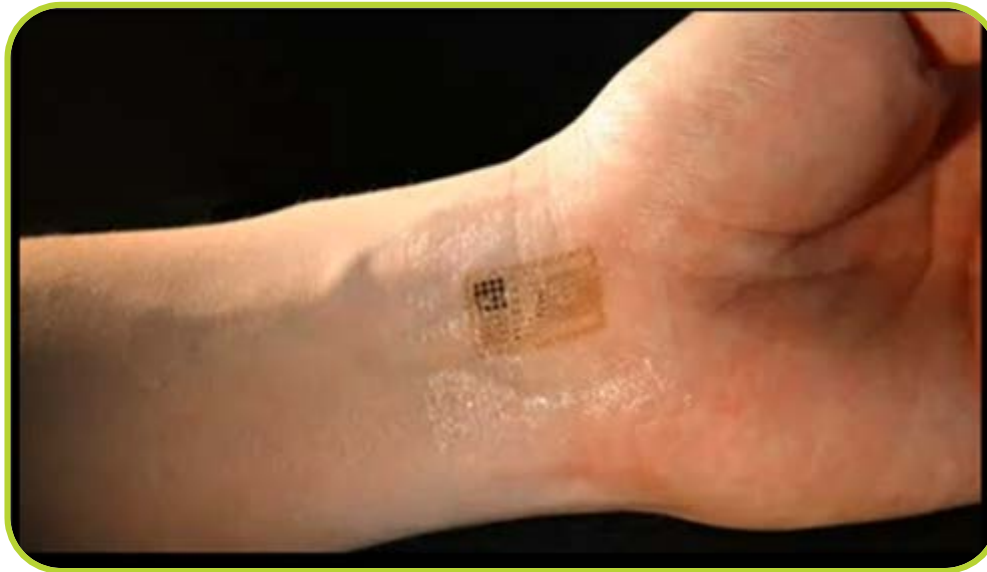
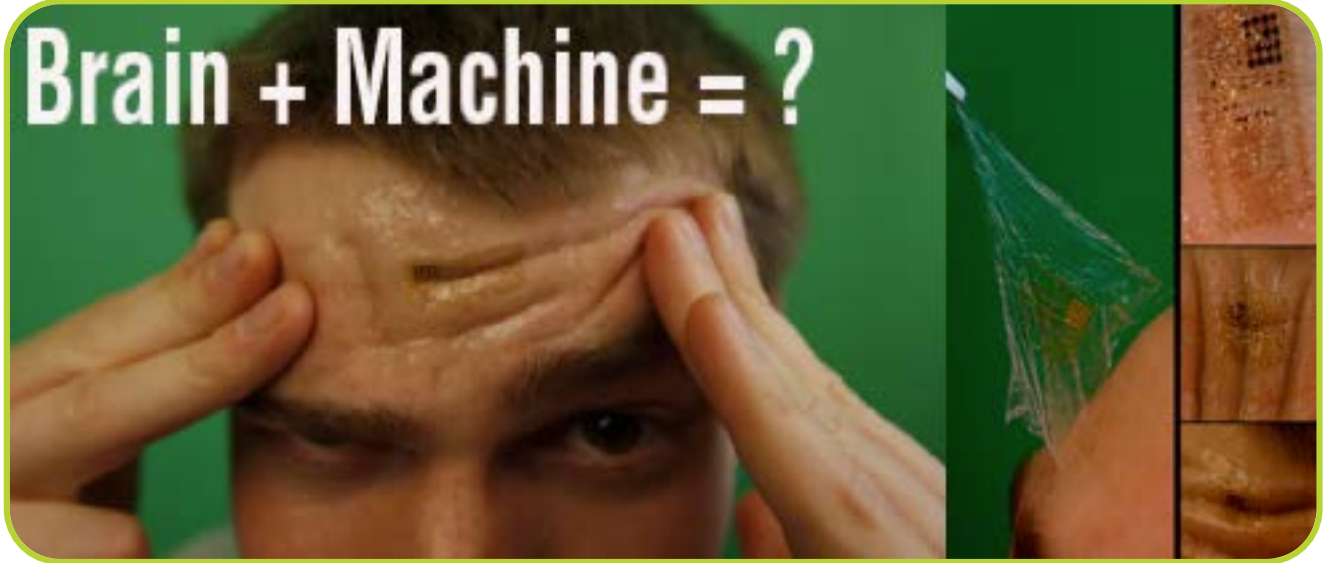
# The Cloud as an Extension of the Neo-Cortex?







# Epidermal Electronics



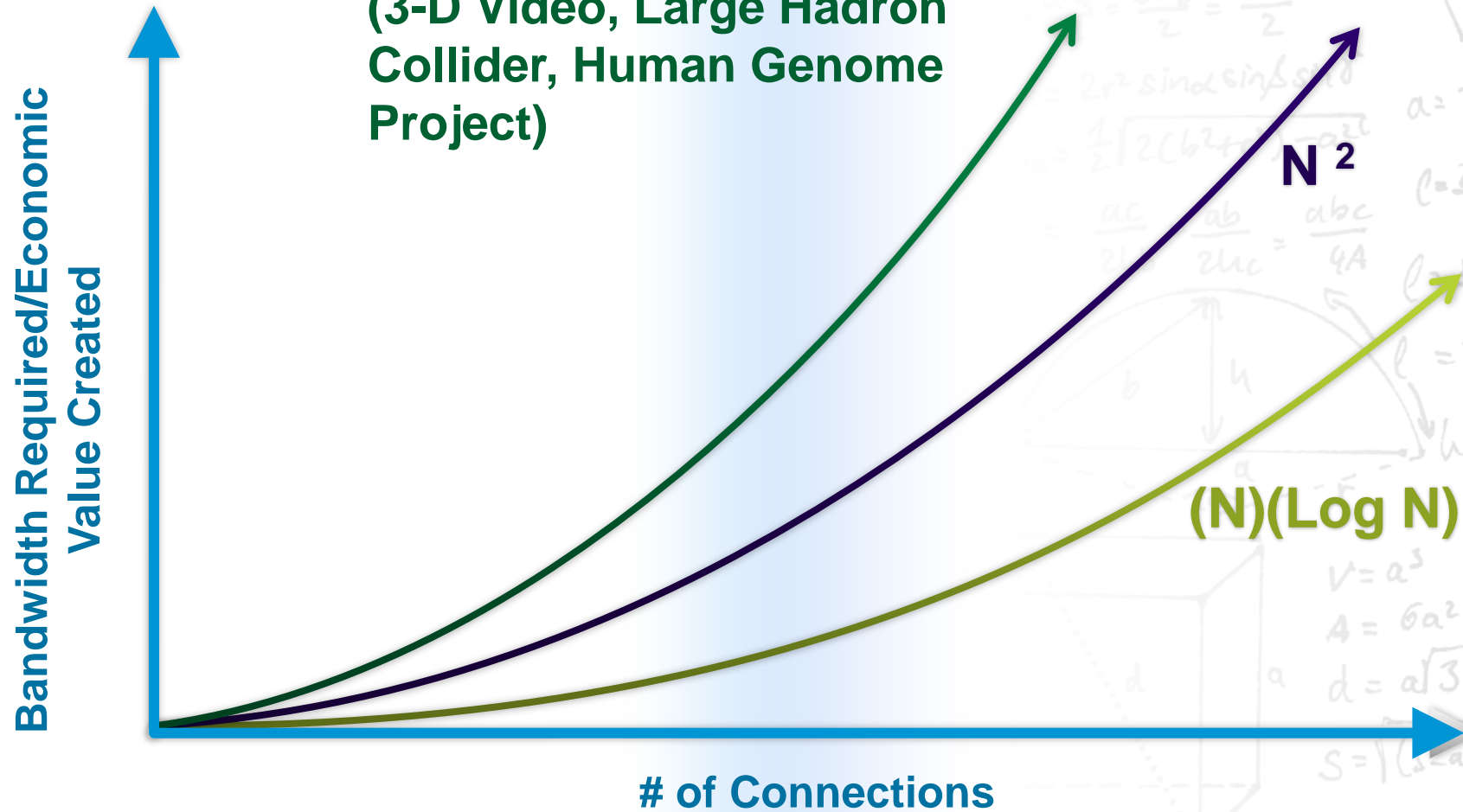
**“The difference between a  
visionary and an eccentric is...**

**...being right!”**

Bob Metcalfe

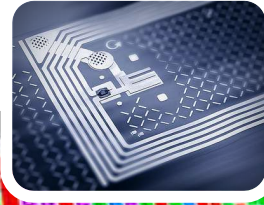
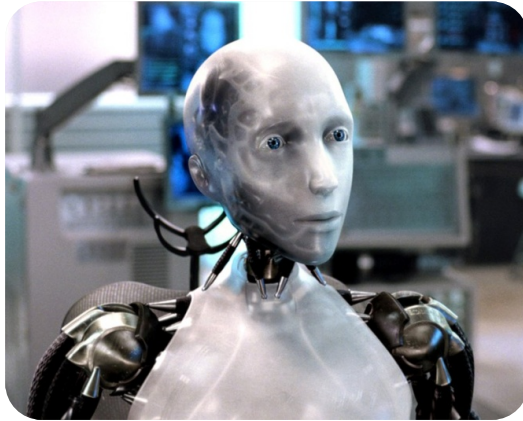
# Quadratic Economic Value Creation from More Connections to the Network

(3-D Video, Large Hadron Collider, Human Genome Project)





# Amazing Opportunities Ahead



Shukran jazeelan.

