The Greatest Inflection Point in Technology History

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WW Strategy and Business Development
What is an inflection point?

Noun

1. MATHEMATICS
a point of a curve at which a change in the direction of curvature occurs

2. BUSINESS
a time of significant change in a situation; a turning point

What are some of the great inflection points in history?
Fire
Farming
Wine Making
Gunpowder
Electricity
What are the greatest inflection points in technology history?

My top 4:

#4: The Transistor

John Bardeen, William Shockley and Walter Brattain

Bell Labs, 1947
Steve Jobs offered him the job of President of Apple

Don Estridge

IBM, 1981
The web browser... creating the Internet as we know it.
Technology Cycles by the Numbers

Normalized IT Spending Growth versus GDP Growth

Source: CIMI Corporation
The Grid
The Foundation for the Internet of Everything

#1 Greatest Inflection Point in Technology History is Happening Now!
New Experiences, New Business Models, New Services

Concierge Internet  Elastic Enterprise  Next Generation SP
Agenda

Vision of the Concierge Internet

How Did We Get Here? Market Dynamics

The Grid: Platform for Innovation

Elastic Enterprise

Next Generation Service Provider
Colorado
“Best travel route is...”

“Your flight is running on time”

“West side parking garage level 2 has open spots”

“South security is least crowded”
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Creating a Perfect Storm of Change
The average lifespan of a company listed in the S&P 500 has decreased from 67 years in the 1920's to 15 years today.

By 2020, more than three quarters of the companies in the S&P 500 will be companies that we have not heard of yet. 15 years today.

Richard Foster
Yale University
IN 10 YEARS

OVER 40% OF THE FORTUNE 500 WILL NO LONGER BE HERE*

*Babson Olin School of Business Advertisement, Fast Company April 2011, page 121.
SURVEY OF 1700 CEOs GLOBALLY

CEO SURVEY

KEY FINDINGS?
WHAT EXTERNAL FORCES OR FACTORS COULD IMPACT YOUR ORGANIZATION OVER THE NEXT 3-5 YEARS?

Source: IBM 2012 Global CEO Study
CEO’S Expect Technology To Drive The Most Change In Their Organizations Over The Next Five Years
Technology Change is Rampant: Smartphones

Smartphone & Feature Phone Penetration, US
Mobile Subscribers Ages 18+

- Smartphone
- Feature phone

29% 31% 30%
35% 36% 38% 37% 38%
41% 42% 43% 44% 44% 46%
48% 48% 47% 45%
50%
51% 52% 53% 55%
Technology Change is Rampant: iTunes
Gartner’s Take

CIOs have pivoted 180° to focus on growth...

<table>
<thead>
<tr>
<th>Business strategies</th>
<th>Ranking of business strategies CIOs selected as one of their top 3 in 2012</th>
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</thead>
<tbody>
<tr>
<td>Increasing enterprise growth</td>
<td>1  1  -  -  -  -</td>
</tr>
<tr>
<td>Attracting and retaining new customers</td>
<td>2  2  5  4  2  2</td>
</tr>
<tr>
<td>Reducing enterprise costs</td>
<td>3  3  2  2  2  5</td>
</tr>
<tr>
<td>Creating new products or services (innovation)</td>
<td>4  4  6  8  9  -</td>
</tr>
<tr>
<td>Delivering operational results</td>
<td>5  0  -  -  -  -</td>
</tr>
<tr>
<td>Improving enterprise efficiency</td>
<td>6  8  -  -  -  -</td>
</tr>
<tr>
<td>Improving profitability (margins)</td>
<td>7  21 -  -  -  -</td>
</tr>
<tr>
<td>Improving the workforce</td>
<td>8  12 4  3  6  -</td>
</tr>
<tr>
<td>Improving marketing and sales effectiveness</td>
<td>9  18 -  -  -  -</td>
</tr>
<tr>
<td>Expanding into new markets and geographies</td>
<td>10 11 13 10 4  -</td>
</tr>
<tr>
<td>Improving governance, compliance, risk and security</td>
<td>11 10 11 12 14  -</td>
</tr>
<tr>
<td>Implementing finance and management controls</td>
<td>12 25 -  -  -  -</td>
</tr>
<tr>
<td>Improving business processes</td>
<td>13 6 1 1 1 1</td>
</tr>
</tbody>
</table>

Sample represents $321bn in budget across 37 industries in 45 countries.
Business Strategy Merging with Technology Strategy

BUSINESS Architecture / Business IMPERATIVES

CEOs, CTOs, & CIOs

Business Strategy

Customers

Elastic Enterprise
Next Gen Service Provider
Concierge Internet

Unified business & technology architectures

Business Results
Find the Seam!

The Seam

Real time Business Value

B USINES S  Architecture / Business IMPERATIVES

CEOs & Government Leaders

Products/Services

Customer Experience

Customer Acquisition

The Seam

TECHNOLOGY Architecture

CIOs

Products

Software

Support/Services

Products

Customer Experience

Customer Acquisition

Real time Business Value
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Next Generation Service Provider
Today, Networks Stand Apart
Public Internet and Applications
Today, Networks Stand Apart
Business Networks and Business Applications
Today, Networks Stand Apart
Mobile Networks

Feature Phones
Smartphones
Tablets
2G
3G
LTE

Apps Stores
Mobile Data
Mobile Apps
iTunes
Android
Today, Networks Stand Apart
Internet of Things (Sensors and M2M)
Federating Networks, Data Centers, Applications, and Things is The Grid enabling the Internet of Everything
Scattered Analytics Getting Collected

- Internet of Things
- Mobile Networks
- Business Networks
- Public Internet

- IBM
- Meters
- City Cameras
- Web Services
- Business Apps
- Expertise
- Applications
- Search
- Location
- Content consumed
- Vz / AT&T
- Company-specific Analytics
- Device
- Location
- Friends and Family
- Likes and Hobbies
- Business Networks
- Oil and Gas
- Medical
- Manufacturing
- Automotive
- Internet of Things
- Content consumed
- Business Networks
- Mobile Networks
- Public Internet
Network Is the Common Denominator Can Become the Most Insightful Analytics Engine!

Applications

Browsing

Search

Content consumed

Likes and Hobbies

Friends and Family

Company-specific Analytics

Location

Web Services

City Cameras

Meters

Business Apps

Expertise

Medical

Oil and Gas

Manufacturing

Device

Business Networks

Mobile Networks

Public Internet

Internet of Things
Analytics and Privacy
Ingredients for the **Intelligent Infrastructure**

Enable application integration and an open development community

Abstract and orchestrate network & DC resources; Application aware

Integrate networking and compute throughout; Virtualize network functions

With policy, security, control throughout
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Next Generation Service Provider
The Concierge Internet Meets The Elastic Enterprise

New customer experiences

The digital office

Elastic cloud
A concierge experience for the customer

Intelligent store design and staffing
Joe’s new shopping experience

Customer Experience

Automatic Wifi Connectivity

Indoor Location Services
Joe’s new shopping experience

Personalized Loyalty Programs

Targeted Advertising
Joe’s new shopping experience

Targeted Advertising

Buying a ceiling fan? Can we install it for you?

Context Aware Services
Joe’s new shopping experience
Immediate Access to Expertise
Enabling Joe’s new shopping experience

In Store

Shopping List
Inventory Check
Purchase Assistance

From Home (or anywhere)
Network Data / Analytics  
Creating New Business Intelligence

- Most Frequently Used Paths in the Venue
- Peak Times in the Venue?
- New or Repeat Customers?
- Where did People Spend Time?
- How does dwell time vary through the day?
Enabling Elastic / Flexible Retail

Efficient store design / product placement

Personalized / intelligently placed displays / offers

Staff in the right place at right time

Enabled consumer:
- Location assistance
- Product information
- Project support

Context aware offers
- Upsell / related products
- Service offerings
- Loyalty Program

Opt-in
The Elastic Enterprise

New customer experiences

The digital office

Elastic cloud
Anybody really like fluorescent lighting???
Commercial Lighting In Transition

1/5th of global electricity is used for lighting

27% of commercial building energy is consumed for lighting

$54B commercial lighting market LED Lighting will constitute 52% share in 2020

Source: The Climate Group
Source: 2008 EIA Buildings Energy Data Book
Source: Pike Research
Power Over Ethernet (POE) LED Lighting
‘Digital Ceiling’ is a framework that enables an intelligent and integrated ceiling infrastructure that is DC powered (Ethernet Cable / PoE), secured, monitored and managed real time on an IP network.

Digital Ceiling Applications

- Ethernet Cable
- Commercial LED PoE Fixtures
- Dense Sensor Network (Light, Motion, CO2/CO, etc.)
- WiFi Access Point
- IP Video Surveillance Camera
- Building Mgmt (Connected HVAC)

Network manager

PoE / UPoE Switch in the Ceiling

Wiring Closet

Cisco / Partner Cloud Services

• Joulex – Lighting Manager:

Wall Switch

Building Mgmt System

Enterprise LAN

GW
The Elastic Enterprise

New customer experiences  The digital office  Elastic cloud
What about Enterprise policy and security, especially network security?

What about Enterprise networking functions and SDN?
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Market Transitions

Networking

Compute

Storage
Building Blocks for the Intelligent Carrier Infrastructure

Elastic Enterprise

Intelligent Hybrid Edge

Next Generation Service Provider

Intelligent Core

Intelligent Cloud

Unified Orchestration

OpenDaylight, OpenStack

OpenDaylight

OpenDaylight, OpenStack

Integrated L1-L3 Core

Integrated L1-3 creates massive efficiencies

Service Delivery Platform

Virtual Network

Physical Network

ASR9K, 900, NCS

Virtual Services

GSP

vFW

vASA
New Infrastructure Required

End to end Workflow and Policy

Hybrid Edge

Distributed Orchestration

Analytics Infrastructure

Enterprise Transition Infrastructure
Forces at Work

Transition to the Elastic Enterprise

Move to SW based service delivery

Distribution of Cloud Functions

Massive Growth and Distribution of Data
The Grid: The Greatest Inflection Point

- Public Internet
- Mobile Networks
- Internet of Things
- Business Networks
TOMORROW starts here.
The Concierge Internet Will Be Everywhere

New ways to connect with patients

Shared Industry Infrastructure

Omni Channel

Moving employees from harms way

Constituent self service

For Healthcare Providers

For Financial Services companies

For Retail and Consumer Products

For Manufacturing, Energy, & Communities

For Public Sector
Internet of Everything Creating New End Points, New Networking Requirements

Source: Cisco Internet Business Solutions Group, 2012
The Next Generation Service Provider

- Service Provider
- Consumer
- Enterprise