

Technology Futures – 2009

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A Presentation By

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I Last Year's Predictions

A Good - 6

B Almost - 3

C Poor – 2

II Trends

A Companies

1 Google

a Google at 10 - Compared to Microsoft

- (1) Age
- (2) Revenue
- (3) Revenue/Employee
- (4) Searches Per Hour

b Network Effects

- (1) Google is the emerging dominant company in the Internet era, much as Microsoft was in the PC era.
- (2) Much of its success is because it is a finely honed learning machine.
- (3) In the Internet marketplace, users can easily switch to another search engine. Similarly, advertisers and publishers can switch fairly easily to rival ad networks operated by Yahoo, Microsoft and others.
- (4) There is no tight technology control, as there is with proprietary PC software.
- (5) Direct Effects
 - (a) Software & document formats & technology standards incompatible with a rival's technology
- (6) Indirect Effects
 - (a) Large numbers of users
 - (b) Ability to learn from those users
 - (c) Power of a well-known brand
 - (d) User inertia
- (7) There are network effects that present formidable obstacles to rivals
 - (a) The "experience effects" of users and advertisers familiar with Google's services make them less likely to switch
 - (b) A whole ecosystem had developed where companies tailor web sites to get higher rankings on search engines - focusing their efforts on the market leader - Google.

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2 Microsoft

- a The Torch Has Been Passed...
 - (1) Current revenue streams
 - (2) Single-Era Conjecture
 - (a) Mainframe Era
 - (b) PC Era
 - (c) Internet Era
- b Distracted by Google
 - (1) Military Strategy
 - (2) Google Apps & Docs
 - (3) Not to increase profitability but rather damage focus
 - (4) Attack where it really matters
 - (5) Azure may bring the fight to Google
- c One Bright Light – Sharepoint
 - (1) Financial Results For 2008
 - (2) Attracts social software vendors
 - (a) Awareness
 - (b) WorkLight
 - (c) NewsGator
- d Acquisitions
 - (1) Navic Networks
 - (a) Real-time audience measurement
 - (b) Addressable Advertising
 - (c) The Admira product
 - (2) Powerset
 - (a) New technology in the battle with Google
 - (b) Semantic Search
 - (c) Relies on sentence structure and syntax to extract meaning
 - (d) Based on PARC technology

3 Apple

- a Macintosh continues to be a strong-selling niche computer brand
- b Apple is transforming itself into a consumer electronics and media distributor juggernaut
 - (1) Retail
 - (2) iPod and iTunes Store
 - (3) iPhone and Apps Store
 - (4) Generator Research Forecasts 2013 Smartphone Market

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4 IBM

a Services Lead The Way

- (1) Global Services business leads the company in revenue
- (2) Now IBM's research arm is being integrated into the services mix
They already do CRM, manufacturing, supply chain and HR
Now they're moving into entirely new areas of work

b Acquisitions

- (1) Cognos (January 2008)
 - (a) \$5 Billion
 - (b) Canadian business intelligence software company
 - (c) IBM now becomes the leading provider of technology and services for business intelligence and performance management.
 - (d) Supports IBM's Global Information on Demand effort
- (2) ILOG (January 2009)
 - (a) \$340 Million
 - (b) French developer of logistics and back-office operations software
 - (c) Strengthens IBM's business process management business

c Information on Demand

- (1) A marriage of master data management, analytics, industry-specific applications and services
- (2) They believe businesses are moving from an "application agenda" to an "information agenda"
- (3) They're closest competitor is Oracle with Microsoft and others not far behind

B Software

1 Operating Systems

a General

- (1) OSs In Use For End User Desktop 2008
 - (a) XP
 - (b) Mobile
 - (c) Vista
 - (d) Linux
 - (e) Mac OS

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(2) End-User Desktop 2014

- (a) It Will Not Be The Same
- (b) It Will Be Virtualized
- (c) It Will Be Mobile
- (d) It Will Be Secured In Depth, By Users
- (e) It Will Be Running Windows, Maybe
- (f) It Won't Be A Desktop At All

b Ubuntu

- (1) Fastest-growing version of Linux
- (2) 10 million people use it
- (3) IBM, H-P and Dell ship servers
- (4) Google also uses a modified version
- (5) US business penetration
- (6) European examples
- (7) Development comparison to Vista

c Windows 7

- (1) Pluses
 - (a) Faster boot times
 - (b) Keeps (but improves) good-looking Vista user interface
 - (c) Fixes Vista flaws like slow search
 - (d) Tighter memory footprint
 - (e) Better battery life
- (2) Minuses
 - (a) Poorer security than Vista (UAC issue)
 - (b) Media device-centric (too consumery)
 - (c) Doesn't rethink what an OS should be
 - (d) Still relatively bloated, so it misses the Netbooks boat
- (3) Timing
 - (a) Microsoft has to have Windows 7 ready by the 2009 holiday season
 - (b) Needs to be ready by September 2009 so that OEMs can test and preload systems for retail sale
- (4) Versions
 - (a) Windows Starter Edition
 - (b) Windows 7 Home Basic
 - (c) Windows 7 Home Premium
 - (d) Windows 7 Professional
 - (e) Windows 7 Ultimate
 - (f) Windows 7 Enterprise

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2 Applications

- a Rich Internet Applications - Silverlight vs Flash
 - (1) Install Penetrations
 - (2) Adobe Flash
 - (a) Default standard
 - (b) Jan 2009 - 55% of all computers have the current Flash Player
 - (c) 1 million downloads of developer SDKs
 - (d) 80% of online videos viewed using Flash
 - (e) Alliance with Time Warner (Turner Broadcasting, Warner Bros. and HBO)
 - (3) Microsoft Silverlight
 - (a) "There's no question Silverlight is the biggest threat to Adobe in years," – Piper Jaffray
 - (b) MS signed big-named partners Netflix and rival Blockbuster
 - (c) Since Silverlight was first announced in 2007, online video usage of Flash has risen from 66% to 80%, Adobe notes.
 - (d) Many people first encountered Silverlight in August, when Microsoft teamed with the Olympics to present international sporting events via the technology
- b Browsers – Google's Chrome
 - (1) All of today's browsers were designed before video, spyware, web-based games and web-based applications like Google's Docs word processor.
 - (2) "We realized that the Web had evolved from mainly simple text pages to rich, interactive applications and that we needed to completely rethink the browser."
 - (3) Many new 'ease of use' features and incredible speed improvements
 - (4) What does Chrome mean to the market

C Hardware

1 Blu-ray

- a The Market
 - (a) One of the more successful new CE product launches in recent history
 - (b) DisplaySearch market estimates
 - (c) CEA Market Research
 - (d) Adams Media Research - Household penetration statistics after 3 years from launch
 - (e) 1,100 Blu-ray titles available (Jan 2009)

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- b The future
 - (a) SNL Kagan Research Estimates
 - (b) Concerns
 - (c) BD-Live
- c Archival Discs
 - (a) Delkin Devices is now shipping Archival Gold Blu-ray recordable media
 - (b) Guaranteed to preserve data safely for over 200 years
 - (c) 25GB of data written at a 4X speed in 23 minutes

2 Mobile Devices

- a Where are we today?
 - (a) Market shares US and worldwide
 - (b) Worldwide cellular use
- b How Are They Used?
 - (a) Web Browsing Market Numbers
 - (b) Maps & Navigation Applications
 - (c) In School
- c Near Field Communications
 - (a) Definition
 - (b) MasterCard & Visa projects
 - (c) Nokia 6212

3 Gadgets

- a Mino Flip Pocket Video
- b iBreath
- c Wind-Up Remote Control
- d Internet Radio
- e Kindle 2
- f Nikon Media Port UP300
- g MedSignals
- h LG Watch Phone

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D Communications

1 New IP metrics

- a 1 Gigabyte
- b 1 Terabyte
- c 1 Petabyte
- d 1 Exabyte
- e 1 Zettabyte

2 G4 Wars

- a Who's on which side
 - (1) WiMAX
 - (a) Sprint
 - (b) Intel
 - (c) Microsoft
 - (d) Google
 - (e) Comcast
 - (f) Time-Warner Cable
 - (2) LTE (Long-Term Evolution)
 - (a) Verizon
 - (b) AT&T
 - (c) T-Mobile
- b Similarities
 - (1) Both LTE and WiMAX are 4G technologies designed to move **data** rather than **voice**. Both are IP networks based on OFDM (Orthogonal frequency-division multiplexing) technology — so rather than rivals, they're more like siblings.
 - (2) Despite their differences in origin and current availability, the two siblings may grow closer with time, especially as newer iterations on the IEEE 802.16 standard emerge.
- c The business model of each side
 - (1) LTE - The cellular industry wants to hold onto their revenue and dictate the terms of other applications (computing and entertainment) while claiming an open environment
 - (2) WiMAX - The new participants — the Internet telephony companies and the entertainment participants such as gaming — want a seat at the table and don't want terms dictated to them.
- d Advantages
 - (1) WiMAX Advantages
 - (2) LTE Advantages

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- e In the end...
 - (1) It's the big ship vs
 - (2) The upstart

3 Cloud Computing

- a Definition
- b The Upside and Downside
 - (1) Pew Internet Survey
 - (2) gMail, Citrix, Amazon outages
- c Who's Doing What?
 - (1) Academic Cluster Computing Initiative
 - (2) Google App Engine
 - (3) Amazon Web Services
 - (4) Microsoft Azure Services Platform
- d Private Clouds
 - (1) Definition
 - (2) Web 2.0 Players
 - (a) Nirvanix
 - (b) Cleversafe
 - (c) ParaScale

4 Instant Messaging

- a Nielsen Mobile Study
 - (1) Q4 2007 American cell phone users survey
 - (2) Teenagers 13-17
 - (3) 18-24 demographic averages
- b Harris Interactive Study
- c Ohio State and University of California, Irvine Study
- d Since IM is becoming more and more acceptable in the workplace, IT departments will be forced to find solutions to the security issues posed by the technology.

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III Enabling Technologies

A Software

1 Intelligent Assistants

- a CALO: Cognitive Assistant that Learns and Organizes
- b A First Commercial Spin-off - Siri, Inc.
 - (1) Founder - Adam Cheyer
 - (2) The initial version, to be released this year
 - (3) Voice command demo
- c Other approach – Rearden Commerce
 - (1) Rearden Personal Assistant
 - (2) Corporate product given to individuals within client companies
 - (3) Application areas: travel, airport parking, car services, dining reservations, entertainment tickets, package delivery and video conferences

B Hardware

1 TransferJet

- a A Sony-proprietary technology
- b 14 Japanese consumer electronics firms, including top TV and camera manufacturers, have adopted a standard ultrawideband technology
- c Three characteristics
 - (1) Simple Operation
 - (2) Safe Connection
 - (3) Efficient Transfer
- d Wireless (1-2 inches)

2 Holographic Storage

- a Inphase Technologies is by far largest single developer
- b Recently Inphase has suffered setbacks
- c In comes Nintendo
- d Joint Patent for Nintendo and Inphase

3 The iPill

- a Take 2 aspirin and call me in the morning
- b Philips Research in Holland
- c Pharmaceutical Profiles Ltd. of England

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C Communications

1 Printed Electronics

- a Kovio now printing RFID tags
- b Use nine electronics-use inks
- c They've developed silicon inks that are deposited on thin metal-foil substrates 16" x 16"
- d Cost advantages
- e Initially the products will be disposable smart cards for public transportation
- f We could see products by the end of 2009 or early 2010

2 Femtocell Technology

- a Originally known as an Access Point Base Station
- b A device that allows a cellular phone to connect to the Internet for calls to provide better coverage indoors
- c AT&T has announced its first 3G femtocell – the AT&T 3G MicroCell
- d Rival Verizon Wireless is also exploring femtocells

IV This Year's Predictions

A Hardware

B Software/Media

C Communications

D The "Far Out" Forecasts