10 Hypotheses for Technology Investing

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#1: "Next" Web Architecture = Hypernet + Hyperweb

Hypothesis: Smart phones are 50% of web devices; data distributed in many clouds = hugely disruptive.

- Consumer adoption of really smart phones changes architecture of internet and web
  - Hypernet: internet overlaid with smartphones
  - Hyperweb: software infrastructure for the above; access to many clouds from your body
- Major changes in use cases (e.g., index search MUCH less important on phones)
- The most valuable transactions are on devices on your body, not on PCs
- Mobile requires a different design sensibility than web
  - Some giants (e.g., Google, Facebook, Microsoft) have not extended business model to mobile, making them vulnerable; this levels playing field for all
- Inconvenience of moving content libraries will ensure fragmentation of "The Cloud"

- *Time Horizon: 2011 and beyond*
- *Confidence: High*
- *Outcome: Potentially the most disruptive change on the horizon*

#2: The Decline & Fall of Windows Unlocks Revenue

Hypothesis: Windows no longer provides a measurable ROI to enterprises, who will eventually reallocate tech spending

- Software development on Windows platform has all but stopped; developers focus now on web, Apple operating systems, and open source
- Thanks to Microsoft's subscription model, Windows is a tax on customers
  - Each desktop eliminated saves $1000 in support per year
- In 2011, Windows devices will account for <50% of internet-connected devices for the first time, down from 95% 4 years ago; smart phones and tablets taking share rapidly.
- Microsoft can shift model to leverage Exchange monopoly; should enable major growth in profits for five years
- Will shift to smartphones/tablets favor SaaS over established client/enterprise apps?
- MSFT acquisition of Skype may be brilliant; global telecom co. for $8 billion = bargain

- *Time Horizon: Unknown*
- *Confidence: Very high over a five-year term*
- *Outcome: Exceptionally bullish for those who can take a meaningful share of "Windows dollars" and "SAP dollars" as they redeploy.*

#3: Index Search is Peaking

Hypothesis: Google's position of dominance on the web is under threat, due largely to the consequences of success

- Thanks to Google, the organizing principle of the HTML 4 web is "page rank." Every page is included in Google's index, which has invited manipulation of algorithms. Signal-to-noise ratio of index has become unacceptable.
  - Google has been losing "search" share for years, as new models sliced off parts of the market. Index search may be down to half the search market, broadly defined.
    - Wikipedia: facts
    - Facebook: social, taste, money
    - Twitter: real-time search
    - Yelp: local and restaurants
    - LinkedIn: business people
    - Realtor.com: real estate listings
  - Google share on mobile and tablet MUCH lower than PC; Android does not fix this.
- Google has many opportunities but margins likely to be far below index search
  - YouTube, Google+, enterprise, mobile (requires strategy change)
  - Google's influence linked to search, which explains why influence is declining significantly.

- *Time Horizon: Now*
- *Confidence: Very high*
- *Outcome: Bullish for content owners who execute well; bullish for companies picking off new forms of search. Google can grow, but its influence has probably peaked.*

#4: Apple’s Model Threatens Web

Hypothesis: The app model of the iPhone and iPad threatens the open source web, led by Google

- Web is more flexible, but it has become Digital Detroit: many threats, much insecurity
  - Apple’s iOS app model simplifies access to information on Internet
    - Consumers pay huge hardware premium for access for content available free on PCs
    - Benefits: brands, differentiated content, safety vs. web’s commoditization, Wild West
- Success of iPad confirms iOS defeated HTML 4 web economically; are PCs next?
- Content owners are better off with Apple, rather than Google as dominant player, due to Apple’s commitment to intellectual property, brands, security, and comprehensiveness.
- HTML5 is next threat to Apple . . . but it’s no bargain for Google; HTML 5 goes beyond app model in terms of giving control to content owners and consumers.

- *Time Horizon: Now*
- *Confidence: Very high*
- *Outcome: Exceptionally bullish for Apple; big opportunity for major content brands; Issue for Apple: will it accept and support lack of control inherent in HTML 5?*

#5: HTML5 is Game Changer for Publishers

Hypothesis: First major upgrade in a decade to infrastructure of the web will be disruptive, enabling monetizable differentiation of content

- HTML5 is not just a programming language; enables new models of web experience
  - Developers will embed audio and video directly in web pages, replacing Adobe's Flash plug-in; enables much greater differentiation in sites, advertising, etc.
  - Content publishers will redesign their sites to reduce power of Google, ad networks
- HTML5 will be disruptive in ways we cannot imagine today: pendulum swinging to favor content creators and publishers. Imagine Amazon or eBay storefront as an ad.
  - Everything can be an app . . . every piece of content . . . every tweet . . . every ad
  - Ads: create demand and fulfill it at the same time . . . without leaving publisher's page
  - Other tech (e.g., Wordnik) enables publishers to protect and monetize text onsite and off

- *Time Horizon: 2012 and beyond*
- *Confidence: Very high on HTML5 transition*
- *Outcome: Exceptionally bullish over ten years, as HTML5 should inject new life into web; may be a check on Apple. HTML 5 gives Twitter another chance to develop a business.*

#6: Tablets Are Hugely Disruptive

Hypothesis: Apple's iPad will be even more disruptive than the iPhone

- If someone doesn't step up soon, Apple will own the tablet market
  - What if iPad share is closer to iPod (70%) than iPhone?
- iPad has replaced DVD as the most rapidly adopted tech product ever
  - Corporate adoption coming MUCH earlier in the cycle than with past tech products
- There should be competitors, but no one is threatening Apple
  - Android
  - HP
- If tablets gain traction in enterprises, market opportunity will be effectively unlimited.

- *Time Horizon: 2011 and beyond*
- *Confidence: High for disruption; no idea on market share*
- *Outcome: Hugely bullish for Apple; possibly bullish for #2 player, if one emerges*

#7: First Wave of "Social Web" Is Over

Hypothesis: New entrants face uphill battle for users due to rising engagement of incumbent services; anticipate a period of consolidation by market leaders, leveraged by traditional brands.

- Facebook has won platform war. It's the new Windows. Key opportunity = licensing Connect. Lesser "established" players (e.g., Twitter, Yelp, Pandora, Skype, LinkedIn) also win as platforms, but FB gets to place a 30% tax on everyone else (e.g., Zynga).
  - Expect a consolidation phase where traditional brands (e.g., Old Spice) leverage the social web for marketing, boosting influence of FB, other leaders
    - Analogy: web success of brick-and-mortar retailers between 1998 and 2000
  - Going forward, "social" must be a feature of every product
  - Likely threat to Facebook: peer-to-peer social networks. Google+ = uphill battle.

- *Time Horizon: 2011 and beyond*
- *Confidence: 50%*
- *Outcome: Hugely bullish for FB and anyone who can leverage Facebook. Negative for new "social" start-ups dependent on current web technology.*

#8: Smartphones in US: Apple + 7 Dwarfs

Hypothesis: Thanks to Verizon's commoditization strategy for devices, Apple is the only smartphone vendor with an attractive business model.

- Android has more units, but iPhone earns almost all the profits
  - iPhone gross margin per unit approximates Android gross revenues per unit
- Android continues to gain share, but prosperity has not been great for eco-system.
  - How vulnerable is data on Android? Seems like Digital South Central Los Angeles.
    - 64 apps removed from Android store for stealing user data
    - No vendor is responsible for security of Android products
      - Security is a business opportunity
- Will H-P do anything with webOS?

- *Time Horizon: 2011 and beyond*
- *Confidence: High*
- *Outcome: Bearish, unless it causes a 3rd network to appear (e.g., peer-to-peer WiFi)*

#9: Wireless Infrastructure Is a Competitive Threat to US

Hypothesis: Trying to support two wireless technologies has caused the US to fall behind other developed countries. Allowing carriers to set wireless policy will ensure that the situation continues to deteriorate.

- Assertion: US has least capable wireless infrastructure in developed world
  - It's a drag on productivity, competitiveness
- Current trends suggest gap will grow
  - Chronic underinvestment in infrastructure by US carriers
  - Converged technology is not a silver bullet due to underinvestment
- Will an alternative to carriers emerge?

- *Time Horizon: Current*
- *Confidence: 90%*
- *Outcome: Bearish, unless a 3rd option appears (e.g., peer-to-peer WiFi)*

#10: Integration of TV & Internet Could Be Disruptive

Hypothesis: The convergence of web and television has the potential to disrupt cable and satellite . . . but it probably won't happen.

- Cable and satellite vendors have adopted digital technologies for transmission, but prevented such technologies from disrupting their business model
  - e.g., continued use of Nielsen sampling implies carriers have something to fear from the exactness of web measurement of audience sizes
- Latest flat panel televisions have potential to disintermediate cable/satellite vendors by improving the consumer experience
  - e.g., program discovery, DVR management, etc.
- Will anyone step up to this opportunity?

- *Time Horizon: Now*
- *Confidence: Low*
- *Outcome: The greater the disruption in consumer behavior, the greater the investment opportunity*

Context and Strategy

Economic Hypotheses:

- Deleveraging of global economy will continue for several more years
- Revival of Herbert Hoover Economics will produce bad outcomes globally
- US government will not deal with real economic issues
- Unemployment will remain high, especially on a “fully diluted” basis

Market Hypotheses:

- NASDAQ no longer functions as a capital formation market. Private secondary trading filling the hole.
- Ability of major banks to influence government policy will ensure “best possible” environment for trading
- Wall Street has become a centrifuge for spinning the cash out of the economy; capital formation function is broken

Recommended Strategy:

- Abandon focus on new social platforms
- Focus 100% on companies that are cloud + multiscreen; HTML 5 as proxy.
  - Focus on earliest stage, as well as larger beneficiaries of disruption
  - Full contact investing
  - Moonalice has demonstrated power of HTML 5 for live video and audio vault