

Organizational Concepts for Entrepreneurial Technology Companies *-the cathedral or the bazaar?*

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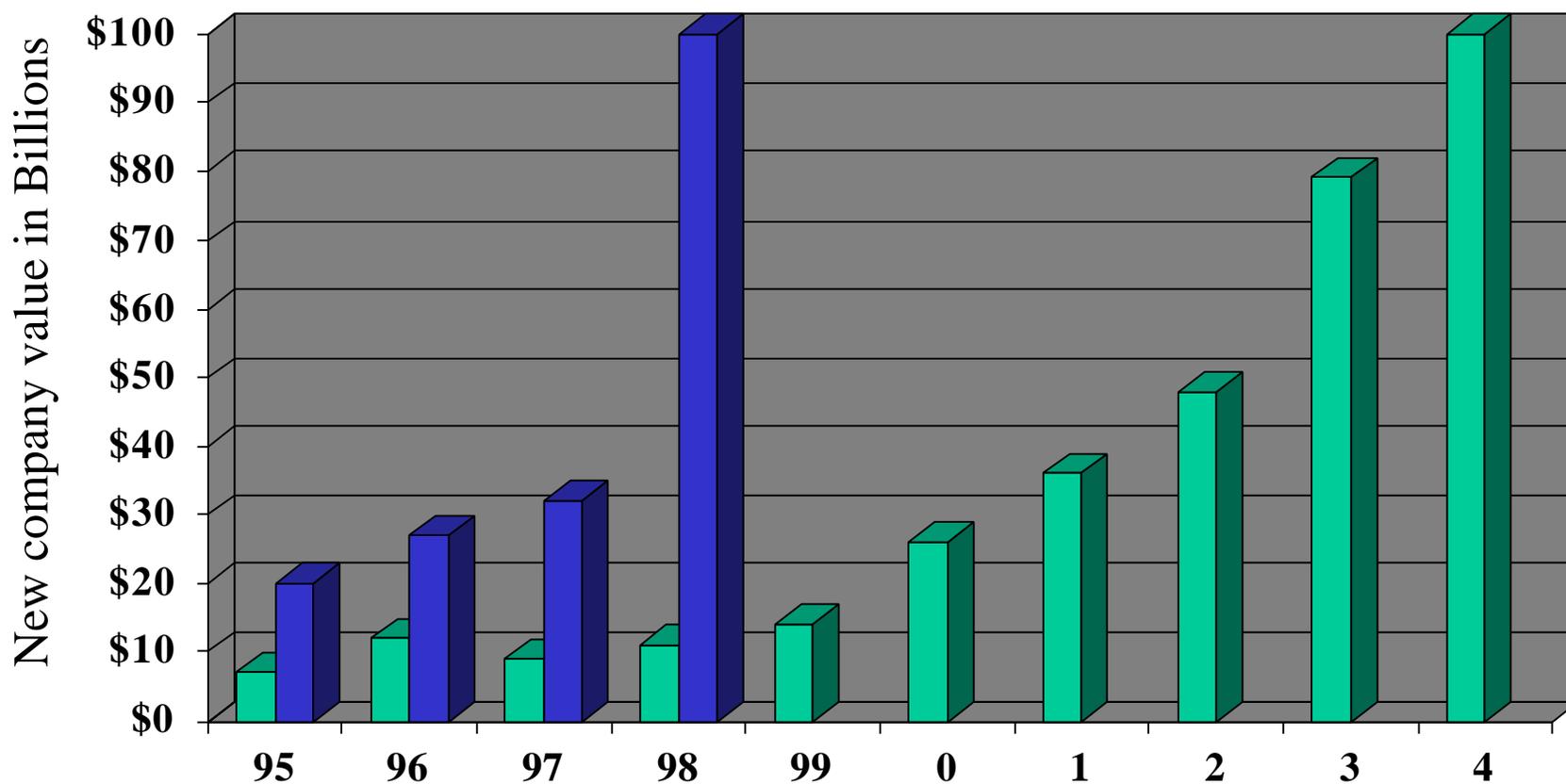
There's change and then there is change!

“...every strategic inflection point [is] characterized by a ‘10X’ change ...”

**“There’s wind and
then there is a typhoon,
there are waves and
then there’s a tsunami”**

- Andy Grove

Visible Signs: Wealth Creation

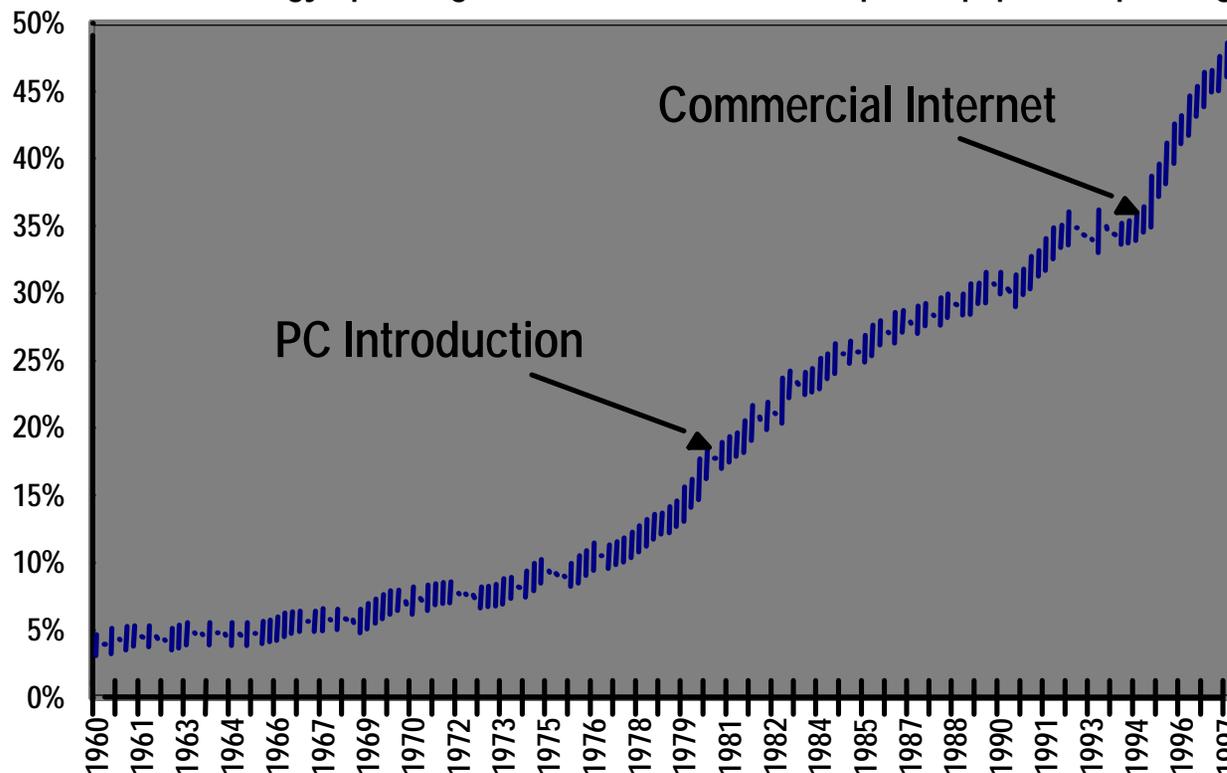


First 10 years of PC

First few years on Internet

Visible Signs: Corporate Tech Spending Continues to Rise

U.S.-based Information Technology Spending as a Share of Business Capital Equipment Spending - 1960 to Q2:1997



Source: U.S.
Department of
Commerce.

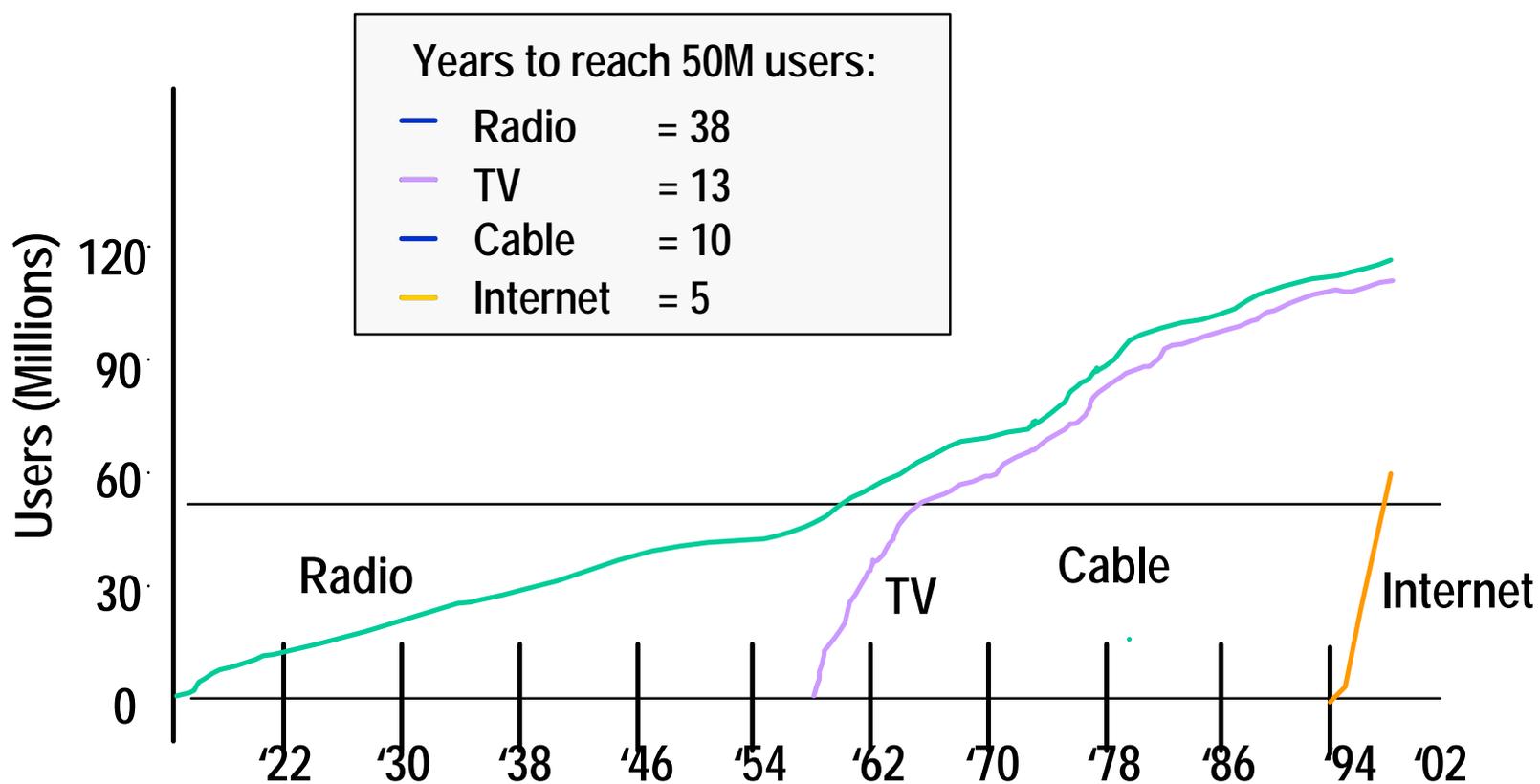
Note: Information technology spending includes purchases of information processing and related equipment (including office, computing, and accounting machinery), computers and peripheral equipment, communication equipment, instruments, and photocopy and related equipment.

Visible Signs: Public Pure Play
Internet Winners - \$ Billion Club

	Market Value (4/98)	Market Value (3/99)
Yahoo!	\$6.3 B	\$34.2 B
Amazon.com	2.2	20.8
eBay	n/a	18.8
@Home	2.2	14.9
Netscape	4.0	9.7
Excite	1.3	5.7

Priced as of 4/22/98, 3/17/99

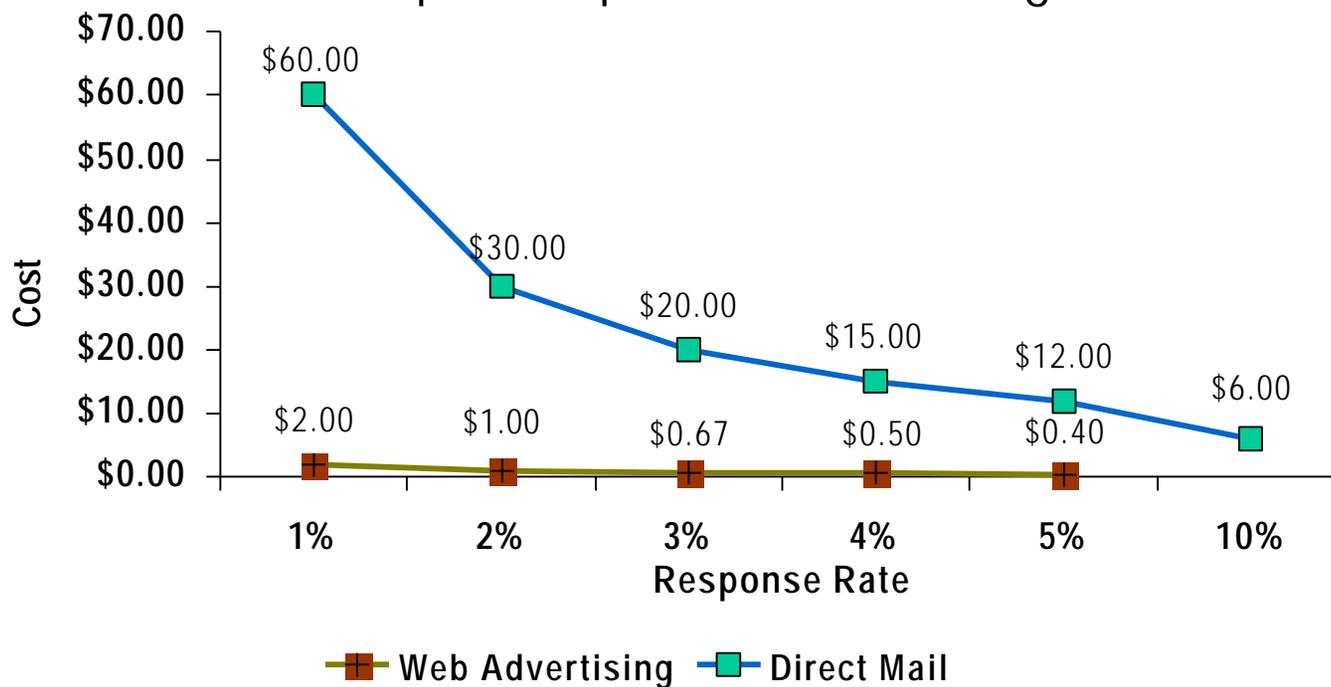
Visible Signs: Social Change



Source: Morgan Stanley.

Behind the Scenes: Changes Economics of Reaching New Customers

Cost per Response/Click-Through

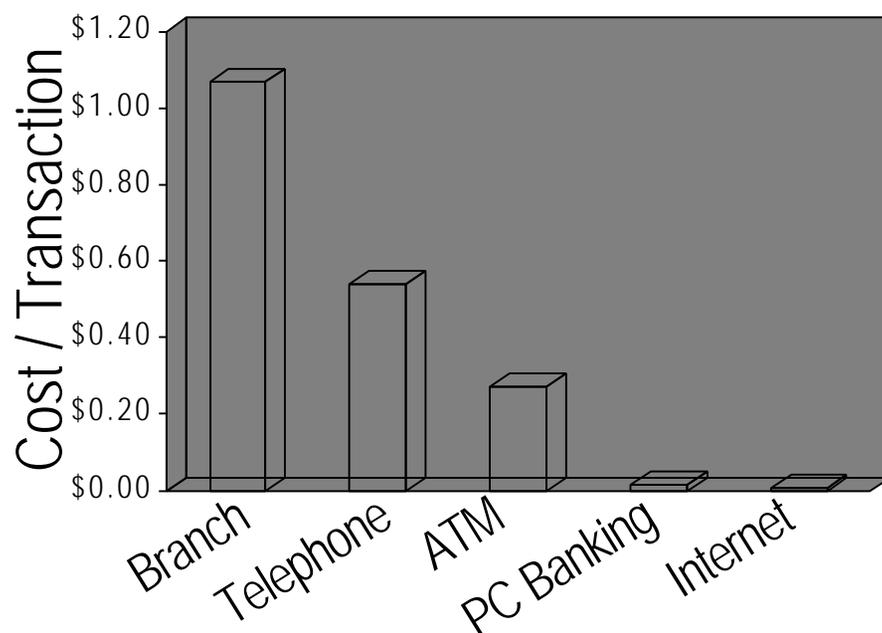


Even with lower click-through / response rates, Net advertising costs much less on a per-response basis!

Source: Direct Marketing Association, Morgan Stanley, KPCB analysis.

Behind the Scenes: Changes the Cost of Serving Customers

Transaction Costs (Banking)



Source: Booz Allen Hamilton.

- Net transactions cost far less than through traditional channels
- Investment for a commercial bank to reach 10M potential customers
 - Bricks-and-Mortar: \$900M
 - The Net: \$1M

Behind the Scenes: Revolutionizing the way companies interact with customers



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- New customer acquisition
 - 80% of Dell's small business Web customers never purchased from Dell before
- New channels to the customer
 - 70% of Internet users plan to make travel plans and purchases on the Web
- Increased availability to customers
 - 40% of AOL's merchant online sales took place between the hours of 10 P.M. and 10 A.M.
- Building an online customer base
 - Amazon.com has 6.2M records – mailing addresses, e-mail addresses, credit card numbers – of customers who have made purchases on their site

Behind the Scenes: Brand Building is Changing



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- Amazon vs. Barnes & Noble
- Yahoo vs. Mickey Mouse
- SportsLine vs. ESPN
- e-Trade vs. Merrill Lynch
- C|Net vs. CNBC
- CD Now vs. Tower Records

Behind the Scenes: Internal Operations are Changing

Savings

- Procurement: GE purchases \$1B in supplies over the Internet in 1997
**\$500-700M
(3 yrs.)**

- Customer Service: Cisco reports customer service productivity has improved 200-300% from using the Internet
**\$360M
(annually)**

- Logistics: FedEx reports that PC and Web interfaces are used by 950K customers to track 12M packages annually
**6 Million calls
per year**

Source: Company reports.

Behind the Scenes: Communications Networks are Changing



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- Qwest changing the rules on backbone fiber capacity
- Level 3 investing \$10B in an all IP network
- DWDM growth causing dramatic changes in available capacity
- Voice over IP projects proliferate at Lucent, Nortel, Cisco



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And at the macro level....

The New Economy



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- Conventional wisdom: **American dream over.** *“I’m OK, but my kids...”*
- **40% of GDP growth** from tech
- **Silicon Valley is symbol:** <3% unemployed, high wages, every segment moving up
- Silicon Valley is **state of mind:** it’s everywhere, for everyone...

The New Economy

Old versus **New** economy

a skill

managers

labor v. mgt

bus v. environ

security

monopolies

job preservation

wages

plant, equipment

life long learning

entrepreneurs

teams

encourage growth

risk taking

competition

job creation

ownership, options

intellectual property

The New Economy

Old versus **New** economy

status quo

standardization

top-down

hierarchical

regulation

zero sum

sues

standing still

speed, change

custom, choice

distributed

networked

pub/private partners

win win

invests

moving ahead

**What goals are we designing
the organizational form for?**

The “Environment”

- Change as a “process”
- A new Competitiveness -Adam Smith II
- Technology : “driver” or “tool”
- People
- Whose Rules?
- Static vs. Dynamic - Creation of new markets
- Amplification of Events & Time Compression
- A “winner take all” economy

Pace of Change



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- Diseconomies of scale
- Diseconomies of process / hierarchy
- Timeliness of information disbursement
- The role of standards

Success Factors - Old & New



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- People vs. Organization
- Process vs. Instinct
- Questioning vs. Hierarchy
- Leverage vs. Entrenchment
- Managing Risk vs. Risk avoidance
- Paranoia & Persistence vs. History
- Role of Trial vs. Consistency
- Best of breed Offerings



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A detailed look at the factors....

Internal Factors

- People: Building the “balanced” team
- Culture
- Technostructure & Infostructure
- Engineering Methodology
- Organized Chaos : Execution vs. innovation.
- Pull vs. Push
- About Customers & Marketing
- Planning & process

People

- Top 5% - “winner take all”
- Instinct & Vision
- Personality mixes
- Role of the “Flakes”
- Leading vs. managing

Culture

- Setting the goals
- Managed Conflict
- Persistence & iteration
- Tolerating mistakes & rewarding failure
- Sense of urgency
- Paranoia
- Success & Complacency

Technostructure & Infostructure



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- Specialization and complexity of technology
- Decision-making: top down or bottom up?
- The role of the “fringe” employee.
- Nuances as Pitfalls
- Horizontal and vertical communication & cooperation.

Engineering Methodology



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- Evolvability
- Specialization
- Experimentation
- Change isolation

Organized Chaos: The Shepherd or the Sargent?



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- The Flakes vs. Engineering vs. Marketing
- Experimentation
- Execution
- Budgets, Schedules, Tasks vs Project Stage

Push vs. Pull

- Products
- Brands
- People
- Leverage

Changing Roles: Marketing & Customers

- Listening to the customer
- Participants in Design / Experimentation
- Meeting vs. Teaching Requirements
- Discovering “Applications”
- Growth Patterns: the “stairstep”
- Perception & Reality; the Halo effect
- Momentum

Planning & Process



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- Process vs. Instinct
- Risk Balancing & Burn Balancing
- Risk Balancing of Projects
- Planning & Variability

Optimized for what?



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“The early movers are the only companies that have the potential to affect the structure of the industry and to define how the game is played by others.”

-Andy Grove

Case Study: Open Source



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Evolvable Systems: Cathedral-building

The traditional development model reflects the “cathedral-building” model...

- Follow a single approach and vision
- Optimize for performance
- Release only bug-free products
- Products and technologies are developed in isolation
- Examples: IBM System/360, MSFT Windows platform, Intel Pentium, AT&T network

Evolvable Systems: the Bazaar model

The new development model is evolving to the “bazaar” model...

- Optimize for evolvability
- Adopt new approaches and agendas regularly (“plan to throw it away”)
- Delegate/buy/outsource everything you can
- Be open to the point of promiscuity
- Release early, and often
- Products and technologies have to exist in a dynamic community
- Examples: Linux, Apache, Sendmail, Excite, Microsoft (the company), QWEST/Williams networks

Weather Forecast



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- Rate of change will accelerate - life will be more complex, more busy...
- Innovation, opportunities & entrepreneurship will thrive
- Fun & fortunes will be in abundance
- Adaptability, agility & momentum will be the key to success!

“As long as we maintain the practices that have made us what we are today, there is no limit to the longevity of this situation”

-F.E.Terman, Vice President, Stanford University



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Comments?
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