

# The Future of Innovation and IT

**Vince Kellen**

CIO, University of Kentucky

[Vince.Kellen@uky.edu](mailto:Vince.Kellen@uky.edu)

June 25, 2010

The Information Systems  
Executive Forum (ISEF)



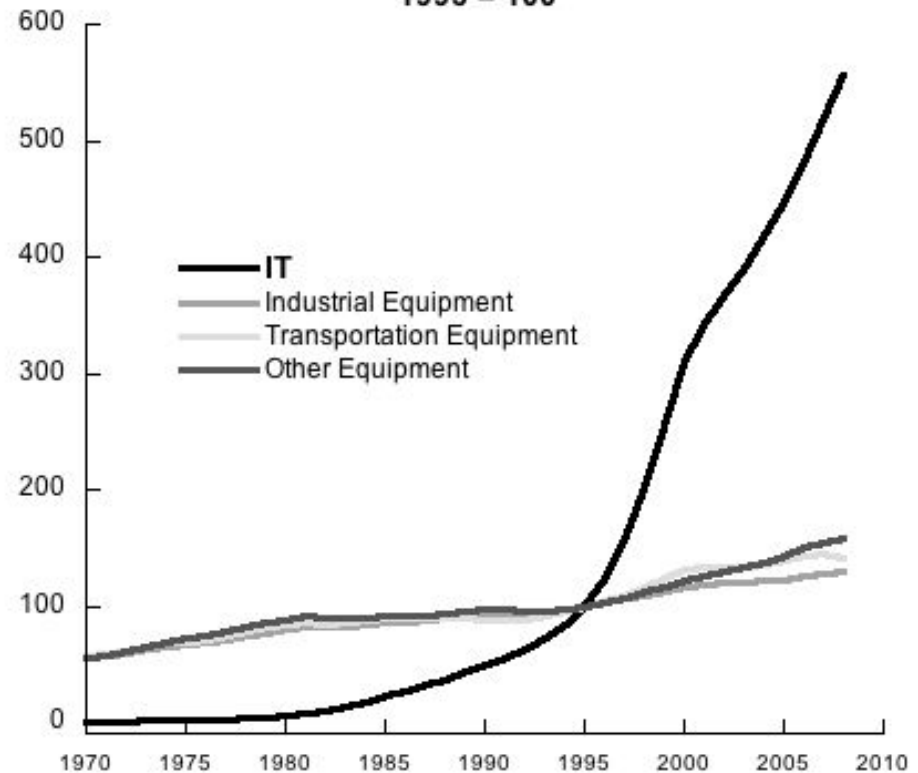
# IT Doesn't Matter Anymore

- Arguments against the CIO/IT innovating
  - IT is a commodity; cloud makes it easy
  - The business leaders can do this themselves
  - CIOs aren't 'aligned,' aren't strategic, are too techie
- Errors in this argument
  - Some IT/CIOs are aligned and strategic. The scarcity of this suggests its difficulty and its strategic potential
  - Some IT maybe a commodity, but information isn't
  - Unlike other technologies, information technology is infinitely flexible. Most technology obeys the laws of physics, which are rigid. IT has no 'laws' governing it
  - Innovation requires deep (learned) insight into IT and the forces that shape it (market, strategy, culture, etc.)

# Good question

- Andrew McAfee, Harvard, asks ‘Why do companies keep on spending more and more on IT?’

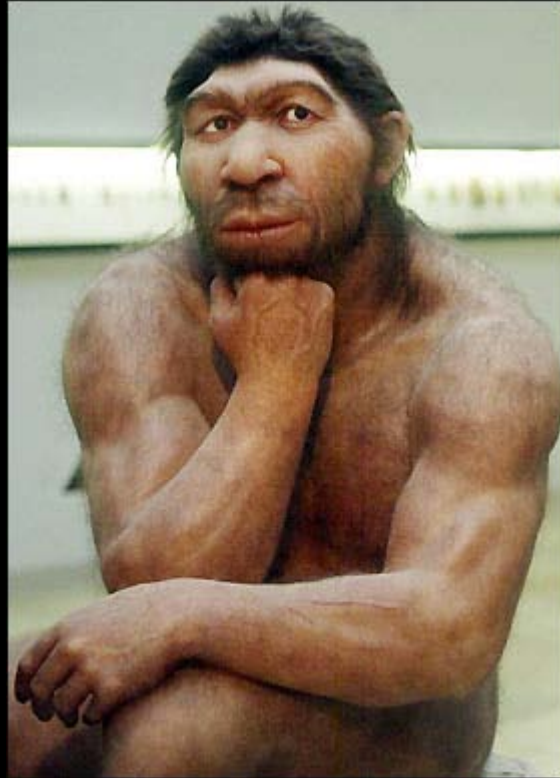
Standardized Quantity Indexes for Four Types of Equipment in the US Economy, 1970-2008  
1995 = 100



<http://blogs.hbr.org/hbr/mcafee/2010/04/corporate-americas-ongoing-lov.html>

# Something I always suspected....

## Signs of Neanderthals Mating With Humans



<http://www.nytimes.com/2010/05/07/science/07neanderthal.html>

# But read the fine print...

- Human interbreeding with Neanderthal likely occurred when a certain wave of humans migrated out of sub-Saharan Africa about 60,000 years. What caused this wave of migrations?
- We are all likely descendants of this group of more advanced humans (homo sapiens sapiens)
- This group had wanderlust and quickly traveled to all ends of the world and supplanted all other humans including Neanderthals along the way (see *Journey of Man: A Genetic Odyssey*, Spencer Wells)
- Did some change in our neuropsychology cause us to endlessly seek novelty? Did some of us leave because of the old men running the show? Did we grow tired of the same old routine? Simple curiosity?
- Were we all looking for the iPad we didn't yet know we wanted?

**My second answer to Andrew McAfee's question  
on why companies keep buying more IT**

**Ancient migratory behavior  
in a modern context**

# My first answers

- Half of human kind wants to change things to be more favorable to them. The other half resists this change
- Human change is carried out via language and information systems 'capture' and 'reflect' language
- Therefore information systems will constantly change to reflect changes in uses of language and culture
- This cycle repeats endlessly. In search of advantage, companies construct a new arrangement of words, (aka, cultures) displacing the old arrangement of words
- Along the way, IT people have to quickly change systems, since IT systems are the primary, if not only, means of analysis & communication of information and coordination of thought & action

# THE DESIRE TO TINKER WITH INFORMATION TECHNOLOGY IS ETERNAL

# 'War on String May be Unwinnable' Cat General

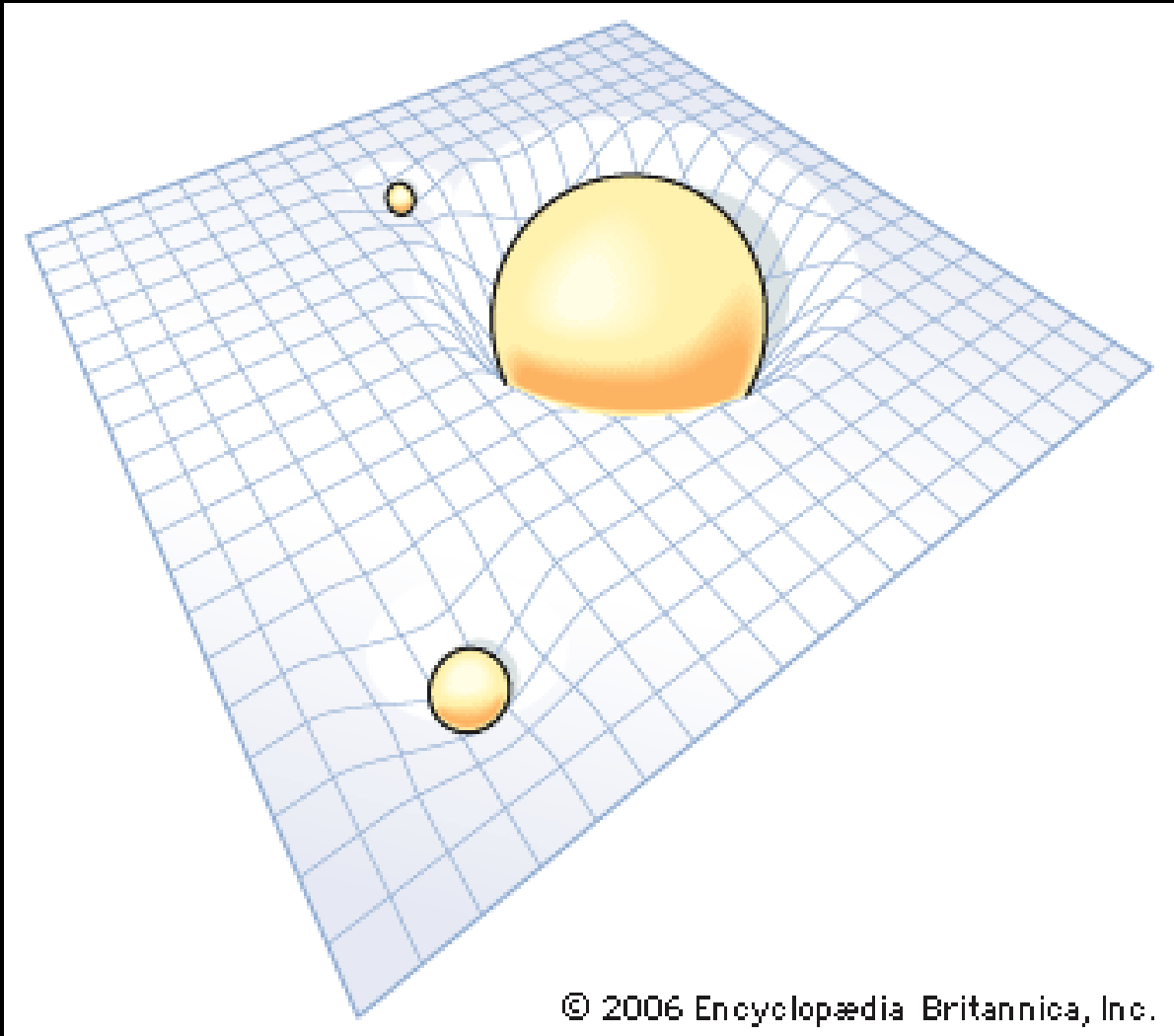
The Onion



# Innovation is a process of co-evolution

- The process of change isn't in one direction
  - New organization requirements -> new system requirements
- It is cyclic in which culture and systems interact with each other and change each other over time (co-evolution)
- Both customers and competitors react and learn from each other, changing the shape of competition
- Companies that can do this faster and cheaper than other companies can maybe beat the snot out of their Neanderthal peers
- This co-evolutionary process is path dependant and idiosyncratic to the firm (aka, non-reproducible and hence strategic)
- Managing this co-evolutionary process is *hard*. Who should or could lead this?

# Distorting the competitive space



# Hypercompetitiveness & IT (following McAfee, et al.\*)

- In IT-intensive industries, two things may be happening:
  - IT lowers barriers to entry, letting many small companies in
  - IT also makes the playing field unlevel, rendering it inhospitable, longer term, to smaller companies
- How do you explain this?
  - Over-optimism and access to cheap IT encourages new, small competitors
  - Over time, IT leads to hyper-competitiveness, favoring larger companies who 'kill' smaller companies. IT enables larger and still agile competitors
  - Think Pandora (from Avatar) where everything is hypercompetitive with less gravity. Bigger is better. If you are big, you have an endless food supply
- What does this mean for innovation and IT
  - In tech intensive industries, innovation is not for the meek, weak or faint of heart. The long-term future of the firm is at stake. Super-smart minds and high skill are needed. Amateurs and arm-chair strategists should stay home
  - In industries which have far less tech intensity, not too much changes

\*See: [http://andrewmcafee.org/2009/01/curiouser\\_and\\_curiouser/](http://andrewmcafee.org/2009/01/curiouser_and_curiouser/) and [http://andrewmcafee.org/2009/01/curiouser\\_and\\_curiouser/](http://andrewmcafee.org/2009/01/curiouser_and_curiouser/)

# Pick a door...



# Let's explore three complaints about innovation

1. Innovation is not done at the 'core'
  - Oh really? Explain Apple, Google, etc. in which innovation is central
  - What is the firm's core competency?
2. Innovation not nurtured, but bought
  - There is some truth to this, especially for marketing and sales-driven firms and the hypercompetitiveness of IT intense industries
  - Some big IT companies have been using M&A in lieu of R&D
3. The central (or remote) IT unit is not innovative
  - To a large extent, this may be true. Why is this?
  - Knowing there are few rules and many, many options, who has the ability to 'bend' the competitive space with information technology?
  - Are there two kinds of IT evolving? Operational vs. innovative?
  - Is there innovation in operations? Can operational innovations drive value? Should the split between operations and innovation be expanded?

Imagine a bike race...



# What should IT do?

- Master IT operations enough so they are not part of the problem and give yourself time to nurture innovation
  - Streamline, harden, right-source
- Figure out the nature of innovation in the firm
  - What is the role of information and IT in the organization? How can IT bend the competitive landscape? How can it create advantage?
  - What is the core competency of the firm? Does it grow innovation or buy it?
  - Where is the skill and acumen for innovation located? Where should it be located? How do you spot talent?
  - How can you give innovators time to innovate *but* access to the front lines where innovative insights arise?

# Questions?

If you are not confused, you haven't been paying attention.

Tom Peters