SHARE, August 2011, Orlando

IT Game Changers: The Mainframer's Guide to Becoming a Technology Trailblazer

Glenn Anderson, IBM Technical Training

Session 10042

SHARE Member Survey

- Employers want well-rounded, business-savvy employees
- "People need to understand the 'big picture' of how computers work, from the deep level programming to how it affects – and interconnects with – applications, servers, and other things in the data center"

Become an IT Game Changer…

- Understand the dissatisfaction with IT that is driving cloud computing
- Embrace a service-oriented approach
- Fix broken IT funding model
- Know when to jump the curve to the next generation of technology
- Realize full potential of disruptive technology
- Use IT as part of a corporate strategy

Computing models: A bit of history……

- **1950's / 60's / 70's - Centralized**
  - **Sharing and reliability**
- **Dumb, text-based terminals ----> PC's**
- **1980's - Distributed client server**
  - **Low costs and simplicity**
- **PC's ----> mobile devices and sensors**
- **Mid 1990's - Internet / Web**
  - **On demand computing**

Dissatisfiers →Disruptions / Technology Shifts

- **1980's** - how long it took IT to meet departmental needs
- **1990's** - thousands of physicists in the world who wanted access to data at CERN
- **Today** - IT apps are too costly and too difficult to use

Why the crazy interest in cloud computing today?

- IT needs to deliver service, to meet the needs of the business you are supporting
- IT has not been doing a good job of this. Users are not satisfied
- A private cloud is a model for IT to do a better job of delivering services to end users
- IT needs to operate as a value center. When IT is a cost center, the only thing they ask you to do is cut costs!

Some Characteristics of Cloud Computing

- Internet of Services
  - User experience
  - Decouple delivery from technology
- Process-oriented, industrialized approach
- Virtualized Assets
  - Security
  - Green footprint
  - Multi-tenant
- Flexible acquisition model

Approaches to Cloud Computing

1. Build a public cloud and market its services externally
2. Purchase services from a public cloud
3. Build your own private cloud, using technology that exhibits the characteristics of cloud computing
4. Enhance your service delivery to embrace the public cloud computing model

Cloud-onomics…

CLOUD COMPUTING

VIRTUALIZATION + ENERGY EFFICIENCY + STANDARDIZATION + AUTOMATION = Reduced Cost

….leverages virtualization, standardization and automation to free up operational budget for new investment

AGILITY + BUSINESS & IT ALIGNMENT + SERVICE FLEXIBILITY + INDUSTRY STANDARDS = OPTIMIZED BUSINESS

… allowing you to optimize new investments for direct business benefits

How IT Becomes a Liability

- Business proposes new product or service
- Mgmt allocates resources and establishes schedule and budget
- Concept / requirements to IT
- IT works to clarify requirements and deliver system on time and within budget
- Business adjusts requirements

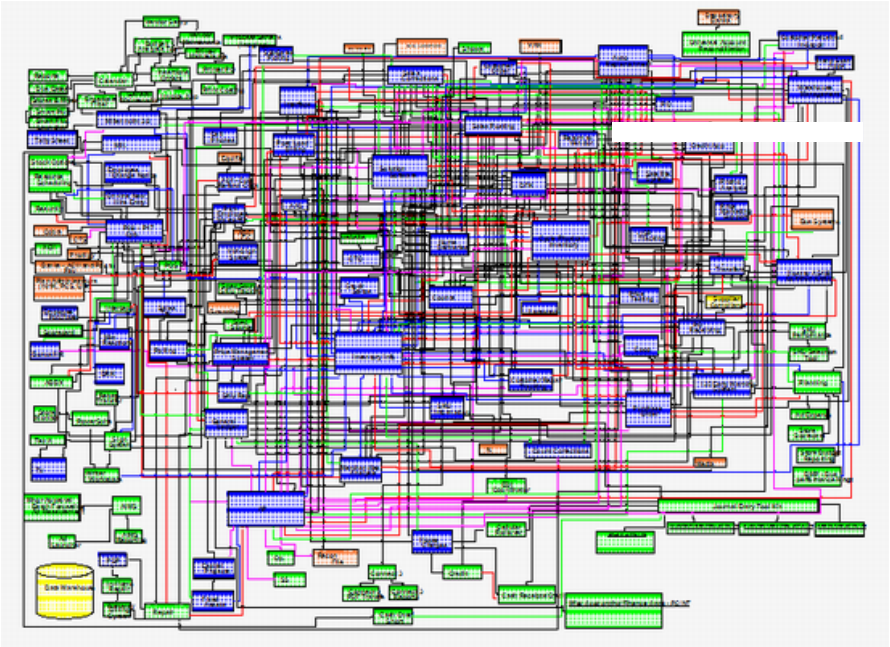
From IT Savvy by Peter Weill

How IT Becomes a Liability

- IT works to address changes and meet schedule (budget abandoned)
- System delivered late with less than intended functionality. New product or service is still a success
- New system added to IT inventory of isolated solutions, patched together and managed to avoid breakage.

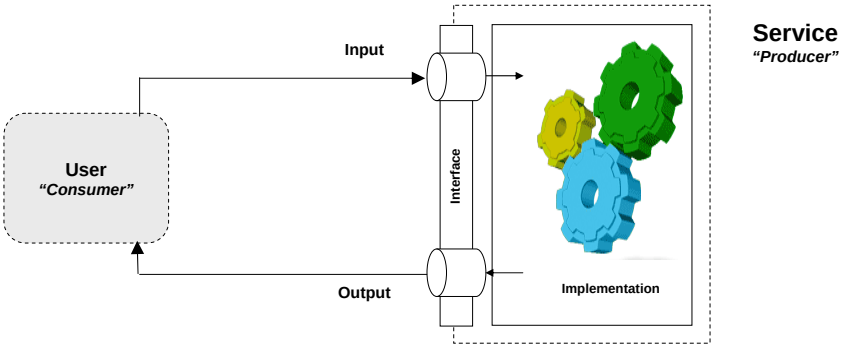
From IT Savvy by Peter Weill

Application Architecture Map



A "Service"

A discrete set of business or technical functionality that can be identified, has a defined set of input and output, and is reusable

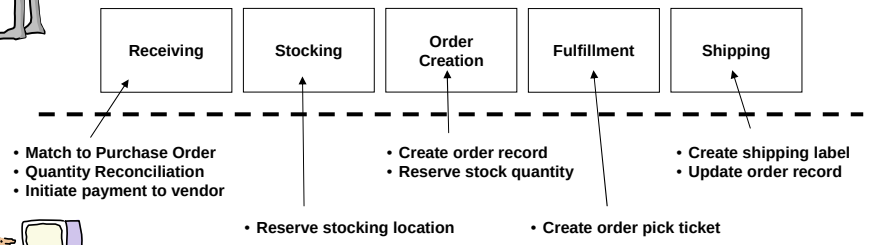


Two Perspectives of the Same Thing

Depending on who you are and how you approach this, the concept of a "Service" takes on different meanings

Business manager or business consultant

View business process as a set of functional services linked in a specified flow



IT specialist or architect

View as a set of computing actions – programs, subroutines, transactions, etc.

Service Oriented Architecture and Cloud Computing??

- A standard that supports cloud computing. SOA makes it possible to integrate new cloud-optimized workloads and platforms with the company's existing infrastructure

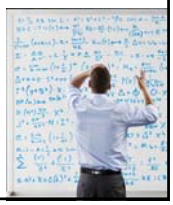
Common Fixes Mgmt Applies to IT

- Throw more money at IT problems
- Drastically cut IT spending
- Fire the CIO
- Yank out legacy systems and replace with huge vendor-developed integrated solution
- Outsource the IT problem

From IT Savvy by Peter Weill

A well-organized IT department under direct control of top management is a substantial competitive advantage…….

From IT Savvy by Peter Weill



Well-executed IT Funding

- Senior executives establish clear priorities and criteria for IT investments
- Mgmt develops a transparent process for assessing potential projects and allocating resources
- Mgmt monitors the impacts of prior investment decisions

From IT Savvy by Peter Weill

Managing Your IT Portfolio

- Two types of expenditures:
  - Project funding for new initiatives
  - Operating budgets for sustaining IT
- Classes for an IT portfolio
  - Strategic IT
  - Informational IT
  - Transactional IT
  - IT Infrastructure

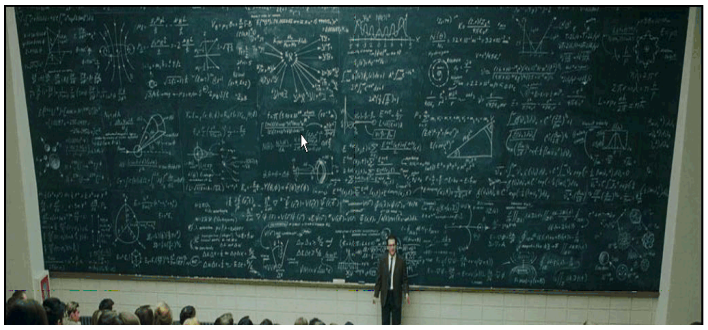
From IT Savvy by Peter Weill

Cost and Value Milking Stool

- Cost Case (IT Finance)
- Technical Case (Operations)
- Value Case (Together)

Thinking About Chargeback

Firms cannot generate business value from IT if they have not clarified their **operating model** or if their **IT funding model** is not working.



From IT Savvy by Peter Weill

A Paradox

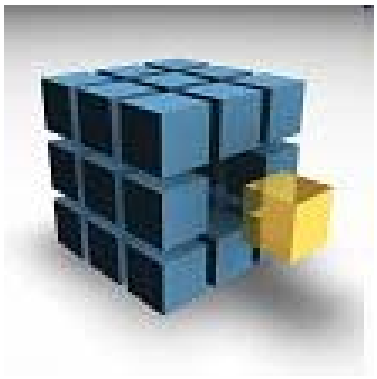
- A statement that is seemingly contradictory or opposed to common sense and yet is perhaps true
- Is “IT Payoff” really a paradox?
  - 45% of all capital investment in the US is in information technology
  - A snapshot view
  - Isolating the effect of IT

From The IT Payoff, by Sarv Devaraj and Rajiv Kohli

IT is a tool, and when used in the context of a sound business strategy, can yield significant payoff.

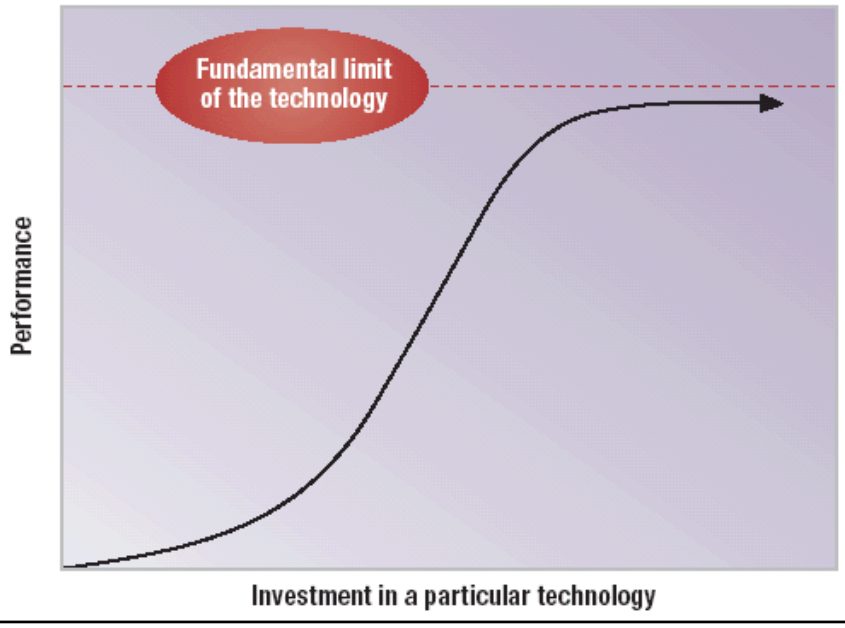
From The IT Payoff, by Sarv Devaraj and Rajiv Kohli

Businesses need to get back to using IT as part of a corporate strategy, as opposed to an inward-looking operational role.



From The IT Payoff, by Sarv Devaraj and Rajiv Kohli

The Technology Curve



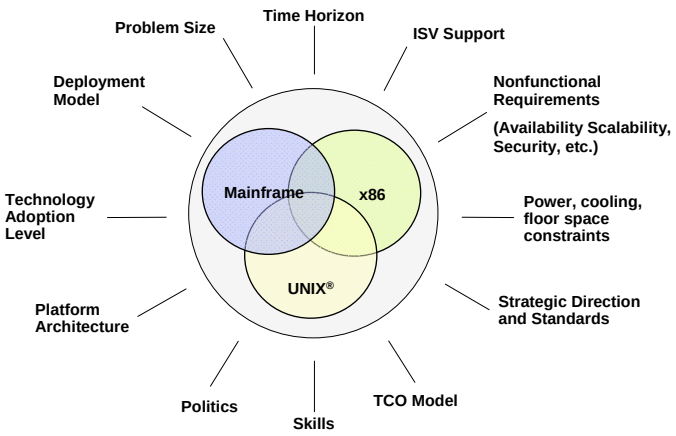
The Technology Curve Implications

- The extent and nature of payoff from technologies depends on their position on the curve
- Payoff and performance of new technologies can actually be lower than the payoff and performance of the technologies they are meant to replace

From The IT Payoff, by Sarv Devaraj and Rajiv Kohli

Platform Choice – Fit for Purpose, Workload and Situation

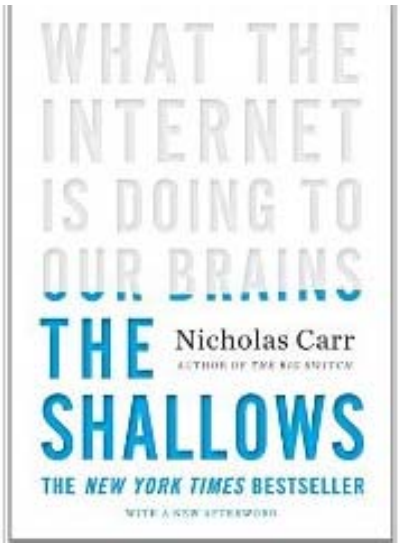
Many factors influence a platform selection



Some factors are specific to each business, others are common to all and can be generalized

Disruptive Technology

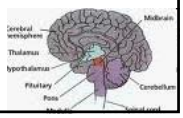
- New way of doing things that disrupts or overturns traditional business methods and practices
- Attributes initially not valued by customers
- May look financially unattractive to established companies



The effects of the net……

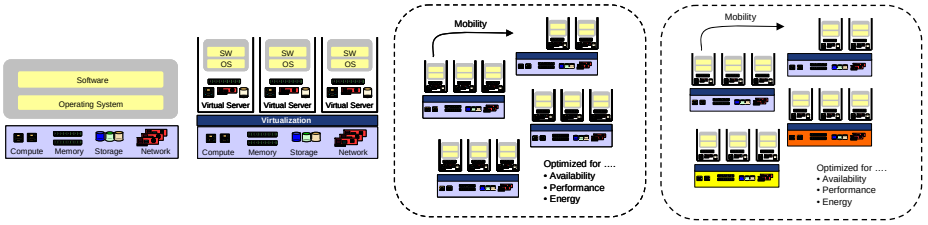
- The time we spend reading print publications is decreasing
- The multimedia Net fragments content and disrupts our concentration
- Media companies adapt to the audience's new expectations
- Publication becomes an ongoing process rather than a discrete event
- The Net seizes our attention only to scatter it

From The Shallows, by Nicholas Carr



IBM Watson

The Evolution of the "Platform"



Server | **Virtualized Server** | **Virtualized Cluster** | **Virtualized Heterogeneous Cluster**

Advanced Management of Virtualized IT Infrastructure

IBM zEnterprise System

zEnterprise Unified Resource Manager

- Provides platform, hardware and workload management

IBM zEnterprise™ 196 (z196)

- Most efficient platform Capable of massive scale up, over 50 Billion Instructions per Second (BIPS)

IBM zEnterprise BladeCenter® Extension (zBX)

- Selected IBM POWER7® blades and IBM x86 Blades[1] for tens of thousands of AIX® and Linux applications

Other Disruptive Technology

- Big Data
- Likenomics
- Digital Curation

Prioritizing disruptions that matter

User Experience
- Is it easy for people to use?
- Does it enable people to connect in new ways?

Business Model
- Does it tap new revenue streams?
- Is it done at a lower cost?

Ecosystem Value
- Does it change the flow of value?
- Does it shift power from one player to another?

Become an IT Game Changer…

- Understand the dissatisfaction with IT that is driving cloud computing
- Embrace a service-oriented approach
- Fix broken IT funding model
- Know when to jump the curve to the next generation of technology
- Realize full potential of disruptive technology
- Use IT as part of a corporate strategy