

**The New Software Industry
Microsoft Campus
Mountain View, CA
Monday, April 30, 2007**

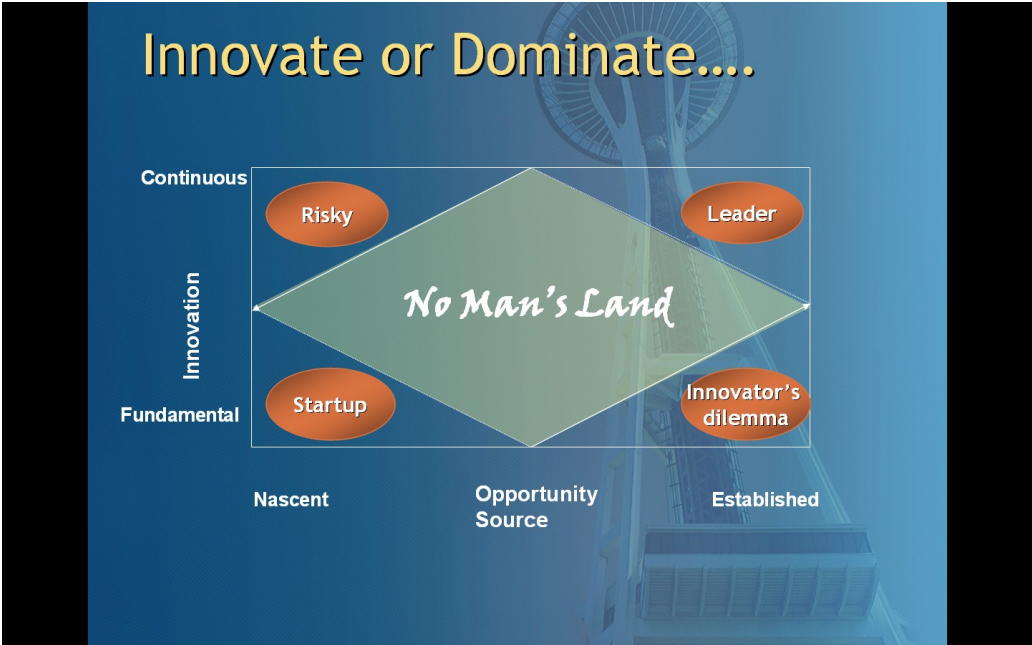
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This excellent event was jointly sponsored by Carnegie Mellon West, The Fisher IT Center at the Haas School of Business, and Services: Science, Management, and Engineering Program, at the University of California, Berkeley.

The Personal Enterprise
Ray Lane, [Kleiner, Perkins, Caufield, and Byers](#)

Google is an enterprise company, not just a consumer company. It'll change the entire computing model, because the traditional licensing model is just wrong. The software business is at crossroads and hardware margins have fallen from 70% to less than 20% now. The U. S. still leads in software, but the picture will change with the emergence of China, India, and Russia. Software is a commodity; consolidation continues; hardware replacement is strong with software moving into hardware and inexpensive, disposable appliances; customer reluctance to change operating systems is strong. Over 75% of the software industry's profits in the U. S. are generated by three companies—Microsoft, Oracle, and SAP. Support costs are exploding and support services will globalize next. Amidst these challenges, how do we innovate, how does that innovation get deployed, and how do we get services/updates?

Was Nick Carr right about IT not mattering anymore? Yes he was. Booz Allen Hamilton, for instance, used to charge customers \$500,000 to \$1 million on just advising them which software to buy. What matters is not IT itself, but how fast can you deploy IT. The business model is changing, from products to software as a service (SaaS). This will challenge entrenched vendors, such as Oracle and SAP, who may take years to change their business models. salesforce.com's story is different; it started with a clean slate. The industry has forgotten that innovation is still critical; now, consumer software is driving it. Should we innovate or dominate? We have a large no man's island in software.



Few vendors will get acquired, innovation gets funded, and the no man's island will be occupied by open source vendors, SaaS, and outsourcing. Traditional monolithic platforms are being replaced by computing clouds. Oracle once upon a time supported 90 different platforms, today it supports about 10. The emerging common themes are collaboration, virtualization, convergence, on-demand, interoperability, contextual search, subscription...that are being enabled by cheap bandwidth, hardware, and storage, pervasive computing, social networking, and advanced retrieval.

The mostly read-only Web 1.0 in 1996 had 250,000 sites and 45 million users; the wildly read-write Web 2.0 in 2006 had 80,000,000 sites and a billion-plus users.

There are six Webs: Near, Far, Here, Weird (talk to my car), B2B, D2D (device to device). Web-driven capabilities are rapidly expanding and the 'Blackberry is my best friend and my worst enemy.'

More trends:

- Web modality
- Relationship, personal, and location—you are in New York, your smart handheld device prompts you to call your Mom.
- Virtualization—today, applications are hogs.
- www.podshow.com which lets you create your own pod shows.
- Personal activity recording
- Physical world becomes alive.
- Electronic room designs—HP and Cisco have great systems but they are expensive.

The "Personal" Enterprise

- Consumer Web apps inspire new enterprise apps
- Individuals—personalized access to information
- Individual values

Seven Laws

1. Serves individual need
2. Viral/organic adoption
3. Contextual personalized info
4. No data entry or training required—did anyone teach you how to use Google?
5. Deliver instantaneous value
6. Utilizes community, social relationships
7. Minimum IT footprint, e. g., salesforce.com or Google

The next revolution in software has already started with Webex, Skype, YouTube, Facebook, MySpace, RIM, Google, salesforce.com, Netsuite, RightNow, SuiteTwo, and VisiblePath. But let us not forget that we need a social network that ensures privacy. Enterprise software is not dead, it still does matter.

Call to action: Leverage community involvement with mash-ups, e. g., SuiteTwo; enable relationships and user-generated content; build applications from services.

The Changing Business of Software

Michael Cusumano, MIT

The software market is being affected by:

- Decline of new enterprise sales
- Growth of services and maintenance models
- Emergence of new business & pricing models

Product platform disruptions create more opportunities. The number of public software firms is down to 200 from over 400. There are many different kinds of software selling—perpetual license, subscription, pay as you go, appliances, etc. Of the 108 Web-based enterprise software vendors today, 89 are offering their products on a monthly fee basis.

Is rise in services and new business models temporary or permanent? It is both: Temporary—in transition; Permanent—Google, free but not free. Ford and GM should give cars away and charge customers for services, e. g., OnStar. This is a modified version of leasing. The future of software companies is definitely services. The Internet did generate revenues, but overall license revenues are sagging. Contribution of services to sales is non-linear. Sweet spots are at low (22%) and high (53%) ends of spectrum. Services' effect on market cap is also non-linear; first effect positive but turns negative at 19%, positive again at 79%. For profits and survival, software product firms should build services. This will be true of autos, hardware, and other industries.

How do you manage crisscross?

- Bests balance of products, services, and maintenance
- Keep products as engine driving services, and maintenance

How do you 'servitize' products?

- Make products less commodity-like
- Determine where special value and revenue opportunities are.

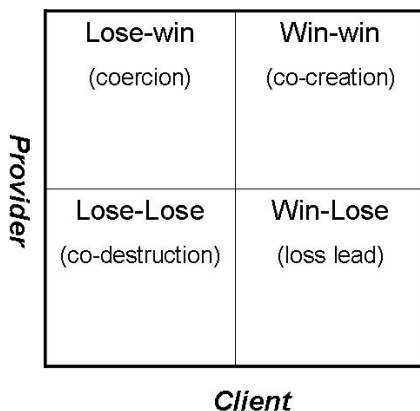
How do you productize services?

- Create two professional organizations in one
- Customize, as the Indian companies (Infosys, Wipro, *et al.*) do.

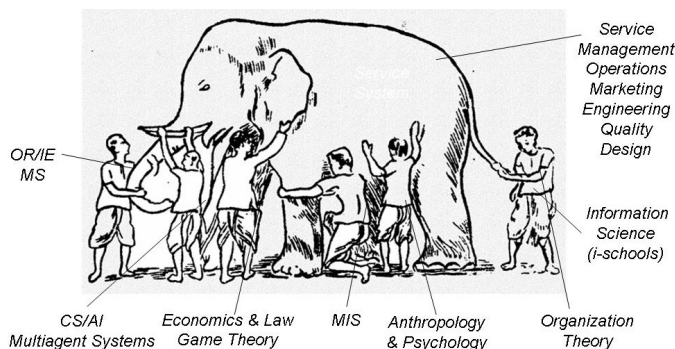
Steps Toward a Science of Service Systems

[Paul Maglio](#), IBM Almaden Research Center

Services account for more than 80% of US GDP, according to a report by the U. S. National Academy of Engineering. IBM's Services revenue in 1Q2007 was \$12 billion out of a total of \$22 billion. Services are created by as a system of relationships among Service Provider, Service Client, and Service Target. Service systems depend on value co-creation, as shown in the graphics below.



Sample service systems include hospitals, universities, call centers, data centers, families, cities, and nations. Service science is just...pick your choice from the graphic below!



The New Logic of Value Creation: Services, Networks, and Competition

John Zysman, UC—Berkeley, Berkeley Roundtable on the International Economy (BRIE)

Services have gone from a sink hole to a productivity driver with the mergence of mass production, mass markets, and lean production. America has had remarkable comeback with new consumer electronics, transition from an electro-mechanical world to a digital one, and ‘Wintelism’—the combined effects of Windows and Intel:

- Component, modular, driven competition
- Modularity facilitates outsourcing in manufacturing
- Cross-national production chain

This has resulted in a Global and Digital Combine

- New entrants
- New strategies
- New products and services

To Infinity and Beyond

Timothy Chou, Author/Consultant

SaaS started with Concur (2001) and WebEx (2002); now we have salesforce.com, Kenexa, Taleo, DealerTrack, RightNow, Vocus, and WebSideStory. SaaS revenue has risen from \$200 million in 2002 to \$1.4 billion in 2006 for the ‘Nifty 9’ companies cited. The Moore’s Law for Software: It costs traditional old-school software vendors about \$100 per month to support one user; SaaS is \$10; Internet is \$1. The cost for software at SAP and Oracle per user is ~\$60; at salesforce.com it is \$7; at Google it is 70 cents! What is going to happen? Yesterday belonged to large companies; tomorrow belongs to YouTube, Wikipedia, MySpace, eBay, Skype. If you want to succeed, become students of the consumer market, watch what your teenage and college kids are doing—they don’t install software on their PCs, they download/steal music and videos, build personal websites, and don’t read newspapers! ☹

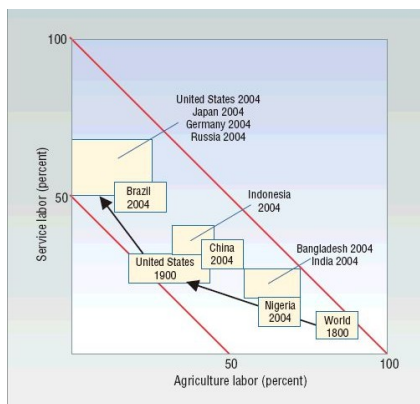
Learn three lessons:

1. Specialization matters
2. Games matter
3. Service matters

Specialization Matters: No one taught you how to use Google. Amazon today has 2,000,000 nooks, Lulu, an online publisher, has 100,000 titles. Today, there are 12,000,000 programmers, and 2,500 are being added everyday. Citigroup has more programmers than Oracle.

Games Matter: Learn from World Warcraft—healers can’t kill, killers can’t heal—which teaches you how to play in teams.

Service Matters: Service is discovery of known information and services and information are exploding: In 4Q2006 1,093 petabytes of storage were sold. Examine the graphic below how labor has transformed from agriculture to services.



Panel: Integrating Traditional Software Engineering Practices into Modern Service Oriented Development

Adam Blum, Mobio Networks and Martin Griss, Carnegie Mellon West

The answer to all software questions is agile vs. the traditional way. The world of software is changing and there is an increasingly greater need for more features incorporated in a faster way. But these should be done in a collaborative way. There are too many contracts, too much documentation, and we spend too much time on QA, testing, debugging. Try Scrum. Scrum is a lightweight management tool, usually used in conjunction with another tool, and works best for collocating teams. People used to claim structured programming, and not object-oriented programming, is the way to go. *Emerging architecture* is stupid: Architectures don't emerge, they are built. In 67 B. C., a book was published on how to be an architect.

Bridging the "Front Stage" and "Back Stage" in Service System Design

Shelley Evenson, Carnegie Mellon; Bob Glushko, U.C. Berkeley School of Information

Traditional concepts of service management and design emphasize person-to-person interactions. One bad experience wipes 10 good experiences. What is common? There are service producers and service consumers. Each service provider has an interface through which the consumer interacts. There are different qualities of services, ranging from Motel 6 at the low end, to Residence Inn, to Marriott, and to Ritz Carlton at the high end. There are also different lines of visibility, from McDonald's, where very little is visible, to a dining establishment where you often watch chefs cooking behind counters, to a Benihana where your food is cooked at your table, and certain stir-fry restaurants where you pick your food and carry it to a 'chef' who cooks it. Hence, service intensity is multi-dimensional.

Investment Opportunities in the New Software Industry

Bill Burnham, Inductive Capital; Scott Russell, Venture Capitalist, and Ann Winblad, Hummer Winblad

What are you now focusing on? Too much money is going into SaaS, software-on-demand...companies like ADP and Reuters have been delivering SaaS for years. SOA/Web Services/SaaS are a reality. This changes the entire infrastructure of the datacenter. Equally crucial is data integration, such as salesforce.com's AppExchange. IT is moving from silos to real-time computing with business intelligence and collaboration. Perpetual licensing model is tyranny. Can you build successful open source companies? Yes, Red Hat is an example, but the model hasn't settled yet. IBM's embrace of Linux in the data center was a masterful way of attacking Windows NT. Everyone is using open source, but no one is paying for it. Mule Source provides an open source ESB and their business model includes support. To be an open source vendor, you have to build better software. We have to build platforms for innovation, and not just to make money or reduce total cost of ownership. Ann Winblad is bullish on open source. Hummer Winblad has 97% batting average in investing in infrastructure companies.

You should worry about all cash-rich innovative companies, such as Google; they can acquire innovative companies and change the entire landscape overnight. Microsoft is more predictable. Young companies are equally dangerous. In the enterprise market, you need to worry about Cisco, IBM, and Oracle. Reuters and Bloomberg will really benefit over the next ten years because of markets opening up in China, India, and other emerging markets. "I would not invest in middleware, I would short BEA (unless HP buys them) and Tibco." Amazon is worth looking into, especially their Web services. CA is in the old market—storage, mainframe software—and uninteresting. "Sun is interesting. With KKR's recent investment, Sun will be broken up." Yahoo! and Google used to be portals, now they are becoming platforms. Yahoo! is an entertainment company and will not enter the Google and Microsoft markets. Microsoft may still buy Yahoo!. Mobility is still in its infancy, no one has figured out the right user interface, form factor, content, and delivery, mostly because of the telco oligopolies. The consumer market—YouTube, Facebook, MySpace—is entirely different. Remember Three 'A's — AdSense, Ajax, and arrogance. With Amazon Web Services, you get a Linux server in the cloud. This is not SaaS, I call it HaaS—hardware as a service.

Conclusions

Overall, this was a fantastic conference with brilliant speakers. There definitely was a lot of discussion and some hype about Saas, Web 2.0, user-generated content, blogs, vlogs, etc. We believe there are too many vendors in these areas, very few are making money, but they are being acquired at sky-high prices by cash-rich companies like Google, NewsCorp, and Yahoo! But we worry about the inevitable Bubble 2.0 (and Biotech 1.5) coming soon. For a fascinating piece on this, we invite you to peruse an [article](#)¹ on Bubble 2.0 by Richard Waters of the *Financial Times*.

¹ <http://www.ft.com/cms/s/c81136ba-f747-11db-86b0-000b5df10621.html>