exam

May 9
11:30 - 2:30
155 Kroeger

study sessions

Tuesday May 3 - Thursday May 5
2-3:30
storage & search
up in the clouds

History of Information
April 15, 2010
Goliath Stubs Toe: Amazon Cloud’s Morning Malfunction

April 21, 2011

By Matthew Dublin

It looks like Giles Day knew whereof he spoke at last week’s Bio IT World Expo when he called for a bit of “cloud sobriety,” asking attendees: what if Amazon’s cloud fails? What then? While most in the audience probably thought of that as the remotest of possibilities, like the entire national power grid failing, the unthinkable did in fact happen today. Early this morning at 1:48 AM PDT, Amazon’s cloud failed, crippling many social networking sites including Foursquare, Quora, Reddit, and Hootsuite, Discover, Wildfire, Livefyre, CampgroundManager, Totango, ESchedule, ZeHosting, Recorded Future, PercentMobile, the Cydia Store, and whatever other jobs were being run by private users at the time.

The technical failures affect Amazon EC2, Relational Database Service (RDS), Elastic Beanstalk, CloudFormation, and Elastic Block Store (EBS).
Amazon’s Trouble Raises Cloud Computing Doubts

As technical problems interrupted computer services provided by Amazon for a second day on Friday, industry analysts said the troubles would prompt many companies to reconsider relying on remote computers beyond their control.

“This is a wake-up call for cloud computing,” said Matthew Eastwood, an analyst for the research firm IDC, using the term for accessing services and information in big data centers remotely over the Internet from anywhere, as if the services were in a cloud. “It will force a conversation in the industry.”

That discussion, he said, will most likely center on what data and computer operations to send off to the cloud and what to keep inside the corporate walls.
Goliath Stubs Toe: Amazon Cloud’s Morning Malfunction
April 21, 2011
By Matthew Dublin

Amazon’s Trouble Raises Cloud Computing Doubts
By STEVE LOHR
Published: April 22, 2011

As technical problems interrupted a second day on Friday, industry analysts companies to reconsider relying on

Why hackers and spooks want our heads in the cloud
Our unthinking embrace of these giant data centres is throttling the giddy anti-authoritarian computing dream

Imagine this. A notorious multinational is on the lookout for new business. For the sake of argument, let's imagine it's Lockheed Martin, the defence, security, and "advanced technology" corporation that has lately been seeing to the census. From somewhere in their R&D division comes an idea: "personal lifestyle security services" for millions across the planet. The wheeze is simple enough: sign up and hand them your personal correspondence, financial records, bank details, ID documents, and more. They'll have all your stuff, and you'll have a unique password whenever you want a look. And just think: more clutter shunted out of your life, leaving you to glide through the minimalist bliss of 21st century living.
overview

dead of distance

some doubts

bear in mind

social implications

a little learning
death of distance

"Every cheapening of the means of communication, every new facility for the free interchange of ideas ... alters the action of the forces which tend to localize industries."

"Electric circuitry has overthrown the regime of 'time' and 'space' and pours upon us instantly and continuously concerns of all other men. It has reconstituted dialogue on a global scale. Its message is Total Change, ending psychic, social, economic, and political parochialism... Ours is a brand-new world of allatonceness. 'Time' has ceased, 'space' has vanished. We now live in a global village ... a simultaneous happening."

McLuhan et al., Medium is the Massage, 1967
even cheaper
1. The Death of Distance. Distance will no longer decide the cost of communicating electronically. Indeed, once investment has been made in a communications network, in buying a computer or telephone, or in setting up a Web site, the additional cost of sending or receiving an extra piece of information will be virtually zero.

2. The Fate of Location. Companies will be free to locate many screen-based activities wherever they can find the best bargain of skills and productivity. Developing countries will increasingly perform on-line services – including monitoring security screens, inputting data from forms, running help-lines, and writing software code – and sell them to the rich industrial countries that generally produce such services domestically.

3. Improved Connections. Most people on earth will eventually have access to networks that are all interactive and broadband. The Internet will continue to exist in its present form, but will also carry many other services, including telephone and television.

4. Increased Mobility. Every form of communication will be available for mobile or remote use.

5. More Customized Networks. The huge capacity of networks will enable individuals to order “content for one”: that is, individual consumers will receive (or send) exactly what they want to receive (or send), when and where they want it.

6. A Deluge of Information. Because people’s capacity to absorb new information will not increase, they will need filters to sift, process, and edit it.

7. Increased Value of Brand. Companies will want ways to push their information ahead of their competitors’. One of the most effective will be branding. What’s hot — whether a product, a personality, a sporting event, or the latest financial data — will attract the greatest rewards.

8. More Minnows, More Giants. Many of the costs of starting a new business will fall and companies will more easily buy in services. So small companies will start up more readily, offering services that, in the past, only giants had the scale and scope to provide. If they can back creativity with competence and speed, they will compete effectively with larger firms. At the same time, communication amplifies the strength of brands and the power of networks. In industries where networks matter, concentration will increase.

9. More Competition. More companies and customers will have access to accurate price information. In addition, some entry barriers will fall. The result will be greater competition in many markets, resulting in “profitless prosperity”: it will be easier to find buyers, but harder to make fat margins.
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distance is dead

your thoughts

call centres

ideas and beliefs spread worldwide at no cost

companies no longer dependent on physical location or "patronage of court"

eliminated the need for localization

...

I'm a bit confused ...
overview

depth of distance

some doubts

bear in mind

social implications

a little learning
10. Increased Value of Niches. The power of the computer to search, identify, and classify people according to similar needs and tastes will create sustainable markets for many niche products. One of the most valuable improvements will be in the ability of people to locate things that have hitherto been hard to find: from friends with similar tastes to specialized services.

11. Communities of Practice. The horizontal bonds among people performing the same job or speaking the same language in different parts of the world will strengthen. Common interests, experiences, and pursuits, rather than proximity, will bind these communities together.

12. The Loose-Knit Corporation. Culture and communications networks, rather than rigid management structures, will hold companies together. Vertically integrated companies that do the costs of dealing with arm’s-length suppliers and partners. Alliances will bond companies together at many levels.

13. Openness as a Strategy. Loyalty, trust, and open communications will reshape the nature of supplier and customer contacts. Suppliers will draw directly on their customers’ databases, working as closely and seamlessly as an in-house supplier does now. Customers will be able to manage and track their orders through the production process.

14. Manufacturers as Service Providers. Companies will tailor their products more precisely to a customer’s tastes and needs. Some will retain lasting links with their products: car companies, for instance, will continue electronically to track, monitor, and learn about their vehicles throughout the product’s life cycle. New opportunities to build links with customers will emerge as a result.

15. The Inversion of Home and Office. The line between home and work will blur. People will increasingly work from home and shop from work. The office will become a place for the social aspects of work such as networking, brainstorming, lunching, and gossiping. More people will work on the move: from their cars, from hotel rooms, from airport departure lounges. Home design will change: new homes will routinely have home offices.

16. The Proliferation of Ideas. New ideas and information will travel faster to the remotest corners of the world. Developing countries will acquire more rapidly access to the industrial world’s knowledge and ideas. That will help many developing countries to grow more quickly and even to narrow the gap with the rich world.

17. The Decline of National Authority. Governments will find national legislation and censorship inadequate for regulating the global flow of information. As content sweeps across national borders, it will be harder to enforce laws banning child pornography, libel, and other criminal or subversive material, and those protecting copyright and other intellectual property.

18. Loss of Privacy. Protecting privacy will be difficult, as it was in the villages of past centuries. Governments and companies will easily monitor people’s movements. Machines will recognize physical attributes such as a voice or fingerprint. Civil libertarians will worry, but others will rationalize the loss as a fair exchange for the reduction of crime, including fraud and illegal immigration. In the electronic village, there will be little true privacy – and little unsolved crime.

19. A Global Premium for Skills. Pay differentials will continue to widen, as companies fight for the scarce talents of well educated workers. Managerial and professional jobs will be less vulnerable to competition from automation than jobs requiring relatively little skill. In addition, the Internet enhances the value of creative use of information. On-line recruitment will make the job market more global and efficient. As a result, highly skilled people will earn broadly similar amounts, wherever they live in the world.

20. Rebirth of Cities. As individuals spend less time in the office and more time working from home or on the road, cities will change from concentrations of office employment to centers of entertainment and culture. They will become places where people congregate to visit museums and galleries, attend live performances of all kinds, participate in civic events, and dine in good restaurants. Some poor countries will use low-cost communications to stem the flight from the countryside by providing rural areas with better medical services, jobs, education, and entertainment.
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if distance is dead ...

... why are they here?
if distance is dead ...

... why are they here?
if distance is dead ...

... why are they here?
where are we?

the heart of cheap communication

Tuesday, April 26, 2011
why are we here?

Silicon Valley is still held to be the premier software region in the US, though it offers no geographical advantages other than its proximity to Stanford (the importance of which has declined as other schools developed prestigious computer science programs). Silicon Valley is the Mecca of computer science for this reason, put forward by Marshall - "Employers are apt to resort to any place where they are likely to find a good choice of workers with the special skill which they require; while men seeking employment naturally go to places where there are many employers who need such skill as theirs and where therefore it is likely to find a good market". That is, if you do software, you go to Silicon Valley because that's where the jobs are, and if you are starting a software company, you go to Silicon Valley because that's where the talent is.

-Andrew
why are we here?

Even though nowadays with modern technology and means of communication, Marshal's claims of localized industries is still true. For instance, Marshall said "localized industry gains a great advantage from the fact that it offers a constant market for skill. Employers are apt to resort to any place where they are likely to find a good choice of workers with the special skill which they require", this is true for cases like Hollywood for modeling and acting, Silicon Valley for computer related industries and so on. We can still recognize these localized industries in modern society. Also, industries like mining, which Marshall mentioned are still localized industries.

-Monica
why are we here?

However prestige and demand for higher skilled and highly specialized labor tends to ensure a presence by the major corporations in traditional central business districts. In addition these considerations lead to concentrations of certain industries near each other and near research institutions, for example the proliferation of tech firms in the Bay Area. As Marshall points out there is a virtuous circle of firms locating where skilled labor is, which in turn attracts those looking for such work (iv.x.9). Then when such workers peel away and form start-ups they remain in the same area and gain a degree of kudos from their location. Marshall also points out the economic problems this can present for an area during a downturn, as was the case in the Bay Area after the “dot com crash” (iv.x.12).

-Gavin
will we stay here?

This completely agrees Marshall's statement by saying the cost of skills and productivity will overcome distance, thus negating localization. From a real world example, Silicon valley companies are tending to move out of California and spread out through the U.S. This increase in distance from their target customers must overcome the costs that are associated with being located in California, such as taxes and cost of living.

- Steven Tanti
SOCIAL MEDIA

Viadeo opens S.F. office to compete with LinkedIn
Europe's Viadeo plans to challenge leading business network LinkedIn

March 07, 2011 | By Benny Evangelista, Chronicle Staff Writer

LinkedIn Corp. is the world's leading professional social network with more than 90 million members, but the company's main international competitor has quietly put down Bay Area roots to help close the gap.

Viadeo S.A., which has 35 million members, has opened an office in downtown San Francisco and its chief executive has moved here from Paris along with his family and about 20 engineers.

Viadeo hopes to expand its largely unknown presence in the United States by touting its overseas networks. Its strong presence in countries such as China - where LinkedIn was briefly blocked - could be attractive to people seeking new business opportunities.

"We still strongly believe that networking is a local thing," said founder and chief executive Dan Serfaty. "You don't network, create content and manage your contacts the same way when you're in France, in Italy, in China, in India or in the U.S."
and why are we here
Watch. Practice. Learn almost anything—for free.

What started out as Sal making a few algebra videos for his cousins has grown to over 2,100 videos and 100 self-paced exercises and assessments covering everything from arithmetic to physics, finance, and history.

Help us change education

Our small team is on a mission to deliver a world-class education to anyone anywhere, and you can help. Take a second to get the word out, or read about how teachers, translators, donors, and everyone else can contribute.
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a little learning
issues to bear in mind

endism
replacement
liberation
redefinition
constraint vs resource
"In the utility billing problem, for instance, meter readings would come automatically by wire into the input organs of the central office's electronic accounting and information processing machine which, ... would compare these readings with its customers' accounts in its huge memory storage, make all computations and return the new results to storage while printing out the monthly bills."

-- *Fortune*, 1952

"Gas and electric meters will be linked to telephone lines, so that computers read the meters from afar and send out the bills. They could also be connected to banks; customers would then find utility charges on their monthly bank statements."

-- *National Geographic*, 1970
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--National Geographic, 1970
AP Exclusive: `Smart' meters have security holes

By JORDAN ROBERTSON (AP) – Mar 26, 2010

SAN FRANCISCO — Computer-security researchers say new "smart" meters that are designed to help deliver electricity more efficiently also have flaws that could let hackers tamper with the power grid in previously impossible ways.

At the very least, the vulnerabilities open the door for attackers to jack up strangers' power bills. These flaws also could get hackers a key step closer to exploiting one of the most dangerous capabilities of the new technology, which is the ability to remotely turn someone else's power on and off.

The attacks could be pulled off by stealing meters — which can be situated outside of a home — and reprogramming them. Or an attacker could sit near a home or business and wirelessly hack the meter from a laptop, according to Joshua Wright, a senior security analyst with InGuardians Inc. The firm was hired by three utilities to study their smart meters' resistance to attack.

These utilities, which he would not name, have already done small deployments of smart meters and plan to roll the technology out to hundreds of thousands of power customers, Wright told The Associated Press.

There is no evidence the security flaws have been exploited, although Wright said a utility could have been hacked without knowing it. InGuardians said it is working with the utilities to fix the problems.
Because everything in her home is waterproof, the housewife of 2000 can do her daily cleaning with a hose.
7. Some uses for a Message Communication Network

The original intention for its use, the connection of terminals to computer services, remains of primary importance. A selection of such services is listed:

- Numerical computation at various levels of generality
- Editing and typesetting of text
- Design services and problem oriented languages
- Availability of goods for sale
- Ordering of goods
- Invoicing, delivery notes, etc.
- Booking of transport
- Banking, establishing credit
- Remote access to national records, e.g. MPNI, tax, police, medical, on a secure basis
- Betting
“Electrical Entertainment” 1931

Dr. Goldsmith of the Radio Corporation Predicts an Instrument Which at a Touch of the Fingers Will Bring to the Home Scenes and Sound, Color Symphonies, or a Keyboard for Self-Created Music.

Electrical entertainment: A glimpise into the future.

The Home "Electrical Entertainer" of 1931, as visualized by Dr. Alfred N. Goldsmith. On the left is a panel upon which, home talking motion pictures are cast from behind the screen. In the center is an electrical music machine, combined with a color-organ, which casts colored images on the center screen as the music is produced with a keyboard similar to that of the modern theater organ. Televisions, which will display announcements, radio broadcasts, films grown in the right hand room, or the radio "auditorium," where the radio is so coordinated with the television that the pictures are in complete harmony with the music and sounds that are transmitted.

The future is not so far away as it appears to be, and within the next 100 years, within the next 100 years, "radio," (as a play on the word, "radio," which is derived from the Greek word for "light," to denote the enjoyment of music and entertainment through the medium of radio.) may mean more than as entertainment. The sound of "radio," (as a play on the word, "radio," which is derived from the Greek word for "light," to denote the enjoyment of music and entertainment through the medium of radio.) may mean more than that it is a source of enjoyment. The sound of "radio," (as a play on the word, "radio," which is derived from the Greek word for "light," to denote the enjoyment of music and entertainment through the medium of radio.) may mean more than it is a source of enjoyment. The sound of "radio," (as a play on the word, "radio," which is derived from the Greek word for "light," to denote the enjoyment of music and entertainment through the medium of radio.) may mean more than it is a source of enjoyment.

Today, with some limitations of radio entertainment in its infancy and others yet born, it is difficult to understand that radio entertainment will grow to any great extent. The sound of "radio," (as a play on the word, "radio," which is derived from the Greek word for "light," to denote the enjoyment of music and entertainment through the medium of radio.) may mean more than it is a source of enjoyment. The sound of "radio," (as a play on the word, "radio," which is derived from the Greek word for "light," to denote the enjoyment of music and entertainment through the medium of radio.) may mean more than it is a source of enjoyment. The sound of "radio," (as a play on the word, "radio," which is derived from the Greek word for "light," to denote the enjoyment of music and entertainment through the medium of radio.) may mean more than it is a source of enjoyment.

"Electrical Entertainment" 1981

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Tuesday, April 26, 2011
"begin(s) to foreshadow the true office robot"


Behold the Computer Revolution

By PETER T. WHITE National Geographic Staff
Illustrations by National Geographic Photographers
BRUCE DALE and EMORY KRISTOF

MY WIFE IS MAD AT COMPUTERS. “Those awful machines,” she calls them. “How they mess up our credit card accounts! Imagine sending a bill for $232.24 every month for four months after you’ve paid it!”

But I’m not mad. That mixup was settled after five months; and we never did feel as computer-harassed as some Americans, notably the Kansan repeatedly reminded that his department store bill was “overdue in the amount of $00.00.” At last he too managed to pacify the computer—with a check for $00.00.

In a way, though, my wife is right. After a year of looking closely at computers—at what they are doing all over the country, what they are likely to do before long, and what their effects are expected to be upon us all and upon our descendants—I must say that these machines are indeed awful, in just about every sense the dictionaries assign to that word: inspiring dread, appalling, objectionable; solemnly impres-

At the consoles of such electronic wonders as this IBM 370, man achieves the power to master information as a
"Perhaps someday the desk worker fed up with traffic jams in the city will do his job at a computer input-output station at home: If he wants to see documents from company files, he punches his keyboard and they appear on his display screen. If he needs a copy, he presses a button and there it is, on paper. ... If he wants to confer with colleagues, he presses buttons, and they appear on the screen too. To dictate a letter, he punches up his secretary, at her office desk or at her terminal in her home. She’ll type it on her keyboard— and the text will emerge in the downtown office, to go into the files and into the mail. Or she’ll send electronic impulses directly to the company addressed—into their computer.... How soon could computer use from home be upon us? Among 85 leading technical experts asked, the majority say within a decade. But it’s not only a question of technology. It is also a question of economic practicality, and I trust no predictions on that." — National Geographic, 1970
within a decade

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Tuesday, April 26, 2011
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death of distance

some doubts

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social implications

a little learning
social implications
generational change?

"Fanatic Life and Symbolic Death Among the Computer Bums"
--Stewart Brand
Rolling Stone
7 December, 1972
compare & contrast

From Counterculture to Cyberculture

Fred Turner
Next phase of working at home: Leaving home

By Thom Patterson

 ROSWELL, Georgia (CNN) -- More than a decade after the Internet allowed millions of people to work at home, the next phase of telecommuting involves, well, not working at home.

Organized "coworking" -- the concept of working solo alongside like-minded independents -- has spread to dozens of cities.

The irony of coworking isn't lost on organizers, including Kevin Bachman, who set up a group north of Atlanta as part of an informal Web-based network called Jelly.

"The reason people work alone, is because they're looking for freedom," said Bachman, a 34-year-old Web developer who telecommutes part time. "It may be ironic that you crave isolation, but you also want to be socially interactive with others like you."

Web developer Toby Ho, left, has joined a coworking group called "Jelly" in Roswell, Georgia.

Once a month, Bachman's group takes over a room provided by Tony's American Grille & Tap. A handful of home-based Internet workers hunch over laptops writing code, tweaking administration systems or enhancing databases.
"The accumulation of many large manufacturing establishments in
the same district has a tendency to bring together purchasers or
their agents from great distances, and thus to cause the
institution of a public mart or exchange. This contributes to
diffuse information relative to the supply of raw materials, and
the state of demand for their produce, with which it is necessary
manufacturers should be well acquainted. The very circumstance of
collecting periodically, at one place, a large number both of those
who supply the market and of those who require its produce, tends
strongly to check the accidental fluctuations to which a small
market is always subject, as well as to render the average of the
prices much more uniform." --Charles Babbage
moving information

information/knowledge management

the HP conundrum

sticky or leaky

resolution
When an industry has thus chosen a locality for itself, it is likely to stay there long: so great are the advantages which people following the same skilled trade get from near neighbourhood to one another. The mysteries of the trade become no mysteries; but are as it were in the air, and children learn many of them unconsciously. Good work is rightly appreciated, inventions and improvements in machinery, in processes and the general organization of the business have their merits promptly discussed: if one man starts a new idea, it is taken up by others and combined with suggestions of their own; and thus it becomes the source of further new ideas. And presently subsidiary trades grow up in the neighbourhood, supplying it with implements and materials, organizing its traffic, and in many ways conducing to the economy of its material.
Every cheapening of the means of communication ... alters the action of the forces which tend to localize industries. Speaking generally we must say that a lowering of tariffs, or of freights for the transport of goods, tends to make each locality buy more largely from a distance what it requires; and thus tends to concentrate particular industries in special localities: but on the other hand everything that increases people's readiness to migrate from one place to another tends to bring skilled artisans to ply their crafts near to the consumers who will purchase their wares. These two opposing tendencies are well illustrated by the recent history of the English people.
what moves?

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"through the WTO, World Bank, and the IMF information and its needed resources ... can move and migrate freely, but not necessarily the people" --Corbyn
east is east and ...
These immigrants taught us how to weave woollen and worsted stuffs, though for a long time we sent our cloths to the Netherlands to be fulled and dyed. They taught us how to cure herrings, how to manufacture silk, how to make lace, glass, and paper, and to provide for many other of our wants.
"Children in the public schools will be taught practically everything by moving pictures. Certainly they will never be obliged to read history again"

D.W. Griffith

"The people's University of the Air will have a greater student body than all of our universities put together."

RCA, 1932
One can predict that in a few more years, millions of schoolchildren will have the personal services of a tutor as well-informed as Aristotle.

any time, anywhere
the end of the university?

a "stagnant" sector --William Baumol

against stagnation

Alvin Toffler

Peter Drucker

John Chambers

Bill Gates
kinds of distance?

geographical
extension courses

social
correspondence degrees

the Open University
going global

the mega universities

Indira Gandhi (New Delhi) : 2 million

Allama Iqbal (Islamabad) : 1.8 million

Islamic Azad (Tehran) : 1.3 million
"Institutions working together to advance education and empower people worldwide through opencourseware"

www.ocwconsortium.org
other alternatives
more alternatives
still local?

“New products are associated with old brand names. This ensures the prospective consumer of the quality of the product.

“Doctors, lawyers, and barbers, the high school diploma, the baccalaureate degree, the Ph.D., even the Nobel Prize, ... education and labor markets themselves have their own ‘brand names’”.

still local?

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--George Akerlof, “The Market for
Lemons: Quality, Uncertainty,
and the Market Mechanism,” 1970
where we've been

depth of distance
some doubts
bear in mind
social implications
a little learning
the final sticker

I survived i103
coming up

what you've all been waiting for

last class

virtual pollution

summing up