



social implications

from past to future?

History of information

April 22, 2010





aob

hat tip Alejandra

Web Coupons Know Lots About You, and They Tell

By STEPHANIE CLIFFORD
Published: April 16, 2010

For decades, shoppers have taken advantage of coupons. Now, the coupons are taking advantage of the shoppers.

📧 Readers' Comments

Readers shared their thoughts on this article.

[Read All Comments \(64\)](#) »

A new breed of coupon, printed from the Internet or sent to mobile phones, is packed with information about the customer who uses it. While the coupons look standard, their bar codes can be loaded with a startling amount of data, including identification about the customer, Internet address, [Facebook](#) page information and even the search terms the customer used to find the coupon in the first place.

And all that information follows that customer into the mall. For example, if a man walks into a Filene's Basement to buy a suit for his wedding and shows a coupon he retrieved online, the company's marketing agency can figure out whether he used the search terms "Hugo Boss suit" or "discount wedding clothes" to research his purchase (just don't tell his friends).



aob

as we were
saying ...

Google rapped over privacy issues by 10 nations

Canada's Privacy Commissioner Jennifer Stoddart has sent an open letter to Google Chief Executive Eric Schmidt.

The letter raises concerns about privacy issues surrounding social network tool Google Buzz and Google Street View.

It calls for Google to adhere to a set of "fundamental privacy principles" when creating new services in future.

Ms Stoddart's counterparts in nine other countries, including the UK, France and Germany, have signed it too.

Ms Stoddart expressed concern that "the privacy rights of the world's citizens are being forgotten as Google rolls out new technological applications."

She cited the early controversy around Google Buzz, a social network service that, when launched, automatically connected people in public to those they had emailed via their Gmail accounts.



Seven European countries are among the co-signatories of the letter.

"men more frequently need to be reminded than informed"
S. Johnson, *Rambler* 2



overview

from past to future

predictions and problems

predictions past
computer
death of distance

past vs contemporary
Cairncross (1997) vs Marshall (1890)
(7, 14, 5)

& You/U



Heilbroner to *Wired* prediction: it's easy

THE TECHNIUM

Progression of the Inevitable

The procession of technological discoveries is inevitable. When the conditions are right – when the necessary web of supporting technology needed for every invention is established – then the next adjacent technological step will emerge as if on cue. If

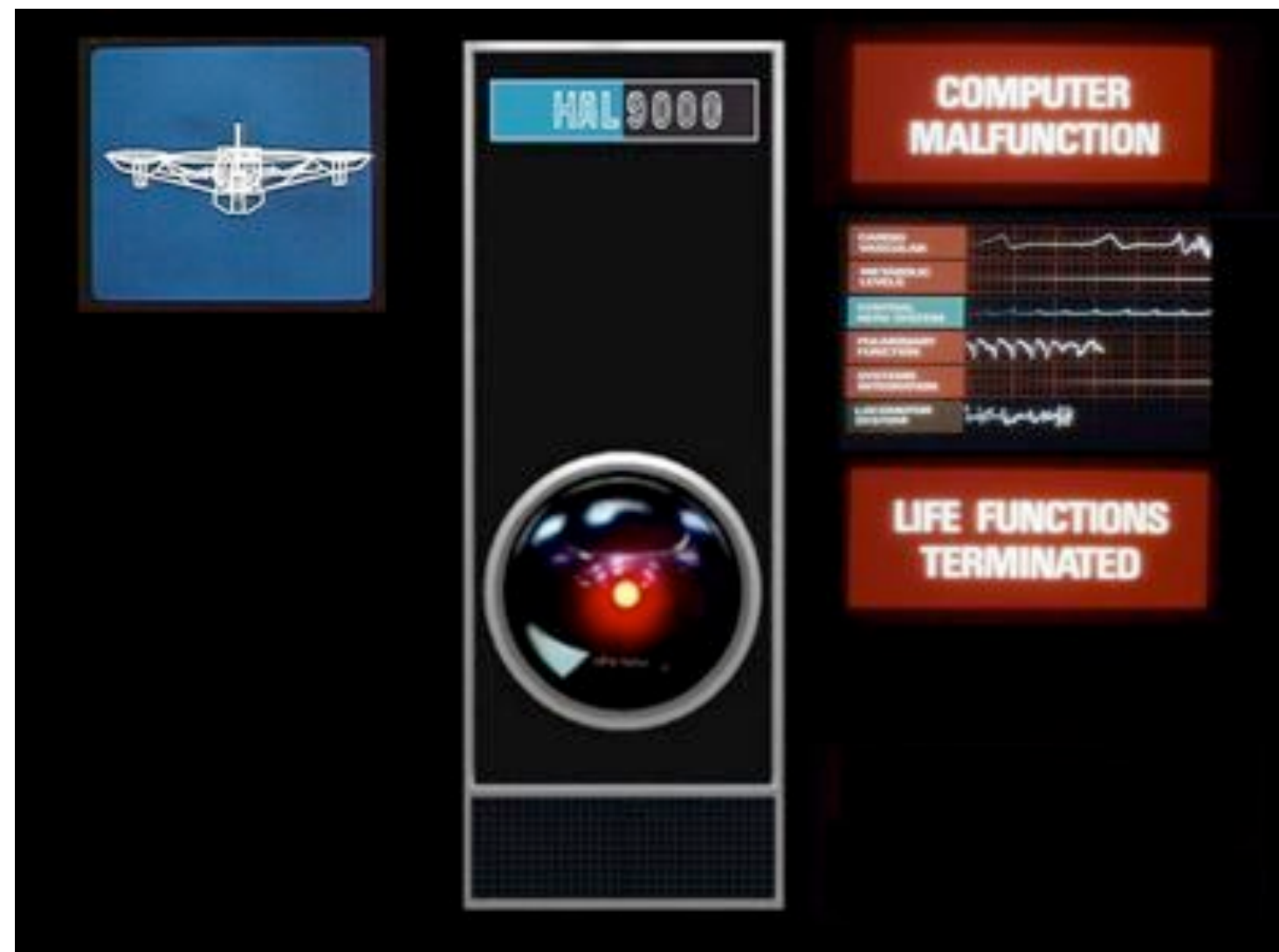
inventor X does not produce it, inventor Y will. ...

the paths of technologies are inevitable. They are 1) that quantifiable trajectories of progress don't waver despite attempts to shift them (**see my Moore's Law**).

-- Kevin Kelly, 2009



social implications





issues to bear in mind

There are persons who can write not illegibly in pencil, but are as enigmatical as Rufus Choate or Horace Greeley when they take up the pen. There are persons too lazy to resort to ink and pen who can conquer their besetting sin enough to make a few dabs with a pencil. Living must have been more laborious before the pencil age. Blue pencil, red pencil, what should we do without them? Yet writing with one's own hand seems to be disappearing, and the universal typewriter may swallow all. Librarians of a century or two hence may be searching for the last reference to pencils.

New York Times | 1938



endism
coupure

replacement
this will kill that

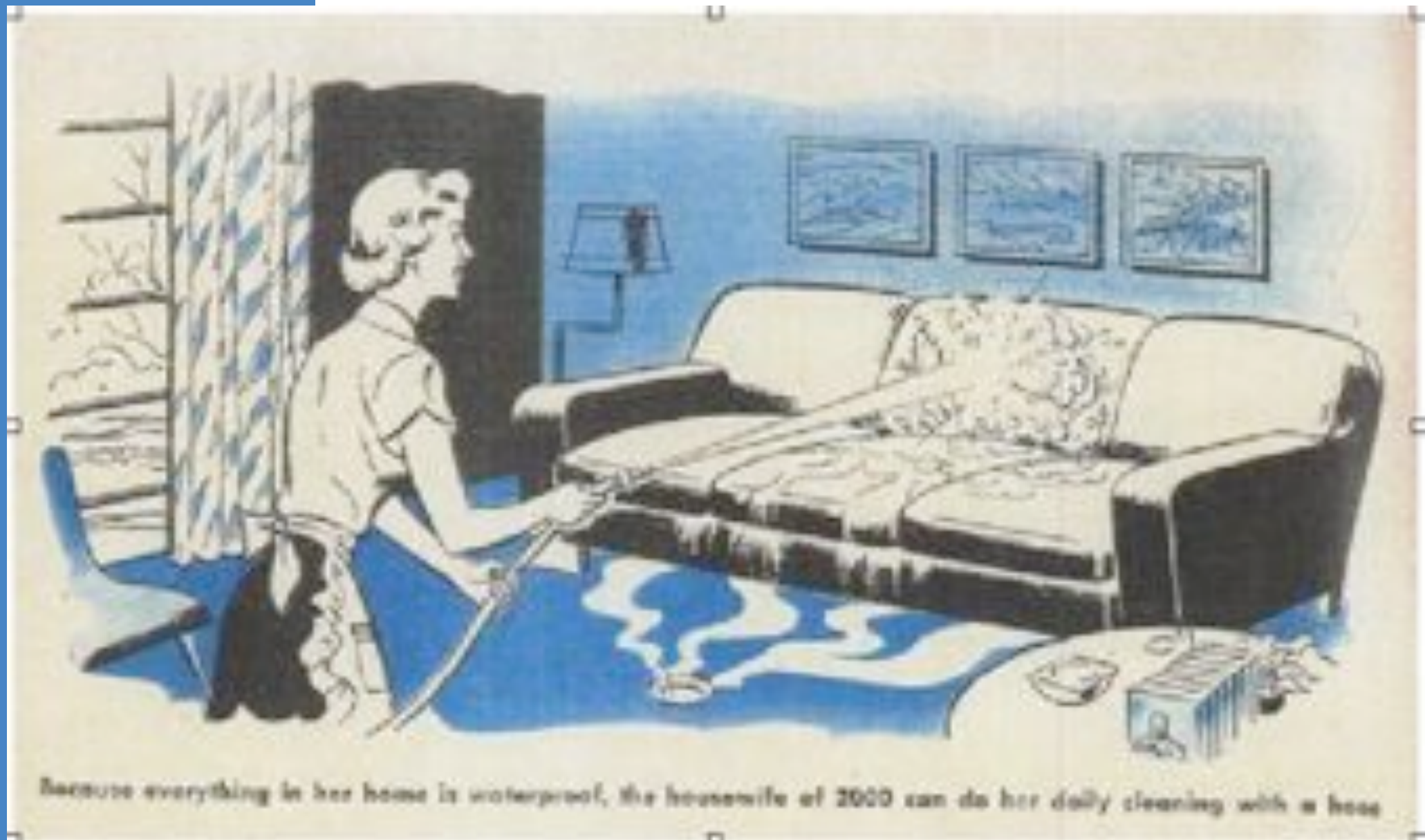
liberation
*of information
of people*

redefinition
to a man with a hammer

constraint vs resource

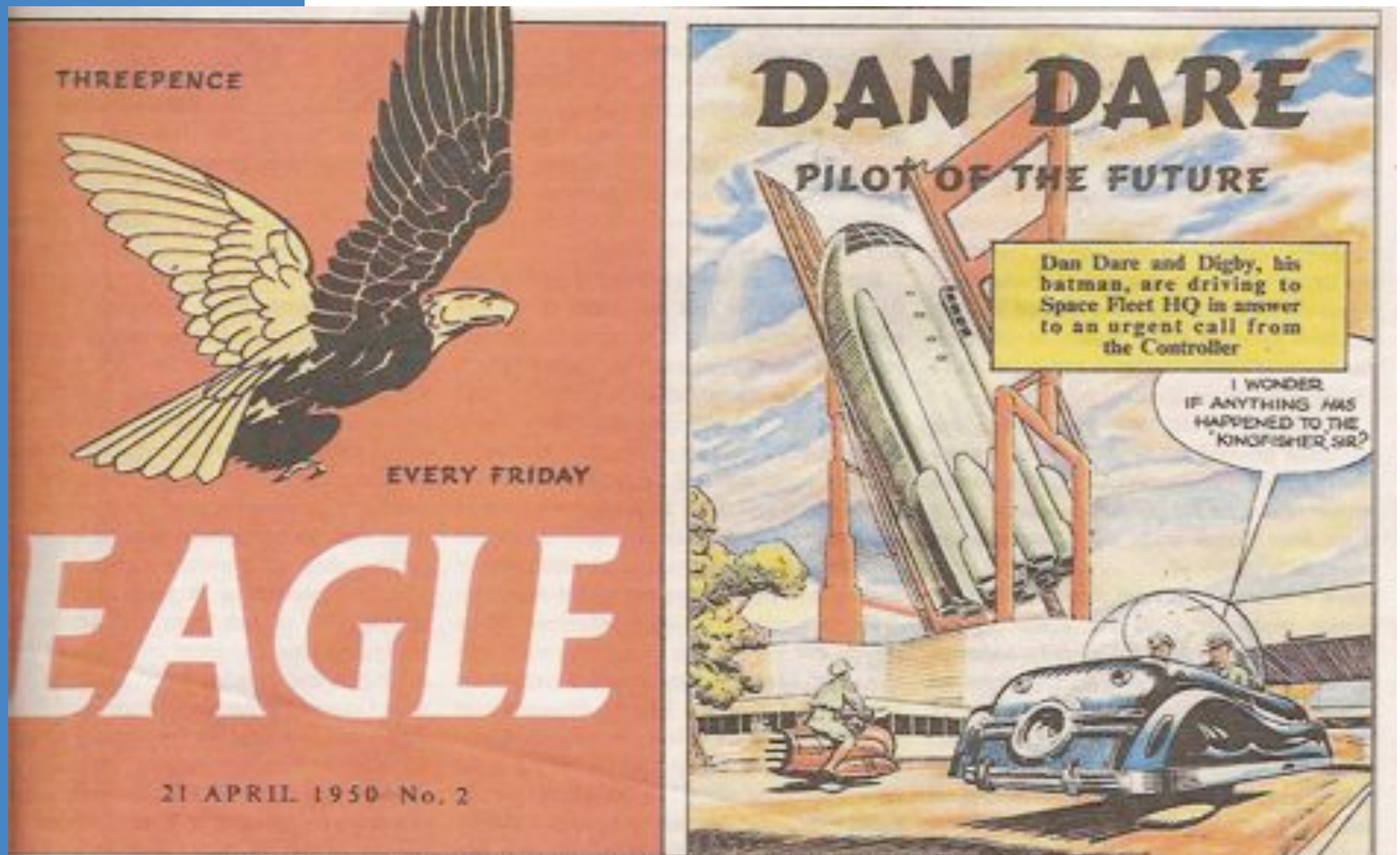


nunberg error





nunberg error



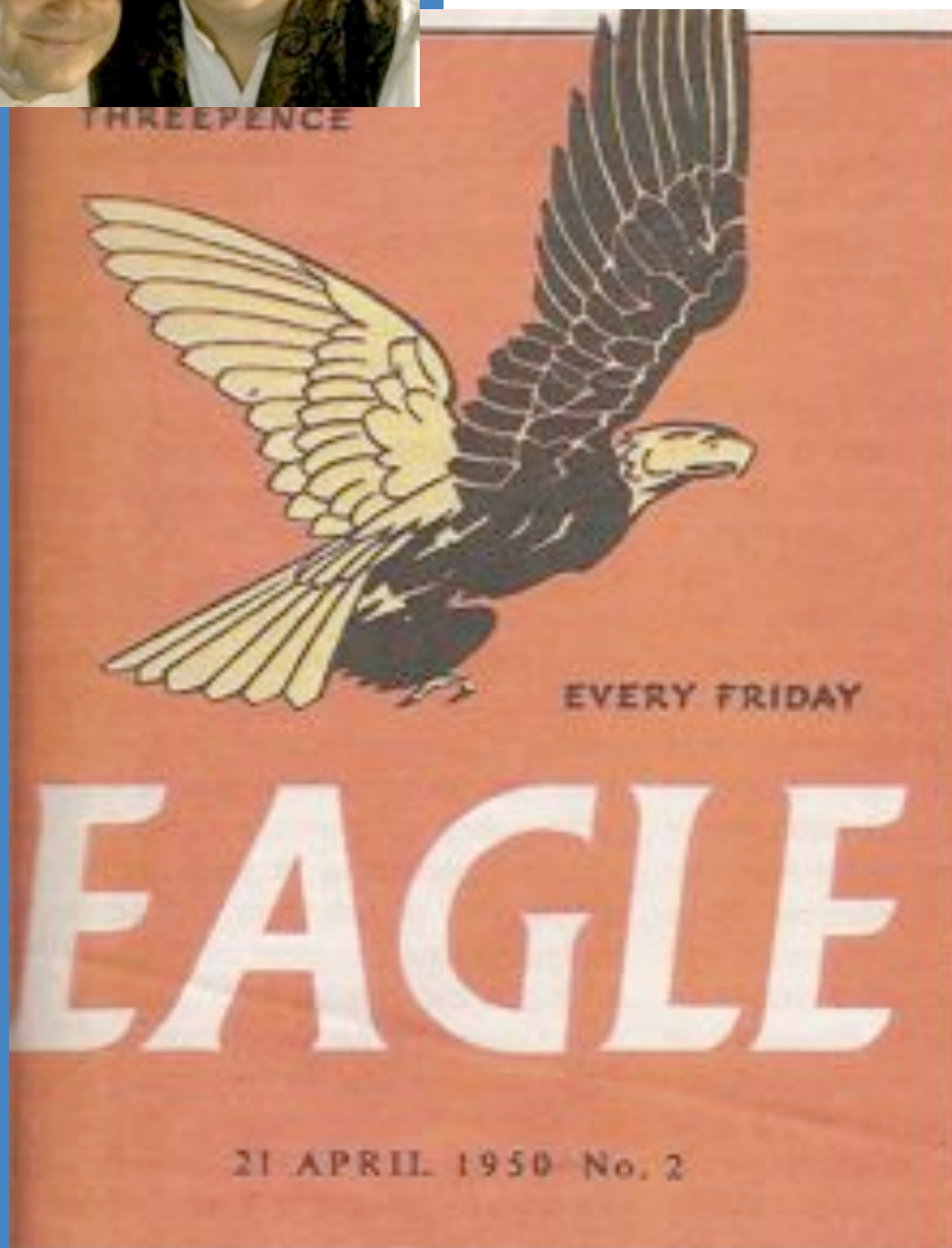


nunberg error





nunberg error





nunberg error





predictions past

Donald Davies, 1965

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. MIPNI, tax, police, medical, on a secure basis
- Betting



NYT, 1931

"Electrical Entertainment" 1981

ELECTRICAL ENTERTAINMENT: A GLIMPSE INTO THE FUTURE

By DR. ALFRED N. GOLDSMITH,
Vice President and General Engineer,
Radio Corporation of America.

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

It would not be astonishing if, within the next 50 years, "radio" (in a legitimately expanded use of the term) came to mean the same thing as "entertainment." Some may regard this as an over-bold assertion. Yet an omniscient study of the nature of electrical entertainment—and this is what we really mean by "radio" in the probable broad usage of the future—has capabilities so extensive and agencies so powerful at its disposal that entertainment and radio may come to mean the same thing.

Today, with some branches of electrical entertainment in their infancy and others not yet born, it is difficult for the public and the artists to gauge the significance of the trend in that direction. The ultra-specialist, concentrating on one particular form of electrical entertainment device (such as a radio receiver), is likely to see only his corner of the field. The broad significance of electrical entertainment may well elude him.

Musicians, artists, actors and composers of the present are accustomed to the forms of mechanical, visual and audible entertainment with which the public is now provided. They, too, are specialists and have devoted their lives to the mastery of an instrument or a technique. Not unreasonably they view with some apprehension the mere idea of a revolution in the methods and instrumentalities of entertainment. Electricity is a strange and foreign force, and only those musicians who have won success and fame in the fields of broadcasting and phonograph record production are likely to view with sympathy a tendency toward the superseding of present forms of entertainment by electrical entertainment.

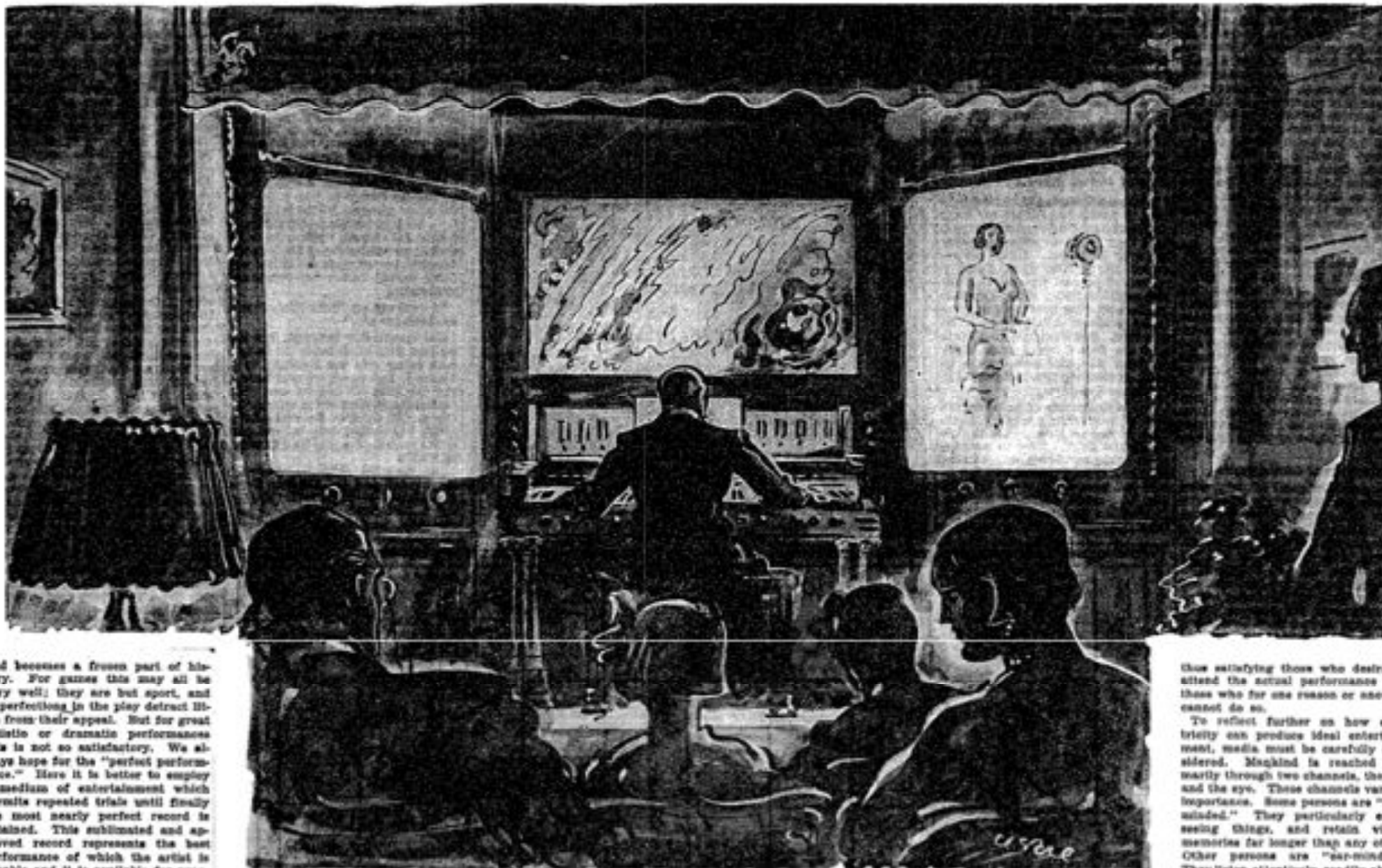
The Role of Radio.

Yet time brings the answer to most problems and silences the unwarranted objection, and there are extremely powerful reasons for the belief that time is the ally of what is really called electrical entertainment, of which radio is the greatest present exponent. Perhaps a brief analysis of the functions of entertainment and the requirements of an ideal plan will show clearly why electrical entertainment necessarily holds the key to the future.

In contriving entertainment material, human psychology must always be kept in mind. Masking is not only in the present but also, in a manner of speaking, in the past. We desire to see and to hear not only that which is happening but also that which has happened and, except through the magic of its recreation, is gone forever. We need to

and becomes a frozen part of history. For games this may all be very well; they are but sport, and imperfections in the play detract little from their appeal. But for great artistic or dramatic performances this is not so satisfactory. We always hope for the "perfect performance." Here it is better to employ a medium of entertainment which permits repeated trials until finally the most nearly perfect record is obtained. This subtitled and approved record represents the best performance of which the artist is capable and it is available for practically all time, ever ready to live again at a touch of the finger on the controlling switch.

Amplifying Distance.



The Home "Electrical Entertainer" of 1981, 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 Centre is an Electrical Music Machine, Combined With a Color-Organ, Which Casts Weird Images on the Centre Screen as the Music Is Produced With a Keyboard Similar to That of a Modern Theatre Organ. Television, Which Will Allow Accurate Radio Broadcasting, Also Over the Right Hand Screen When the Radio Set Is Turned On.

elate the program. The ideal type of home for the "lookstener" will be both sound-proofed and darkened. Of course, we do not actually need an extreme and peculiar type of residence for this purpose, because the "lookstener" will demand that the television picture be bright enough to be seen under ordinary home conditions and that the sounds will be loud enough to be appreciated in normally quiet surroundings.

Paralleling the combined television and telephone radio program, we find a form of record for either the home or the theatre which produces similar effects, namely, the sound motion picture. The success of this form of entertainment in the theatre is a clear indication of what may be expected when it becomes available also for the home on a simple and economic basis.

Electrical Instruments.

A small group of electrical musical instruments have appeared on the market within the last few years, both in the United States and in Europe. Many more forms, some of extreme ingenuity, exist in the laboratories and promise the production of extremely flexible, readily controlled, and exquisitely toned instruments. The forms in which the public has as yet seen them are necessarily only beginnings, yet they indicate only some of the possibilities of such instruments. As the years pass they will be further developed. Great composers will begin to write music specially suited to them and capable of fully utilizing their astounding possibilities of tone quality, volume, flexibility of control, and pitch. And, finally, virtuoso performances on these instruments will then spring up and render masterpieces which have been composed for them. But that is far in the future.

The electric control of mobile color is also foreshadowed in a number of home and auditorium instruments which have already been demonstrated. Examples of these are the Claviflux of Thomas Wilfred and the Colorama of the General Electric Company. The interplay of moving fabulous forms of color, sometimes softly shaded and sometimes blazing in almost harsh brilliancy, is extraordinarily attractive. Some enjoy viewing such displays without accompanying music; others prefer music and color at the same time. These color symphonies, as they might be termed, can either be produced in a pre-determined fashion from records, or by an individual performance by the artist, or through a combination of these methods.

A New Art.

Here again electricity brings a new art. It is conceivable that mobile color will be as definite and widely appreciated a form of art as

thus satisfying those who desire to attend the actual performance and those who for one reason or another cannot do so.

To reflect further on how electricity can produce ideal entertainment, media must be carefully considered. Manhood is reached primarily through two channels, the ear and the eye. These channels vary in importance. Some persons are "eye-minded." They particularly enjoy seeing things, and retain visual memories far longer than any other. Other persons are "ear-minded." They listen attentively, readily absorb knowledge through speech or other sounds, and remember others by the sounds of their voices or what they have said. Look back into the important moments of your own life.



in the office

Fortune
Jan 1952

"begin(s) to foreshadow the true office robot"

Technology

The door to the UNIVAC, above, opens into the computing departments of the future. The first UNIVAC, built for the Bureau of Census by Eckert-Mauchly Computer Corp., victory of Farmington Road, marks the transition of big "electronic brains" from scientific to general business and government use.

Office Robots

It won't be very long before U.S. businessmen can employ electronic brains to:

- keep business accounts
- run continuous sales records
- compute and send out bills
- handle entire payrolls
- keep running inventories
- fix production schedules
- serve as vast filing systems
- chart corporate expansion

AA reservisor
mail order

When the first of the giant "electronic brains" was unveiled after the last war, performing feats of lightning calculation on abstruse scientific and military problems, its creators proclaimed it the beginning of "the second industrial revolution." They foresaw profound applications in industry, business, and government.

Few, however, at first saw the development at all, could see the connection. Now, however, a few rudimentary production models of electronic digital computers are in growing business use, many more advanced prototypes are in operation or development, and it becomes possible to glimpse and weigh that revolution. It appears that its first and heaviest impact, beyond the fields of science and engineering, will be on the business-executive office.

The office is ripe for revolution. Its costs have doubled and tripled, while clerical staffs become steadily harder to recruit or expand. There is, in fact, a real shortage of good clerical help in most regions. The mountains of paper work grow year by year, and the tasks they entail grow steadily more onerous. Some of the most grinding of all industrial routines are not found in business offices, probably one reason why it becomes harder to attract young people into them. The fact is that the office has been nearly the last area to be touched by industrial rationalization, and it is still not mechanized to anything like the degree of the modern factory.

The proof is in the extraordinary rate of white-collar employment, which is set of line with all other types. While the



Under the operator's hand is the desk-sized computer called MADDIDA (Mad Ida), for Magnetic Drum Digital Differential Analyzer, developed by Northrop Aircraft and now in production. Mainly for engineering, it pioneers compact features for general use.



The keyboard and electric typewriter, above, are linked to CADAC, latest approach to an automatic general computer—a 195-tube machine with magnetic-drum memory (see page 117) tucked away in a closet. Computer Research Corp. will offer it to business.

Behold the Computer Revolution

going home

National Geographic
1970

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 \$252.24 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



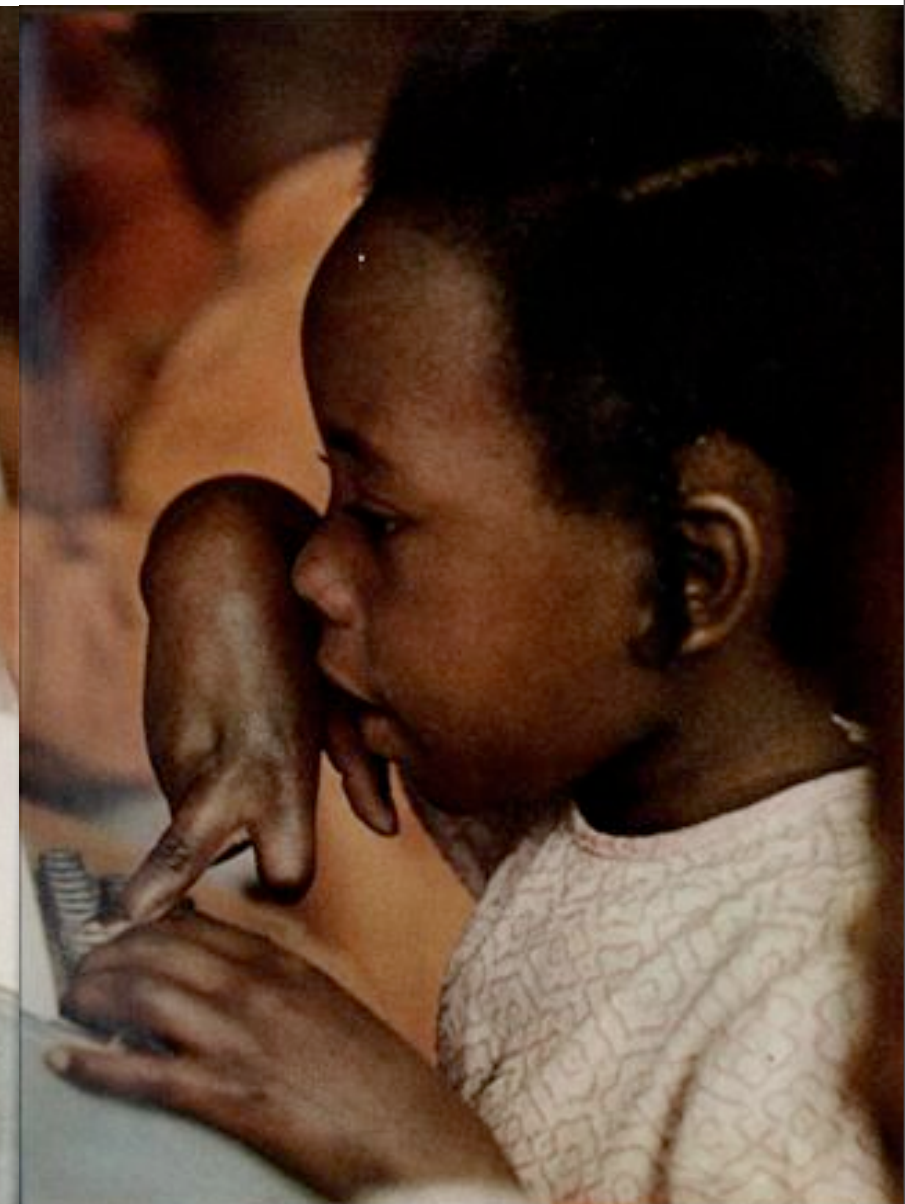
1970's future

education
law enforcement
shopping
job hunting
science
music
defense
flight reservations
other reservations?
"habeas data"



Bringing the blessing of education

Face to face with a classroom friend, six-year-old Shelia Brunfield rapidly works her way through an arithmetic drill at a computer terminal in McComb, Mississippi. Taking turns with her classmates, Shelia identifies herself each day by pecking out her number and first name on the machine. Searching its electronic memory, the device



locates her file, reviews her performance, and picks up with the day's practice problems. Work done, it grades the assignment and bids a printed "GOOD-BYE, SHELIA." Computer practice not only speeds the rate of learning, but also frees the teacher to explain new concepts. Launched as an experiment by the Federal Government three years ago, computer instruction has been enthusiastically adopted by the McComb school system as part of its curriculum.



education
law enforcement
shopping
job hunting
science
music
defense
flight reservations
other reservations?
"habeas data"

US school accused of using laptops to spy on pupils

Philadelphia school computers captured more than 50,000 images of students

Ewen MacAskill in Washington

guardian.co.uk, Tuesday 20 April 2010 19:40 BST

[Article history](#)



A US school has been accused of using laptops to spy on pupils: Guardian

The row over a Philadelphia school district accused of **secretly spying on pupils through laptop cameras** escalated today after it acknowledged capturing more than 56,000 images of its students, many of them in their homes.

When the scandal first broke, it was believed that only a few pictures had been taken of one pupil, **Flora Robinson**. But court papers released this

Bringing the
of educat
field rapidly work
Mississippi. Taki
out her number



combining themes: home office

"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



Inc.



Payroll, benefit
What a drag.

home work

START-UP • RUNNING A BUSINESS • FINANCE • LEADERSHIP & MANAGING • SALES & MARKETING

percentage of home workers in population

	1960	1970	1980	1990	1999	2005
April 2010	0.025	0.013	0.0095	0.014	0.034	0.039



COVER STORY

The Case, and the Plan, for the Virtual Company



Next phase of working at home: Leaving home

coworking

By Thom Patterson

CNN


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."

 [See how Jelly works together »](#)

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.

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

1 of 4



home shopping



"And so I may yet have a chance to sit home and punch my push-button telephone to ask a computer for the best car route to the beach on Labor Day, and see the directions spelled out on my TV screen. Or see my wife pushing those buttons to order bargains from the department stores, with the charges automatically deducted from my bank balance— without mistakes! But to extend such services to millions of households might put such stress on the telephone network that it would have to be rebuilt, a matter of a decade at least." --*National Geographic*, 1970



what's missing?

generational change?

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





Technology

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Office Robots



compare & contrast

Behold the Computer Revolution

From Counterculture to Cyberculture
Fred Turner

By PETER T. WHITE National Geographic Staff

Illustrations by National Geographic Photographers
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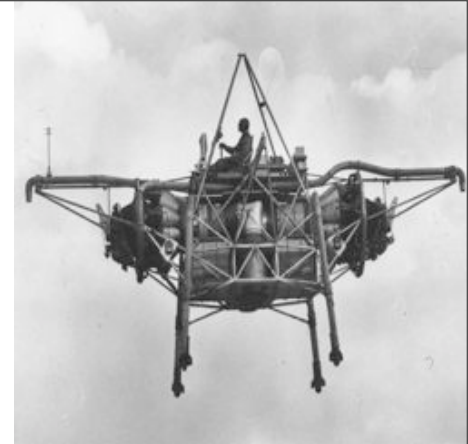
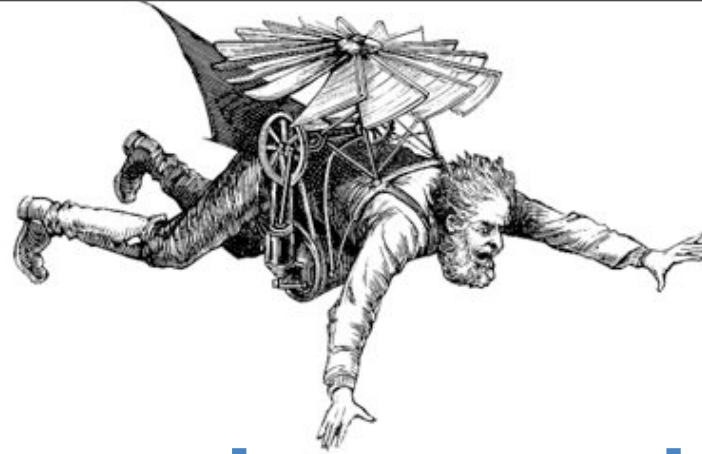
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In the end I found my own ways of



At the consoles of such electronic wonders as this IBM 170, man achieves the power to master information on a scale that profoundly influences the course of science, business, government—even the arts. © N.G.

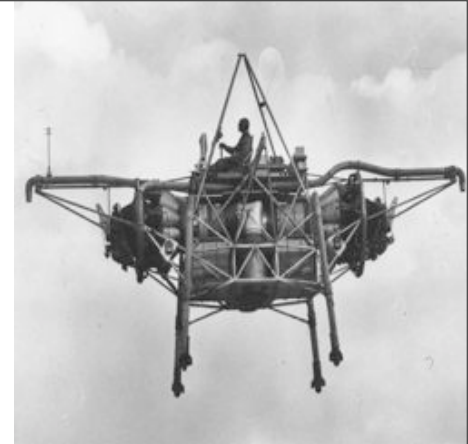
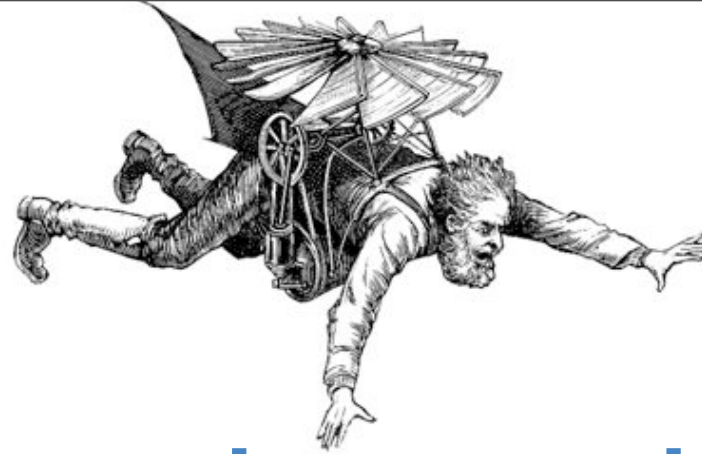


endism oddities

"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



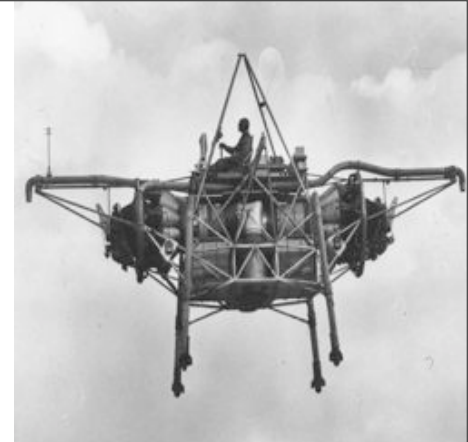
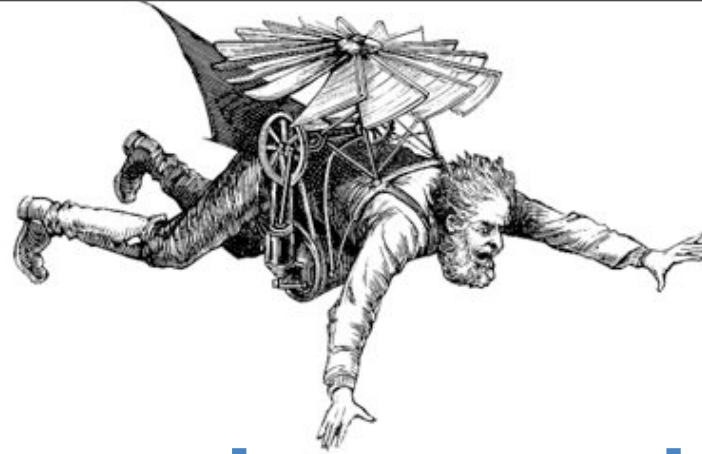
endism oddities



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endism oddities

AP Exclusive: 'Smart' meters have security holes

By JORDAN ROBERTSON (AP) — Mar 28, 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.

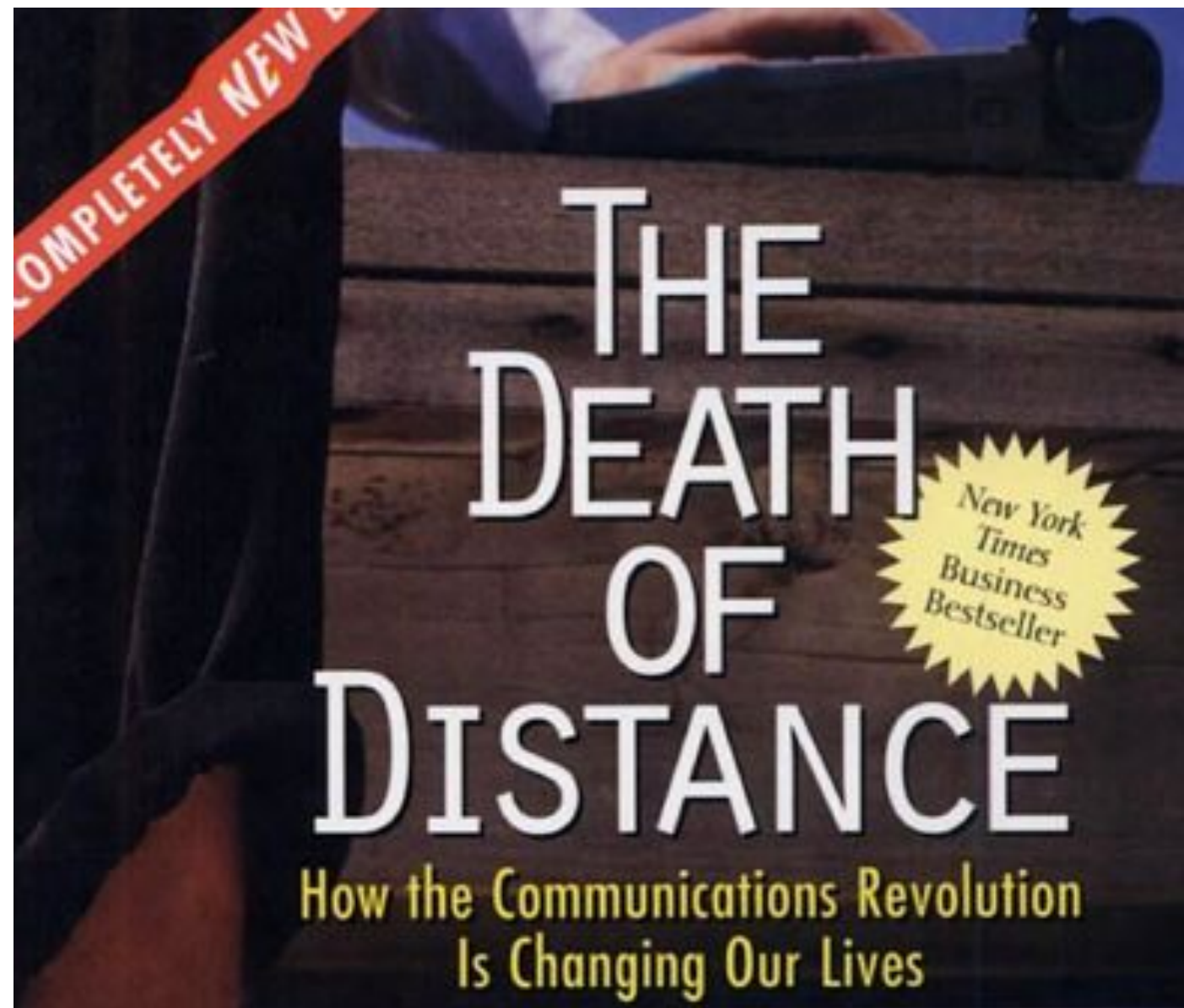
The attacks could be pulled off by stealing meters — which can be situated outside of a home — and reprogramming them. Or an attacker could sit near a home or business and wirelessly hack the meter from a laptop, according to Joshua Wright, a senior security analyst with InGuardians Inc. The firm was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



another revolution?





trendspotting

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.

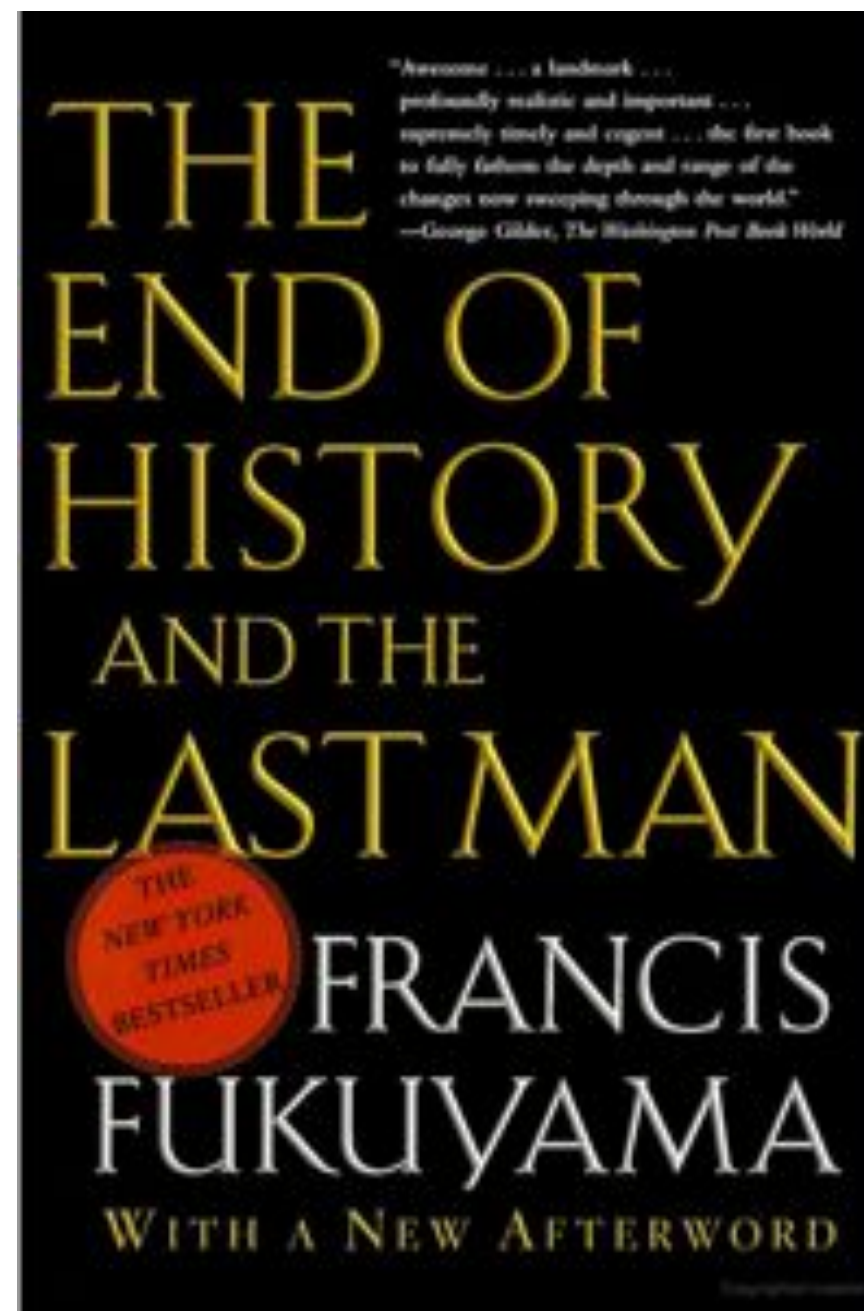
10. **Increased Value of Niches.** The power of the computer to search, identify, and classify people according to similar needs and tastes will create sustainable markets for many niche products. One of the most valuable improvements will be in the ability of people to locate things that have hitherto 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.



21. **The Rise of English.** The global role of English as a second language will continue. It will become the global communications standard: the default language of the electronic world.
22. **Communities of Culture.** At the same time, electronic communications will reinforce less widespread languages and cultures, not replace them with Anglo-Saxon and Hollywood. The falling cost of creating and distributing many entertainment products will also reinforce local cultures and help scattered peoples and families to preserve their cultural heritage.
23. **A New Trust.** Since it will be easier to check whether people and companies deliver what they have promised, many services will become more reliable and people will be more likely to trust each other to keep their word. However, those who fail to deliver will quickly lose that trust, which will be increasingly hard to regain.
24. **People as the Ultimate Scarce Resource.** The key challenge for companies will be to hire and retain good people, motivating them while at the same time extracting value from them. A company will constantly need to convince its best employees that working for it enhances their value as well as its own.
25. **Global Peace.** Democracy will continue to spread: people who live under dictatorial regimes will be more aware of their governments' failures. Democracies have always been more reluctant to fight than dictatorships. In addition, countries will grow yet more economically interdependent. People will communicate more freely with human beings on other parts of the globe. As a result, while wars will still be fought, the effect may be to foster world peace.



global peace 2000?

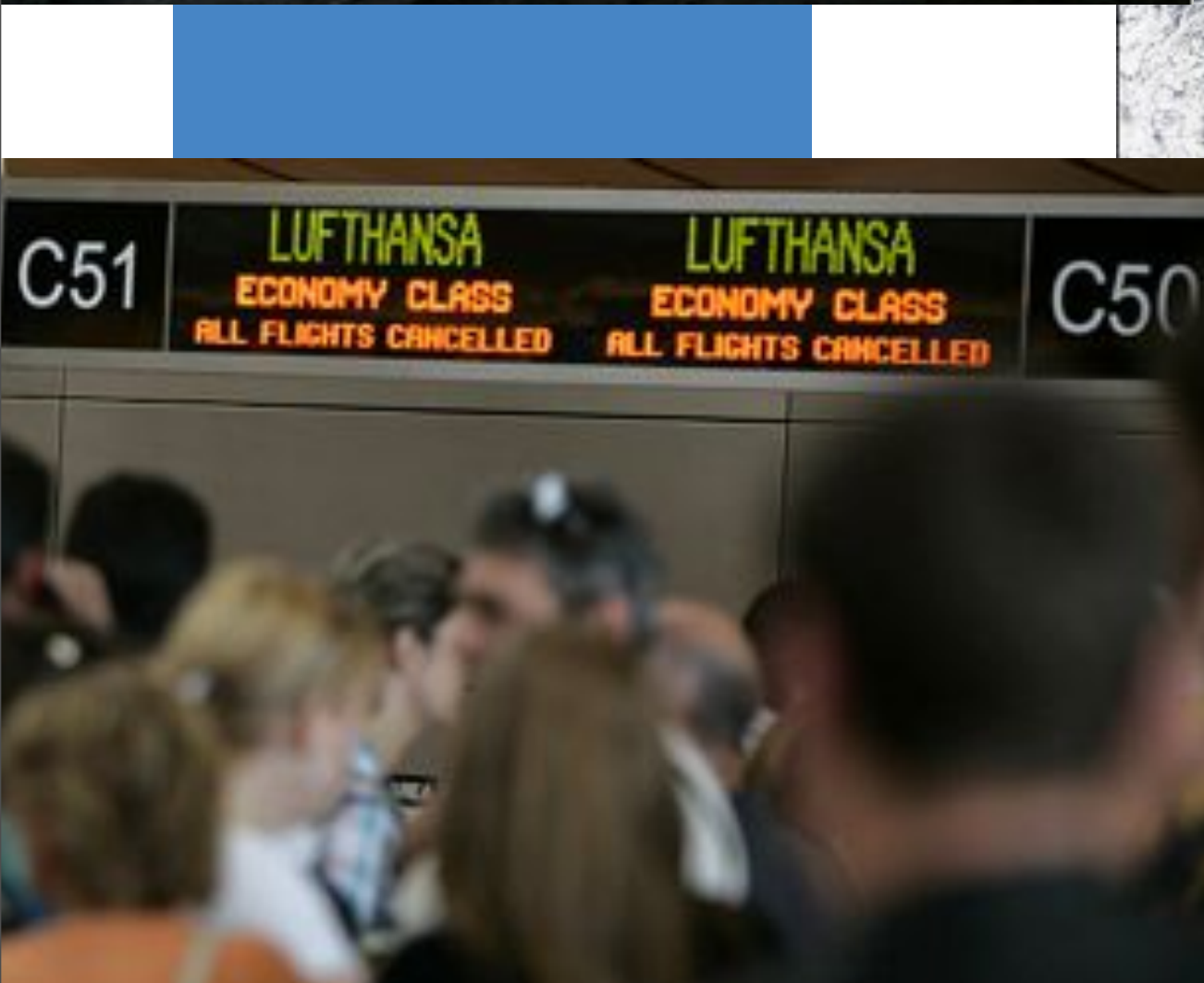


or 1989?

the unforeseen?

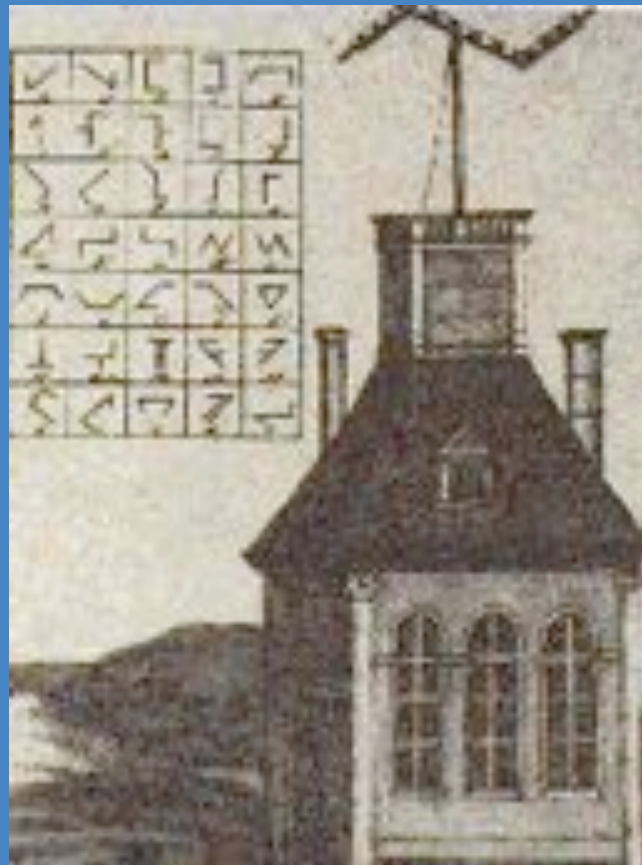


death of distance?





shrinking states



"The establishment of the telegraph is ... the best response to the publicists who think that France is too large to form a Republic. The telegraph shortens distances and, in a way, brings an immense population together at a single point." --Claude Chappe, 1793

"at bottom, this invention might suffice to make possible the **establishment of democracy among a large population ... no reason why it would not be possible for all the citizens of France to communicate their will ... in such a way that this communication might be considered instantaneous.**"--Alexandre Vandermond, 1795



instantaneous



"If the presence of electricity can be made visible in any desired part of the circuit, I see no reason why intelligence may not be instantaneously transmitted by electricity to any distance."

--Samuel Morse



global peace

"the great chain that will bring all
civilized nations into instantaneous
communication ... the most potent of all the
means of civilization, and the most effective
in breaking down the barriers of evil
prejudice and custom"

Hunt's Merchants' Magazine, 1868

"the hand of progress beckons a rivet is
loosened from the chains of the oppressed"

Commercial and Financial Chronicle, 1865



... this age of
ours ... when the
pulsations of
electricity vibrate
and throb around this
earth, uniting nations
as one family by those
powerful yet sensitive
bonds wrought by
science and riveted by
man's quenchless
thirst for still
higher and better
achievements.

Morris S. Wise, *Trade-
marks and Trade-mark
Law*, 1898

single pulse

"Tomorrow the hearts of the civilized world
will beat in a single pulse, and from that
time forth forevermore the continental
divisions of the earth will, in a measure,
lose those conditions of time and distance
which now mark their relations. ... The
Atlantic has dried up and we become in
reality as well as wish, one country."

Times



global village



"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.**"

Marshall McLuhan et al., *Medium is the Massage*, 1967



keeping distance alive?

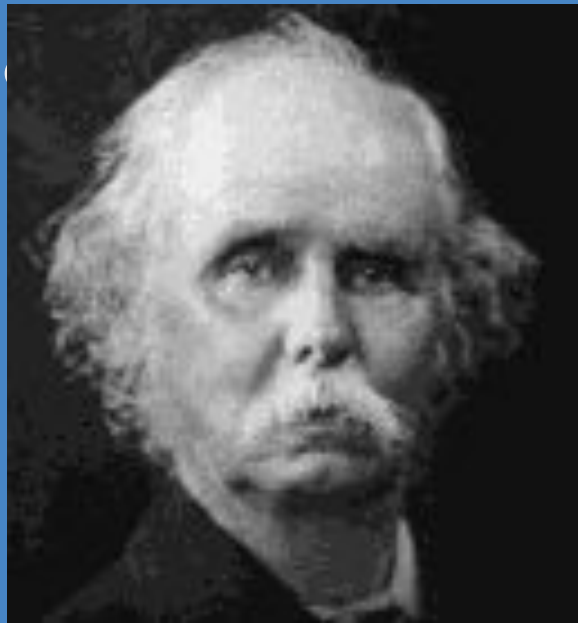


Charles Babbage
1791–1871

"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



Marshall's *localization*



Alfred Marshall
1842–1924

In an early stage of civilization every place had to depend on its own resources for most of the heavy wares which it consumed;

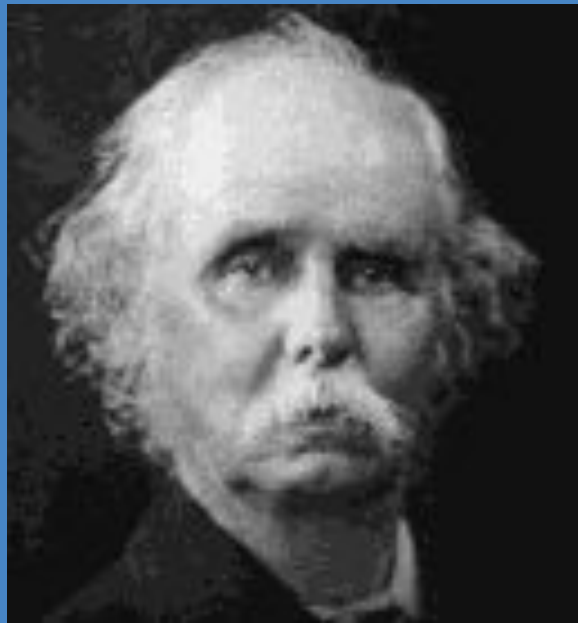
Consequently the lighter and more expensive articles of dress and personal adornment, together with spices and some kinds of metal implements used by all classes, and many other things for the special use of the rich, often came from astonishing distances.

This elementary localization of industry gradually prepared the way for many of the modern developments

of division of labour
Hofl 10 -- Social Implications (I) 35



work and learning



Alfred Marshall
1842–1924

Many various causes have led to the localization of industries; but the chief causes have been physical conditions

Another chief cause has been the patronage of a court.

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

But how did these immigrants learn their skill?



mysteries of the trade

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.



end of localization?

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.









every cheapening
of the means of
communication...

Marco Danesi
Isobel Dewey
Charlie Hsu
Zachary Keller





not just business?

		
Grandfather: Well, I finally finished my doctoral thesis.	Woman: Way to go, <u>George</u> .	Grandfather: Did my research at <u>Indiana University</u> . Woman: <u>Indiana?</u>
		
Grandfather: Yep. IBM took the school's <u>library</u> ...and digitized it. So I could access it over the Internet. She cracks her <u>eye</u> to take this all in.	Grandfather: You know... it's a great <u>time</u> to be alive.	Tag: IBM. Solutions for a small planet.



info-education

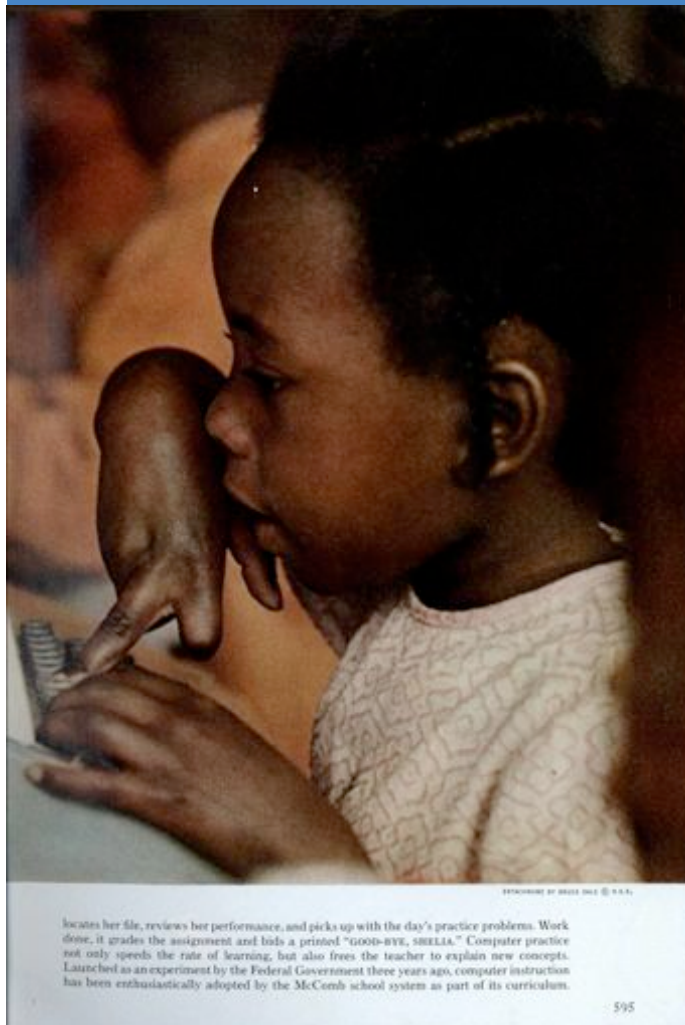
PLATO

(Programmed Logic for Automated Teaching Operations)

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."

Patrick Suppes, *Scientific American*, 1966.

Open University
early morning television





the end of the university?

a "stagnant" sector --William Baumol

against stagnation

Alvin Toffler

Peter Drucker

John Chambers



kinds of distance?

geographical
extension courses

social
correspondence degrees

the Open University



going global

- * Allama Iqbal Open University
- * Anadolu University
- * Athabasca University
- * Bangladesh Open University
- * China Central Radio & TV University
- * City College of San Francisco
- * Fern University in Hagen
- * Indira Gandhi National Open University
- * Indonesian Open Learning University
- * Instituto Tecnológico Autónomo de México
- * Payame Noor University
- * Korea National Open University
- * Sukhothai Thammathirat Open University
- * The Open University, U.K.
- * Universidad Nacional de Educación a Distancia
- * University of Maryland University College
- * University of South Africa
- * University of Phoenix
- * Universidad Nacional Autónoma de México
- * Shanghai TV University

the mega universities

Indira Gandhi (New Delhi) : 2 million

Allama Iqbal (Islamabad) : 1.8 million

Islamic Azad (Tehran) : 1.3 million



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- * College of Eastern Utah
- * Dixie State College of Utah
- * Johns Hopkins Bloomberg School of Public Health
- * Kaplan Higher Education
- * Massachusetts Institute of Technology
- * Michigan State University
- * Open Institute of law, Int.
- * Tufts University
- * UC Berkeley
- * University of Alaska Fairbanks
- * University of California, Irvine
- * University of Massachusetts Boston
- * University of Michigan
- * University of Notre Dame
- * University of Utah
- * University of Wisconsin- Eau Claire
- * Utah State University
- * Utah Valley State College
- * Weber State University
- * Western Governors University
- * Wheelock College



why not you?

(and why not Geoff?)

History of Information Podcast



History of Information Podcast
webcast.berkeley Course - InfoSys C103
by Paul Duguid

◀ [LISTEN TO PODCAST](#)

► Podcast Description

This course explores the history of information and associated technologies, uncovering why we think of ours as "the information age." We will select moments in the evolution of production, recording, and storage from the earliest writing systems to the world of Short Message Service (SMS) and blogs.

www.learnoutloud.com



why not indeed?

The image shows a screenshot of a website. The top banner features the logo of the University of Languages and International Studies (ULIS) on the left, which includes a shield with a torch and the text 'ULIS' and 'ĐẠI HỌC NGOẠI NGỮ'. To the right of the logo, the text reads 'ĐẠI HỌC QUỐC GIA HÀ NỘI' and 'TRƯỜNG ĐẠI HỌC NGOẠI NGỮ' in large blue letters, with 'UNIVERSITY OF LANGUAGES AND INTERNATIONAL STUDIES' in smaller blue letters below. The background of the banner is a blue sky with white birds and bubbles. Below the banner, the page is divided into two columns. The left column has a yellow background and contains the text 'Search This Blog' and 'Loading...'. Below this text is a small graphic of a network of nodes and lines. The right column also has a yellow background and contains the date 'Saturday, January 2, 2010', the title 'Online Course 12 - InfoSys C103 History of Information' in bold orange text, the subtitle 'InfoSys C103 History of Information', a red URL 'http://webcast.berkeley.edu/course_details.php?seriesid=1906978352', and the text 'History of Information' followed by 'Posted by English 1 at 5:07 PM' and a small icon.



coming up

Week 15

27 Apr: Social implications of the internet II

Required reading:

- Moore, James F. "The Second Superpower Rears its Beautiful Head," Berkman Center for Internet & Society, March, 2003. Also [here](#).
- Hindman, Matthew. 2007. *Voice, Equality, and the Internet* (ms of *The Myth of Digital Democracy*) Pp. 1-13.

Assignment

According to Moore, "the new superpower" [i.e., focussed discussion on the Internet] demonstrates a new form of "emergent democracy" that differs from the participative democracy of the US government. Hindman reaches a somewhat more cautious conclusion: "[It is important] to consider who speaks, and who gets heard, as two separate questions. On the Internet, the link between the two is weaker than it is in almost any other area of political life." Which of these views do you find more persuasive, and why? Is the Internet likely to have a profound effect on the democratization of political discourse?

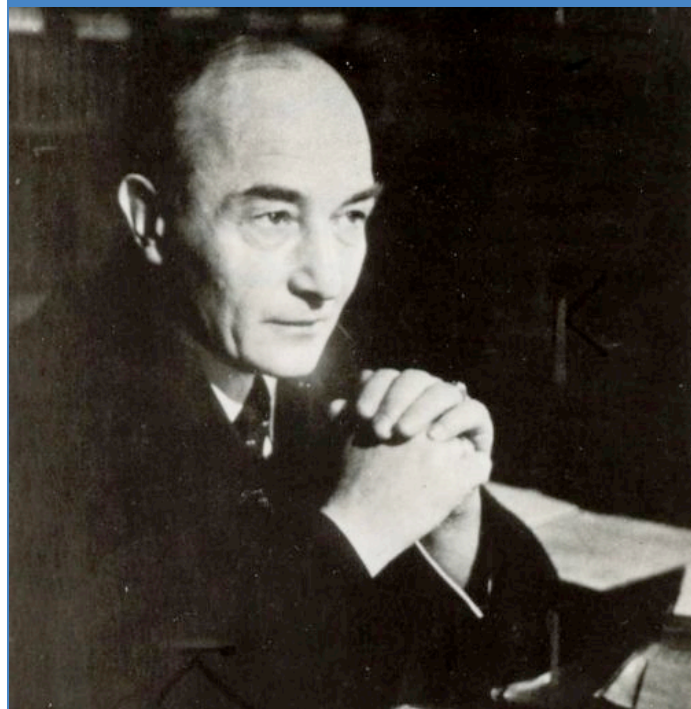


divisions of labor

the super-American city

"Air and earth form an ant-hill, veined by channels of traffic, rising storey upon storey. Overhead-trains, overground-trains, underground-trains, pneumatic express-mails ... chains of motor vehicles. ... Each person has nothing but quite definite tasks. The various professions are concentrated at definite places. ... Amusements are concentrated in other parts of the city. And elsewhere again are the towers to which one returns and finds wife, family, gramophone, and soul. Tension and relaxation, activity and love are meticulously kept separate. ... And man needs no more for his happiness ... Besides, zoology makes it clear that a sum of reduced individuals may very well form a totality of genius."

--Robert Musil, *A Man without Qualities* c. 1920s



Robert Musil
1880-1942



distance education



Sinclair Lewis
1842-1924

"The University of Winnemac ... [has] twelve thousand students; beside this prodigy Oxford is a tiny theological school and Harvard a select college for young gentlemen. The University has a baseball field under glass; its buildings are measured by the mile; it hires hundreds of young Doctors of Philosophy to give rapid instruction in Sanskrit, navigation, accountancy, spectacle-fitting, sanitary engineering, Provençal poetry, tariff schedules, rutabaga-growing, motor-car designing, the history of Voronezh, the style of Matthew Arnold, the diagnosis of *myohypertrophica kymoparalytica*, and department store advertising. Its president is the best money-raiser, the best after-dinner speaker in the United States; and Winnemac was the first school in the world to conduct its extension courses by radio."

--Sinclair Lewis, *Arrowsmith*