

# End-users: Dollars but doubts

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Three years ago I wrote “End Users: Dreams or Dollars” in reaction to the modest redirection of funds from the library market to the non-library or end-user market [1]. Requests for the paper came from three score three people: six from the United States and 57 from other countries. I had drilled a nerve in the information industry’s wisdom tooth.

When Tony Cawkell asked me to revisit the subject of end users-hereinafter called EU-and electronic information, I told him that now my activities orbit around the professionals-librarians, information scientists, and database experts -not the parvenus, dilettanti, MBAs, and kindred data dabblers. But I agreed because the EU market has changed and because 1989 is shaping up to be a watershed for electronic information products and services.

My premise was-and remains-that selling EUs on the idea of electronic information is easy-too easy. One of our industry’s failing is that we make the easy sale then don’t deliver. As one executive wedded to biz-buzz says, “Selling passwords is a no-brainer”. Right. The *brainer* is getting EUs-individuals not trained as librarians or information scientists- to use electronic information resources regularly and appropriately. Textbook marketing techniques build unrealistic expectations and then let the EU fail. Little wonder that doubt plagues the information business.

But in spite of the global information industry’s floundering, millions of EUs capitalize on electronic information in their jobs or personal affairs every day. EU’s acceptance of the electronic information phenomena seems to reach wherever there is an electrical outlet.

Complexity and chaos are promising areas in many scientific disciplines today, and EU’s usage of information is a complex and chaotic system. Nuzzling electronic information is ubiquitous but marriage random. Recently I experimented with a fractal graphics generator. The images the program created helped me visualize EU’s use of electronic information. Sudden discontinuities appeared, taking over an area on the monitor only to be transformed into another pattern. Yet other parts of the screen were unaffected by the blitzkrieg of activity a few pixels away.

And so it is with EUs. Neither education nor economic status are yardsticks for measuring who will or won’t be a consumer of electronic information. Near

illiterates make automatic teller machines cough dollars. Free online information can be dialed by a student in his school computer room. Reference CD-ROMs are available in almost 80 percent of the US public libraries if one accepts at face value a comment made at the June 1989 Special Libraries Association meeting in New York.

It is my belief that EUs will rely increasingly upon electronic information. They will not be primarily dependent upon commercial timesharing services in their present form nor on commercial CD-ROM products that duplicate online services. Each niche or cluster of interests in the EU universe will have specific individualized needs. Innovators will bend information technology to meet them. EU requirements will change rapidly which, in turn, will beget opportunities for technically-adept people who listen. Each technology solution will enable additional information use. The future is complex, a kaleidoscope of chaotic opportunity.

### **End users at work**

My list of where EUs are in US organizations is not complete, but it does benchmark pockets of EUs:

- Financial services firms. People inhabit their CRTs, trading futures, wheeling and dealing, selling short and buying long. This is probably the preeminent electronic beachhead for EUs. (Even CD-ROMs containing archival full-text material have found sustenance here as well.)
- Law firms. EU computing thrives here because partners gained a double whammy when Jerry Rubin introduced the world to the wonders of full-text, online legal research. (1) Paralegals or junior partners went online and retrieved everything relevant to a particular case faster and more thoroughly. (2) This work was billable. *Ergo*: More billable work in less time! And . . . the client pays.
- Consulting firms. Consultancies work like lawyers. Their employees also use online information to help win business. With each year's cohort of new hires, electronic information becomes more firmly rooted.
- Research laboratories. Online research started here. Now one can't do science or engineer without a computer. These EUs are the most innovative in electronic information retrieval. Imaging and graphics applications multiply here.
- Marketing and planning departments. Market information and computer simulations help pull these professionals to electronic information.

Why have these professions and business functions become EU leaders? These five areas rely upon electronic information because the process meets one or more of these needs:

- Revenue. This is the driving factor for the penetration of electronic information in financial services.

- Cost reduction. Electronic information husbands scarce resources and, in some instances, reduces staff.
  - Organization culture. Optimal information expertise means more money or power.
  - Work. The job cannot exist without computer-based data.
- System friendliness, data price, and time requirements are of lesser importance than any of these key factors.

EU marketing can increase the visibility of a particular electronic service. It may even sell a password, system, or CD-ROM. But today's marketing programs cannot influence companies strategically. Habitual usage of electronic information is cultivated within the work environment. It follows, then, that information marketing must aim at the senior managers as well as individuals in particular functions.

### **End users at home**

EU home use of electronic information services has enjoyed considerable success. CompuServe, the US-based timesharing service owned by H. & R. Block (an American tax consultancy) signed on its 500,000th online customer in the first quarter 1989.

In a *Business Wire* story filed on 3 March 1989, Charles W. McCall, CompuServe's president and chief executive officer is quoted as saying:

Over the years, we've seen companies enter this industry with a big bang, then find they're unable to offer a service of real value to personal computer users. We've never lost sight of the value of information, and we stayed the course of providing an online service that has as its cornerstone a very basic concept: people communicating with other people.

I read this to mean that CompuServe's EUs employ the system as a high-technology citizen's band radio. The most popular services on CompuServe are electronic chatting, exchanging technical advice about computers and software, and downloading free software or shareware.

CompuServe is first a transmission utility; its value-added packet data network services more than 1,700 major US corporations and government agencies. Then in off-peak hours it is an information company. Clever use of hardware and network capacity has allowed CompuServe to make a go of a business that has brought other companies rivers of red ink. A half-million passwords is an impressive achievement. When one compares the number to the population of 10 million PCs in the US, CompuServe has captured one percent of its potential market.

The big winner in the EU home market are BBSs. BBS is an acronym for a *Bulletin Board System*, a single or multi-PC online timesharing service. A BBS can support one caller or more than 100 simultaneously as does Exec PC in suburban Milwaukee, Wisconsin.

Free or low-cost bulletin board systems are now a global phenomenon. When Ric Manning and I started *Plumb/Bulletin Board Systems* in 1984, we counted about 1,500 BBSs in the US. Curt Edwards, operator of Softstone, thinks that today there are more than 10,000 BBSs in the US. This number probably exceeds 20,000 BBSs if a global count were made. In 1984, Manning and I placed the total number of BBS users at 150,000 people. Today the total is probably closer to two million. This makes BBSs one of the most successful electronic information sources in the world. It is a sad commentary on the information industry that the BBSs and their incredible EU success are largely unknown. Exec PC has risen in three years from revenues of zero to more than US\$ 1 million per year. Bob Mahoney, founder and owner of Exec PC, has a fresh approach to pricing which warrants study. His online interface overshadows most of the commercial time-sharing companies'.

EUs gravitate to these information services because they meet needs; for example, messaging (E-Mail), software, technical information, and special interest group conferences (SIGs).

Who's making billions in electronic information?

Certainly not the database producers. Even Mead Data Central's \$200 million in revenue doesn't seem like much when compared to Ford's, Paramount's, or General Food's billions. Perhaps electronic information *is* different from automobiles, motion pictures, and cookies?

What makes me nervous is that the information industry – database producers, timesharing companies, and CD-ROM peddlers-is small, maybe stunted. The revenues are lackluster; profits dismal. If one accepts the data in Information Market Indicators' statistical analyses of the online and CD-ROM information businesses, the traditional "information industry" is a second-division football club. One, maybe two players, are on the way up; most are going nowhere. A few are playing their last season. Flashes of brilliance thrill the fans, but the team has little chance of winning the Cup.

I find it entertaining that expectations for electronic publishing revenues remain high. The less familiar the managers are with the traditional information industry, the higher the revenue projections. The frenzy of speculation, rampant when I first tackled this subject, has cooled but not disappeared. Stoking the fire, however, is the consolidation of the electronic publishing industry. As the electronic information businesses mature, watch for rapidly increasing prices and deteriorating quality and service. The third-division players will show their limited skills.

### **The information providers' problem**

It is common knowledge now that the online information retrieval industry depends upon a small number of companies for most of its revenue. In the US, for example, Dun & Bradstreet has cataloged about eight million businesses. Fewer than 25 percent have revenues greater than \$1 million per year. The online

industry is supported by the biggest and wealthiest companies. Only they have the money and people to nurture online data retrieval on a daily basis.

Individuals and small organizations have neither the money nor the time to spend significant sums of money for the commercial timesharing services' data. Pundits have offered dozens of reasons ranging from EUs' naivete about computers and communications to the opaque, even weird, system commands. I think our industry's problem is *pig-in-a-poke* information.

Decades ago my uncle purchased and paid cash for an automobile sight unseen. Not surprisingly, the automobile failed to proceed. As my uncle struggled to get his money back, my mother intoned with endearing frequency, "Don't you euer buy a pig-in-a-poke".

Of course, the pig in question is anything one cannot see. The poke is the sack in which the pig is hidden. One judges livestock through inspection. But not in the electronic information business. Buying a pig-in-a-poke is what we most often ask an EU to do. What do we say when the information is not what the EU needed? We say, "Pay up and have a nice day".

Is this a reasonable expectation, or is it a relic of our inability to reconcile system functionality with information value? We expect the EU or customer to query an electronic system (the electronic equivalent of my uncle's stupid act); process the stuff the system spews forth; and then pay-whether or not the EU gets what he wants! Even veteran online searchers show respect for online systems' facility at generating hefty bills for useless data. Are we losing touch with reality when we wonder why EUs thwart us? Commercial timesharing services spit out data and Texas-sized bills with equal facility. I have never had much success telling the offended party that he paid to learn that what he wanted wasn't there. Have you?

As an industry, we can no longer ignore the customers' sensitivity when paying for something they don't want, can't see, and aren't able to use. Little wonder that electronic publishing revenues fail to meet their revenue targets. We're not making it easy to win customer loyalty.

### **The customer's problem**

EUs also bring some problems to the party. It is my opinion that most EUs run on their PC what US PC columnist Jim Seymour calls "killer apps": word processing, spreadsheet, or DBMS. Once a killer app is mastered, EUs run in a groove and tune out messages that tell them to learn new computer tricks.

Not long ago I went to a small, traveling circus. I delighted in the behavior of the trained horse. José the Horse seemed quite bright. But, I knew that José can't do much more than his one trick, whinny, and find his feed bag. José performs from habit, and it's hard to teach an old horse new tricks. It should be no surprise that it is hard to teach an old EU new tricks as well.

I feel uncomfortable admitting that I see most EUs the way I see José the Horse. These professionals wait for two years for the 3.0 version of Lotus Corp.'s

l-2-3 spreadsheet and ignore superior products. Why wait more than 100 weeks for an upgrade? Habit, comfort with the familiar, new information tuned out as noise- that's why.

An EU who gets software to work and obtains satisfactory performance from l-2-3 doesn't *want* to switch. Learning new software requires time and effort, two commodities in increasingly short supply in the industrialized nations. An AT&T telephone salesperson told me that most executives use only two or three of the 100 features resident in the average office telephone. If something as familiar as the telephone is not learned thoroughly, is it so surprising that an EU doesn't want to learn a new spreadsheet? In fact, does the EU tap a fraction of the power of the original Lotus 1A?

To reach the customer, the information industry must make some changes. One of the easiest and fastest changes is to think about EUs in a different way. When I look at the five markets in which electronic information has taken root, I see dozens of other niches which represent opportunities. My current scheme is to group broadly EUs into two broad categories and then make sub-categories under each.

### **Category A: Mailing list end users**

A mailing list EU is one whose name you can buy from a commercial list house. In general, MLEUs do their work inside bureaucracies. Electronic publishers can identify these people by their membership in associations, the periodicals to which they subscribe, the products they purchase, and the titles their organizations assign them:

- New Intermediaries. These are people who use online information services to obtain information for colleagues or clients. A typical example would be a young MBA or junior lawyer searching one or more online databases for information on a specific topic.
- Tool Users. Think of these EU computerists as administrative assistants with PCs. The typewriter gives way to a PC, a word processing package, and a laser printer. The clerk's pad and pencil yields to a PC, Lotus l-2-3, and a wide-carriage printer.
- Heat Seekers. Some of the early EUs have matured with circuits for souls and software in their brains-power users, just the name causes a surge of adrenaline among vendors of 33 megahertz 80386 computers. A power user is an EU who has the PC equivalent of an F-16. But according to *InfoWorld*, watch out for the *real* power user who actually runs industrial-strength programs on his computer [2].
- Transaction Tornadoes. This type of EU is the person for whom the computer is a legitimate money machine. These are the brokers, salespeople, and wholesalers who stir the money pots with their PCs.
- Unknowners. These are people who use online data retrieval without knowing they do. Credit checks and financial transactions by bank personnel are two examples of EUs unaware of the technology and resources at their disposal.

## Category B: Data mavericks

As one might imagine, the computerizing of the world fosters many EUs who don't fit into the pigeon holes above. In general, EUs in these categories are hard to find.

- Chippieties. These are the folks who connect with underground online information services, BBSs. They range in age from 23 to 50, have disposable income, and are techno-junkies outside of work.
- Dabblers. These are people who purchase a computer and don't know what to do with it. These people are the consumer videotex prospects. People in this category may express a fear that they are being left out of the computer revolution. Buying a machine is enough; then they skip using it.
- Experimenters. A person who gets a password to check out the system. Once a feel for the service is established, the EU moves on to another new experience. The journey is this EU's reward.

EU markets are not homogeneous. Each category has different needs, perceptions of information, and mental capabilities. It seems highly improbable that a person who uses a PC to do his banking will download an InvesText report on Shell Oil, Disclosure's 10-K, and relevant citations from Trade & Industry Index and Promt. Long counter lines and automatic teller machine muggings have spurred EU interest in banking by PC. The move to electronic information is motivated by needs people perceive, not just the intrinsic value of the data. Perhaps in Manhattan people will pay a premium for the privilege of banking in safety? Electronic information may have nothing to do with what the customer wants.

## End user excuses

Even though there is a rich variety of EUs, the excuses they offer for not using electronic information are consistent.

Here is my list of the reasons not to use electronic information that I have recently heard:

- “It's too hard. Make it simple”. When an EU calls for ease of use, the remark often means “I don't have the time”; “This is not important to me”; or “Go away”. Furthermore, I am not sure electronic information should be easy. Conceptualizing, reading, understanding, and thinking should not be short-circuited.
- “This stuff is too expensive”. We have touched on pricing but lightly. The value of data is determined by the situation. For example, if a company is an acquisition target, affected executives will pay almost any price for data about the suitors. The value of the information is determined by the user's need at a specific time in a certain situation. It follows that standardized pricing cannot match situational need and value. Electronic publishers urgently need fresh thinking about getting dollars for data. Until then, this is a legitimate objection which kills online usage and CD-ROM sales.

- “I’m going to wait until the technology settles down”. Life today is unchecked technological change. Electronic information requires the twentieth-century believer to take a thirteenth-century leap of faith. This is tough when the resisting EU owns the company into which we are trying to sell electronic information services.
- “I don’t have time to do this”. The recent *Time Wars* by Jeremy Rifkin contains many thought-provoking observations [3]. On the issue of time perception, Mr. Rifkin says that computer users learn to accept computer time as the norm. Wasting time to a computer engineer means nanoseconds, not minutes. Consequently people will perceive that they have nanoseconds to give to a problem, not minutes. Information has to be available correspondingly fast and require minimal time for learning, processing, assimilating, and understanding. In a mass market, electronic publishers have to package to meet the demands of a person who is on computer time. Electronic information is more likely to evolve into a Road Runner cartoon, a Nintendo game or an Indiana Jones movie than a page of ten-point Times’ Roman text.

I am convinced that technology may do more to reduce these barriers to EUs than pricing tricks.

## Opening windows

The interface is the man-machine equivalent of the automobile tire meeting the pavement. In the US there are thousands of people who head into the wilderness to rough it, to experience life the way America’s Frontiersmen did. The online industry has its aficionados of the past as well. The lovers of the command-driven interface are the online equivalent of sleeping naked in the mud.

By the end of 1989, two significant and different EU interfaces for electronic information retrieval will be available in the US. Both make use of windows, lower-case “w”. (An uppercase “W” can cause a lawsuit more quickly than an attorney can say \$100 per hour.) *Windows* in this context has nothing to do with Microsoft’s Windows/286 or /386, Quarterdeck’s windows, Apple’s windows, or Xerox’s real windows. (Only in America can such richness abound!) The term refers to chopping the display into rectangles and putting different data in each one.

Available now, Mead Data’s NEXIS group has created News Plus, which is a bloated version of the now-defunct Menlo Corporation’s EU software.<sup>1</sup> Collectors of online potpourri will recall that the first Menlo interface was introduced as a front-end for the Dialog Information Services’ protocol. News Plus, which requires at least an 80286 processor and a couple of megabytes of the EU’s hard disk, makes searching and manipulating the Mead Data NEXIS databases easy or

<sup>1</sup> Menlo Corporation’s interface and software is now owned by Personal Bibliographic Software in Ann Arbor, Michigan. Their implementation is excellent, and it is unfortunate that timesharing companies persist in reinventing the wheel, not using excellent products commercially available.



at least easier. Besides the little boxes for data, commands, and help, the software includes a comms program, automatic downloading to folders, accounting routines by client name, and dozens of other functions. The hope is that EUs who are not comfortable with plain vanilla NEXIS will embrace the interface.

Later this year, rumor has it, Thomson Financial Network, which produces the InvesText database, is introducing both a new EU online service and a window interface. The word from those who have seen the demonstration is that the boys from InvesText have done it again.<sup>2</sup> TFN has code-named the project *Summit*, a proper noun used in the US for a sweet and a senior information industry executive. Happy coincidence?

Summit's windows take a revolutionary new approach to online searching. The EU can choose the windows or a command mode. The query can be answered by three levels of prepackaged reports, each offering increasing amounts of detail. TFN's First Call customers will get a crack at Summit later this year. The information is oriented to financial and business professionals and promises to be a product which others will rush to emulate. Summit has a strong bloodline and could win the End User Derby in the 1990s.

Technical strides like these from Mead Data and TFN in accessing and packaging of information are more important in attracting EUs than any other tactic for the next two or three years. How does the interface relate to pricing?

More EU-oriented interfaces allow the customer to approach electronic information on one's own terms. The electronic information process becomes more personal and apprehendable. I know if I can control what I get from an electronic service and what I spend, I have a better feeling about the process. If someone does most of the grub work for me, I have a different perception of what my dollar buys me. I reduce, if not erase, my doubts about value, risk, and results.

## CD-ROMance

In the book Linda Rosen of Digital Equipment Co. and I wrote this year, we discuss in some detail the management and EU implications of CD-ROMs [4].

Most of the 500 commercial CD-ROM products are not very imaginative. Most of them use the CD-ROM format to simulate the online search environment. This is like using a Honda racing motorcycle for a quick trip to the market. CD-ROM publishers say the marketplace has responded with great enthusiasm. I won't parade the filmy statistics which suggest that today the CD-ROM is a \$100 million dollar business for database producers or that in 1988 100,000 optical drives captured desktop real estate around the world.

The fact is that any self-respecting manufacturer of computer hardware, sneakers, or house paint would be a banker's nightmare if only 1,000 units of his

<sup>2</sup> InvesText is one of the most successful new databases introduced in the 1980s and ranks as one of the essential business databases because of its excellent, full-text coverage of reports produced by investment analysts.

product sold at less than the cost to develop and manufacture the product. The majority of CD-ROM publishers find themselves in this dream-like state. Ms. Rosen and I learned that only a baker's dozen of CD-ROM publishers have sold more than 1,000 units. The other 490 are marketing but not selling.

For EUs, WORM, read-write, and CD-ROM allow the organization to recast electronically its internally-generated data. Applications might include distribution of certain large files on CD-ROM, backups by WORM, and image storage and retrieval via read-write optical devices. Commercial electronic publishers may be excluded from this market unless they become service bureaus building databases for clients, not selling off-the-shelf databases to clients.

Commercial CD-ROM information products can sell to EUs if the following conditions are met to the client's satisfaction. The product must be:

- economical or offer value for the money;
- designed to make the EU comfortable during use;
- updated on a cycle appropriate to the client's needs;
- presented in a visually appealing way;
- able to run on equipment the client has;
- integrated with the primary application the EU runs;
- a creative use of the medium; for example, colors, graphs, sound, moving pictures, and the like.

Ms. Rosen and I reported that the Voyager Corporation's Vincent van Gogh product demonstrates an imaginative yet practical use of the optical medium. We were impressed by Jordan's Financial Analysis Made Easy (FAME). Collaborating with the Bureau Marcel van Dijk, Jordan's has broken new ground in making financial analysis intuitive and instantaneous without sacrificing clarity. Other pacesetters include VNU/Disclosure's Laser Disclosure image product and the Information Access Co.'s InfoTrac product.

The real payoff for EUs is that optical technology offers individuals and organizations the tools to become desktop database publishers and distributors of their own information.

### **Why 1989 is a watershed**

This year marks a turning point in the efforts of electronic publishers to reach EUs. The abstract and indexing, timesharing, and full-text industry-what I consider the text-oriented information industry-has redirected its marketing. The focus on EUs will speed the rise of new winners, cause the fading of old stars, and neglect the librarians and information scientists.

These are the marketing cannon rolled out to signal significant escalation in the battle for EUs:

- The focus on big companies. Three big US timesharing companies-Dialog Information Services, Dow Jones News/Retrieval, and Mead Data Central—are increasing or shifting resources to sell EUs electronic data. This is called “key account marketing”.

- Direct sales calls on functional managers.
- Big budget advertisements. For example, Delphi, GENIE, and CompuServe (whose advertisements promise the universe) run pricey adverts. These firms' messages have appeared in high-circulation US periodicals, including business and computer publications. Dow Jones News/Retrieval makes sparing but effective use of the *Wall Street Journal*. Dialog Information Services' advertisements have turned up in Knight-Ridder newspapers in Sacramento, California, and other cities graced with the KR masthead. My guess is that fewer than 15 percent of the respondents to any of these advertisements get a password and only one percent become users.
- The telcos. American Telephone & Telegraph (AT&T) has petitioned the judge who controls the fate of the neutered giant for permission to be a producer and distributor of data. When AT&T or any of the RBOCs (regional Bell operating companies) are allowed out of corral, the flowers, grass, ants, and cowboys are going to get trampled. AT&T, the Baby Bells, and their subsidiaries have the hardware, software, money and fiber optics to pump zillions of gigabytes of data around on Big Mama's network. EUs will love regional data centers, telephone listings for individuals and businesses, gateways, image transfer, and real-time, full-color picture/data telephones.
- Consumer thrusts. Prodigy's joint venture partners IBM and Sears Roebuck & Co. have expanded their videotex service *from* Los Angeles, California; Sacramento, California; San Francisco, California; Santa Barbara, California; San Diego, California; and Hartford, Connecticut, *to* include Philadelphia, Pennsylvania; Baltimore, Maryland; Boston, Massachusetts; Detroit, Michigan; Washington, DC (the new murder capital of the United States); and greater New York. Prodigy sells data to consumers and advertising to stores, banks, and automobile dealers [5]. Prodigy is very visible.

These developments signal electronic information's change from a boutique for librarians to branded products for EUs. When one chases the herd, one must appeal to the lowest common denominator. 1 see dark days ahead for data quality, validation, integrity, and identity of the older online databases.

### **Short-term gains long-term groans**

As electronic information spreads in the 1990s, more professions will toss employees in the electronic sea. Retrieving information from internal and external online services, CD-ROMs, and other media will be a continuous, routine activity. But in the short-term the money for electronic information will come from the Fortune 1000. Today's good customers also will be tomorrow's.

The serious money--billions, not millions, of dollars--will come from consumers who want data to be microwavable. In the next five to seven years, consumer electronic information services will gain steam and finally blast by the organizational information services. Interactive optical discs with X-rated movies;

telephones with HDTV, voice, FAX, and data; and CD-ROM maps in every new automobile—these are the services of serious money.

## **Oh, ick! Ethics**

Building new services will consume electronic publishers and avert attention from the brambles of ethical issues.

Electronically-retrieved data are little more than potential, the digital equivalent of two hundred kilos of sheep's wool. Now the EU must select, compare, analyze, weigh, discard, reshape, and process the raw material into intellectual fabric. Some of the data are accurate, some inaccurate. Some timely, some out-of-date. Some relevant to the question at hand, some irrelevant. Some is appropriate, some inappropriate.

These processes are simplified when the information pertains to easily verified facts; for example, certain types of scientific, engineering, and technical information. Numbers and laboratory results can be compared, contrasted, and calculated. As one synapse-short publisher told me, "A number is a number".

But the transformation of data into information gets harder when one tackles such subjective inputs as value judgments, opinions, options, and recommendations. Making informed distinctions with this raw material is the intellectual equivalent of winter mountain climbing. Only a handful of people excel in this.

The EU market is primed and ready with money in hand for an electronic information service which does as much of the screening, selection, and analysis as possible. Shrink-wrapped information gives the EU more time to reflect and decide. In nanosecond time, the electronic information service must do more, correct?

Without dragging you, gentle reader, into epistemological thorns, let me suggest that most business people will pay to have some of their thinking done for them. The uncomfortable conclusion that I draw is that packagers of electronic information will have increasingly greater influence over the reality which the EU sees.

What if a packager of electronic information omits critical facts about a particular company's financial performance, and the EU makes a decision on this tailored data? Who's at fault? The EU for relying on the electronic information? The packager who shaped the information product? The individual who purchased the product and placed it in the organization? What of the individual who mucked with the data electronically? Who has the job of validating these data packages? Do we place our faith in a transnational corporation, or do we hire information police?

One of the attributes of electronic information is that it seems so authoritative, so right. The printout says, "All the work's done". Well and good if the packager of electronic information is smart and dedicated to objectivity. But what if the timesharing service redirects a query from one database to another to maximize

profit? Would you say, "That won't happen in our industry?" Okay, be happy; don't worry. Two timesharing services in the US are doing this . . . now.

### **The next ten years: Dollars and doubts**

What is the reality as we approach the 1990s? It's safe to say that the shine has rubbed off American high-technology and information companies.

Last fall, *Business Week* (October 17, 1988) in "Will Computers Take a Dive?" reported that the PC boom is starting to fade with potentially dire repercussions for the entire computer industry.

As if to validate the *Business Week* report, a number of American companies started 1989 with economic whimpers, not bangs. Leading Edge, once the largest of the PC cloners, dropped then flopped. Wyse, Seagate, and Borland retrenched by RIFed<sup>3</sup> and tightened belts. Compaq pulled its equipment from Businessland stores, dealing both companies a multi-million dollar blow. This type of instability, possibly chaos, foreshadows similar turn-and-churn in the electronic publishing. Datatiques will be gobbled up by conglomerates. Disenchanted owners of electronic publishing properties will try every trick they know to get their money back. Those gifted with an international view and stability can capitalize on the turmoil.

The growth of the online information industry has been perking with a 10 to 15 percent increase each year. Not bad, but tame when compared with the exponential growth of Ask or Microsoft. None of the 350 odd timesharing companies or the producers of the 3,500 plus commercial databases can match these two overachievers. Pumping up marketing, hyping CD-ROMs, and adding passwords to timesharing companies' customer lists have not created an information Microsoft. According to two timesharing company's officials, the cost of carrying unused passwords is greater than the aggregate revenue generated by 80 percent of their customers.

In the next few years, growth in electronic publishing revenue will come from financial sleight of hand, not sales and usage. Among the tactics used to create the illusion of growth will be:

- frequent price increases disguised as sign-up fees, monthly minimums, or increased communication charges;
- making customers pay for support;
- new high-cost services (special formats and images);
- tricks (intentional system delays when the customer downloads data in order to up connect time; premium charges for higher-speed modems; and inefficient compression techniques for image data to inflate connect time).

EUs and information professionals must guard against such charges.

The number of niche databases will increase. A handful of the new products will earn more than a million dollars per year for their creators. Since the

<sup>3</sup> An acronym for *reduction in force*. RIFed means an employee loses his job.

mothership databases have matured, their producers will have an increasingly difficult time expanding their customer base, protecting their revenue base, and meeting profit targets. Most producers will adopt K-Mart marketing. The mothership products have matured. Mature products have to be sold because they no longer sell themselves.

Companies whose primary business is not information will get into the electronic publishing business using optical and other new technologies. More potent new networks will put employees online. Access will be primarily to internal financial, product, and technical data. Some organizations will build gateways to external timesharing companies, ask for, and get preferential discounts. US companies will fixate on their data. Electronically, they will contemplate their navels.

Inexorably, new (and most likely non-American) competitors will sink their teeth into lucrative sectors of the US electronic information market. Disturbing to me now is my recognition that America is the first industrialized Third World Country of LDC. Other countries' companies will exploit the US market the way American firms milked Brazil in the 1950s. This time, however, the resource hauled out of America will be dollars and data, not minerals.

The US is ripe for picking. It has a two-class society: the information rich and the information poor. Intellectually, its nation has one of the highest illiteracy rates in the world. Culturally, the country is concerned principally with amusing itself, according to US educator Neil Postman [6]. The US will lose its lead in information as it lost its lead in DRAM manufacturing. Thus, in the 1990s, a significant structural realignment is inevitable.

In the short-term not much will change. The dollars will flow from EUs to the information companies which meet these customers' needs. Over the long-term, investors, entrepreneurs, and product innovators will begin to doubt the viability of the US information industry. The 1990s will marry electronic information. No doubt about that. The question is, "Who will be the bride and groom?"

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