Take Heart, Tainted Ones!

Second Edition

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MIS manager attending an ACTS executive briefing asked, "How can I get upper management to listen to me? They act like I have been tainted with my 20 years of experience working with mainframes?

The mainframe is still the most cost-effective computer platform for organizations above a certain size, and will remain so for the foreseeable future. Downsizing, even partial downsizing, is in fact an expensive and potentially disastrous move for most mainframe users. This "Straight Talk" series of reports addresses the unwarranted claims made against the mainframe and challenges those who either promote reckless downsizing or insist unequivocally that a move toward client-server and open systems is a move away from the mainframe. Each professional using mainframe technology should be wary of the myths and half-truths that tempt organizations to become fashion victims and advise his/her management accordingly.

Large-systems professionals, do you feel tainted by 15-20 years of experience working with "big iron?" Are you frustrated that your voice of reason is being drowned out by hordes of consultants, pundits, and opinion peddlers proclaiming the death of the mainframe? As your company contemplates open-heart surgery on IS, are you concerned that the progress of the last few decades is being casually trampled beneath the trendy wheels of the client-server/open systems/downsizing bandwagon? Take heart, tainted ones, because the wheels of that bandwagon are starting to come off, just as you tried to warn others they would. Much to the dismay of everyone, the all-too-common horror stories are starting to surface, transitioning from quiet murmurs to revealing headlines. Datamation reported in its February 15, 1994 issue that 25% to 30% of client-server projects are totally abandoned. In this manner, the truth is starting to come out even though most "fashion victims" have no plans to call a press conference to lay out the embarrassing details. Nor should they! If an organization has just spent millions of dollars learning that something does not work, the best competitive tactic is to keep quiet while competitors make the same expensive mistakes.

The primary lesson that fashion victims are learning is that distributed systems rarely, if ever, work well in large configurations. They simply don't scale to handle large numbers of users and large volumes of work. Even as early as December 12, 1992, John Gantz was cautioning readers of Computerworld:

"Client/server works on a small scale. But rolling it across an entire enterprise is different... For that matter, I can't recall too many major client/server applications that didn't require the services of a consultant to implement. Andersen Consulting, in discussing its widely publicized Northwest Airline ticket auditing application, admits that very few IS shops or consulting firms could have pulled it off..."

You were definitely right in questioning the motives of those zealots who have been preaching that a move toward client-server is always a move away from the mainframe. Perhaps you suspected that those with a "shoot the mainframe" mentality were motivated more by resume building, being featured in the trade press, or being invited to deliver a conference keynote address than by delivering business results. All too often those decision-makers who tried to scrap their mainframe have long since departed before the ugly facts of high cost and poor results are discovered. They can be compared to Typhoid Mary as they infect the next organization they join with empty promises and techno-hype, setting unrealistic expectations.

Great Expectations Versus the Real World

Decision-makers today are bombarded from all sides with impressive sounding buzzwords packaged neatly in marketing sizzle and flash. It is almost impossible to pick up a magazine or newspaper today that doesn't include ads or articles promoting the latest silver-bullet technology solution that will supposedly give you the ultimate competitive advantage. For example, consider the implications of these excerpts taken from a special advertising section in the October 17, 1994 issue of Fortune magazine, under the headline "Information Management - Challenges and Opportunities."

"To accommodate the new paradigms for doing business, the natural solution is client/server computing, which links 'client' computers - usually PCs or workstations on desk tops - and 'server' computers, which distribute information and applications wherever they are needed on a network. This allows information to be accessed from one database or many and distributed to users, no matter where a user or the information is located. It enables businesses to leverage previous investments in information systems, while deploying new solutions that can integrate new information technology and yield a wide variety of benefits... Along with client/server, continued advancements in many key information technologies are enabling innovative applications, at affordable prices."

Sounds simple, doesn't it? One person suggested client-server computing is simply splitting an application across a wire. Such oversimplifications downplay the technical complexities of such a task. While these theories sound simple at a boardroom-level discussion, numerous technicians working in the trenches can attest -- implementation is a different story! At the Canadian government's Fall 1994 technology conference, a senior technology architects, Mr. John Cooper, gave a presentation titled "Client-Server Reality Versus Expectations: An Examination of 20 Federal Projects." Mr. Cooper offered this analogy:

"Your computer used to be a box and you have some wires going out to a terminal or a terminal server, and everything was contained in there. There was one company looking after it. The communications bus was part of the computer. That's not the case now. You've really broken up that computer and spread it out all over the building or all over the city or all over the country. The box, your data base server, or server is really the CPU, and you have a communications bus now that could be thousands of miles long. All of the software and firmware that used to be inside a single box and well tested, you're now buying from 4 or 6 or 3 different vendors, and you're putting it all together and expecting it to work."

Mr. Cooper also reported that for 18 of the 20 projects he surveyed, costs had been underestimated.

Cost of Computing Reality Check

Business executives are often shocked if and when they learn about the Total Cost Of Computing (TCOC) from studies conducted by Xephon, Gartner Group, IDC, ITG, and others. These studies have shown consistently that, on a cost-per-user basis, client-server applications cost significantly more than comparable mainframe applications. Computerworld, October 18, 1993, reported:

"Some 1,200 attendees packed in to hear Gartner Group, Inc.'s prognostications, among them that it is OK to 'just say no' to client/ server computing... 'We estimate that client/server costs 150% of a mainframe-centric architecture,' said Michael Braude, Gartner Group's senior vice president. 'Change is not necessarily progress, and it's up to you whether you jump or not.'"

After more data from actual customer experiences had been gathered, reports showed client-server costs were not getting better as proponents claimed they would. Another Gartner Group quote reflected this trend in the July 4, 1994 PC Week:

"'Client-server systems will be 50 percent to 300 percent more expensive than mainframe-based systems.' (according to) Ken Dec, Client-Server program director, Gartner Group, Inc... When adopting client-server, most large enterprises will increase information technology spending. A typical client-server move, with investments in hardware, software, service, and labor, represents approximately $48,000 to $66,000..."

The $48,000 to $66,000 figures represent the cost per client over a five-year period. Since a powerful PC can be obtained for under $2,000, it is easy to see why those doing a shallow cost comparison can be so easily misled.

The PC Week article went on to say:

"The average mainframe installation operated 2.4 times more hours during the course of a year than a comparable PC/LAN installation and delivered three times faster response, according to a study from International Technology Group. In addition, on the basis of an overall five-year study of the cost of computing, mainframe installations averaged 3 cents per transaction; PC/LAN installations averaged 43 cents per transaction."

Reports like these are now commonplace. Reality-based data has consistently shown that costs

for client-server can run as much as two, four, and even eight times the cost of a comparable mainframe application. Furthermore, distributed systems that work well for dozens of users don't scale upward. Performance typically degrades substantially when several hundred users are added.

An article in the September, 1994 issue of Scientific American reported the results of a study of companies trying to deploy large, distributed systems:

"Software is buckling as well under tectonic stresses imposed by the inexorably growing demand for 'distributed systems': programs that run cooperatively on many networked computers. Businesses are pouring capital into distributed information systems that they hope to wield as strategic weapons. The inconstancy of software development can turn such projects into Russian roulette."

"In June IBM's Consulting Group released the results of a survey of 24 leading companies that had developed large distributed systems. The numbers were unsettling: 55 percent of the projects cost more than they expected, 68 percent overran their schedules and 88 percent had to be substantially redesigned."

Simply stated, distributed systems do not play well in the large commercial environment. With 88% of companies having to go back and substantially redesign their networks, just think of the devastating impact this had on original cost projections!

While mainframe-bashers may be less likely to promote cost savings as an incentive to dump the mainframe, watch out! The client-server/open systems/downsizing zealots are not to be deterred that easily. They are simply re-posturing their alleged solutions under the nebulous banners of flexibility, business freedom, and yes, even as the key enabler for Business Process Reengineering (BPR)!
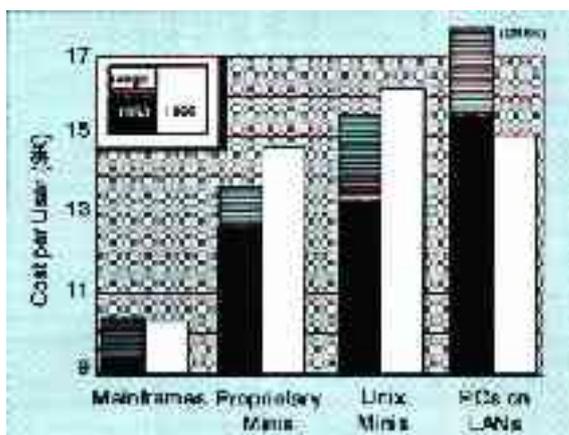
The bad news for vendors claiming client-server costs will be dropping eventually is that studies show the advantages of mainframes over PC/LANs and midrange systems have actually been increasing rather than decreasing! With mainframe vendors introducing more and more CMOS-based solutions, such as commercially viable parallel processors based on System/390 CMOS chips, mainframes will easily maintain their cost advantages for the foreseeable future. The Dinosaur Myth (Xephon Publishing 8/93) compares 1993 costs per end-user to projected

1998 costs (see Figure 1).

Missing Pieces

Although you have always encouraged the responsible use of PC/LANs, workstations, and new technology in general, you were right in pointing out to upper management that the omission of bedrock building blocks for mission critical systems has doomed many of these faddish, hastily designed downsizing projects to failure. Perhaps you even lay awake nights wondering if anyone would ever be held accountable for sacrificing so many non-negotiable IS requirements. We are speaking, OF COURSE, of systems management, 7 X 24 X 365 availability, built-in backup and recovery, automated operations, security, high-volume transaction processing, data integrity, and scalability, to name just a few. These are the very disciplines you have been refining in your glass-house data center operations over the last 30 years. To your amazement, these were either overlooked, neglected, or ignored in the careless lemming-like rush to the so-called open, client-server, mainframe alternative solutions.

Reinventing the Mainframe

As philosopher and writer George Santayana once stated, "Those who cannot remember the past are condemned to repeat it." Vendors peddling mainframe alternatives would do well to heed this warning and quit trying to re-invent the wheel. Ask LAN software vendors to explain their upcoming features, and they will frequently reply, "You know, like on a mainframe."

One only has to ask around to discover the damage done by client-server/open systems/downsizing zealots who have led followers headlong into the same mistakes made by mainframe folks during the 1960's and 1970's. Rather than taking the industry forward, these fashion-focused vendors are boldly bringing their customers 1960's ideas packaged in trendy but unproven theories, models, and strategies. Examples include numerous Unix-based proprietary vendor extensions, as well as the vast majority of "not-so-new" multiprogramming and network features in Windows/NT. Rather than compare these features to modern industrial strength operating systems like VSE/ESA, VM/ESA, or MVS/ESA, a more revealing comparison would be against early versions of System/360-based DOS and OS, specifically OS/PCP, OS/MFT, or OS/MVT. Other examples include practically all of the rudimentary systems and network management tools being introduced for open, client-server systems. One might say that in these instances, necessity has become the mother of reinvention.

Mark Firley, IBM Gaithersburg, has looked into the claims of mainframe bashers, and concluded that IBM's ES/9000 mainframe (and its forerunners) has advanced more in the last 10 years than any other computing platform, including Intel's family of microprocessors from the 80286 to Pentium. For example, Mr. Firley compared a 1983 fully-configured model 3083-E16, which occupied 2000 cubic meters, to a 1991 equivalent-speed machine from the ES/9000 9121 family. The newer mainframe occupied only a few hundred cubic meters. Today, System/390 PC CMOS solutions have been produced that are in effect "mainframes on a card" that fit inside a PS/2 with micro-channel and are capable of running mainframe operating systems. These latest innovations mean the processor occupies only a few cubic centimeters! Since April of 1994, IBM has been using advanced CMOS technology in newer System/390-based mainframes and parallel processors.

Mr. Firley's insights also suggest that most mainframe opponents who commonly refer to mainframes as "big iron" are typically working with perceptions and/or information that is outdated by at least 10 years.

To further refute the notion that mainframes are not modern, when comparing mainframe alternatives to mainframes:

1. Compare overall processor design. The mainframe uses horizontal microcode techniques to double processor speed.

2. Compare overall channel design where several thousand I/Os per second are routinely supported on mainframes. The next fastest platform (super-minis) only does hundreds of I/Os per second.

3. Compare overall amounts of data per processor MIPS. Do your own averaging, but expect to find that mainframes, depending on workload, will support between 3000 and 3300 megabytes per processor MIPS, minicomputers running Unix typically support several hundred megabytes per processor MIPS, and PCs typically support from 30 to 100 megabytes per MIPS.

4. Compare the use of laser technology in mainframe channels, the distances allowed for local connections between mainframes and I/O devices, and the overall impact this has on areas such as dynamic reconfiguration or disaster recovery.

5. Compare mainframe processor-coupling techniques and, most importantly, benchmark data with other machines that offer Symmetrical Multi-Processing (SMP) and moderately parallel systems. Note that you'll have difficulty getting any hard performance data for high-end wares from vendors of mainframe alternatives.

6. Compare data compression techniques. Modern mainframes now offer high-speed hardware data compression.

Downsizing Realities

With so few people having an accurate understanding of modern mainframe technology, it is not surprising to learn companies have been so easily misled.

The Dinosaur Myth also reported:

"Downsizing projects typically follow the same life-cycle:"

1. The company announces its intention to downsize from the mainframe, often in a blaze of publicity orchestrated by the suppliers of the downsized alternative chosen. The IS Director gives presentations at numerous industry conferences enumerating the benefits the company will gain by throwing out its mainframe.

2. A year or two later, the IS Director, when pressed, concedes that the project is taking longer than expected and is costing somewhat more than planned; nonetheless, the company will still gain considerable benefits once the transition is complete. The mainframe is still operational.

3. A new IS Director is appointed, and the downsizing project is quietly abandoned. The mainframe is upgraded.

Xephon has uncovered dozens of case histories matching this
pattern, as well as a few more extreme cases, where organizations abandoned
the mainframe a few years ago, encountered insurmountable problems with
the alternatives they chose, and are now converting, or have already converted,
back to mainframes. The costs and disruption involved in two wholesale
conversions, not to mention the loss or serious impairment of computer services
during the interregnum, are clearly enormous-- for many organizations,
such a mistake could be the last they make."

In light of this evidence, it is extremely disturbing to note that a partner from a Big 6 accounting firm was recently talking about how the computer downsizing fad is allowing his firm to get double the business from the same customers: first helping them in their efforts to downsize, and then, after they fail, helping them return to the mainframe. You were right in asking--are IS providers selfishly milking a trend, or do they really have your best interests at

heart?

Chaos Theory

Comparisons of dinosaurs and mainframes have always been commonplace. Interestingly, there is a valid insight to be gained from a recent movie about dinosaurs, Jurassic Park, which deals with the Achilles heel of client-server systems that are being attempted on a large scale. The point was made by the mathematician in the movie, Dr. Malcolm, whose specialty was studying the predictability of complex systems. He called this area the study of chaos, or chaos theory. Regarding computing systems, the main point here is to recognize the nature and drawbacks of distributed systems. The fundamental drawback of a distributed computing system is that it makes simple things more complicated. Conversely, the nature of centralized systems makes complex things more simple. Progress and success is clearly identified on the road to recentralization, as evidenced by the emerging world of servers on all platforms, while the road to decentralization is littered with empty promises and failed attempts.

The bottom line is that too many organizations are pursuing technology plans that are based on distributed models that are untried and, at best, unproven (or at worst are proving to be a disaster). For most large organizations, the mainframe-centric model is far superior to the distributed model. Mainframes typically support client-server environments much, much better than hundreds of small servers networked together, primarily because mainframes simplify resource sharing and provide economies of scale (which are two reasons why mainframes also offer the lowest cost per user). Nonetheless, client-server enthusiasts are slowly learning lessons that mainframe specialists learned decades ago. John Devore, IS specialist at the County of San Diego, cautions that the demand by customers to move into a client-server environment has rekindled many of the same computing problems that existed back in the late sixties and early seventies. Mr. Devore likes to remind people that "One man's common sense is another man's revelation." For example, Information Week, February 14, 1994, reports the "discovery" of the super-server alternative:

"Having brought a number of servers into one location, the next logical question would be: When does a hardware upgrade to a large server make sense? And will any of the new 'super-servers' provide a solution?... 'There are good reasons to upgrade to a super-server,' agrees Tom Carson, director of management information systems for retailer Zale Corp. 'You can achieve many economies of scale. A case can then be made simply on software licensing alone.'"

Mr. Firley came across a company that had decided mainframes were too expensive and had distributed its applications to more than 100 midrange "interconnected" hierarchical systems. The resulting configuration became so complex the organization was forced to supply a data center to re-centralize the distributed processors. Thus was born centralized distributed computing!

The Tide is Turning

After years of hearing only one side of the debate, customers' expectations about unproven technology are slowly being reset. For the masses, downsizing has become dumbsizing.

Numerous firms have painfully learned that unexpected problems and overall complexities of distributed systems more than offset anticipated gains. Such is the unavoidable risk associated with pioneering unproven technologies along a pathway where chaos theory dominates.

Referring back to Mr. Cooper's presentation regarding his 1994 survey of personnel working on 20 of the Canadian government's more significant client-server projects, he reported:

"The complexity makes it much easier to fail... When problems occur, complexity slows the resolution. If something is not working, where do you start? And which people do you involve? Is it something wrong at your PC end in Vancouver, is it something wrong with your communications, should you talk with your network personnel? Is it something wrong with the communications driver on your server, should you be talking with your systems administrator or your DBA or whoever looks after that? So you have to spend a lot more time troubleshooting, and it may be a lot more complex to fix when you find it."

Regarding experiences working with multiple vendors, Mr. Cooper also offered the following observations:

"Changing DB drivers on a PC is not straightforward. 2000 PCs from 34 manufacturers running different things --boy, it's going to be a headache! Things that used to be straightforward are not anymore ...You're dealing with many more vendors, many more products, and the products are a lot newer... One project brought in an Ingres consultant who reduced a query from dozens of hours to 20 minutes."

Fashion victims have learned hard lessons-- that fragile networks amplify the chaos, especially when a system's reliability is being questioned. The aforementioned article in Scientific American also stated:

"The survey did not report one critical statistic: how reliably the completed programs ran. Often systems crash because they fail to expect the unexpected. Networks amplify the problem. 'Distributed systems can consist of a great set of interconnected single points of failure, many of which you have not identified beforehand,' Randell explains. 'The complexity and fragility of these systems pose a major challenge.'"

It is encouraging that responsible decision-makers are now taking a closer look before making any significant changes in proven business processes. As they look beyond the cost-per-MIPS fallacy and more closely examine key factors such as processor utilization, data handling capabilities, response time's impact on productivity, and support costs, they are scrapping their downsizing plans. Even the pundits who were touting that downsizing means big costs savings have reversed their positions in light of irrefutable facts disclosed from the world of actual experience. What is doable is not always reasonable, and what looks good in theory may look terrible in practice. Too many companies have learned only after investing millions of dollars that user-friendly can often mean budget-hostile.

Journalist Bart Ziegler affirmed many of these same points in an article he wrote in the September 12, 1994 Wall Street Journal:

Headline: "Vital Signs: Decline in IBM Mainframe Sales is Slowing - Next Generation Steps Out as Death Knell for Big Machines is Quieted"

"A funny thing happened on the way to the funeral for IBM's mainframe computer business: It has started to show surprising signs of life... instead of shrinking 30% as in 1993, or plummeting 50% as International Business Machines Corp. had predicted it would this year, mainframe sales are down only about 10% so far this year. Why are mainframes doing better? An improving economy, a fading stigma about mainframes, a growing realization that a much-vaunted alternative will be slower in coming, and the fact that the big machines are the only ones that can do certain computing tasks are all contributing factors... Ã Ã'There's No Alternative?'Ä Ä Now, many industry experts see a slightly brighter outlook and an improved image for the machines, at least in the short term. That's in large part due to the slower-than-expected takeoff of an alternative system. These 'client-server' setups have turned out to be tougher and more costly to implement than initially believed."

Theory Meets Reality

The National Guard and Army Reserve's Reserve Component Automation System (RCAS) is a good example of a large-scale client-server project that, thus far, has intentionally excluded any mainframes. The system primarily handles office applications and is part of a $1.8 billion procurement over 12 years. RCAS is the first requirements-driven system of its size in the history of the government. Regarding "openness," RCAS is attempting to comply with all GOSIP and POSIX standards.

The system is totally Unix. There is no DOS in the system, not even under a Unix shell. Low-end servers are sized to support up to 16 X-Terminals each. The RCAS configuration uses 10-base-T Ethernet, TCP/IP, MOTIF, and X-Windows. In its full glory, RCAS will support approximately 55,000 workstations. So far the RCAS "infrastructure" consists of approximately 13,000 low-end servers (486-based), and 700 database servers (DEC minicomputers) tying these users together.

The serious limitations of this "fully distributed" system were not uncovered until E-mail was added. The store and forward windows on mail servers limit the speed at which mail can be passed. It can commonly take 1/2 to 2 days to send E-mail and get a reply. How could those responsible for RCAS design overlook the fact that a communications heavy E-mail system needs a mainframe or super-mini to handle communications and store-and-forward functions? For RCAS, however, things like E-mail were considered a secondary benefit. One thing is certain: people who were expecting greater flexibility and freedom from the new client-server computing paradigm readily admit this is not what they bargained for!

In most instances, failed or run-away client-server/open systems/downsizing projects are simple
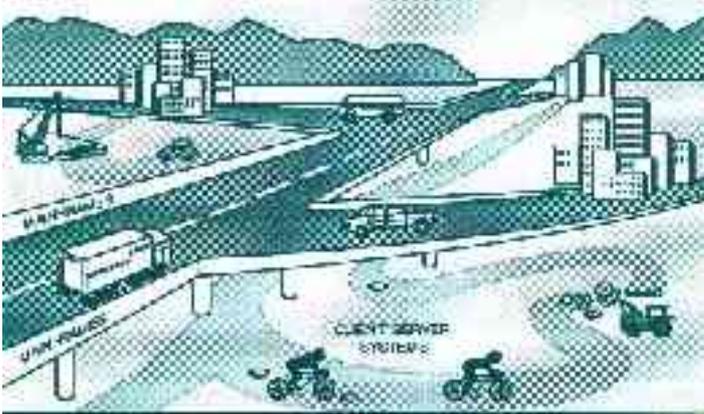
cases of good intentions gone bad. The problem lies in the fact that to fully test the alternatives, huge capital expenditures must be made up-front, usually before concepts can be accurately proven. On the other hand, even where testing can be done, fewer and fewer companies take time to conduct rigorous pilots. Such insights help explain Datamation's finding that, eventually, 25% to 30% of client-server projects are totally abandoned.

An Analogy

Consider a state somewhere in the US that has hundreds of small asphalt companies who specialize in building residential driveways and parking lots. Most of the companies are owned and operated locally, but these business owners got together to figure out ways they could expand their respective businesses. Once they learned how much money the state highway department spent each year, they decided to go after some of those "big bucks." A strategy was developed to convince government officials that the existing interstate highway was too expensive, too inconvenient to access, and for all practical purposes was obsolete. They rationalized that all state residents would be better served if each city could independently undertake (be empowered) to build its own custom on-off ramps where they would best serve each city's needs and purposes. Eventually the ramps in each city would be interconnected by a new, more versatile, more modern interstate highway. Convenient access would encourage even more residents to drive. Naturally this work could be done cheaper by the smaller asphalt companies.

Once implemented, the new interstate would ultimately improve the quality of living for all state residents. Projections also showed the state attracting more business and expanding the economy. Naturally the state officials were all for economic expansion and an improved quality of living for everyone! Who, in their right mind, would oppose such noble causes? To clinch the deal, the small asphalt companies pushing for a new interstate promised that even though initial costs would be higher, the costs over time would eventually drop once the existing interstate was completely shut down.

None of the current state officials were around when work on the first interstate began back in the 1960's. They were fully aware of the high cost of building and maintaining an interstate, however, because those costs were known quantities and regularly appeared as rather large line items in the state budget. In addition, the state highway department was generally perceived as being slow to respond because it always seemed to take such a long time to complete additions to the existing interstate.

Committees were formed to look into the proposal for a new interstate, and committee members were pleased to find that almost every newspaper and magazine was filled with stories about other states pursuing similar plans that were projected to save their respective governments bundles of money! Since the perception was widely held that "everyone else is doing it," approval for the new interstate came quickly. Since time was of the essence, it was decided that it would not be necessary to check directly with other states who may have been further along in

the transition.

What neither the state officials nor the general public understood was that the existing interstate had been continually upgraded over time and was actually very modern. Predictably, no one at the state highway department had given any thought to educating the general public about all of the advanced technology used over the years to keep the existing highway modern. Most people took interstate highways for granted and there had never been a need to "merchandise" them.

As soon as senior highway department officials learned of the proposal for a new interstate and actually reviewed the plans, they were shocked and appalled at how incomplete the plans were. They tried earnestly to point out the shortcomings of the new interstate and warn everyone about obvious omissions and unavoidable problems. But these warnings went unheeded and were dismissed as "sour grapes." As highway department officials continued to voice concerns and repeat warnings, they were eventually labeled as obstructionists and were accused of trying to protect their turf. Many were told if they did not make the new strategy work they would be replaced by someone who would.

At first, proponents of the new interstate enjoyed the spotlight. At their own press conference they took turns patting themselves on the back. They soon felt like media darlings, granting numerous interviews, then reading one news report after another about their visionary and responsible actions that were going to save the state so much money and improve the quality of life for all. Before long one couldn't find anything said or written that didn't refer to the existing interstate as old, aging, archaic, outdated, tired, or anachronistic. Construction began, and very soon thereafter, so did the delays and cost overruns. The contractors and state officials alike began to learn the hard way that there was more to building an interstate than they first thought. Numerous hidden costs became known. For example, when trying to connect the different cities with new roadway, it was discovered that some cities were separated by high mountains, while others were separated by bodies of water, and yet others by marshy swamp lands. The new contractors who specialized in driveways and parking lots never had to blast-away at mountains, build bridges over ravines, or build roadway upon pilings through a swamp.

Eventually some new roadways between cities were actually completed, but even then poor construction presented travelers with new security and safety risks that they never had to face when driving on the "old interstate." To make matters worse, so many new contractors were involved in the project that highway inspections repeatedly revealed that time-tested engineering principles were commonly overlooked or abandoned, making travelers assume even more new risks. State officials were forced to advise residents that use of the new interstate should be restricted to light traffic, such as motorcycles and compact cars. They were also notified that heavy duty traffic, like 18-wheelers, presented serious safety hazards on the new interstate, so plans to close the old interstate would have to be abandoned!

The irony was that after the costs of the new interstate became known, state officials learned only then that the original interstate was not only less expensive to operate, and had been all along, but the original interstate was more versatile as well! It was also pointed out that other states making legitimate progress in improving the quality of living for their residents were those that had built new on-off ramps for their existing interstate, providing new ways to access their existing, reliable, and proven highway system.

While this analogy may sound almost comical, it is not a bit humorous if your IS department is building a new distributed computing infrastructure and becoming another "fashion victim." Don't worry though, the consultants will gladly help you convert back! And, oh yes, you can expect the decision-makers who approved the conversion to be long gone before the magnitude of the disaster is known.

Healthy Skepticism

A philosopher once stated "What has not been examined impartially has not been well examined. Skepticism is therefore the first step toward truth." With this in mind, you were right to be skeptical about what you read in the trade press. A January 10, 1994 Business Week article went so far as to boldly proclaim 1994 as the "end of the end for big iron."

The Atlanta Journal and Constitution newspaper countered this prediction in an article appearing in its Sunday, April 3, 1994 edition:

Headline: "Mainframe computers extinct? Don't believe it. PCs just not suited for some jobs"

"So the pressure to replace mainframes is real. Trade journal articles began appearing by 1990 speculating on the mainframe's future. Ironically, just as the hysteria seemed to be dwindling in the trade press, general-interest newspapers and business magazines jumped into the fray."

"'It's the end of the end for mainframes,' George F. Colony, president of market research at Forrester Research, told Business Week for a report published in its January 10, 1994, issue. Stories such as that tend to catch the eye of a chief executive officer, said George Baylog, who is senior vice president of technology for Atlanta-based World-Span. Most CEO's aren't technologists, but almost all of them can read. 'That's a real issue in information technology, the expectations made by hype in the press can influence chief executives,' said Baylog. 'And very often, if there is resistance from the information officer, it's considered narrow-mindedness...'"

With so many mainframe opponents trying to paint the mainframe into obscurity using adjectives like old, aging, archaic, etc., just remember what Arthur Ponsonby said: "When war is declared, truth is the first casualty."

Always check out so-called success stories and get the facts first hand. Two recent articles, taken from Computerworld and Information Week, illustrate further the need for closer scrutiny.

Computerworld reported in its March 28, 1994 issue:

"Pacific Gas and Electric said it expects a March 1995 introduction of a client-server based customer service system for 20,000 key industrial accounts... The PG&E project, which began 3 months ago, will employ Sun Workstations and Sybase... The current system uses an IBM mainframe and dumb terminals... (and) there's a big risk if it (the mainframe) goes down because it could take three or four days to get back up. The overall strategic intent is to get off the mainframe and allow the system to change as rapidly as the business."

While Information Week reported a more revealing version of the story in its February 21, 1994 issue:

"Is Pacific Gas & Electric... putting a happy face on a
client-server project gone haywire? Last week, Anderson Consulting said it will develop and build a new customer information system (CIS) for San Francisco-based PG&E's 20,000 large industrial customers by year's end. On the surface, it seems like a logical move... But PG&E has already sunk five years and untold millions of dollars into developing a client-server CIS for all its customers, residential and commercial alike--facts conspicuously missing from last week's announcement."

Take Heart, Tainted Ones!

You were right in your assessment that PCs, workstations, and mainframes are all here to stay. When used and managed properly they can provide valuable business solutions. Your job is to blend these technologies and make them productive in your organization.

Because of the unavoidable complexities involved in trying to make distributed multi-vendor systems work at all, you are more valuable to your organization now than ever before! Your 15-20 years of experience with multi-user operating systems and networks is just what is needed to make it all fit together. At Gartner Group's fall 1994 conference, they reported that 90% of successful client-server projects include the use of mainframes.

You should continue to educate others that whenever computer technology is used to solve business problems, business value should drive the choice of applications. Application requirements, in turn, drive the selection of the appropriate computer platform. Rightsizing means making the right moves, at the right time, for all of the right reasons. Fantasizing begins when you start believing everything the zealots of client-server/open systems/ downsizing are telling you. A quote by Josh Billings accurately summarizes what is at the root of most of the technology projects that fail: "The trouble with people is not that they don't know but that they know so much that ain't so." Consequently, those who take the deliberate approach, prove their concepts, conduct valid pilot-tests, do thorough reference checking, and are honest about the strengths and weaknesses of the technology choices at hand, have a much greater chance at success. No matter what others may say, experiences from the real world paint a different picture about the viability, practicality, and affordability of distributed systems, especially those implemented on a large scale.

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