I. INTRODUCTION

Good evening. It is always with some trepidation that I await an introduction after an incident several years ago when I went out from Minneapolis to talk to a group of Control Data employees on the west coast.

[intro story]

You give a little dinner and some politician comes up with a speech. Some politician gives a speech and up comes your dinner.

But anyway, here we are again -- stomachs full....waiting for an informative corporate talk. It occurs to me that "informative corporate talk" is a good oxymoron candidate.
[oxymorons: old news, jumbo shrimp, airline food]

[software oxymorons: off-the-shelf (off-the-wall maybe, but off-the-shelf?), version one (think about it)]

[one-word oxymorons: debugged, documented]

II. HISTORY OF SOFTWARE AFFILIATES

This gathering represents, in a way, a first for Control Data -- but not really the beginning....because Control Data was the force which changed the industry structure fifteen years ago to give software a clearly separate identity in the marketplace -- a value of its own.

[unbundling story]

So the true beginning was quite a while ago. And, of course, this is not the end of the story either, but for me it represents, I hope, at least the "beginning of the end" of a long period of personal frustration.

Nothing is as satisfying really as seeing a business idea become reality. Last week I attended the opening of Control Data Business Advisors' new offices in Minneapolis. Some of you, I believe, are acquainted with BAI -- a subsidiary of Control Data whose specialty is small business consulting.
The idea for BAI actually arose as a result of thinking about management development -- management training is one of the toughest jobs any company faces. A crucial element of good decision-making is simple perspective -- being able to look at a problem from different points of view or find a new way to approach a problem. And that's what "perspective" helps you do. Now, perspective is not something you "train" into people; mostly it's a matter of experience. But in a big organization, managers tend to become isolated and specialized. The way they "see" things is shaped for them by the culture and rules and structure of the organization. Some years ago, to help managers break out of those ruts, I was thinking about some sort of internal program in which they would spend a week or two each year as a consultant to another part of the company. Discussing this with my colleagues brought out two related observations. One was that the value of getting outside the daily routine was true for all employees, not just managers. The second was that there is an incredible array of talent and interests in Control Data.

Coupling those thoughts to the enormous need small businesses have for affordable management assistance led to the concept of a "Talent Pool." Now "affordable consulting" may be one of the all time great oxymorons. But through the Talent Pool we sensed the genuine possibility of making it a reality.
Well, a long story made short -- Business Advisors and the Talent Pool became reality. The Talent Pool is now over 2,000 strong. The original concept, as I say, involved only Control Data people, but as the word has spread about BAI, people from outside Control Data have joined the Talent Pool so that now about half its members are from outside the company. These people are available on an as-needed basis and represent a collective resource greater than any other firm can claim. Their talents cover the spectrum from market research to computer-aided design and manufacturing to human resource development. From the Talent Pool we can assemble a working team capable of performing effectively in any one of 50 functional business areas -- as the need arises, for as long as the need exists. When Business Advisors isn't using these experts, of course, they're working in their regular jobs and are better for the outside experience.

So you can appreciate the feelings of pride and satisfaction I had in seeing those ideas as living, breathing reality.

The flip side of such a scenario, however, is having a business idea which you know is good, sound, needed, practical and potentially profitable, and yet you can't quite bring it to reality. Nothing -- absolutely nothing -- is more frustrating. And the software business -- in particular the
microcomputer software business -- has undoubtedly been one of my biggest frustrations. Whatever else you might say about it, for Bob Price, a "microcomputer software business" is not a very funny oxymoron.

Back in 1977, when micros began to emerge, we made a conscious decision to concentrate Control Data's efforts on applications rather than hardware development. I got together with the head of our Professional Services division and we set up a little "skunk works" -- well it was a skunk works all right -- it stunk up the place. Control Data, as you might guess, is saturated with a big machine mentality. We tried moving the group to different, more entrepreneurial parts of the company, we tried different people, we tried different strategies. But, mostly in retrospect, what we were unconsciously trying to do -- me included -- was to "synergize" the thing with other Control Data strategies. That was naturally a trap. So it's been a long frustrating period of watching a marketplace explode -- of knowing what could be done -- and seeing others do it.

I feel that frustrating period coming to an end. Rather, to be more accurate, here in this room I feel the beginning of something even more exciting than what I had in mind seven years ago. So you'll understand that it's no empty cliche for me to say "it's a pleasure to be with you tonight."
No doubt you have also sensed from that recitation a couple of basic characteristics of Control Data as well. We obviously don't give up easily, and we believe -- truly believe -- that small companies must be fostered if our country is to remain economically powerful. And since political might rests as much as anything on economic might, there is a whole lot more at stake for our country than just economic well-being. Like other basic needs, we feel the best approach to assuring a healthy small business sector is to make a business of it; and so we have -- or more accurately are -- through cooperative activities such as City Venture, Rural Ventures, Minnesota Wellspring, Minnesota Cooperation Office, Minnesota Seed Capital Fund, Starco, and Minnesota Project Innovation (SBIR grants). And we are likewise pursuing this objective through our own products and services such as Business Advisors, Business Centers, Business and Technology Centers, Worldtech, Advantage Dealers, Small Business Investment and Lending Programs, and the EEAO. In recognition of these initiatives and achievements, in May, Control Data will receive the 1984 Small Business Development Award. This award is presented to large business that has supported and strengthened small business.

III. NATURE AND IMPORTANCE OF INNOVATION

People talk a lot about innovation, the importance of small companies, and the importance of small, highly motivated work
groups. Tom Peters has practically made a Holy Grail out of the "skunk works" concept, and so on. Well, first of all, I don't think most people -- including Tom Peters -- really understand what they are talking about, much less do they want to engage in the incredibly hard work to make a reality of those fine thoughts. But hard work is what it takes -- and it is of fundamental, economic importance that we get on with it.

The long-term vitality of any industry -- and certainly of high tech industries -- rests squarely on the existence of a large number of competitors -- individually innovating and creating new products and services. Yet the history of most industries indicates a natural tendency toward consolidation into fewer and fewer firms as the need for efficiency and scale economies in production gains ascendency.

There is no way I'm going to go into all that tonight -- economics is boring enough as it is -- after dinner it becomes incredible.

[definition - "economist"]

All you have to do, though, is keep the example of the U.S. steel industry in front of you. There's enough tragedy and terror in that story to motivate any industry. No TV soap
opera could be more heart-rending than the sorry spectacle of LTV or U.S. Steel groveling about on the one hand, pleading for government support, trade restrictions, or whatever, and on the other giving stirring speeches about the free enterprise system. And like a long-since hopeless drug addict, there is no alternative for them but one more merger -- in an attempt to relieve the pain. Meanwhile the mini-mills roll on -- turning out a competitive, quality, and profitable product.

Just think what might have been if U.S. Steel (or LTV or Bethlehem or all of them) had consciously and vigorously undertaken a policy fifteen or twenty years ago at the height of their power of investing in independent affiliated companies to operate mini-mills. Add to that a little inter-company cooperation to develop basic technology and it is easy to envision a vigorous, profitable U.S. industry today instead of the pathetic spectacle we read about in the daily press. But somehow in its blindness, business seems not to be able to see -- until it is too late.

IV. MICROELECTRONICS AND COMPUTERS

Nor must we be fooled into thinking that the so-called high tech industry is any different. The U.S. semiconductor industry was well down a similar path by 1980. Indeed, the Japanese based their world-wide strategy in semiconductors on this natural movement of industry toward conglomeration.
The following is an excerpt from the February issue of INC magazine:

"New companies, founded by hungry entrepreneurs, long have provided the innovative spark that has made the U.S. semiconductor industry the world's largest and most successful. At the industry's inception in the late 1950s, it was two relatively obscure companies, Texas Instruments, Inc. and Fairchild Camera and Instrument Company's new semiconductor division, that seized the technological initiative from more entrenched electronics companies, such as RCA Corporation and General Electric Company. A decade later, restless engineers and executives at Fairchild and their corporate peers started breaking off on their own, founding such companies as Intel and National Semiconductor. These companies, in turn, became the bastions of U.S. technological excellence and the industry's proud new leaders.

"But the influx of fresh entrepreneurial blood slowed to a trickle in the late 1970s as Japanese manufacturers began to bring their considerable manufacturing expertise to bear on the market. The Japanese changed the rules; the competition shifted from a battle for technological innovation to a scramble to become the low-cost producer."
"Atsuyosi Ouchi, senior executive vice president of NEC Corporation, has been in the forefront of Japan's aggressive and, to date, highly successful foray into microelectronics. Like many analysts on both sides of the Pacific, Ouchi saw semiconductors as an increasingly mature industry with little room for entrepreneurial players.

"If nothing else, Ouchi predicted the quickly rising cost of new semiconductor facilities, now upwards of $50 million for a manufacturing plant, would by itself all but eliminate the U.S.'s many 'boutique' producers, leaving only such behemoths as Motorola, Inc., and Texas Instruments to slug it out with Japan by the end of the decade.

"But today, Ouchi admits he might have been wrong about the U.S. semiconductor industry. The explosion of start-ups -- boutique producers par excellence -- has clearly upset his characteristically Japanese vision of a rigidly structured industry dominated by megacorporations.

"'You cannot deny the role of small American firms, because the semiconductor industry has changed,' Ouchi admits, with some reluctance. 'In the past, the number of products was small, now it is enormous. In that kind of market, it's very difficult for us to cover the customer's demands.'"

That's the end of the excerpt.
The history of the computer industry is likewise a perfect illustration of how innovation occurs and who are the principal agents for change through innovation. It is the small companies who have established every major direction in our industry. Control Data created the super computer and the OEM disk business; DEC the mini-computer; Apple the micro-computer; Software Arts the electronic spread sheet; Cullinane, Cincom and their ilk realistic and marketable data management systems; and the list goes on and on.

But do we understand or believe that really? There's not much evidence that we do. For twenty years the basic argument against any sort of antitrust action against IBM has been that it is a national treasure, our only hope against foreign competition. I don't raise that point to comment on whether antitrust action was called for or not -- only to point out the basic mind set that it is the big who are considered economically important when national policy is set. To this very moment, not one thing is being done by government or industry to foster small companies in steel, automobiles, machine tools, pharmaceuticals, or any other basic U.S. industry. And it may well be too late for some of them anyway. There is still time in semiconductors and computers but it's running out.
V. SOFTWARE INDUSTRY

So our conference here -- though it involves less than one-fifth-hundredth of the industry -- has significance far beyond its size. The concept of partnership -- of combining strengths between large and small -- of working the basic problems of survival together -- is unique, and it has the great virtue of serving our individual interests.

Certainly the specific problem being worked is all-important. Marketing is "where it's at," as they say. What a fantastic opportunity we have. Lord knows I hate all the gee-whiz "GNP" type statistics that get thrown about in this industry. For one thing, if you listen to all that jazz you can fool yourself into thinking you can't help but succeed.

Still indulge me in a few numbers quoted from a recent Wall Street Journal article about the personal computer software industry. It said this is "a business that barely blinks at 100% plus annual growth rates among individual companies. Makers of software for personal computers more than doubled sales last year, to $1.3 billion ($2.2 billion at retail), and sales could rise at a 34 percent to 39 percent compounded yearly rate in the next six years, to about $8.4 billion ($13.9 billion at retail) by 1989....By most counts, there are
more than 5,000 active software companies, and scores more are forming each month." But the same article also points out, "The vast majority of these must share about 28 percent of the industry's sales. About 38 percent of software sales last year were accounted for by a half dozen big hardware producers, led by IBM and Tandy Corporation. Seventeen leading independent software companies chalked up 34 percent of sales."

The difference in the survivors and the non-survivors as this wave crashes along will be marketing. The same Wall Street Journal article is quite instructive in that regard. It says "At least 37 companies are marketing various job-performing programs integrated on one diskette. Another 15 companies are offering the programs that split the computer screen into "windows" for separate jobs....Yet dealers and wholesale resellers have room for only a handful of brands. They are reluctant to provide sales support for too many competing programs because of the extensive effort required....Lotus Development Corporation, for example, has directly trained more than 1,000 independent sales people in nearly 500 stores....To survive, smaller companies hoping to become the next Lotus or the next Microsoft must make their products 'different' through marketing."

Obviously the task as well as the opportunity is enormous. Although the article I've been quoting concerns itself with the
particularly turbulent field of personal computing, the perils and potentials are equally great wherever we look in the field of computer applications.

VI. CONCLUSION

Some of you have been at this task a long time already. Magnicom, I know, has been through three reincarnations (this one's gonna stick!). Some of you are relatively new. Some of you have already enjoyed great success and some have suffered setback and frustration, and some have had a little of both. But whatever the case, I can tell you we are embarked on a path here that is going to bring that enormous satisfaction I spoke of at the beginning: The marketplace reality of a new and better computer applications idea -- a new and better software idea. And me? I'm looking forward to sharing it all with you.

Thank you.