Futurepower® *Technology Support*

Technology support where you need it.

We help make your technology efforts successful.

Sometimes your staff can't do everything.

We help you discover excessive risk in technology opportunities.

We help protect you from hidden flaws in technological efforts.

Great technology opportunities, huge challenges

We help you find the best methods that fix problems and minimize cost.

We use friendly business methods.

We're honest, open, trustworthy, and careful about security.

Table of Contents: See page 27.

See selected headings on page 27.

Links

Links in this manual, and the latest version of this manual, are available on the web site: http://futurepower.net/about/Futurepower_manual.html

Version

July 3, 2012. Minor changes.

Contact us.

Michael Jennings
Adriana Pereira
Futurepower*® *Technology Support
P.O. Box 14491
Portland, OR 97293-0491 USA

Tel: 408-372-7820
Tel: 503-233-7820
Fax: 419-781-4606

Email: tdd@futurepower.net

Web site: www.futurepower.net

Futurepower®

Our registered trademark and service mark, the invented word "Futurepower", was chosen to signify the power of combining an understanding of technology and sociology, long before discussions of energy supply were common.

Futurepower is a professional corporation incorporated in Oregon, USA.

We help make technology efforts successful.

If a project needs improvement, we'll help you improve it. We have considerable experience helping improve faulty situations so that otherwise excellent projects can go forward. We also help you avoid projects with hidden difficulties that would be excessively risky.

To analyze a technological company, it is necessary to have all the various skills required to manage a technological company. The skills we use for analysis we also use to help make your ventures stronger.

Below are some examples of the way we help.

We provide professional communication. Often people who have the deep technical background that allows them to have marketable ideas lack professional communication skills.

Poor communication tends to cripple technical efforts; sometimes it even prevents employees from fully understanding their own company.

We can help improve web sites and brochures and advertising. We can train someone already on the company's staff, or supervise the hiring of someone who will help create a healthy, vigorous connection between the company, its employees, and the outside world. Once corporate communication is pointed in the right direction, it is easy to maintain.

Technical advertising copywriting: We have experience with technical advertising copywriting. See the appendix of this manual, page 25, for an advertisement we have used for our technical copywriting services. We have associates who help us with graphics.

We offer advertising help when it is necessary to complete your venture. For example, we can verify that the technical excellence of a venture is powerfully communicated to technically-minded people, to non-technical customers, and to those from whom support is needed.

Marketing management: We can help find managers with an aptitude for communication and sales. For example, at one company we found an employee with the necessary thoughtfulness, mental agility, and fascination with the company. Somehow the top managers of that company had overlooked his abilities. We encouraged him to take on the new challenge.

Often companies who sell to technically-oriented customers take the position that sales people don't need a thorough understanding of the technology of the products. However, sales people who don't have full understanding tend to annoy technically-minded prospective customers. Technically ignorant sales people tend to engage in intense politics since their jobs depend on issues they don't fully understand.

Technological companies must be led by technically knowledgeable top managers. Immediately or eventually, a top manager with little technical knowledge will make decisions that reduce profitability. If you have an excellent business manager, but need a technical director, we can help you gain confidence in your candidate.

Feature failures lower profits. We provide product design insight. Everywhere we look, we see badly or incompletely designed products. For example, top-rated front-loading home clothes washers use computer controls that suffer from poor programming decisions and a lack of understanding of some of the basic issues of clothes washing. The user manuals are poorly written. Model numbers are confusing.

Motorola's Razr cellular phones were popular until users discovered the numerous poor design decisions, such as buttons that allow pressure from clothes to turn off the ringer accidentally. The rejection of Motorola phones by customers brought huge problems for the company and attention from Carl Icahn, as mentioned later.

Companies often settle on a product design in a sloppy way. The reasons appear to be varied combinations of these:

1) Few people have the ability to consider user interfaces creatively.

2) Top managers are busy running their companies, and often don't give sufficient priority to coordinating product design.

3) Top managers may be somewhat imperial or dictatorial; they may not have the social skills or social insight necessary to build a committee to put many brains to work thinking about product features.

4) Often top managers lack the thorough technical knowledge necessary to discuss the underlying challenges presented by product feature design. There may be no effective coordination.

5) Usually the average person is not very helpful in considering user interfaces. Market testing focus groups need skilled leadership, otherwise they are often almost useless. Few people have the technical experience, design experience, and social experience to lead such a group effectively. That is especially true because often design improvements require an entirely new approach rather than incremental changes.

6) It's best that product design be considered by several people with design experience. Usually no one brain can do it all. Many companies greatly underestimate the challenge.

7) The striving to be noticed and appreciated inside companies may prevent sufficient consideration, even when issues are known. When there is insufficient managerial coordination, there may be intense politics.

We can provide efficient design help. Also, we have associates with whom we work who have years of experience thinking about and designing product features and user interfaces. User experience is extraordinarily important; it requires thorough attention.

We understand the underlying principles of technology. We don't already understand new technology; no one completely understands even one area of technology. However, because we have years of technical experience we have the advantage of being able to gain a full understanding quickly. If we don't understand something, we will tell you.

Common misunderstanding: Often there is considerable misunderstanding about technological thinking. Those most successful in technical ventures are not necessarily the people who know the most details. The most successful people are those who have mental flexibility.

Another area of misunderstanding concerns certainty. The most technically creative people are not necessarily those who sound most certain. The most creative people often initially talk in a way that indicates uncertainty because they have habits of evaluating all the possible areas of ignorance. Successful technologists have the skills necessary to consider uncertainty thoroughly and to resolve the multi-level conflicts that come from uncertainty.

Hands-on experience: Technical ventures usually require some work in a laboratory or on a design workbench. Those who do lab work typically don't communicate well with people who have little or no bench experience.

We have plenty of bench experience. We have built and operated physics experiments and designed electronic circuits. We have done component-level repair on technology as diverse as the automatic guidance systems of U.S. Air Force interceptor aircraft and the complex mechanical systems of commercial knitting machines.

Global Experience

Multi-cultural: Business has become global faster than people have formed an international culture. Not only does business now often involve more than one country, it is now more common to hire people from other nationalities.

We are prepared to help you with your ventures that need to bridge cultures. We can provide truly multi-cultural international management assistance. We have plenty of experience in handling the inevitable complications. For example, often people who have little involvement with another culture adopt a feeling of superiority that makes communication more difficult. We don't worry about how people think about us unless it interferes with doing the job; we can help them be comfortable.

We have experience living in several countries, including in South America, Asia, and Europe.

Translation help: We can provide advertising-quality translations in English, Portuguese, French, and Spanish. We translate not only the words, but the underlying culture.

Accurate translation requires at least two people, a translator and someone to help check and edit the translation. We have associates who help us with this work.

Good technical translations require translators to have complete technical understanding. If we have helped you evaluate a venture, we would then have the enormous advantage of already thoroughly understanding the business of the venture, making translations far more efficient.

If there is a large amount of translation work not connected with ventures that we have helped evaluate, we may be able to help you find a capable translation company.

We help you analyze everything that affects the success of a venture.

Analysis of the profit potential of a company is fully trustworthy only when all the issues are examined.

Ventures almost always involve more than one technology. For example, solar energy projects require mechanical, electrical, electronic, and computer controls. Most solar energy projects require knowledge of physics. Experts in only one technology can play a valuable helping role, but they cannot guide a full analysis. Also, in any new technology venture some of the technology will be new, so anyone will need to learn it, even an expert in the field.

Technical issues interact with social and psychological effects. Those who analyze companies for investment purposes must be as sensitive to sociological and psychological issues as they are to technical issues, since they each affect the profitability of a company, perhaps equally.

As was mentioned in the previous section, the psychological and sociological health of a company is so difficult to consider that managers often try to ignore it. That avoidance is not restricted to business; there is a general human tendency to ignore any problem that is difficult to consider.

Often a company has the technology, the re-

sources, and the money it needs, but is still not as successful as expected. Two recent examples are Yahoo and Motorola. Analysts, business magazines, and newspapers usually offer extremely simplistic explanations for the problems of those companies, such as something equivalent to "The company needs a new CEO."

However, both Yahoo and Motorola suffer from what are fundamentally psychological and sociological issues. The companies could easily afford to hire capable people. There are technically knowledgeable people already working for both companies. The top managers of both companies could have familiarized themselves more with the technology; they didn't. That failure, that block in thinking, is due to psychological phenomena.

We're sensitive to the unique sociology of technology efforts. We can help you discover and correct hidden social adjustments that increase risk.

For example, sometimes a company becomes unable to develop successful software, even though it has done so in the past. Here are four common steps to software development failure:

1) It often happens that a top manager with little technical experience begins to put pressure on programmers to produce faster.

2) The programmers explain why their efforts are time-consuming.

3) The top manager doesn't fully understand what the programmers say, and increases the pressure.

4) The programmers obey, but begin to make decisions in favor of short-term speed that greatly increase the long-term costs.

Since we are programmers ourselves, we can talk easily with a programming staff and understand their concerns. We can help you understand the issues. We can recommend healthy arrangements.

The sociology of programming is especially important because businesses often depend for their success on software development, even when they are not primarily software developers. For example, advancements in biotechnology may depend on improvements in software. Alternative energy sources require computer controls. Automation is guided by computers.

A common failure of business management is trying to do too much. Creating healthy management groups and delegating authority are not just important to the health of a business, they are important for the personal health of top managers.

However, due to psychological and sociological shortcomings, managers often fail to delegate sufficiently.

Below is a table of the health risks a person takes who forces himself or herself to do too much. The risks apply particularly to those who run complicated businesses, but don't delegate sufficiently. The risks depend on many specific circumstances, but the table seems to reflect general experience:

Age	Effect of not delegating
30's & 40's	Lower quality of life
50's	Chronic illness
60's	Serious illness
70's	Possible death

Michael Eisner of Disney is an example of someone who tried to do too much. In a short period, Mr. Eisner had problems with losing money at Disneyland near Paris, he bought Capital Cities/ABC, and he suffered the loss of his friend,

partner, and COO, Frank Wells. Instead of delegating and resting, he increased his pace. He began having very serious heart problems and underwent quadruple bypass surgery. The excellent book *Disney War* dates his management problems from that time. Eventually he was asked to leave Disney, after years of intense public criticism.

Book: *Disney War*, by James B. Stewart (2005)

Efficient analytical methods speed discovery of risk.

We analyze failures in logic. Failure to be strictly logical increases overall business risk; we have studied that extensively. We have found that information about business fits into healthy and unhealthy patterns. Errors in patterns of thinking are often the first indication of management problems. The easiest way to discover excessive risk may be by analyzing both information itself and the way information is presented and used.

Managers and analysts and reporters often consider failures in logic in an inadequate manner. Even if a failure is identified, it may not be considered clearly, or at all. Most people don't feel comfortable considering negative issues with the emphasis they deserve. Partly that is caused by not feeling completely confident of their understanding. An inexperienced manager or analyst or reporter will often bury awareness of negative facts in language that the writer or speaker perhaps views as diplomatic.

If we find something negative that increases risk, we'll make that clear. We'll make sure you understand. Not only are ideas important, the relative emphasis of ideas is important, too.

To do useful analysis, it is necessary not only to gather facts, but to do something valuable with the facts, quickly.

Sociology and psychology are analyzed using considerations of probability. Technology is analyzed using traditional methods: Facts are gathered and verified; theories are made and tested. However, since it is difficult or impossible to know sociological and psychological influences precisely, efficient analysis using sociology and psychology requires methods based not on the certainty of facts, but on understanding of their likelihood.

Skilled sociological and psychological investigators gather ideas that seem to have a high chance of being correct. Theories are made and tested, but investigators consider only probabilities, and such investigations usually never pass through even one intermediate stage in which understanding is factually definite.

For example, the experiences of former CEO of Disney Michael Eisner are summarized in the previous section. It is impossible to show with certainty that Mr. Eisner's medical problems occurred because he was pushing himself to do too much. However, it is generally understood that overwork can cause medical problems, and Mr. Eisner's case is extreme. (There is a Japanese word for dying from overwork: "karoshi".)

There may be a shortcoming of using sociological and psychological methods: It can be difficult to make intermediate reports that are credible to everyone. Many people have habits learned in childhood of focusing almost exclusively on external reality, of ignoring feelings, and of attaching little importance to thoughts about internal experience. For them, sociological and psychological factors may have little or no validity.

In practice that does not cause a problem in reporting final results because, although analysis of social and psychological factors is often used to provide much more rapid results, that analysis only guides the consideration, and is almost always not the final result itself.

We help you discover excessive risk in technology venture opportunities.

We help you do the necessary due diligence in evaluating new venture opportunities involving technology.

For some, avoiding the work of understanding is more important than profit.

We have found that investors often don't do sufficient investigation into the technical details of technological ventures. That ignorance increases the risk enormously.

These examples show surprising tolerance of ignorance among those interested in and involved with technological enterprises:

Example 1: Charlie Rose interviews Ken Auletta and Andrew Ross Sorkin about Yahoo.

On the February 1, 2008 *Charlie Rose Show* on the PBS broadcasting network in the U.S., Charlie Rose interviewed Ken Auletta of *The New Yorker* magazine and Andrew Ross Sorkin, the *"chief mergers and acquisitions reporter"* of the *New York Times*.

They discussed Microsoft's interest in buying Yahoo. Yahoo's stock began falling when Google went public in 2004. It is said that Google's newly public financial information allowed investors an easy comparison of the success of Google in selling online advertising, and Yahoo's relative failure.

The times in parentheses show when the words were spoken. Here is some of what they said:

Charlie Rose: *"Why has Yahoo not done well? Is it poor management, is it poor technology, is it they lost their momentum, is it what?"* (Time in the video: 12:22-12:31)

Ken Auletta, of The New Yorker magazine: *"... the engineer better be king in a technology company. And with Terry Semel at the top, I think they fell behind technologically."* [Terry Semel was CEO of Yahoo.] (13:00-13:06)

Andrew Ross Sorkin, the New York Times: *"But I wanted to just say one thing about Terry ... when you look at what happened in 2000 when Terry got there, he was a media guy, he was an advertising guy, which actually is the business Google ended up being in, but he focused the company in a way that made it a media company ... a content company, and meanwhile the boys at Google were in the search business. But what I don't think either side realized was they were in the same business, they were in the same advertising business, they were just coming at it from two different directions and Google got the right direction, and Yahoo didn't."* (13:18-13:50)

Ken Auletta: *"... and the chief executive couldn't question the engineers because he didn't understand what they were saying.*

"Just like me, I go out to Google, ... they talk... I'm sitting in a meeting, ... they talk ... I don't understand half the words they're saying." (13:54-14:02)

Links: See the following web page for the links:
http://futurepower.net/white_manual.html
The links were tested on August 1, 2008. There are no spaces in any of the links.

Link: Broadband, full screen (Feb. 1, 2008)
http://video.google.com/googleplayer.swf?docId=8701597407697901728

Yahoo paid Terry Semel more than $500 million for six years of work. It apparently didn't bother those who made the decision to hire him that he had, literally, almost no understanding of the technology of the company.

In a video by CEO Exchange, Terry Semel freely admits on camera that he has little knowledge of technology:

CEO Exchange interviewer: *"When you came to Yahoo, you didn't know much about technology?"*

Terry Semel: [comfortably] *"That's very true, very true, ..."* (0:06-0:11)

Link: *Mr. Semel's Video Clip* (November 2006) http://www.pbs.org/wttw/ceoexchange/episodes/510_episode.html

Example 2: Andy Kessler

In his book about running his hedge fund, *Running money*, Andy Kessler says something that illustrates the widespread disrespect for technology. His fund had invested heavily in a software company and he was evaluating that company for an even bigger investment. He says:

"We then learned more than any living human would want to know about object-oriented databases, how they differ from Oracle databases, how Microsoft will eventually move to objects, how the Internet will eventually become one giant object repository." (page 61)

To the average person, that statement illustrates Mr. Kessler's extreme care in choosing stocks for his investors.

To someone who is knowledgeable about the technology, that statement illustrates Mr. Kessler's complete ignorance and extreme lack of caring about due diligence.

When Bjarne Stroustrup designed the C++ computer programming language, he gave several of the new concepts misleading names. There never were any real objects. Mr. Stroustrup's "objects" refer to a very useful method of organizing a computer language. The C++ language design relieves the programmer of some of the administrative tasks of programming.

The term "object-oriented" became a buzzphrase that many people with little knowledge thought they understood. Software salespeople began using the term to indicate the superiority of their products, taking advantage of the ignorance of some of the potential customers. Object-oriented databases never became more than a tiny part of database technology.

Not surprisingly, Mr. Kessler's investment lost money.

Mr. Kessler has plenty of experience reviewing technology. However, because his writing often shows a lack of concern about being logical, he seems to be more a technology historian and enthusiast than a technologist himself. He does not belong to the sub-culture of technologists. More about that sub-culture later.

Books by Andy Kessler: *Running money: hedge fund honchos, monster markets, and my hunt for the big score*. (2004) Mr. Kessler also wrote *Wall Street Meat: Jack Grubman, Frank Quattrone, Mary Meeker, Henry Blodget and me* (2003), and two other books.

Other examples of failures due to ignorance of technology

John Sculley brought Apple to the edge of failure. When Steve Jobs met John Sculley, then a top manager at PepsiCo, he referred to him as a *"sugar-water salesman"*, partly indicating the fact that Sculley had no technical knowledge. Sculley eventually arranged that Jobs be fired.

Sculley's management took advantage of pre-existing technical advancements for several years. When there was no new technology, Apple began to falter badly, causing many people to predict its end. Apple fired Sculley, re-hired Steve Jobs, and now Apple is successful again.

Ted Turner of CNN said that the merger between Time Warner and AOL was *"better than sex".* Well before the merger, computer professionals, and even some people new to computers, knew that AOL was not a trustworthy company. Amazingly, Gerald Levin, CEO of Time Warner, and Ted Turner, founder of CNN and by then a Time Warner board member, apparently had not the slightest understanding of technology, yet felt that they were qualified to make big decisions. Time Warner lost $88 billion in the merger. Some consider the merger the worst business decision ever made.

Link: Ted Turner, *"better than sex"*
http://www.youtube.com/watch?v=gqDn4YNVq3c

Link: Ted Turner, *"I had the honor and privilege of signing a piece of paper that irrevocably cast a vote, the first vote taken, a vote of my hundred million shares, more or less, for this merger..."* (4:25-4:42)
http://www.youtube.com/watch?v=ALIvH6Vgx84&NR=1

Link: AOL Time Warner. By 2004, *The New York Times* was calling AOL, *"a boring, dinky Internet service provider"*. Book review of *The Making and Taking of AOL Time Warner* (January 18, 2004)
http://www.nytimes.com/2004/01/18/books/review/18LIPTAKT.html

Bernie Ebbers of WorldCom was given a 25-year prison sentence. Investors apparently thought that someone with no technical knowledge could judge the future profitability of complex new communication systems. But he couldn't; former motel owner and CEO of WorldCom Bernie Ebbers eventually began altering the accounting and was convicted.

Many other examples are available.

Technological ignorance is risky, yet tolerated. Why?

Here are some observations concerning why people sometimes act as though true understanding isn't necessary:

Knowledge with buzzword depth: Sometimes people recognize that technology is important and want to participate, but don't realize how little they know. They learn some of the ideas and some of the words. They may sometimes sound quite convincing. It may be difficult to detect their errors. But their participation is misleading. They want attention for what they say, they expect their contributions to be viewed as important, but they only draw attention away from careful thinking.

General lack of real knowledge of technology: One problem is the general understanding that someone who has graduated with a technical degree is technically oriented in his thinking. That is often not true. A chief technology officer said that, of twenty people he interviews with an electronics engineering degree, only one is actually able to design electronics.

It often happens that a significant change in technology occurs quickly, long before any university offers a course covering the changes. It's not possible to learn everything at a university, partly because universities lag behind.

Generally far more than nine-tenths of what successful leaders in technology know they learned after they got their bachelor's degrees. Technology leaders are expert in teaching them-

selves. In a way, that's obvious. Someone who only knows what everyone else knows cannot be a leader.

Disrespect for those who understand technology: Another problem is that the intense desire to have the benefits of technology is coupled with disrespect toward technology and technically knowledgeable people.

In the Charlie Rose interview quoted earlier, Ken Auletta says of his attendance at meetings at Google, *"I don't understand half the words they're saying."* His tone of voice is happy, as though his ignorance doesn't matter.

Somehow there is a general lack of functional awareness that the technology that provides us enormous benefits is available only because some people have deep understanding.

Ken Auletta says he accepts the idea that to work with technology it is necessary to understand technology. But he doesn't apply that idea to himself. And people around him accept that. Even though he freely admits he doesn't understand technology, he is somehow known as someone who has opinions about issues deeply rooted in technology, and who is qualified to be invited to be interviewed on a national TV show. That kind of disrespect is very common.

Can any smart manager run anything? Ken Auletta correctly says in the interview, *"... the engineer better be king in a technology company."* However, judging from books, interviews, and articles, most people believe that anyone who has been successful at managing anything can manage a technological company. That belief continues even though there is an enormous amount of evidence that it is false and risky.

Certainly it is possible for a CEO who has already learned the careful mental habits of a technologist to teach himself something new after he joins a company. However, it's unlikely that while running a company someone could simultaneously learn to a) think especially carefully and logically, b) test what he thinks he knows in various ways, c) attend to multitudes of small technical details, and d) flow freely between those details and fundamental technological principles. The brainpower required is too large to become truly comfortable with technology while attending to day-to-day management responsibilities.

Cultural differences: Those who are truly oriented toward technology form a sub-culture. The most easily observed element of their subculture is the preciseness with which they think and speak.

Succeeding with technology requires extreme dedication to being logical. Years of that dedication changes a person's patterns of speech and preciseness of enunciation. The result is that technically knowledgeable people can easily identify each other, often before they have heard the other speak even a full sentence over the telephone.

Those who don't have to accept the necessary rigors of making technology function may allow their thinking and speaking to be somewhat sloppy. They may be interested in making only a general point, and may expect that a lack of precision will be ignored. The sloppiness works, to some degree, because other people compensate and do the right thing even though what was said wasn't perfect.

In contrast, technologists avoid sloppiness because if any lack of precision is allowed, there is a tendency to allow it in other areas also, and that can make their work far more difficult. For a technologist there is no compensating influence; either what they do is perfect or it fails. Their way of making a living and their success in life depend on technical results, and those

results require zero sloppiness.

When a speaker does not follow the technical sub-culture's rules, those who have technical knowledge are presented with socially complicated conflicts. Technologists may mentally disconnect from conversations that include sloppy expression because of the difficulty of correcting the sloppiness. That is particularly true when the technically-oriented person detects that a speaker would be offended or resistant if he or she were corrected, the usual case.

The cultural differences between technical and non-technical people make it difficult for the two groups to communicate. The difficulties are similar to the problems experienced between people from different countries.

Both sides learn to accept unspoken rules, maybe even unconsciously. The usual result is a generally accepted lack of communication that both sub-cultures allow to be hidden. The hidden conflicts vastly increase business risk.

Business management is even more challenging. Managers are also presented with difficult social conflicts.

The challenges and mental demands of good business management are equal to or greater than the challenges of technology development, but that is often not fully appreciated by technically knowledgeable people.

Failures of technological companies are often not technological failures. Yahoo's difficulties come not only from top management's ignorance of technology, but also from poor advertising results.

Sometimes analysts spoke of former Yahoo CEO Terry Semel as having had "media" experience, as though that very broad word covers one area of understanding. Actually, he was involved in the movie business. It is apparent from his guidance of Yahoo that he had little understanding of advertising; his ignorance of advertising was a major reason why Yahoo's stock began falling. An examination of that is beyond the scope of the discussion here.

Complexity: One reason there has been acceptance of ignorance of technology is that fully understanding the technological health of a company requires also understanding the social interaction inside the company. To be successful, a company's employees must not only understand how to do their work, they also must make the right choices and feel motivated to do the right thing. They need coordination and freedom from the restrictions caused by internal politics and under-management.

Companies often work with more than one technology. Achieving full understanding requires knowing how each of the technologies and the sociology interact. Managers, analysts, and investors have not wanted to accept that complexity.

Carl Icahn says management is sloppy. Mr. Icahn said about Motorola's mobile phone business, *"They should ... get a top management team... that understands it, a management team that will know what to do."*

Mr. Icahn sees a general lack of focus on excellence: *"... there's so much waste and the CEO is out there playing golf..."*

He says there is a general tendency for boards of directors to socialize rather than do the hard work: *"... unfortunately the boards don't make most of these guys accountable until it's too late..."*

Link: *One on One with Carl Icahn, Chairman, Icahn Enterprises* (March 21, 2008)
http://www.pbs.org/nbr/site/onair/gharib/080321b/

Great Technological Opportunities, Huge Challenges

There are more opportunities to profit from technology than ever before. The challenges to understanding are also greater than ever before, partly because they are often complex and hidden.

Global Opportunities

Global ventures that ignore cultural differences have especially high risk. For example, outsourcing U.S. computer programming to India has sometimes failed because the nature of the Hindu culture in India is such that often a programmer feels social pressure to program to the specifications, to do what is asked. Programmers in India may feel uncomfortable telling their managers that the specifications are wrong in some areas, as they usually are.

Thailand is no longer attractive. Ventures in central and northern Thailand can benefit from finding people who combine the best qualities of the Chinese sub-culture and the best qualities of the Thai culture. (There is a different culture in southern Thailand, similar to that of Malaysia.) However, the Thai government has become much more intense about arresting people who criticize the government (lèse-majesté). In our opinion that creates weaknesses that make Thailand less attractive to global business.

China: There is a drawback to building a business in China or Taiwan. Chinese managers often intend to take control. For example, an August 7, 2008 article in *Business Week* magazine, *Chinese Counterfeiters Thrive in Africa*, discusses extensive international counterfeiting. In 1986 we often found that, after a distribution business had been built in some area of the U.S. by Americans, the Chinese supplier would stop delivering to the American company, and there would be a new distributor with a Chinese manager in the same area selling the same things.

Link: www.businessweek.com/magazine/content/08_33/b4096062676521.htm

Brazil is rapidly emerging. We especially like the opportunities in Brazil. Brazil is relatively energy independent and politically stable.

There is a difficulty finding people who are fully educated, but, once found, Brazilians tend to form cohesive social groups, making new ventures stable and energetic.

Brazilians tend to have a low level of anxiety and strong family support. That makes managing their efforts less complicated and less costly of expensive, inelastic managerial effort.

On the other hand, the Brazilian culture tends to be less concerned about details and less interested in planning; a manager must give particular attention to supporting employee awareness of the need to compensate for those cultural weaknesses.

In 2005 we wrote 12 columns for a small newspaper in Brazil, in Portuguese, analyzing the differences between the U.S. and Brazilian cultures. One element of the Brazilian culture is amusing sometimes and mildly annoying at other times. Brazilians emphasize their similarity with other people and often dislike being seen as different. That's good if not taken to extreme, but we've seen many cases in which Brazilians take humility to an extreme.

For example, recently we got into a friendly disagreement with a Brazilian at a party. For his Ph.D. thesis at a Brazilian university, he had written a paper about new, more efficient methods of designing the routing of connecting wires in microprocessors. Since modern processors have hundreds of millions of transistors, the routing must be done by computer.

His paper was written in English and easy to read, although there were some grammatical mistakes. We are not knowledgeable about routing methods used in the past, but his paper seemed important, if the explanations of past methods in the paper can be taken as accurate.

Not surprisingly, our friend was hired by Intel to help write software for microprocessor design. At the party, we told him once again that we are impressed by his paper. We told him again we are impressed that Intel hired him. That started the friendly disagreement. Our friend insisted that his achievement was not very remarkable. Maybe denying one time doing something excellent could be called humility, but his continuing to insist that there is nothing excellent is an element of the Brazilian culture.

Alternative Energy

Electricity generation using controlled fusion: The biggest problem with creating a controlled nuclear fusion reactor seems to be in finding a suitable container. The heat required would melt normal containers.

There is a general idea that, if a stable method of magnetic containment can be designed, it will be possible to generate electricity using inexpensive, safe, controlled fusion reactions. Magnetic containers of controlled fusion available now collapse after a very short time.

The development of a reliable magnetic container is perhaps the ultimate technology venture. Such a development would make a huge amount of money and would make everyone involved with it famous.

A presentation was given at Google suggesting that it was possible to find such a method by experimenting in a laboratory. Our opinion is that such an approach is risky. The only efficient way to find a method of magnetic containment is through investigation of the mathematical theory of the physics, and later testing the theoretical understanding in a laboratory.

Another presentation about fusion at Google also suffered from poor management. A successful method of controlled fusion is unlikely to come from one man who alone understands the theory.

It's interesting that, in both cases, the first indication of risk came from noticing mismanagement, rather than considering the technology.

Controlled fusion is an attractive possibility not only because the fuel is cheap and abundant, but also because there is the possibility that electricity generation plants could be relatively small and inexpensive. There are fusion reactions that are far cleaner than the methods of generating heat using fission of uranium. There would be no threat from explosion, since if the magnetic containment disappears, the reaction stops immediately. Since controlled fusion does not generate carbon monoxide or dioxide, there would be less contribution to global warming.

"Cold Fusion" is old confusion. What is now called cold fusion is apparently only effects that have been known for more than a century. Volume 5 of the 1890 edition of the Encyclopaedia Britannica discusses, on page 483, the heating and other unusual effects that are obtained with platinum and hydrogen and other gases. The effects are old, what is new is claiming that they are nuclear fusion.

To have nuclear fusion, it is necessary to bring protons close enough together that they can fuse. That requires a huge amount of energy, far more than is present at room temperature.

Link: *Encyclopaedia Britannica*, 1890 edition
http://books.google.com/books?id=R50UAAAAYAAJ (Volume 5, page 483, column 2)

Problems of development of alternative energy are usually underestimated. Enthusiasts of alternative energy usually vastly underestimate how much energy is needed. They minimize the problems of generation that may not be where or when the energy is needed and the problems of energy storage.

Solar energy has become a buzzword; it is often mentioned as just "solar". Alternative energy initiatives are partly limited by the lack of useful understanding among those who might invest.

Medicine

The nature of the medical industry at present is such that it presents more difficult challenges for the analyst than any other field.

Collapse of the sickness industry: Investors should expect that what might be termed the "sickness industry" will eventually collapse. There are four reasons for the collapse:

1) Hospitals, doctors, and drug companies have been raising their rates by substantial amounts every year. Eventually there must be a limit to *any* continued rapid increase in prices.

2) The sickness industry is, to a surprisingly large extent, based on fraud. The present system waits until serious medical attention is necessary, then charges a huge amount for medical care, while often exaggerating the benefits.

Eventually the emphasis will be on early detection, and on treatment before sickness becomes serious, which will make far less money for doctors and hospitals.

See the next sub-heading for a mention of the rise in importance of diagnostic procedures.

3) The contrast between the inefficient and insufficient system of medical care in the United States and the efficiency and excellence of that in Canada and Europe is receiving wide attention through television, magazines, and books.

In the U.S., political candidates of the Democrat party try to arrange universal health care, which would remove some of the abuses. Even if that doesn't happen, there are very early signs that eventually the public will become sufficiently knowledgeable that the abuses are lessened.

4) There has been a continued improvement in the average person's awareness of how to live a healthy life, and that will continue. Life expectancy has risen from approximately 49 in 1900 to 77.4 today. Part of that increase is due to improved medical care, but most of it is due to living life in a healthier way.

For example, recently the news media have been making people aware that they must get enough sleep. Lack of sufficient sleep is a major contributor to long-term degradation of health.

Rise of the health industry: Eventually there will be diagnostic machines that analyze human sweat, saliva, and feces for a wide variety of diseases, for example. Automatic analysis will eventually be cheap enough that diseases are found before they are serious.

Link: *"A team of scientists ... has completed ... the most comprehensive map of the human salivary proteome to date,* [toward] *the long-term goal of creating new saliva-based diagnostic tests for a wide array of diseases."* (April 3, 2008)

http://www.hspp.ucla.edu/wonglab/pressreleases/Proteome.salivary.doc (.DOC file)

Link: *"Saliva test may speed heart attack diagnosis"* (April 21, 2008)
http://uk.reuters.com/article/healthNews/idUKTON18071820080422

Pharmaceutical Industry

Drug companies often find new drugs, not by understanding human biochemistry, but by trying thousands of chemicals in automated trials involving chemical and animal experiments. When they find drugs that way they usually have little or no understanding of why they work. That ignorance vastly increases the risk of serious side effects.

That "we don't care if we don't understand" attitude is part of the reason so many drugs are taken off the market after causing serious harm and deaths.

Statistics are often misused by exaggerating their meaning. The pharmaceutical company Merck tried to show through statistics that its drug Vioxx was useful in slowing the onset of Alzheimer's disease and in preventing conditions associated with rectal cancer.

Vioxx is no longer sold; Merck took it off the market after the deaths it caused were publicized.

Link: *Failing the Public Health - Rofecoxib* [Vioxx]*, Merck, and the FDA* (October 21, 2004)
http://content.nejm.org/cgi/content/full/351/17/1707

Link: There are 4,200 lawsuits pending against Merck for problems with Vioxx. (September 26, 2008)
http://vioxxlawsuit.lawinfo.com/

Widespread fraud: The respected medical journal, *The New England Journal of Medicine*, felt that pharmaceutical fraud was so widespread and intense that it published a paper about incidents of fraud that is available to non-subscribers.

Link: *Dangerous Deception - Hiding the Evidence of Adverse Drug Effects* (November 23, 2006)
http://content.nejm.org/cgi/content/full/355/21/2169

Link: The U.S. government's attacks on scientific integrity have a negative effect on the success of new ventures by creating a climate of business uncertainty.
http://ucsusa.org/scientific_integrity/interference/interference-at-the-epa.html

Electronics and Automation

We're fascinated with methods of having machines do work instead of humans. Robots for manufacturing and other automation have increased the world's quality of life enormously.

We have designed and built a temperature regulator for a crystal growing furnace, and a current regulator to keep the current in a flowing gas laser constant over a 20,000 volt range. Most venture opportunities require automation that is far more complicated than that. However, automation tends to be collections of components that are rather simple and not in themselves technically challenging. While we're able to understand the design of such systems, we no longer have knowledge of electronic parts that are currently available, so we would not be efficient in doing design ourselves.

At one time, the U.S. had a hotly competitive automation industry. Unfortunately, it was discovered that pressures in the Chinese culture are such that it is easy to find Chinese workers who will allow themselves to become robots. That slowed the development of mechanical robots. Eventually, perhaps many years from now, the quality of life of the average person in China will increase, and there will be a demand for more interesting jobs, and a rejection of boring manufacturing jobs. Eventually, the cost of labor in China will rise. That will mean there will be a greater interest in having machines do the work.

Opportunities in automation tend to be suitable for new ventures. Even though there is competition from less-developed countries, there are still many viable opportunities in automation and process control, and the opportunities tend to be suitable for new ventures.

Often it is easy to discover all the potential customers for new automation, and easy to verify that there is no strong competition. Usually there is no need to make automated machinery attractive. Delivery schedules tend to be relaxed, since the old machinery is available. It is easy for a prospective customer to evaluate the savings in buying new processing machinery. There is often an advantage in manufacturing something near where it will be used rather than by a group of people in a small town in a distant country that uses a different language.

Trash sorting: Sadly and amazingly, at present some of the trash generated in developed countries is sent to less-developed countries for sorting, because present sorting automation is not sufficiently capable. As fuel becomes more expensive, designing improved trash sorting automation will become more attractive commercially. Possibly improved automation is already commercially viable, but no company has accepted the challenge of designing it.

RFID, remote detection of inventory: We did research for a customer with retail stores (not a venture opportunity) and got the impression that the radio tags industry is still primitive, poorly organized, and lacking needed items.

For example, jewelry stores need small RFID tags that are re-usable and can be re-numbered. RFID tags would allow stores to check their inventory efficiently every night after closing, to detect theft and misplacement of items. The tags would create a new market for re-numbering equipment, remote inventory tag readers, and inventory software.

Computer Software

There is computer software in almost everything that is complex and in the machines that manufacture almost everything that is simple. Ventures in many areas like biochemistry depend on advances in computer software.

The success of a new venture often depends on the sociology of a group of programmers who interact but work mostly alone. Analysts need to be able to sit with the members of a programming team and decide if they are efficient working together.

Early software demos only show possibilities. What is initially considered 90% of a project often takes only 10% of the coding time. What is initially considered 10% of a project often actually takes 90% of the time and is more tedious.

Designing a good user interface is beyond the abilities of most programmers. Programming the user interface may require most of the time. The success of software often depends on seemingly minor decisions about the user interface.

About 20 years ago, we wrote software that turns PCs into cash registers and keeps records of specialized inventory. That software is still in use. There is a great nee d for more sophisticated inventory and cash register software, but the cost of entry into the field is very high because choosing software is a complicated and expensive decision for any retailer.

Recipe for success: Do less evil.

It is possible to succeed in a highly competitive market merely by ending some of the negative practices toward customers that are traditional in that market.

Retailing: Those who shopped in small towns in the U.S. far from populated areas remember how negative small-town retailers were toward their customers. There were high prices, low quality, poor selection, and tricky sales. Imperfectly, Wal-Mart ended some of the abuses and quickly, in only 3 decades, became the largest corporation in the world.

Banking: As Washington Mutual stopped some of the typical banking abuses, it grew to become one of the biggest banks while competing against huge national banks. (It's bankruptcy because of risk was a separate issue.)

Opportunity

There are many opportunities in areas where businesses continue habitual adversarial behavior toward customers. Here is a brief example:

Global Banking: There is a huge need for modernization of global banking. A bank that does for global banking what Washington Mutual did for regional U.S. banking would quickly become very popular.

In banking there are many instances of abuses piled on other abuses. Typical: Paypal charges a 3.9% transaction fee, a 2.5% currency exchange fee, and *also sets the currency exchange rate*.

Link: Paypal international rates (note: http**s**)
https://www.paypal.com/us/cgi-bin/webscr?cmd=_display-fees-outside&countries=ROW

Science fraud is common.

What is presented to the public as science often has some element of fraud. Here are examples:

Cholesterol warnings are fraudulent. High cholesterol levels do not cause heart disease. There are many people who have high levels who never show symptoms of disease. High cholesterol is statistically related to heart disease, but that is far from the same thing. It is not sensible to take a drug that has serious side-effects to lower something that is not the cause but is only statistically related.

Only expensive remedies get publicity. Constant advertising of extremely expensive drugs that lower cholesterol levels has obscured the fact that there is a vitamin that also happens to lower cholesterol. The vitamin niacin, taken with vitamin C and a multivitamin tablet, also lowers cholesterol, and is much cheaper and healthier. The large doses of niacin necessary can cause temporary redness of the skin and sometimes mild itching that lasts for a few minutes. It is possible to eliminate or almost eliminate the side-effects by starting with a low dose, building the dosage slowly, always taking time-release niacin, not the immediately effective kind, and always after the largest meal.

It seems a reasonable theory that, whereas cholesterol drugs apparently act in only a brute-force manner, with serious side-effects, the necessary vitamin niacin at least in some cases cures the underlying cause of having high cholesterol, while providing other benefits.

Clinical investigations have shown that the effective dose of Niacin for lowering cholesterol is 500 mg to 2,000 mg per day. In one case we saw personally, someone's cholesterol level advertised as dangerous was reduced to a level advertised as acceptable after only 15 days of taking 500 mg of niacin per day.

Doctors often prescribe both niacin and cholesterol-lowering drugs. We haven't seen any studies that indicate any value in taking both together, but such studies may exist.

The "Kanzius Machine" to cure cancer is fraud. The popular TV show *60 Minutes* on the CBS network in the U.S. was recently the

victim of fraud, in our opinion. The "Kanzius Machine" is not a cancer cure. The idea is that radio waves heat particles. If those particles can be somehow placed in cancer cells, and not in any other kind of cell, then heating the particles with radio waves would kill the cancer cells.

It has been well known for many decades that powerful radio waves can cause heating. It is well known that nanoparticles enter cells. The problem has always been that there has been no way to selectively cause anything to enter only cancer cells. Such a way may be found; many people are working on that. There is nothing previously unknown or even slightly new about the "Kanzius Machine" reported on *60 Minutes*.

Link: *CBS 60 Minutes: The Kanzius Machine: A Cancer Cure?* (April 13, 2008)
http://www.cbsnews.com/stories/2008/04/10/60minutes/main4006951.shtml

Investment is partly political.

The profit in almost every investment depends partly on the actions of government. Accurate analysis of risk may require not only analysis of the immediately surrounding politics, but also a broad awareness of the governmental climate. For example, the U.S. government has pursued policies that have reduced the value of the dollar, so that even the medium of exchange, the currency, cannot be trusted.

Avoidance of conflict reduces accuracy. Many people find conflicts of ideas so uncomfortable that they are unwilling to consider them long enough to find resolution and understanding. That cripples their ability to analyze business opportunity accurately.

Avoidance of conflict makes serious analysis of political issues impossible. Information about government is there for those who want it; over the years we have read literally hundreds of books about the operation of the U.S. government. Some of the operations of the government are, however, effectively a secret to most people, because they don't have the interest or time to read the books.

There has been considerable conflict of interest, with big, mostly hidden effects on the economy. The problems have their origin partly in the increased acceptance in the 1940s that the U.S. government could act in secret. Military action was sold to citizens as defending the interests of the United States. Often, however, the U.S. government defended the interests of private business concerns. Often part of the profit of those concerns depended on acting against the reasonable interest of the citizens of other countries. The U.S. government's overthrow of President Mossadegh of Iran in 1953 is an example.

Acceptance of secrecy made management of the U.S. government far more difficult. Business leaders found that they could apply hidden pressure to government leaders. They could secretly arrange to shift part of the costs of operating their businesses in countries outside the U.S. to the U.S. taxpayer.

General Eisenhower warned the nation. Former U.S. President Dwight D. Eisenhower, who was Supreme Commander of Allied Forces in World War Two, warned about domination of narrow private interests in a famous speech about the "military-industrial complex". He said, *"The potential for the disastrous rise of misplaced power exists and will persist."*

Link, President Eisenhower's speech (Jan. 17, 1961)
http://www.yale.edu/lawweb/avalon/president/speeches/eisenhower001.htm

Link: Video excerpt of Eisenhower's warning speech, with distracting music (Jan. 17, 1961)
www.youtube.com/watch?v=8y06NSBBRtY

Futurepower® uses friendly business methods.

We need you to provide leadership. We provide a technological locomotive; we need you to drive the train.

Nothing we do takes the place of your business experience, your financial research, and your experience with managing risk.

Our work is in addition to your other forms of due diligence, in the same spirit that pilots have co-pilots and professional writers have editors.

We'll help your staff. We are happy to help your staff learn to do what we do. We have plenty of experience as teachers of technology.

Why do we offer to train someone else in our work when that may eventually reduce our billing because you become more self-sufficient? Because that's the only way to earn your trust. We don't let relationships become adversarial. We expect a high level of cooperation both from ourselves and from our customers.

Also, there is so much work to be done that there is no chance that training new people will limit the amount of work.

Our experience is that our willingness to help exactly where needed causes our customers to take on more work.

No pressure: We're happy just to talk about business. There is no pressure to offer us work. We have found that it is more efficient to develop an understanding of each other first.

We keep your information private. We'll keep anything you tell us confidential, even if our involvement never goes beyond initial talks. It is necessary that you make us aware of what information you regard as private.

Honesty: We do business in a legal and honest manner only, and help only those who are also legal and honest.

Conflicts of interest: We are intense about avoiding any arrangement that could be a conflict of interest or a perceived conflict of interest.

Security: We're especially careful that everything we do is secure. Security is an ongoing project. The only way to ensure security is to examine the need to adapt security methods to any changes; that requires daily vigilance.

Secure computers: We use both software and hardware firewalls and the best encryption software. Your information is always encrypted.

Openness: It has often happened that our customers have asked us for something that, if delivered, would not be what they really want.

We will answer your questions, and will also tell you anything else we think you may like to know, even if you don't ask.

Full disclosure: If we find we have shortcomings that would interfere with giving you excellent service, we'll tell you and, if we can, we will recommend some other way of getting the help you need.

There may be technical areas in which we aren't sufficiently qualified to form an opinion. One of those areas is research in theory of mathematics.

We have no involvement with other companies except as consultants. We love the United States, but have no involvement with any government, with the exception of paying taxes, voting, using the post office, and giving minor technical help to a campaign for U.S. senator.

Freedom from corporate nonsense: Often managers react to their personal insecurities by raising social barriers. That increases the complexity of doing business, sometimes enormously. For example, it's often difficult to know the true meaning of something said in the language jokingly called corporate-speak.

You won't have that problem with us. We are direct and uncomplicated. If we are insecure, we will tell you.

Caring, but strong: It often happens that the results of serious analysis do not reflect the generally accepted view of reality. Many people feel an intense need to be popular; those ruled by need for popularity cannot reliably provide accurate analyses.

We intend always to be cordial and charitable and caring. However, we don't obscure our results with language or actions intended to avoid mention of conflict. Avoidance of awareness of reality is never truly caring.

We respect your money in the same way we respect our own. Our long-term success depends on our efficiency. We practice keeping the costs low every day.

Available to travel: We are available to travel anywhere to help with on-site evaluation.

How we earn your trust: One way we can earn your trust is incrementally, through increasing the size and varying the kinds of challenges you give us.

We are happy to give free initial consultations, or just talk about business in general.

References: For several reasons, we have not found it useful to provide references.

1) Almost always it is difficult to understand the help we have given because: a) The help we give is usually too technical to understand easily, unless there is a specific involvement with the subject and b) The help is never in the exact area of interest of a new customer, because of our need to avoid conflict of interest.

2) One company's needs may not be in the same area as the needs of another company; our previous experience may not be a helpful guide to understanding our performance with a different challenge.

3) Sometimes we cannot get permission because customers are understandably concerned about possibly disclosing their business methods.

4) When we can get permission, it is often somewhat uncomfortable for our customers.

Complex work. No magic. At present it seems that much of the communication from corporations contains some element of exaggeration or fantasy. Given that climate, it seems sensible to say that the work we do requires serious research and attention to detail. We are skilled and experienced and ready to do the work, but it is still roll-up-our-sleeves work.

Associates: We have associates who help us with translations, product design, and other work. We manage their efforts.

Billing

We set billing standards for ourselves more than 20 years ago; those standards continue today almost unchanged.

Detailed invoices: Our invoices are often 10 pages long or more. You can see exactly how long it took to do each task.

Invoices for time: We bill by the minute. Amazingly, we found time-keeping software

packages that make it difficult to bill for exact minutes. The software we found encouraged guessing; guessing causes sloppiness. So we wrote our own software to record our time exactly and produce reports.

We charge for the time required to record what we did. We don't charge for preparing time invoices or checking time invoices for accuracy.

Invoices for hardware: If the most efficient way to do the job is for us to buy hardware for something we are doing for you, we charge only the exact amount of our cost. We bill for the time to research, find, and purchase hardware. We invoice hardware separately and we bill for the time necessary to prepare hardware invoices.

Efficiency: We don't work unless we can work efficiently.

We don't charge for socializing. If a business conversation includes socializing, we try to subtract the minutes spent socializing. That is not always possible to do with perfect accuracy.

We're careful about expenses. We charge for expenses incurred during the work we do for you. However, we're inventive in keeping expenses low. Of course, anyone who is serious about business management is inventive about keeping expenses low.

Errors: Unfortunately, there are sometimes errors in any technical effort. For example, sometimes we make an educated guess as to what path to take toward a result, and we later discover we guessed wrong, that some other direction would have been more efficient. Such errors are part of doing any work, and we bill for the time.

We would not bill for lost time due to unprofessional effort. However, we are extremely careful to consider all issues before we begin work. It is unlikely that we would have a failure that could be called unprofessional. So that we can have a completely open policy, we specify that it is our responsibility to decide if some of our work should not be billed.

Errors in recording time: We bill only for time recorded accurately. Recording time is a tedious process and sometimes someone forgets to log the time when an effort started or ended. If we cannot estimate the time of beginning or ending closely, we do not bill for that period. If we estimate a start or stop time, we mention that on the invoice.

In practice, there are periods of time that are not billed because they are too short, or because they are mixed with efforts that aren't billable. For example, thinking about planning the work we do for you while doing other, personal things is not billed because it could not be billed accurately. The small inaccuracies caused by occasionally estimating start and stop times are offset by larger amounts of time spent doing things that cannot be billed.

Separate invoices: Each person bills separately and independently, so you can see exactly what is being done and by whom. You pay only for the help you need.

More than one person bills for a task only when it is necessary to have more than one person working at one time. In critical operations, sometimes one person will supervise the other; in that case the time is recorded on the invoice, but may not be billed.

Prompt payment of invoices: We ask that you pay us during your normal weekly check runs, immediately after we submit our invoice. We have found that paying weekly encourages managers to give us frequent supervision. Most of what we do should be supervised more frequently than monthly.

About Us

Personal: The two principals in our company are Michael Jennings and M. Adriana Pereira.

We have been married for 9 years. We both married late; we were both unwilling to marry unless we found someone with whom to have an exceptional relationship.

Neither of us have ever had children. We are immediately available any time of day or night and can be ready to travel quickly.

There seem to be two major roles in corporate interaction. We have found methods of interacting with and evaluating corporate activity that work very well. We have tried to understand why they work so well. Here is what we think:

In business there is the role of the leader, who coordinates activity, takes responsibility for things that would not otherwise be done, and deals with conflicts that others are trying to avoid. Leaders sometimes have an unhealthy side, also. Many successful business people interact with others in a manner that carries with it an undercurrent of challenge, so that an interaction may be in some way a test of strength, even if a test is completely unnecessary.

A consultant who interacts with leaders must be viewed as a leader also, because leaders tend to feel more comfortable with people like themselves. A consultant must also pass any tests of strength, because some people tend to ignore others whom they don't feel are as strong.

The other common role in business emphasizes being friendly and sympathetic. People who favor this role tend to be inhibited around leaders; they tend to tell leaders whatever they think leaders want to hear. Someone who is perceived as a leader may not be able to fully evaluate the social processes inside a company because a leader won't be allowed to hear the less obvious details.

Both of us are at times able to take either role. However, one person may not be able to take both roles on the same project. So it helps to have at least two people who work as a team, each giving the required kind of attention.

Adriana is especially skilled at guiding where necessary while at the same time letting the other person be the focus of attention, so that the other person gains confidence.

Michael is especially able to detect and deal with conflicts, confusing situations, and issues others would rather not approach.

Early technical experience: We both became interested in technology very early. Michael knew enough about electronics that when he was 20 he was the sole person who did component-level repair of the automatic flight control systems of two wings of U.S. Air Force aircraft. He found a design flaw and provided a fix that was adopted throughout the USAF Air Defense Command. After serving in the Air Force, he worked in a research laboratory building and running physics experiments, while finishing a bachelor's degree.

Beginning when she was 12, Adriana's parents owned a 9-person company that did specialized commercial knitting. Her father maintained the knitting machines for their own and other companies, and taught Adriana to do the maintenance. Adriana helped with every part of the business, including helping customers and training managers to configure the machines.

From when she was a teenager, Adriana has had such good workbench skills that even people with years of lab experience ask her to supervise if there is some especially delicate or tricky task.

Research into patterns of thought helps business analysis.

For many years, Michael has been doing research into patterns in the way people use their brains. This work will eventually be reported in a book.

Strategies suggested from that research give advantages when evaluating business situations, as was mentioned earlier. Often the most efficient indicators that a business is healthy or unhealthy are sociological and psychological. Often those indications appear sooner than those available through financial evaluation. Financial evaluation is still primary, of course, but sociological and psychological factors often help show where to begin looking for risk to profit or where to find financial advantages.

Logical analysis must be continuous. Often people develop habits of being logical in some areas, but allow themselves to suspend logic in other areas. Bad habits of thinking such as that give uneven results.

Those who want good analytical results must practice continually, similar to the way Pete Sampras practiced tennis, except that there is no age barrier to careful analytical thinking.

Every month in reports in the business press there is a huge amount of evidence of sloppy thinking. For example, reports have called the recent debt crisis caused by investing in mortgage securities a “mess” and a “meltdown”. The surrounding writing suggests that there has been no rigorous analysis by the writer. Yet years before the collapse occurred there were articles generally available on the internet that warned about the problem, explained the problem clearly, and predicted a collapse.

There has apparently not been a thorough analysis of why the real estate investment losses were allowed to occur. The financial issues were well known, suggesting that the losses had a social basis rather than a technical financial basis.

Business failures due to phenomena that are fundamentally social rather than fundamentally technical are extremely common.

Michael Jennings M. Adriana Pereira

Appendix

This page: Michael Jennings used this advertisement for his services as a technical advertising copywriter. *"Ad Writing is More Than Just Writing"* is a service mark.

Next page: The short article on the next page was written for the head of a microbiology laboratory, to express the idea that scientists also need to be good communicators. Poor technical communication is a major problem in scientific research. David Ogilvy is easily the world's most famous advertising man.

Ad Writing is More Than Just Writing.SM

It's interviewing,

Many of the facts in an ad come from talking to people.

researching,

The writer must be an independent investigator.

learning,

There's always something new to be learned.

relating,

Advertising is a people business; relationships are important.

knowing,

The writer must know not only the craft of writing but also graphic arts because what he writes and how it will look are inter-related.

thinking,

Most of what the writer does is some form of mental activity.

creating,

Creativity is necessary, and no one can define it in advance.

communicating,

An advertisement cannot be just an expression of ideas; it must transfer a mental experience.

checking,

Ad writing requires meticulous attention to detail.

managing,

The writer must complete the ad on time and within budget.

editing,

Ad writing is a cooperative effort. It's usual to benefit from several opinions.

and writing.

The mechanical act of putting words on paper is actually the smallest task.

Communicate scientific research using professional methods.

by Michael Jennings, using ideas taken from the famous book,
Confessions of an Advertising Man by David Ogilvy

Communicating well is part of being a scientist.

Your work can't benefit others if they don't know about it.

Many of the people who could use your work or who make decisions about supporting your work are not as technically knowledgeable about your field as you. They need your help to understand.

Communicating your work requires a long-term creative effort, similar to an advertising campaign. Here's how professional communicators do it:

Select a basic idea.

Make a strong promise to the reader. Samples:

Weak: "Our microbiology research helped us understand a disease with an obscure name." (typical presentation)

Good: "We have corrected fundamental errors in previous cancer research."

Good: "We have new understanding of the chemical pathways of leukemia." (page 93, item 1)

Find a great presentation.

Perhaps: "We will show step-by-step the mistakes made in previous research, and how our methods will influence drug design." (page 95, item 2)

Give the facts.

People love to have facts handed to them. It's marvelous to hear the work that was done and what was discovered without having to do the work oneself. (page 95, item 3)

Be sure you have plenty to say.

Don't ask for attention unless you have something worth the audience's time. The reader or viewer or listener must feel after experiencing your communication that the effort was worthwhile. (page 97, item 4)

Be respectful.

The reader doesn't have your knowledge, but has a human brain, and therefore has the potential to make valuable discoveries also. (page 97, item 5)

Relate your work to the reader's interest.

Show how your work is relevant to what's happening now. Perhaps: "We can use our work to design a new cancer drug." (page 98, item 6)

Your message must be your own.

Your campaign to communicate your work must reflect your personal approach, and only that personal approach.

If your message reflected the manner of other people also, it would be fragmented and confusing to the reader. For that reason you're alone when designing your communication.

Once you've chosen a direction, other people may be able to give you helpful criticism. But, more likely they may not be able. It's best not to expect that anyone else will help you creatively, or even fully understand your effort to communicate. However, every writer needs an editor. (page 98, item 7)

Stay with what works.

If you design good communication, use it until it is no longer helpful. (page 98, item 8)

Be honest.

You shouldn't be embarrassed to show your communication to your co-workers or anyone in your field. If there's a part of your effort about which you don't feel completely satisfied, it needs more work. (page 99, item 9)

Create a coherent understanding.

Each element of each communication must contribute toward an overall whole. If there is an element which doesn't contribute, delete it.

The impression you create should be one with which you will be happy for years, or until you grow into something else, or for the rest of your life.

Be yourself. Don't try to be something you're not. Don't present yourself in a way that you can't sustain. (page 99, item 10)

by Michael Jennings, *Futurepower*® ©1995, 2008 (408) 372-7820
P.O. Box 14491, Portland, OR 97293-0491 USA. tdd@futurepower.net

Table of Contents

Selected headings

Table of Contents: See page 27.

See selected headings on the previous page.

Links

Links in this manual, and the latest version of this manual, are available on the web site: http://futurepower.net/about/Futurepower_manual.html

Version

July 3, 2012. Minor changes.

Contact us.

Michael Jennings
Adriana Pereira
Futurepower*® *Technology Support
P.O. Box 14491
Portland, OR 97293-0491 USA

Tel: 408-372-7820
Tel: 503-233-7820
Fax: 419-781-4606

Email: tdd@futurepower.net

Web site: www.futurepower.net

***Futurepower*®**
Our registered trademark and service mark, the invented word "Futurepower", was chosen to signify the power of combining an understanding of technology and sociology, long before discussions of energy supply were common.

Futurepower is a professional corporation incorporated in Oregon, USA.