SECTION II – THE VISION

Chapter 6 The Post-Corporate Society

There is reason to be hopeful, even optimistic, about the future of rural North America. There is growing evidence that human society is in the midst of a great transition – at least as great as the beginning of the industrial revolution and probably as great as the beginning of the age of enlightenment. Terms such as the "information age" and "the new economy" barely begin to describe the multitude of changes ahead – many of which have barely emerged.

The most common mistake when describing this transition is referring to the changes in technologies rather than to the changes in thinking that led to the technologies or the changes in thinking that will be made possible by the technologies. The miracles of the industrial era were the products of changes in ways of thinking that began some 400 years ago. But society is beginning to realize that industrial ways of thinking are not sustainable. Most people don't yet know what to do about this fundamental problem, so they choose to ignore it. But it won't go away. Others have already abandoned industrial ways of thinking. These new thinkers are creating the new post-industrial era of economic and social development.

The question of sustainability is a driving force in the great transition. Sustainable development, sustainable agriculture, sustainable forestry, sustainable oceans, sustainable environment, and sustainable living are common calls for change. People are concerned about their ethical and moral responsibilities for future generations, but a more powerful driving force is that people are beginning to realize that sustainability also is about a better quality of life, right now. We are beginning to realize that quality of life is not something that we can buy at Wal Mart or Disney World with the money we earn from working all day every day. Quality of life is a product of positive relationships, from caring about other people, and a sense of purpose and meaning that comes from our belief in some higher order of things. Certainly, meeting individual needs is an important dimension of our quality of life, but meeting our interpersonal and spiritual needs is important as well. Our quality of life is made better when we pursue social and ecological, as well as economic, objectives. Sustainability is about improving the quality of life of people.

This new way of thinking is fundamentally transforming our society. It reflects a holistic, organismic worldview that is fundamentally different from the analytical, mechanistic worldview that has dominated the industrial era. This new way of thinking has its roots in quantum physics and chaos theory rather than mechanical physics and statistics. Truly revolutionary technologies are emerging from new ways of thinking, and in turn, will support new ways of thinking. New ways of thinking, not new technologies, are the means by which we will revolutionize human society.

The great transformation will fundamentally change American society, including America's farms and rural communities. We will have more farmers, rather than fewer, and we will have more people, rather than fewer, choosing to live and work in rural communities. Contrary to first impressions, this does not mean we are going back to the past, but instead going forward to a fundamentally different and better way of life. The question in my mind is no longer "if" but "how and when."

By John Ikerd, from "Sustainable Agriculture – New Hope for Rural Communities," presented at "A Symposium on Sustainable Agriculture: What's Eating Agriculture?" sponsored by Watershed Restoration Program, Gitsegukla Band Council, Hazelton, British Columbia, April 21, 2001.

Gail Imig was one of the few university administrators I met who was truly able to think *outside of the academic box*. Lots of them talked about it, but few actually did it. Gail was the Interim Director of Extension when I decided I wanted to come back to the University of Missouri in 1989. When the University decided to hire a permanent Director, Gail and I both applied for the position. By now, I wasn't sure that I even wanted to be an Extension Director, but I wanted to get back to Missouri. I knew she had the inside track because she was already on the scene, and by most accounts, was doing a good job. I was one of the top six candidates, but they decided to interview only two. I didn't make the short list, but Gail did. She was the best candidate of the two and she got the job. I was a bit disappointed at the time, particularly in that I didn't get to interview. Later on, however, I was thankful to have Gail in that position and on my side.

As it turned out, Gail's encouragement and support may well have been critical to my professional and personal transformation. She was one of the few people at the University who understood that human society is going through a great transition – so fundamental that it ultimately will affect every aspect of our lives. She tried hard, but in vain, to help guide the University of Missouri through this transformation

as well. I got to know Gail while I was working on a proposal for the W.K. Kellogg Foundation to fund a sustainable community development project in Missouri. Gail had a good track record with Kellogg, so I sought her out for advice.

The basic premise of our proposal was that people, rather than capital or technology, were the key to sustaining a desirable quality of life in rural communities. If we could empower rural people to take responsibility for themselves, to build strong relationships, and to care for their natural environment, I believed they would be capable of developing their own communities without depending on outside capital or expertise. That was pretty radical thinking for the early 1990s and remains so even today. Gail was one of the few people who understood what I wanted to do.

It took a trip to Battle Creek with Gail and five years of revision and rewriting, but we eventually got the grant from Kellogg to carry out the project linking sustainable agriculture and sustainable community development. The grant covered a good piece of my salary for my last five years at the University of Missouri. It allowed a team of thoughtful, dedicated folks to work with people in several rural communities in Missouri, Nebraska, and Michigan. We tried to encourage and enable the people of these communities to take responsibility for their own destinies. We didn't try to develop their communities for them; instead, we helped them to do the things they choose to do. Some of the things we tried worked well and others didn't. Although we didn't come away with the answers to rural community development, we did learn a lot in the process. I remain convinced that people have the ability to shape their own future – without a lot of capital – if they can find a shared vision of hope and have the courage to pursue it. But, it takes a fundamental change in ways of thinking. Industrial economic development is of the past, not the future.

One day in Gail's office, she asked if I was familiar with the writings of Alvin Toffler, the futurist. I told her that I had heard the name and thought I might have read a magazine article by him, but never any of his books. She said Toffler had been writing about things that seemed very similar to what I was talking about, and gave me a copy of a recent article to read. The article referred to some of the things he had written in his book, Power Shift.[1] I became excited as I read the article. Here was a highly respected author and thinker – an advisor to people as well known and diverse as Bill Clinton and Newt Gingrich who shared Toffler's vision for a new society beyond the industrial era.

I bought the book and read it with increasing excitement as I found many of the things I had been thinking about were already in print. Reading Toffler led me to reading other futurists, many of whom were writing about quite similar visions for the future. These writers were selling lots of books and reaching lots of people, and I now sensed the number of people thinking about similar things weren't just a few, but were many. I hadn't learned what I believed from them and they certainly hadn't learned what they had written from me. Yet, we were thinking and writing essentially the same things – human society is in a transition out of the old industrial era and into something fundamentally new and different. Now I knew it wasn't just a dream; it was real.

Another book I read during this time, more philosophical than futuristic, was written by Robert Pirsig, Zen and the Art of Motorcycle Maintenance.[2] Pirsig argued that quality is not a subjective concept, but rather is as objective as any other aspect of reality. He wrote, "What guarantees the objectivity of the world in which we live is that this world is common to us with other thinking beings. Through the communications that we have with other men we receive from them ready-made harmonious reasoning. We know that these reasonings did not come from us and at the same time, we recognize in them, *because of their harmony*, the work of reasonable beings like ourselves. And as these reasonings appear to fit the world of our sensations, we think we may infer that these reasonable beings have seen the same things as we; thus, it is that we know we haven't been dreaming. It is this harmony, this *quality* if you will, that is the sole basis for the only reality we can ever know." I began to understand that the only objective reality we have is a common understanding of reality, shared among thinking beings.

I have purposely minimized the use of quotations in this book. First, I want the reader to rely on their common sense in testing the truth of what I have written, not on the credentials of those from whom I have learned. Second, I don't believe anything is more valid just because it has been written before, nor is anything less valid just because it has been written for the first time. Everything that any of us knows today is made up of ideas that have been floating around the universe since the beginning of time. *New* ideas are nothing more than *new arrangements* of old ideas. Particularly when addressing issues of *why*, of purpose and meaning, we need not be overly deferent to the opinions to others.

However, I do think it is useful to bring together similar thoughts from different people to show patterns of *harmonious reasoning* among thinking people, as Pirsig suggests. We know that their reasoning did not

come from us nor did ours from them, so we can conclude we must have discovered the same truths. We know we haven't been dreaming.

During the late 1980s, a number of intelligent, thinking, reasoning beings, including Alvin Toffler, were writing about a world of the future that will be fundamentally different from the world of the past two-hundred years. In Power Shift, Toffler pointed out that many forecasters simply present unrelated trends, as if they would continue indefinitely, without providing any insight of how the trends are interconnected or of outside forces likely to reverse them. He also contends that the forces of industrialization had run their course and were now reversing.

The industrial models of economic progress are becoming increasingly obsolete, and industrial measures of efficiency and productivity, i.e. quantity and price, are no longer sufficient, he says. Customized goods and services, targeted to niche markets, continuous innovation, and value-added products are the trends of the future. The most important new productive resource has become knowledge. By relying more on knowledge, the conventional factors of production: land, labor, raw materials, and capital, are made less important, and thus, less limiting.

Sequential, assembly-line production systems are being replaced with simultaneous systems, where individuals or small teams transform raw materials into final products. Synergism, creating wholes greater than the sums of their parts, is replacing specialization as the source of production efficiency. Creating value, by meeting the unique wants and needs of unique customers, is replacing low prices as the primary source of economic progress. And, synthesis is replacing analysis as the means of exploration and discovery.

Peter Senge, in his book, The Fifth Discipline,[3] deals with synergy in the context of business organization. Production systems of the future will embody enormous complexity with simultaneous and dynamic linkages among a multitude of interrelated factors. Humans can deal *consciously* with only a very small number of different things at the same time. Yet, humans are able to perform enormously complex tasks quite easily – such as driving a car in heavy traffic, playing a tennis match, or carrying on a conversation – things that still baffle the most sophisticated computers. People are capable of performing such tasks routinely by using their well-developed *subconscious* minds. Computers and robots don't have subconscious minds.

Our subconscious mind can solve problems without our even thinking about them. A problem that seemed to be unsolvable the night before has all sorts of alternative solutions to explore when we arise the next morning. Insights and intuition lead us toward solutions that we would never have reached with logic and reason. Our subconscious mind is capable of dealing with complexities that are beyond our own logical comprehension. In fact, the human mind may be the only mechanism capable of dealing effectively with the type of *mind work* that will dominate economic development in the sustainable society of the future.

Peter Drucker, a time-honored business consultant and writer, talks of the "Post Business Society," in his book, The New Realities.[4] Drucker, whose writings were the foundation for business management classes in many business schools in the 1950s and 60s, has consulted with most of the corporate giants of American industry. He states that the most significant development of his lifetime is the shift to the knowledge society. The future, he wrote, belongs to the "knowledge worker." All developed countries that were business societies are now becoming post-business, knowledge societies.

There are important, fundamental differences between knowledge work and industrial work. Industrial work is fundamentally a mechanical process whereas the basic principle of knowledge work is biological. This difference has important implications in determining the *right* size for business organizations. In a mechanical world, greater efficiency is generally associated with greater size – i.e. there are economies of scale. But in a biological world, efficiency results from fitting size to function. "It would surely be counterproductive for a cockroach to be big, and equally counterproductive for the elephant to be small," Toffler says. The intelligence of a rat and a human cannot be compared; each has found ways to thrive within an ecological context occupied by the other.

This difference in organizing principles may be critically important in determining the organizational structure and location, as well as size, of economic enterprises. Structure and location will be determined by purpose and function, and other things equal, the smallest effective size will be best size for information and knowledge work. And, many small information enterprises can be located virtually anywhere.

Robert Reich, former U.S. Secretary of Labor, addresses future trends in the global economy in his book, The Work of Nations.[5] He identifies three emerging broad categories of work corresponding to emerging competitive positions within the global economy: routine production workers, service workers, and symbolic-analysts. Production workers are the old foot soldiers of American capitalism, he says, and include low- and mid-level managers – foremen, line managers, clerical supervisor, etc. – in addition to traditional blue collar workers. Production workers typically work for large industrial organizations, and live by the sweat of

their brow or their ability to follow directions and carry out orders, rather than by using their minds.

Service work, like production work, entails simple and repetitive tasks. The big difference is that these services must be provided person-to-person. This category includes people such as retail sales workers, waiters, janitors, cashiers, child-care workers, hairdressers, flight attendants, and security guards. Service work, like production work, requires relatively little education and most requires close supervision. Services may be provided through a diversity of organizational structures, ranging from individual providers to large franchised organizations. Unlike production work, however, individual personality can be a big plus, or minus, in performing service work.

Symbolic analysts are the *mind workers* in Reich's classification scheme. They include all the problem-solvers, problem-identifiers, and strategic-brokers. They include scientists, design engineers, public relations executives, investment bankers, doctors, lawyers, real estate developers, and consultants of all types. They also include writers and editors, musicians, production designers, teachers, and even university professors. Symbolic analysts often work alone or in small teams, which are frequently connected, but only informally and flexibly, with larger organizations. The futurists seem to agree that the future will be dominated by symbolic-analysis, by mind work, rather than by routine production or personal service work.

John Naisbitt and Patricia Aburdene, in their book, Megatrends 2000,[6] call the triumph of the individual the great unifying theme at the conclusion of this twentieth century. They talk about greater acceptance of individual responsibility as new technologies extend the power of individuals. Their *mind workers* are called individual entrepreneurs. Over the past few years, we have seen small-scale entrepreneurs seize multibillion-dollar markets from large, well-heeled businesses – in microcomputers for example. In fact, over the past few decades, small firms have created far more new jobs than have the old industrial corporations.

Empowered individuals, while quite capable of working alone or in small groups, seem to seek *community*, the free association of individuals. Large business organizations, government bureaucracies, labor unions, and other collectives have provided hiding places for those who have chosen to avoid responsibility. In a community, there is no place to hide. Everyone knows who is contributing and who is not. In communities, individual differences are recognized and rewarded. The sense of community, all but destroyed by industrial corporatism, may well be restored by individuals empowered with knowledge. Knowledge workers will be looking for a place to be recognized, a place to belong, and not a place to hide.

Several futurists talk about a new electronic heartland. They contend that this new breed of mind workers will reorganize the landscape of America. They will be linked by telephone, fax machines, Federal Express, and the Internet, forming information networks that span the globe. These mind workers are free to live almost anywhere they choose, but increasingly are deciding to live in small cities, towns, and rural areas, rather than in large cities. The industrial revolution built the great cities of Europe, America, and Japan. But, as we enter the 21st century, cities have lost much of their purpose as places for people to either work or live.

A century ago, railroads and waterways allowed raw materials and finished goods to be moved relatively inexpensively over long distances. It was more expensive to move people. So people lived in cities, near the factories, where they transformed raw materials into finished products. Today, multi-lane freeways and extended mass transit systems have allowed people to retreat to the suburbs by making it easier for them to get to and from work. And, low-cost air travel has reduced costs, in time and money, of moving people over far greater distances. In addition, knowledge-based enterprises are far less dependent on movement of either raw materials or finished products. Most knowledge work can be delivered anywhere on the globe almost instantaneously at costs representing a very small fraction of its value – as with computer software development and technical support.

Mind workers are more independent, even when they work for large organizations, and thus, require less frequent personal contact. For the first time in history, the link between a person's workplace and his or her home is being broken. People who continue to congregate around the old, large cities today do so more out of habit than out of necessity.

"If cities did not exist, it now would not be necessary to invent them," say Naisbitt and Auberdene. Drucker claims that the city of the future might well become a center for information, communication, and entertainment rather than a center of work. "It might resemble the medieval cathedral where the peasants from the surrounding countryside congregated once or twice a year at the great feast days; in between it stood empty except for the learned clerics and its cathedral school."

People are abandoning the cities for the suburbs for quality of life reasons: lower crime rates, lower cost of quality housing, and recreational opportunities. Many people are now abandoning the suburbs for rural areas, for quality of life reasons as well: more living space, a cleaner

environment, prettier landscapes, and perhaps most important, to regain a sense of community, a sense of belonging. We currently label this movement as urban sprawl, but a better label might be the resettling of rural America.

The books I have cited were all published between 1989 and 1992. Countless books and articles have been written by hundreds of authors since the mid-90s trumpeting the "information age, the Internet era, the age of technology, and the new economy." However, most people had never even heard of the Internet, let alone used it, at the time these books were written. The microcomputer had been talked about during the 1980s, but very few owned one prior to the mid-90s. Biotechnology was discussed around agricultural colleges and medical schools, but GMOs (Genetically Modified Organisms) were not the subject of ordinary conversation. When these futurists were writing in the late 1980s, the economy was still in the doldrums of lingering industrialization.

Certainly, many of the things envisioned by the futurists of the early '90s have not yet come to past, but their record for insights, thus far, has been pretty impressive. Meanwhile, the record of those who simply extrapolated past trends into the future, using mountains of data and sophisticated computer models, has turned out to be wrong. The world is being transformed into something fundamentally different. It takes human insight and intuition to assimilate the thousands of simultaneous relationships and to integrate the enormous detail and dynamic complexities involved in this world-changing transformation. However, such insights and intuitions are not the exclusive realm of the futurist. We all have the ability to see this new future – we need only learn to rely on our common sense.

Unfortunately, many people are distracted by current changes in technology and fail to understand that new technologies are but a reflection of our changing worldviews and operational paradigms. Industrial technologies didn't cause the industrial revolution but were a reflection of revolutionary thinking, taking place first in the human mind. The idea of a fundamentally different way of doing things came first, and then these innovative, creative, thinking people developed the technologies needed to implement their new ideas.

Machines were developed because someone first conceived how greater productivity could be derived from precise, repetitive processes, which were difficult for humans to perform. Factories were built because someone conceived of the potential that might result from organizing people and machines in linear, sequential relationships. Corporations were an old idea, but they were used in new ways to accumulate the capital needed to achieve the economies of large-scale, industrial production. The technologies supporting a revolution may be new or old, but the revolution comes first to the hearts and minds of people.

Some have labeled the emerging post-industrial era as the information age – a time during which information will replace raw materials and the means of production as the source of new power and wealth. However, information creates new wealth only when it is used to do something productive – when it allows something of value to be created that would not have been created otherwise. The information revolution is not so much a matter of either creating new information or making existing information more readily accessible, it is more about who has access to information, how information is to be used, and for what purpose. If new and better information is used by corporate decision-makers to maximize corporate profits – and they most certainly will keep this information from others, if they can – then corporatism will continue. The new technology will simply support the same old industrial system. However, if more people have quicker access to more and better information, and use it to better their quality of life, to pursue the common good, and to restore civil society, then new information technologies will support a new revolution in human thinking.

For the new information technologies to be used for the common good, they must remain readily accessible to all – not just to those with power and wealth. One means of maintaining free public access to technologies, such as the Internet, might be to tax sales of private goods and services made over the Internet to generate funds to support and expand the system. Regardless of how it is accomplished, if information is to contribute to continuing human progress, it must reach the maximum number of human minds.

It's interesting to note that the major innovations in new electronic information technologies were brought about by people outside of the old, industrial organizations. The microcomputer was not developed by IBM but by a bunch of kids fooling around in their basements and garages. The Internet wasn't created for the purpose of better corporate communications but instead to allow a bunch of academics to share information about their research. The *dot-com* companies that are fueling the *new economy* are practically all corporate outsiders. These companies were not organized according to the old hierarchical corporate structures and weren't managed by command and control. Certainly, these innovators sell their information products and technologies to corporate buyers and some have become millionaires and billionaires in the process. And the large corporations are now scrambling to find ways to use these

new technologies to their advantage – or at least to minimize its threat to the corporate status quo. But, the new information technologies were not developed to support industrialization, and thus, are not particularly industrial in nature. They were developed by people who had a different worldview and different vision for the future.

The new information technologies hold tremendous potential for empowerment of the people, if they can be kept out of the greedy grasp of corporate control. One of the basic motives for industrialization has been to maximize the value of scarce information. Industrial corporations have little to gain and much to lose if common people gain quick and easy access to vast amounts of practical and useful information and become willing to share it with others.

In the industrial era, people were trained to do specific tasks in factories or offices because it took too much information and knowledge for any one person to perform all of the tasks involved in producing something of value. Specialization reduced their need for information. The various phases of industrial production were standardized so that information could be communicated efficiently from one stage of production to another. It was far simpler for a buyer to select from a few standardized products or grades of products than to cope with complete product descriptions. Standardization reduced the amount of information needed. Control was consolidated, with chief executives making most of the important decisions, because it was simply too difficult to keep everyone at all levels sufficiently informed to facilitate autonomous decision making. Thus, the industrial paradigm made efficient use of scarce information.

However, new information technologies can provide more useful and practical information to more people, more quickly, efficiently, and effectively. Better information reduces the need for specialization by allowing each person to know more about more things. Better information reduces the need to standardize, allowing people to be more far more specific in what they are offering for sale or are trying to buy. Better information reduces the advantages of centralization by allowing everyone to know enough about what they are doing to make their own decisions. Better information empowers people to produce whole things of value, rather than to make little parts of things. Better information empowers potential buyers and sellers of unique goods and services to find each other and to negotiate acceptable terms of trade. Better information empowers people to make their own decisions and to shape their own destinies. This is the real power of information.

We often hear or read statistics about the phenomenal growth in the number of home computers, number of people who communicate by e-mail, sales of products and services over the Internet, and numbers of people with cell phones, CD players, video recorders, etc. But what's more important, is the rate at which information is empowering people to lead more successful lives.

Revolutionary changes are taking place in the lives of people all around the globe. Most of these new revolutionaries are not the creators of new information technologies but are people who are using information and knowledge in ways that are clearly in conflict with the old industrial ways of thinking. Most of the new revolutionaries are just ordinary people who are seeking a better life and know that corporate industrialization isn't the answer. These new revolutionaries are diverse, but they share some of the characteristics in common which are beginning to define a new post-industrial era of human progress.

Over the past decade, I have had the rare privilege of working closely with one group of these new revolutionaries, the *new American farmer*. I have been honored to work with farmers from throughout America in addressing the issues associated with agricultural sustainability. I have met with groups of farmers, from five, to fifteen, to fifteen hundred at a time, all across the U.S., in most provinces of Canada, and in several other foreign countries. Over the past five years, I have been asked to speak at thirty-five to forty different venues yearly. And, I never forego an opportunity to have a conversation with a farmer. Through these conversations, I have been able to share in the emerging vision of the American farm of the future.

These farmers, not the experts or the scientists, are the ones on the new frontier. They are the explorers, the colonists, and the builders of a *New World*. Life is difficult on the frontier because no one really knows how to do what these folks are trying to do – they are creating the future. They are getting little help from the government, their universities, or the agricultural establishment. They are doing it pretty much on their own. They will continue to confront hardships, frustrations, and there will be some failures along the road. But, more and more of these *new American farmers* are finding ways to succeed.

This new, post-industrial agriculture is emerging under the conceptual umbrella of sustainability. These farmers are finding ways to meet the needs of the present, while leaving equal or better opportunities for those of the future. They are farming by means that seek balance and harmony among the economic, social, and ecological dimensions of their farming operations. They may carry the label of organic, low-input, alternative,

biodynamic, ecological, natural, holistic, permaculture, or no label at all, but they are all pursuing common economic, ecological, and social goals.

These new sustainable farmers share a common pursuit of an *enlightened* self-interest, in spite of their diversity in many other respects. They are not trying to maximize profit, but instead are seeking sufficient profit to support a desirable quality of life. They recognize the importance of relationships, of family and community, as well as income, in determining their overall well-being. They accept the responsibilities of environmental stewardship, not as constraints to their selfishness, but instead, as opportunities to lead more meaningful, successful lives. To them, friendship and stewardship are not sacrifices made solely for the benefit of others, but are means by which they pursue a higher quality of life for themselves.

These new farmers seek to work and live in harmony with the world around them. They match their unique abilities and talents with their land, their community, and their markets. This requires a higher level of understanding of themselves, their capabilities, their values, and their purpose in life. This requires a higher level of understanding of consumer tastes and preferences and of the uniqueness of relationship markets. This requires a higher level of understanding of the land and of nature's productive processes. In general, sustainable farming requires more intensive resource management – more thinking and creativity per acre of land or dollar of investment.

Sustainable farming is thinking farming. It requires an ability to translate observation into information, information into knowledge, knowledge into understanding, and understanding into wisdom. Certainly, sustainable farming involves hard work, but farming sustainably is not the first stage of development beyond hunting and gathering. It is the next stage, beyond industrialization. Sustainable agriculture is very much in harmony with a post-industrial paradigm for future human progress – the next step forward in the ongoing process of human development. Sustainable farmers are thinking workers – or working thinkers.

There are no blueprints for the *new American farm*. But a few fundamental principles are beginning to emerge. In general, the opportunities arise directly from exploiting the weaknesses of industrialization – of over-specialization, over-standardization, and over-centralization of decision making. The new farm tends to rely instead on the advantages of diversity, flexibility, and decentralized networks of interdependent decision-makers.

These new farmers focus on working with nature rather than against it. The natural resource base – land, water, soil, climate – that ultimately must sustain productivity is inherently diverse. Industrial systems have had to *bend* nature – to augment, supplement, alter, and force it – to create an allusion of conformity out of diversity in order to meet the demands of large-scale, industrial production. The ecological problems arising from industrialization are symptoms of natural resources being used in ways that are inherently degrading to their productivity. Thus, industrialization has created tremendous opportunities for farmers who learn to utilize the inherently productive capacity of a diverse natural resource base, rather than wasting time and money trying to force nature to conform.

These new farmers utilize practices such as management intensive grazing, integrated crop and livestock farming, diverse crop rotations, cover crops, and inter-cropping. They manage their land and labor resources to harvest solar energy, to utilize the productivity of nature, and thus, are able to reduce their reliance on external purchased inputs. They are able to reduce costs and increase profits while protecting the natural environment and supporting their local communities.

New farmers focus on producing the things their customers value most. They realize that each of us values things differently, because we have different needs and different tastes and preferences. Industrial methods are efficient only if large numbers of us are willing to settle for the same basic goods and services – so they can be mass-produced. Industrialization, thus, has to treat us as if we're all pretty much the same. Customers have to be persuaded, coerced, and bribed to buy the same basic things rather than the things they really want. This results in our paying more for packaging and advertising of our food than we pay to the farmers who produce it. The industrial system creates tremendous untapped opportunities for farmers who can tailor their products to conform to the unique needs and preferences of individual customers, rather than try to bend the preferences of customers to conform to their products.

New American farmers market in the niches. They market direct to customers through farmers markets, roadside stands, CSAs, home delivery, or by customer pick-up at the farm. They use everything from the Internet to word of mouth to advertise their services. They market to people who care where their food comes from and how it is produced – locally grown, organic, humanely raised, hormone and antibiotic free, etc. They are often able to avoid some or all of the processing, transportation, packaging, and marketing costs that make up 80 percent of the total cost of mass-marketed foods. They increase value, reduce costs, and increase

profits while protecting the environment and helping to build stronger local communities.

New American farmers focus on what *they* can do best. They realize that we are all different – as producers as well as consumers. We have widely diverse skills, abilities, and aptitudes. Industrialization has had to *bend* people – train, bribe, and coerce them – to make people behave as coordinated parts of one big machine rather than as fundamentally different human beings. Many social problems of today are symptoms of people being used by industrial systems in ways that are inherently degrading to our uniquely human productive capacities. Thus, industrialization has left tremendous untapped economic opportunities for farmers and others who can use their unique capacities to be productive rather than attempt to conform to systems of production that just don't fit.

New American farmers may produce grass-finished beef, pastured pork, free range or pastured poultry and eggs, heirloom varieties of fruits and vegetables, dairy or milk goats, edible flowers, decorative gourds, or dozens of other products that many label as agricultural *alternatives*. They find markets for the things they want to grow and are able to grow well rather than produce for markets where they can't compete. Or they may produce fairly common commodities by means that are uniquely suited to their talents. Their products are better, their costs are less, and their life is better because they are doing the things that they do best.

In general, new American farmers focus on creating value through uniqueness – among consumers, among producers, and within nature. They link people with purpose and place. By linking their unique productive capacities with unique sets of natural resources to serve the needs and wants of unique groups of customers, they create unique systems of meeting human needs that cannot be industrialized. The more unique their combinations of person, purpose, and place, the more sustainable will be the value to customers and producers alike. The sameness of industrialization creates opportunities for unique farmers who can create unique linkages with both resources and customers.

The ultimate strategy for valuing uniqueness is through personal relationships. Each personal relationship is different from all others. Many consumers are alienated from current mass-marketing systems not only because they don't meet their specific needs, but also, because they have lost faith in the impersonal system of mass production for mass markets. They do not believe big corporations, monitored by big government, will really protect the natural environment or fulfill important social responsibilities. They trust neither corporate nor government assurances that foods in the supermarkets are safe, nutritious, and healthful. They feel more personally secure and socially responsible when they support local and regional food systems rather than rely on international markets dominated by the multinational corporations. In other words, they want to know their farmer – personally. New communications technologies may help people maintain relationships, but in many situations, there is no substitute for person-to-person contact.

The most secure markets for the new American farm will be markets based on personal relationships. Producers who develop personal relationships with their customers need not view other producers as their competitors. Sustainable farmers can collaborate rather than compete. No two people are alike, so, no two producers are likely to be viewed as close competitors in the minds of their *relationship* customers. Fortunately, meaningful relationships can only be spread so thin. There will be natural constraints, or limits to growth, in relationship markets. The necessity of maintaining personal relationships offsets the natural tendency to get bigger, and thus, helps farmers to resist the lure of the industrial treadmill. Local and regional markets will be developed and sustained over time by people who prefer to deal with people they know. Corporate industrialization simply can't mass-produce personal relationships.

Some question whether a sufficient number of people who are both willing and able to learn can be found to farm in these new ways. Admittedly, the new American farm will require a lot more knowledge, understanding, and thinking than farming by industrial standards. However, any future occupation that offers an opportunity for a decent living will require the use of one's mind. The days when someone could earn a good living by the sweat of their brow are in the past. The industrial era is over. There will be plenty of innovative, creative, hard working people to operate the new American farms once their promise of a more desirable quality of life – economically, socially, and ethically – becomes widely known. The new information technologies will help accomplish the tasks of both informing people of knowledge-based opportunities and empowering people to succeed in pursuing them.

Critics argue that these new farm opportunities are limited. On the contrary, there is no limit to diversity among people or diversity within nature. There are as many niche markets as there are people. The ideal would be for each person to be able meet his or her unique and individual wants and needs. Since this ideal is not economically practical, the question is how many different markets can be logically served, not how many different niche markets exist. Likewise, there as many differences in production capabilities as producers and as many different niches in

nature as fields or places to produce. Ideally, each part of each field should be put to its best ecological use, whether with a specific livestock-cropping system, a non-farm use, or some non-commercial purpose. Since this ideal is not economically practical, the question is how much diversity can be logically employed, not how many ecological niches exist. The new information technologies will help people with diverse resources, abilities, and passions to produce different things, linking them with specific people who most value the things they choose to produce. Such a food system will bring us closer to the ecological and social ideal of sustaining the productivity of the land while effectively meeting the true wants and needs of people.

Others question whether people can afford to pay farmers the full costs of meeting their food and fiber needs without exploiting either the natural or human resource bases for agriculture. Today's consumer, on average, spends only a dime out of each dollar on food – from which the farmer gets only one penny. The rest goes for costs of inputs and marketing services. Thus, most consumers can afford to pay farmers directly to produce the food they really want and need, rather than settle for something less – particularly if that something less degrades the social and ecological systems from which consumers derive much of their quality of life. Low-income consumers spend a greater proportion of their income for food, but over 80 cents of each food dollar goes for marketing, processing, packaging, advertising, etc. Lower income consumers also tend to buy in smaller quantities in more highly processed forms, because they lack the ability to buy in quantity and often lack the facilities and skills needed to prepare meals from scratch from fresh products. However, if low-income consumers had opportunities to buy unprocessed foods direct from local producers in small quantities and could prepared the food themselves, they could eat far higher quality food while spending a smaller share of their income. Obviously, this is not a simply issue, and at a minimum, would require some basic changes in thinking and in lifestyles. But, so would virtually everything else suggested in this book. Given a willingness to think and to change, the new American farm will produce the things people want at a price they can afford to pay.

Some question whether a sustainable agriculture is physically capable of meeting the needs of a growing global population. However, many sustainable farmers today are already achieving yields equal to or greater than are their conventional counterparts. The knowledge and expertise required to achieve high yields with low inputs are not nearly as widespread as is commercial agricultural technologies. However, many others are capable of acquiring this ability, if they realized it was possible and had an incentive to do so. In addition, sustainable agriculture today is in its infancy. As they accumulate increased understanding and know how, their productivity abilities undoubtedly will increase as well. If we had invested a fraction of the research and development efforts in sustainable farming methods that we have invested in industrial methods, our ability to produce sustainably today might easily surpass our ability to produce conventionally.

Those who think that we can't meet the legitimate food and fiber needs of humanity with a sustainable agriculture are the *new Malthusians*. Over two-hundred years ago an economist, Thomas Malthus, claimed that humanity was destined to starve to death because population increases geometrically and technology only increases arithmetically. Malthus was wrong because he failed to appreciate the capabilities and potential productivity of the human mind. Those who think we can't feed the world without destroying the natural environment and without degrading human society, like Malthus, are failing to appreciate the potential role of human creativity and ingenuity in developing more sustainable systems of farming. I am not making the common economic assumption that we can solve any problem we create or find substitutes for anything we use up. I believe there are definite limits to how much food we can produce and how many people we can support on earth. However, I see no indication that we have reached or are even close to those limits today. To the contrary, I see every indication that we can find ways to feed more people better without sacrificing the health of the biosphere or the civility of society. The perceived limits to *sustainable* farming in meeting the needs of people arise from the assumptions of contemporary economics, which are hopelessly out of date, and an industrial agriculture mindset, which is rapidly losing its relevance to reality.

My brother Don is one example of the new American farmer. He still lives on and farms the same small dairy farm in southwest Missouri where I grew up. The farm is about two-hundred acres – quite small by today's standards. We milked about 25-30 cows while I was growing up. They weren't milking many more by mid-1960s, when Don took over from my dad. During the early years, Don tried to build up the herd – like all the other dairy farmers were doing. By the late 1980s, he was milking close to a hundred cows and feeling like he needed even more. Most of his bottomland was cultivated to grow corn for silage, and he was buying a lot of ground feed for supplement to keep production levels up. He was doing about all he could do with the existing operation. If he was to get much larger, he would have had to make some major new investments,

and he was beginning to have doubts about whether getting bigger was the thing to do.

Sometime around when I came back to Missouri in 1988, Don decided he was going to have to try something very different. He decided to try to find ways to cut costs rather than continually try to increase production. He started out modestly, dividing 20-some acres of fescue pasture into 7 paddocks, moving the milking cows to fresh pastures every morning. This was his approach to Management Intensive Grazing. He still fed silage and supplement to make up for the difference between what the pasture provided and what the cows needed.

His milk production increased and the cows ate less silage and supplement. His profits increased – significantly, if not dramatically. After a year or two of fine-tuning, he divided a larger field into paddocks, and expanded his intensive grazing system into the summer months. He developed a system that fits him and his farm, and that takes time – time for study, observation, and for trial and error. By the end of the 1990s, Don's cows were moving through thirty-some paddocks of pasture that included the whole farm. He abandoned his worn-out silage feeding equipment in the winter of ‘99-‘00. He now has a grass-based dairy operation – pastures from early spring until late fall and hay through the winter.

Over the decade, he had dropped from milking close to 100 cows, down to less than half that number. I don't know what his production per cow was back in the early ‘90s but it now runs in the general neighborhood of 11,000 lb. per cow. So he is milking fewer cows, has quit making and feeding silage, and is doing less work in general on the farm. And equally important, during the decade of the ‘90s, he made more money each year – by reducing costs rather than increasing production.

I don't know, and don't need to know, his financial situation. But, during the ‘90s Don and Sue, his wife, were able to put two kids through college and to about double the size of their house without taking on a lot of debt. Sue has worked off the farm, at least part of that time, but their farm has made money while the conventional dairy farmers all around them were going broke. They take a vacation with their kids every year and seem to have enough time and money to do whatever they really want to do. He also hires someone else to do the milking now a lot more than he used to. They just seem to be living better these days.

I am not saying that they don't have their ups and down, just like everyone else. I know that they worry when milk prices drop, as they do from time to time, and wonder if someday they will drop and not come back. But, they are a lot less vulnerable to low prices than are their conventional neighbors because their out-of-pocket costs are so low. The work still is hard, and I know Don is concerned about how much longer he will be physically able to milk cows for a living. Even if he were younger, I would be concerned about a time in the future when the bulk tank truck may not come down the country road to pick up his milk. He is talking now about getting out of dairy and utilizing his pastures and his knowledge of grazing in a beef cattle operation. But, he already has been able to sustain a quality life on the farm far longer than most of his neighbors.

I know that grass-based farming is a lot better for the Ozark soils and streams than growing corn silage. And grass-based farming is the best hope for keeping family livestock farmers in business and keeping rural communities viable. So grass-based farming is at least a step in the right direction toward sustainability. My brother says he is a "Low Input, Sustainable Agriculture" farmer – a LISA farmer. His is but one of a few hundred examples, of which I’m personally aware, of the *new American farm*.

This new approach to farming is completely consistent with the visions of Toffler, Senge, Drucker, Naisbitt, Reich and others who believe knowledge and information will be the keys to future human progress. These new farmers manage their unique, complex systems of production to meet the unique needs of specific customers while protecting the natural environment and nurturing positive human relationships. The New American Farmer is joining the ranks of the mind-workers of the future. However, information and knowledge alone cannot sustain human progress on earth. We are more than our bodies; we are more than our minds; we also are souls. The new era of human progress will not rely solely on hard work or logic and reason alone, but must also rely on people doing things they know to be *right* and *good* – on using their common sense.

Some think that the future of the American farm lies with biotechnology. Biotechnology is an information technology – the living organism is but the means through which genetic information is expressed. However, it may or may not play an important role in the post-industrial era. Biotechnology did not emerge from the basements or garages of *new age* thinkers, but instead from the scientific laboratories of giant chemical and drug firms. Companies such as Monsanto, Novartis, and Dow, the early biotech leaders, epitomized the industrial model in the chemical industry. These are the same companies, or descendents of

companies, that developed the industrial, chemically dependent paradigm, which dominates American agriculture today.

Their initial motivation was to develop genetically engineered organisms as replacements for pesticides and other agricultural chemical inputs. Agri-chemical inputs were loosing their effectiveness due to the increasing resistance of pests to pesticides and were facing mounting public resistance due to growing evidence of their linkage to environment and heath problems. Biotechnology was simply a new means of pursuing the old, industrial paradigm, which requires the domination and manipulation of living systems so they can be specialized, standardized, and controlled. The biotech firms now seek to extend their industrial model of manipulation and control into human health, and thus, have mutated into *life-science* companies, which seek to engineer and control all sorts of living things.

Biotechnology holds far more peril than promise for the future. Genetic engineering is the epitome of scientific misuse, in that it uses a dead science to manipulate living organisms. In short, the genetic engineers simply do not know what they are doing. Living things simply do not respond to stimuli in precisely predictable ways. For example, when a man kicks a football from a precise angle with a precise force the result will always be the same. Even effects of wind speed and direction on the trajectory of the ball can be calculated precisely, using relationships from mechanical physics. However, when a man kicks a dog, there is no way accurately to predict the response, unless the blow is hard enough to kill the dog, and thus, turn a living thing into something dead. The dog may bark and run, may sit silently and absorb the blow, may grab the man's foot in its teeth and rip it apart, or may run at first but then come back when the kicker isn't looking to inflict its revenge. The point is that when you tinker with a living thing, you just don't know what will ultimately happen. Genetic engineering is a lot more like kicking a dog than kicking a football.

There is no way to know what the outcome of our tinkering with the basic genetic building blocks of life may be. The only thing that we have done before that comes close to creation of transgenic organisms was the splitting of the atom to generate nuclear energy. There was no way of assessing the risks associated with nuclear fission at the time, and there is no way to assess the risks associated with genetic manipulation today. Regardless of the magnitude, we can know with relative certainty that the benefits of biotechnology will be reaped by the corporations that hold the genetic patents and the general public will bear the consequences of any unanticipated catastrophes. We should approach biotechnology with a healthy respect of the unknown, for the miracle of life, and a strong ethical sense of our responsibility to do *right* rather than *wrong*.

Those of us who raise questions about biotechnology are frequently labeled as *luddities* – as people who oppose all technological progress. However, no one should ever abandon their common sense just to avoid wearing someone else's label. I am not opposed to biotechnology, but I feel strongly it should be used with great caution and should be used for the public good rather than for private gain. In addition, I don't believe it is ethically or morally right for a business to own a patent on a living organism. Humans did not create life and have no right to *own* life.

The true potential of biotechnology lies in its ability to add to our understanding of nature, not our ability to manipulate nature. With better knowledge and understanding of how nature converts solar energy, minerals, water, and air into food and fiber, we could hasten the development of an agriculture that truly works with nature to meet human needs without degrading either the natural ecosystem or human society. With better knowledge and understanding of how the human body functions, how our genetic makeup affects our ability to reproduce, to live, to grow, to resist diseases, etc. we would learn to lead healthier, more productive and rewarding lives – physically, mentally, and spiritually. The true promise of biotechnology is in helping us to live better in an era where information and knowledge is widely shared among the many – not in prolonging the era where a few control knowledge and use it to exploit the many.

This chapter has provided but a few glimpses of one vision of hope for the future – my vision. One vision of hope may be enough for one person, but it is not enough to start a revolution or to change the world. One vision of hope can change a life, but a *shared vision of hope* can change the world. Shared hope is the product of communication, one person tells another about their vision, and that person shares their vision in return. No two visions will be the same, but many visions will have some elements in common. As more and more people share their visions with others, the elements that are widely held in common, the *shared hope*, will become clearer.

As we see that some of our hopes are held in common among other thoughtful, intelligent people, and we know this hope is coming from different people in different places, we may infer that other reasonable people have seen the same things as we. "Thus, we know that we haven't been dreaming," as Pirsig might say. We know that our *shared hope* for the future can become a tangible reality – if we have the courage to make it so. As we begin to build bonds of shared hope with other like-minded

people, the strength of our shared vision will grow – not just multiply or grow exponentially, but grow explosively. At some point, shared hope can literally explode into a living, growing epidemic of hopefulness.

I have no magic crystal ball that allows me to see the future. I have no ironclad assurances that corporatism will be replaced by a new era of true human progress. One might even argue quite logically and rationally that the odds are against a future of sustainable human progress. I don't know the odds, but I do know that a better world is possible. I have heard and read of such a future from other thoughtful, intelligent, rational people who did not gain their vision from mine, nor mine from theirs. Thus, I know that am not dreaming. The hope is real.

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