



MANAGING CHANGE

by

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from a speech given to the
Lincoln Chamber of Commerce

Many of you have made changes in your businesses, and you have not found it easy. Mark Twain once said that "A man who holds a cat by the tail learns something he can learn in no other way." I suspect that many of you feel as if you personally have held that cat. Changes in technology, social norms, and the economy are happening rapidly. We must work hard to keep up-to-date in adapting and adjusting to change.

Two Kinds of Change

One can define two kinds of change: structural change and cyclical change. Understanding the difference between these kinds of change can be worth millions of dollars. Structural change is a fundamental, permanent change in the way things such as manufacturing, construction, communicating, growing crops, etc. are done. Such permanent change usually is driven by scientific discovery and new technology. When structural change occurs, society never returns to the old way of doing things.

Cyclical change is a recurring, fluctuating change that is due to government policy or group opinions and attitudes. The story of the Hunt family of Texas may help you differentiate structural change from cyclical change. What the Hunts did was to bet their fortune that inflation, which was increasing in the late 1970s, was a structural change. They invested in land and silver, with the expectation of protecting their money from inflation. When inflation plummeted due to changes in government policy, their fortune crashed with it. (Inflation is not a structural change, it is a cyclical change.)

Here are some examples of structural changes. Communication has gone through a series of structural changes from telegraph, to telephone, to radio, to television, to satellite. Now communication around the world can be instantaneous. Every one of those changes was structural, a permanent change due to advances in science.

Energy sources have changed from wood, to oil, to natural gas, to nuclear fission. The next new source on the horizon is fusion energy. If we achieve

fusion, it means making electricity out of water. It will be a major structural change if we can accomplish it.

Not all changes are positive. We have gone from clubs, to swords, to guns, to bombs, to missiles, to nuclear bombs, and now to laser weapons.

The structural changes that are occurring in agriculture have a big impact in Nebraska. We have gone from horse to machinery, from the use of elementary chemicals to sophisticated fertilizers and pesticides. We now have biogenetic alteration of plants and animals. All of these technologies are available around the world, which is one of the reasons we have a world food surplus. Twenty-five nations of the world consistently are producing surpluses and trying to sell these surpluses in world markets. Current estimates are that less than 3 percent of the world population faces physical risk from hunger. Where there is hunger in the world, it is a problem of the social system and of distribution...not of world food supply.

Let me give you an idea of what may be coming in biogenetics. I was in a laboratory about six months ago where they were working on pigweed. Why would anybody work on pigweed? In a drought when almost all other plants are dead, pigweed is flourishing—because it is so resistant to drought. The scientists are trying to find the gene that controls drought resistance in pigweed and transplant that gene into corn, soybeans, and other crops. If that structural change is accomplished, it will change the way our crops are grown forever. In the same lab, scientists were working toward a soybean oil substitute. These scientists predict that with a few genetic changes, a new plant form they have discovered could provide such a soybean oil substitute. The kicker here is that the plant grows wild in seawater.

Those kinds of changes are on the horizon. With an investment of about \$3 billion, the entire human genetic structure could be mapped. If we make that investment, it is possible that not long after the turn of the century we may be able to reproduce an entire human being from just one of the body cells. What a structural change that will be!

Cyclical change is different. Inflation rates and oil prices are examples. The Hunts bet that inflation was a structural change, but it was not. It was a cyclical change because it is under the control of government. Economic expansions and recessions are cyclical. We have had 43 recessions and 43 recoveries in this nation since we started keeping records. We will have another recession--and another recovery.

One difference between a structural change and a cyclical change is that a structural change often is driven by an underlying change in technology. If something is changing in your business, ask yourself, "What is driving this change?" If it is government policy, it is probably cyclical; if it is technology, it is likely structural. If your current success is due to government policy or subsidy, watch out—things can change rapidly. If technological changes are occurring, bringing structural change, make sure you stay up-to-date and competitive.

Sometimes there are structural changes with cyclical changes occurring within them. This sometimes tricks individuals into believing that a structural change is only cyclical. The structural changes that bring greater efficiency in agricultural production force the real price of commodities down over time. We will have cyclical eruptions where soybean prices or wheat prices rise temporarily because of a supply/demand cycle, but it is important not to confuse that with structural change. The underlying real price trend is down for almost anything that is produced using advancements in technology. That is certainly true in agriculture.

Although adapting to all of these changes will be difficult, the changes bring very good news and a new challenge. If we can avoid nuclear war or other disasters for the next 15 years, we will see unprecedented economic prosperity in the world because of the changes that technology is bringing. It is likely that the biggest problem we will face in 15 years will be how to distribute the resources of a technologically advanced society in a way that preserves and enhances the human spirit.

The Change Curve

Let's look at change now in another way. The graph in figure 1 represents a conceptual view of change.

On the left side of the graph, you see the amount of change. On the bottom of the graph are the years

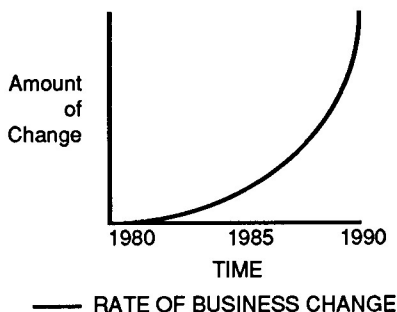


Figure 1

1980, 1985, and 1990, a dimension of time. You see that the rate of change is accelerating, which means that the business environment is going to change much more between 1985 and 1990 than it did between 1980 and 1985—maybe four times as much.

All businesses have a rate at which they are comfortable with change. Change at that rate is represented conceptually by the dotted line. (Figure 2.)

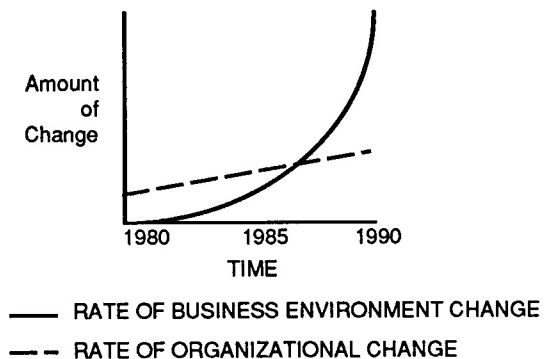


Figure 2

If you continue to change at the same rate from 1985 on as you did between 1980 and 1985, by the year 1990 you are far behind the change curve. As the change curve accelerates, the rate of organizational change sufficient for the mid 1980s is not going to be good enough to keep you ahead of the change curve in the future.

For the business that refuses to change at an accelerated rate to stay ahead of the change curve, usually one of two things happens. It either fails or it seeks government protection or subsidy because it no longer can compete in the marketplace. It then remains in business as long as it has political power to maintain its subsidy.

Change has no names on it; it affects everybody—a company that does not accelerate its rate of change will fall behind the change curve. What is the answer? Accelerated adaptation to change.

A company may start its response to a rapidly changing environment by saying "Something is going on here, we do not quite understand what. We better form a strategic planning task force to see what radical changes we must make in our thinking and business strategies." They then speed the rate that they are willing to change so they can continue in business.

Now, I want to say a few things about Nebraska.

How Many Farmers?

The number of persons involved in production agriculture in Nebraska and the nation continues to decline. In the late 1800s, 75 percent of the Nebraska workforce was engaged in direct agricultural production. In 1986, it was less than 10 percent. Of the 2.3 million farms in the United States, 700,000 produce 85 percent of the food and fiber. By the year 2000, the U.S. will need only 50,000 farming units to meet 75 percent of all domestic and export needs. That means you can take the owners of the country's farming units that produce three-fourths of our domestic and export needs, put them in Memorial

Stadium, and still have room for the University of Nebraska-Lincoln student body.

Subsidies

Depending on how one measures it, between 40 percent and 60 percent of Nebraska net farm income now comes from government payments of one kind or another. We should not delude ourselves. It is likely these subsidies will diminish and end eventually. Those who bet on subsidies continuing indefinitely are betting that the U.S. taxpayers will continue to support the production of many billions of dollars worth of food that clearly is needed no longer.

Reduced Need For Agricultural Land

It is probable that one-third to one-half of the current agricultural land in Nebraska will be out of production by the year 2000. Why? Because advances in biotechnology will reduce the amount of land needed for agricultural production. At the same time, many other nations will continue to increase their agricultural production, which will reduce U.S. export markets.

Population

Population statistics play a role in this too. Believe it or not, the growth rate for world population peaked in 1965. Birth control technology has brought the growth rate down substantially. If birth control technology can be made available around the world, population growth should continue to slow significantly and eventually stabilize.

With world food production increasing dramatically and the world population growth rate decreasing, you can see that the world is facing some enormous food surpluses. Other nations of the world are expanding their food supply; for example, in the last ten years, Brazil has brought into production agricultural land that is the equivalent in size to three Nebraskas.

When discussing Nebraska population, it comes as no surprise that nonmetropolitan population in Nebraska grew 3.4 percent from 1967 to 1984 while metropolitan population grew 19.3 percent. Nearly 80 percent of Nebraska's counties reached their peak

population prior to 1940. Now the population is becoming more and more concentrated in a handful of counties; 67 percent of the state population is in 20 percent of the counties. The age structure varies significantly between the two parts. Total Nebraska employment rose from 623,000 in 1967 to 802,000 in 1985—that is an increase of 28.7 percent. Nonagricultural employment rose 42.7 percent, while agricultural employment dropped by 33.5 percent.

Where Are the Jobs?

Employment changes will recur in Nebraska. When compared with 1967, percentage employment changes in Nebraska have been as follows:

Services	+92.3 percent
Finance, insurance, real estate	+72.3 percent
Wholesale and retail trade	+51.3 percent
Government	
(including public utilities)	+46.8 percent
Transportation, communications, utilities	+19.8 percent
Manufacturing durables	+13.9 percent
Construction	+12.2 percent
Agriculture	-33.5 percent

A clear trend in the Nebraska employment figures is a move toward service employment (transportation, public utilities, trade, finance, insurance, real estate, services, government, education, information) and away from goods-producing employment (agriculture, construction, manufacturing). In 1967, goods accounted for 35 percent of employment and services 65 percent. In 1985, goods were down to 24 percent and services up to 75 percent. This is a structural change precipitated by technological advances that reduce manpower needs and increase efficiency in the production of goods.

This does not mean that agriculture and manufacturing are not important employers in the Nebraska economy—they are. But they are relatively less important in maintaining and creating jobs than they have been in the past.

One also should note that Nebraska has a concentration of employment in insurance when compared to other states. More than 20,000 Nebraskans are employed in the insurance industry.

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MYTHS OF ECONOMIC DEVELOPMENT

Economic Development Myth Number 1: At a recent Nebraska meeting on economic development, listeners were informed that if a new job is created and the employee pays \$1,000 in state and local taxes, \$5,000 additional state and local tax dollars are generated. There are two errors here. The first is to assume a super multiplier of 5. For the state of Nebraska, the multiplier is more likely to be a maximum of 2.25. In many cases, it is considerably less. The second error is the idea that economic development is merely creating jobs. Jobs are jobs according to this theory. It is important to

note that some jobs are more important than others, especially those jobs that create exports. If a new retail trade merchant enters the scene and creates 50 jobs, few Nebraska exports are created. The jobs result in Nebraskans redistributing how they spend their funds. If the new retail firm, however, produces computer software or writes insurance for clients in California, New Mexico, Connecticut, and other points outside of Nebraska, Nebraska has an export product—the jobs are superjobs with a larger impact than others. If it were a simple matter of creating jobs, we would have solved the economic

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ECONOMIC INDICATORS: NEBRASKA AND UNITED STATES				
1. CHANGE FROM PREVIOUS YEAR				
December 1986	Current Month as		1986 to Date	
	Percent of Same		as Percent of	
	Month Previous Year		1985 to Date	
Indicator	Nebraska	U.S.	Nebraska	U.S.
Dollar Volume	102.70	103.70	101.60	104.10
Agricultural	89.10	86.60	85.30	92.40
Nonagricultural	105.50	104.10	104.30	104.40
Construction	92.80	102.80	95.60	106.10
Manufacturing	99.70	96.70	98.00	96.60
Distributive	107.60	106.40	105.60	106.50
Government	105.00	105.60	106.50	106.30
Physical Volume	102.90	102.80	99.90	102.60
Agricultural	98.00	91.60	89.30	96.70
Nonagricultural	104.20	103.20	102.20	102.70
Construction	90.80	100.60	93.20	103.60
Manufacturing	102.30	99.50	99.90	98.70
Distributive	106.40	105.20	103.60	104.50
Government	101.30	101.90	102.40	102.20
2. CHANGE FROM 1967				
Indicator	Percentage of 1967 Average			
	Nebraska	U.S.		
Dollar Volume	403.00	484.00		
Agricultural	449.80	349.50		
Nonagricultural	395.70	488.30		
Construction	226.20	500.70		
Manufacturing	354.60	309.70		
Distributive	418.60	584.50		
Government	441.00	498.00		
Physical Volume	139.60	156.70		
Agricultural	205.40	154.00		
Nonagricultural	129.50	156.70		
Construction	61.50	136.00		
Manufacturing	145.30	124.30		
Distributive	126.40	176.50		
Government	154.50	157.70		

3. NET TAXABLE RETAIL SALES OF NEBRASKA REGIONS AND CITIES			
Region Number and City*	City Sales**		Sales in Region**
	December 1986	December 1986	1986 to Date
	as percent of	as percent of	as percent of
	December 1985	December 1985	1985 to Date
<i>The State</i>	104.70	110.20	107.80
1 Omaha	104.40	109.80	109.30
Bellevue	95.60		
Blair	113.70		
2 Lincoln	106.40	112.20	107.90
3 South Sioux City	114.40	122.00	111.60
4 Nebraska City	118.60	115.80	109.50
6 Fremont	106.40	111.20	109.80
West Point	107.50		
7 Falls City	118.00	116.50	109.40
8 Seward	113.00	112.10	112.40
9 York	106.10	116.80	111.40
10 Columbus	108.10	111.20	108.30
11 Norfolk	108.70	116.10	111.90
Wayne	112.90		
12 Grand Island	106.10	108.10	105.70
13 Hastings	109.70	109.60	107.00
14 Beatrice	105.70	109.80	106.50
Fairbury	98.70		
15 Kearney	108.50	113.10	107.30
16 Lexington	101.20	114.20	103.30
17 Holdrege	103.90	105.80	104.50
18 North Platte	97.60	104.10	106.10
19 Ogallala	115.60	113.90	104.10
20 McCook	99.80	109.60	101.80
21 Sidney	92.90	94.50	92.80
Kimball	76.20		
22 Scottsbluff/Gering	108.60	112.20	103.40
23 Alliance	101.40	97.50	102.80
Chadron	71.90		
24 O'Neill	116.00	115.10	109.20
25 Hartington	123.70	121.00	114.40
26 Broken Bow	103.10	111.60	105.40

* See region map
 ** Sales on which sales taxes are collected by retailers located in the state. Region totals include motor vehicle sales; city totals exclude motor vehicle sales.
 Compiled from data provided by Nebraska Department of Revenue

- Detailed tables and graphs of the components of county personal income are available from the Bureau of Business Research.
- Requests for single counties will be honored without charge.
- A complete set of data for all 93 Nebraska counties is available for \$25.00. Call (402) 472-2334 or write to Bureau of Business Research, 200 CBA, University of Nebraska—Lincoln, Lincoln, Nebraska 68588-0406.

development problem long ago. We could create 1,000 government jobs, which would produce \$1 million in state and local revenue, which in turn would create another \$5 million in tax dollars.

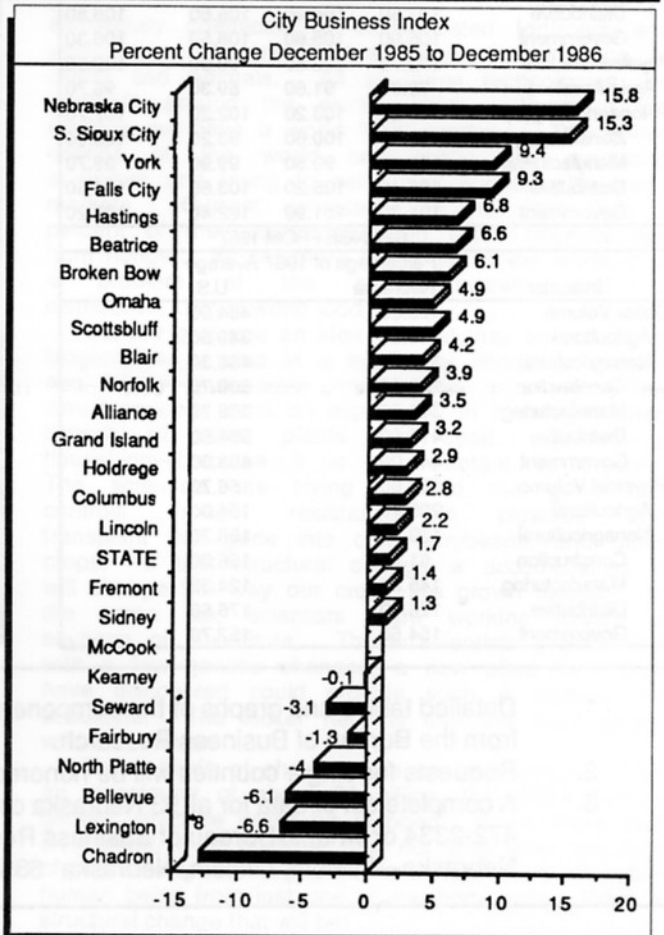
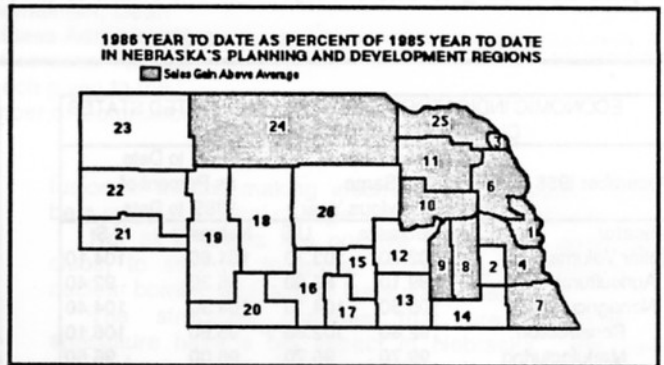
Economic Development Myth Number 2: In testimony before the legislature on the construction of a new facility for the University, it was pointed out that this facility would generate additional tourism dollars. It was asserted that these dollars would turn over within the local economy three times, only a slightly less powerful multiplier than alluded to in myth number 1.

Something seems to be amiss in this economic development project. The football stadium is filled to capacity—additional seating would necessitate an expansion of the stadium. The multiplier for football tourism spending locally is going to be less than it would be for the state. The multiplier is probably around 0.75 in Lincoln, meaning each dollar spent for tourism in Lincoln will generate an additional 75 cents worth of spending. It could be slightly higher, but it is most unlikely that it would approach the 3.0 level recently noted.

Donald E. Pursell

4. December 1986 CITY BUSINESS INDICATORS			
The State and Its Trading Centers	Employment (1)	Building Activity (2)	Power Consumption (3)
	<i>The State</i>	98.90	84.60
Alliance	99.70	152.60	116.50
Beatrice	98.00	228.40	76.70
Bellevue	84.60	148.30	101.20
Blair	101.00	50.20	88.10
Broken Bow	98.30	258.00	79.80
Chadron	99.60	85.00	85.10
Columbus	99.60	72.30	82.80
Fairbury	99.80	73.00	91.20
Falls City	99.30	110.80	97.40
Fremont	101.30	53.90	80.10
Grand Island	100.70	85.50	84.90
Hastings	99.30	146.30	234.00
Holdrege	99.30	112.40	75.20
Kearney	102.70	28.60	105.90
Lexington	90.60	44.90	82.60
Lincoln	101.00	65.10	89.40
McCook	98.70	95.20	78.50
Nebraska City	104.70	248.90	89.70
Norfolk	97.00	107.30	85.20
North Platte	100.80	42.70	85.10
Omaha	105.40	91.90	88.50
Scottsbluff/Gering	102.80	78.30	88.80
Seward	101.40	11.40	89.20
Sidney	102.20	171.40	87.00
South Sioux City	107.30	260.50	63.60
York	101.30	289.90	81.00

(1) As a proxy for city employment, total employment for the county in which a city is located is used.
 (2) Building Activity is the value of building permits issued as spread over an appropriate time period of construction. The U.S. Department of Commerce Composite Construction Cost Index is used to adjust construction activity for price changes.
 (3) Power Consumption is a combined index of consumption of electricity and natural gas except in cases marked * for which only one is used.
 Source: Compilation by Bureau of Business Research from reports of private and public agencies.



5. PRICE INDEXES			
December 1986	Index (1967 = 100)	Percent of Same Month Last Year	Year to Date
			as Percent of Same Period Last Year*
Consumer Prices	331.10	101.10	101.90
Commodity Component	284.20	98.00	99.00
Wholesale Prices	298.10	96.10	97.10
Agricultural Prices		94.6	
United States	227.00	90.90	95.50
Nebraska	219.00	92.90	95.00

*Using arithmetic average of monthly indexes.
 Sources: Consumer and Wholesale Prices: U.S. Bureau of Labor Statistics; Agricultural Prices: U.S. Department of Agriculture

If you think about the communication revolution and the existing strength of insurance in Nebraska, there is every reason we should be the national center for insurance claims processing and processing for other financially related services.

Economic Development Targets

This brings us to prospective economic development targets. They are telecommunications, insurance, high technology manufacturing (including pharmaceuticals, opto-electronics, engine technology, scientific instruments, etc.), biotechnology, and various service industries related to information. But any business willing to access national and international markets can be successful and create new jobs for Nebraskans. Look at what is happening in franchising. More than one-third of the retail sales of this nation are made through franchises. The fastest way to expand an existing business operation is through franchising. It is estimated that by the turn of the century more than 50 percent of the national retail sales will be through franchising. Nebraska can participate vigorously in this rapidly developing sector of the economy. This is one of the reasons we are excited about our newly established Center for Franchise Studies at UN-L.

Turning the Corner on Economic Development

Nebraska may have substantial difficulty directing emphasis to new economic opportunities because of the state's relatively large current investment in agriculture.

If we look at Nebraska compared to the United States, Nebraska's farm income still accounts for a good share of its income overall.

Percentage of Income

	Nebraska	National
Late 1960s Farm Income	15.4%	3.5%
1980s Farm Income	9.0%	1.5%

Unlike Nebraska, most states will not have substantial political opposition from agricultural interests when attempting to redirect investment to new economic sectors. These other states, therefore, may be able to change and adapt to new economic opportunities faster than Nebraska can. This brings us back to our two alternatives: a business (or state) in a rapidly changing environment can stop old investments and make new investments, or it can fail. It is critical that Nebraska make investments in new areas that can provide economic growth and new jobs.

What Place for the University and Research?

The University of Nebraska is a major state resource that has been relatively untapped for direct state economic development purposes, except for agriculture. Since the businesses of information discovery, scientific research, technological advances, transmission of information processing, and marketing of information will be the major job creators of the future, the areas of the country that have the greatest opportunity for flourishing are those with ties to major research institutions and universities.

Let me conclude by congratulating the citizens of Nebraska who are making an effort to develop a strategic plan for the state. It is exactly what the state needs to be doing. The people of Nebraska are a great and resourceful people. We have adapted successfully to many structural changes since the state was settled, and we also will adapt to the current changes—and prosper.

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