RESEARCH PROJECT:

Minnesota Regional Manufacturing/Technology Opportunity Assessment: Northeast Region

Round Table Discussion/Executive Summary

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and Economic Research

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Prepared for:
Minnesota Technology, Inc.
I. INTRODUCTION

The purpose of this paper and five others like it is to describe the economic base of six regions in the state of Minnesota, and to identify possible future niches for development. The relative health of Minnesota’s economy today, and nearly full employment allows us an opportunity to plan strategically for the long term health of our state’s economy. For this reason, our philosophy in formulating this paper and our recommendations has been that economic development efforts should focus on industries providing high wage/high value jobs which lead to an improved quality of life for Minnesota’s citizens.

The economic base of Northeast Minnesota is still defined today by the four Ts: Taconite, Tourism, Timber, and Transportation, although many other industries also make up the economic base of the region. This economic base is described in the first section of this paper under the heading of Strongest Industries.

Our recommendations begin with a look at the top technology manufacturing performers in the region, identified by analyses of secondary data, focus group discussion, and individual interviews with knowledgeable people in the region. In the same way, we have identified candidates for business retention and development efforts that are important suppliers to the industries which comprise the economic base of the region.

Readers who are interested in further information are invited to look at reports 1 and 2 for the Northeast region.


Report #2: PRELIMINARY DATA, including Discussion of Data Sources, Data Organization, Industry Leaders, General Information and Analysis of Regional Structure for Key Industries, and tables of top performers.

The data for these reports are taken from secondary sources, including:

# Regional Economic Information System (REIS), United States Department of Commerce.

# County Business Patterns (CBP), United States Department of Commerce.

# NU OnRamp, University of Nebraska Bureau of Business Research computer based retrieval system (NUOR).

# IMPLAN 1993. MIG, Inc. Stillwater, MN.

# Standard Industrial Classification Manual, Executive Office of the President, Office of Management and Budget.
II. ECONOMIC BASE OF NORTHEAST MINNESOTA

STRONGEST INDUSTRIES

The Northeast region of Minnesota has long been described as an economy made up of four Ts: Taconite, Tourism, Timber, and Transportation. Our data generally confirm this. However, many other industries contribute to the economic base of the region: industries that

1. are large employers,  
2. present high value added to the region,  
3. export from the region (either to the rest of the United States or to foreign countries),  
4. interact strongly with other industries in the local economy leading to spin-off economic impacts, and  
5. show good prospects for future economic growth.

The region depends upon these industries in a very real way. Their strengths and weaknesses should be of major concern to those with an interest in the growth and development of the regional economy. Economic base, in a technical sense, consists of industries that bring money in from outside the region through export activity. At least a part of this money is then used to buy local goods and services, either as semi-finished goods, or as professional services, both contributing to basic production. The secondary or local supplying industries are part of the infrastructure that makes a basic industry competitive in the global market place. Thus, such industries as construction, local retail trade, and related service sectors both depend upon the basic industry and nurture it.

The following list of industries represent those that are dominant in the above categories of performance. To be included on the list requires that the industry in question be among the top thirty industries (out of over 500 industries) in at least four categories of performance.

Key Facts about Northeast Minnesota’s Economic Base: Top Industries from Analysis of Data Sources
n identified both by data sources and focus groups/interviews
values = in the top 30
blank cell = not in the top 30

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<thead>
<tr>
<th>Top Industries:</th>
<th>Electric Services</th>
<th>Wholesale Trade</th>
<th>Automotive Dealers &amp; Service</th>
<th>Eating &amp; Drinking</th>
<th>Hotels And Lodging Places</th>
<th>Doctors And Dentists</th>
<th>Hospitals</th>
<th>Social Services, N.E.C.</th>
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<tr>
<th>Industries ranking in top 30 in at least five categories for Northeast Minnesota:</th>
<th>Compensation (millions$)</th>
<th>Exports (millions$)</th>
<th>Output (millions$)</th>
<th>Value Added (millions$)</th>
<th>Income Multi.</th>
<th>Output Multi.</th>
<th>Employment (persons)</th>
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<td>Reconstituted Wood Products</td>
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<td>Water Transportation</td>
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<td>39.18</td>
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<td>Doctors And Dentists</td>
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<td>323.05</td>
<td>262.61</td>
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<td>Hospitals</td>
<td>162.01</td>
<td>76.69</td>
<td>332.77</td>
<td>194.22</td>
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| Social Services, N.E.C. |   29.27  |   44.73  |   82.90  |   |   |   1.43 | 1891 |
# Iron Ore

This is not a real surprise. However, what might not be known is that the Iron Ore industry, while crucial to the Northeast region’s economy, does not appear in the top thirty industry category for its spin-off (multiplier) effects on the rest of the economy. Its effect comes primarily from its direct operations. It sells virtually all of its output outside of the region and much of what it purchases comes from outside the region. It is local interaction levels that create multiplier impact.

Having said that, it should be recognized that Iron Ore is the top regional industry in terms of levels of compensation, levels of export activity (the technical definition of a base industry), dollar value of output, and dollar levels of value added. It is truly significant to the regional economy and was identified as such by members of the focus group session held in the region and by individual respondents. Most were optimistic about its future, although more than one individual felt that development attention should be paid to this industry in good times as opposed to always waiting for cycle downswings to become excited.

# Paper Mills

Again, no surprise here. Paper Mills are much like Iron Ore in their effect on the local economy. It is a top 30 industry in terms of compensation, exports, output, and value added. It does not appear as a top 30 industry in terms of its spin-off (multiplier) effects on the rest of the economy which is somewhat surprising. While most of its output is exported, we expected stronger interactions through local purchases. Further analysis of the possibilities for import substitution might be appropriate with respect to this industry.

# Reconstituted Wood Products

This is the hardboard, particleboard, and waferboard manufacturing industry, which is so important to the region. This industry is high in every important category, including the multiplier categories, with one exception. This industry is not in the top thirty in terms of employee compensation. This is somewhat curious since it is a leading employer in the region.

# Railroads and Related Services/ Water Transportation

We are actually combining two industries here. Both constitute the transportation “T” for the region. Both are related to basic product manufacturing in the region, summarized above.

It is interesting to note that the focus group and individual interviewees did not discuss transportation to any great extent. Perhaps this industry is taken for granted because its health so obviously depends upon the health of the taconite, paper, and wood products industries. Northeast Minnesota obviously has excellent transportation services. These services would have served the region better if the region were on the way to somewhere and not a final destination/origin point for basic products. Constant attention to keeping the facilities first rate and looking for opportunities to utilize the services that are here could pay economic development dividends in the future.

# Tourism

From any classification system we use in our analysis (Federal Government, IMPLAN database, etc.), there is no such thing as the “tourist” industry. Tourism really constitutes the sales of many industries that also sell to local residents. Having said that, tourism does appear from our data in the types of industries that are seen to be leaders (top 30). These industries appear in the Northeast region and, by the way, are not typically seen as top producers in many of the other regions in the state.

Top employers, compensators, producers for export, output producers, and value added producers include: Automotive Dealers and Service Stations, Eating and Drinking Places, and Hotels and Lodging Places. Interestingly, none of these sectors appear as top industries in terms of their spin-off (multiplier) effects on the rest of the economy.
Tourism was mentioned and discussed by the focus group and by every individual interviewee. The discussions were not always positive in this regard. There was some concern that the resort portion of regional tourism is in need of modernization. Focus group participants were also concerned that tourism in the region is taken for granted and that too little attention is paid to this important industry. All agreed that this industry is critical to the region, not only because of its own impacts, but because it presents the region to the rest of the world in a favorable light. For industries scouting favorable locations, tourism might be the key to calling attention to the region's strengths.

# Health Care

All respondents to our interview/focus group sessions listed health care as an important industry. This is the first to be outside the four “T” categories. Our data confirm the respondents’ feelings in this regard. Hospitals and Doctors and Dentists were listed as major contributors to the economy by our data sources.

One interview respondent was particularly excited about this industry. This individual was looking for development of industries in the region that are in support of the medical community. The University medical school, medical research, and medical implement manufacturing were some of the possibilities identified by this individual. This individual also pointed out that agency and government efforts were currently under way to bring about just this type of development.

III. RECOMMENDATIONS

RECOMMENDATION I: A focus of economic development efforts should be on helping those existing industries which provide higher wage/value jobs to grow and survive, as opposed to emphasizing the recruitment of new businesses.

The industry was in the top thirty categories for compensation, value added, output, and dollar levels of exports. It was not in the top thirty in terms of its spin-off (multiplier) effects. Successful development efforts of the type described by the individual interviewee above might increase the spin-offs from this important industry.

# Three Other Industries

There are three other industries identified by the data but that were not brought out by the focus group/individual interview process. These were: Electrical Services, Wholesale Trade, and Private Social Services, not elsewhere classified (n. e. c.). All appear in the top thirty in at least four categories and all appear as major employers in the region. We have little to offer beyond these generalities at this point. Perhaps further investigation is warranted, particularly with respect to the Wholesale industry. The region may have competitive advantages in such an industry due to its transportation infrastructure. Further development efforts in this direction may be warranted.

This recommendation stems from conversations during focus group and individual interviews with persons knowledgeable about the region’s economy. In fact, it was one of the strong assertions
to come from these conversations. Further, this assertion is consistent with an increasing awareness in economic development circles that regional economic development, especially in rural regions, stems from internal sources. Small-to-medium sized enterprises, begun and nourished by local residents, often define the economic future of a rural region or even urban neighborhoods. Competitive industrial prospecting, combined with strong locational financial incentives, too often amount to a zero sum game in which one region in the state simply attracts firms from other regions in the state.

Further, it is not unusual to find industries offered incentives at a location they would have chosen in any case. Locating firms simply take advantage of significant concessions from competing regions in the process. There is a question as to whether benefits and costs of industrial prospecting, coupled with tax and financial give-a-ways, add up to positive outcomes in many instances. And once industries are located in a region, they are often ignored and taken for granted.

**TOP TECHNOLOGY PERFORMERS**

Northeast Minnesota does not exhibit a strong presence of technology industries as defined by Minnesota Technology, Inc. The four Ts, plus medical sectors, truly dominate the region’s economy. However, the focus groups and individual interviewees agreed that growing already successful, local technology companies would be both a worthy goal and a strong direction to travel, as the region attempts to diversify its existing economic base of the four Ts.

Minnesota Technology provided the research team with U. S. Government Standard Industrial Classification Codes (SICs) that could be considered to be technology based. These industries were identified in the region and the top performers in these categories are listed and discussed below. Technology based industries typically provide higher wages. They are of particular interest to Minnesota Technology, Inc., the sponsors of this project. All industries are identified through an analysis of regional employment levels.

### Chemicals

There are several industrial categories that make up Chemicals Manufacturing. Those with a presence in the region include: Industrial Inorganic Chemicals, Industrial Organic Chemicals, Adhesives and Sealants, and Explosives. All are identified as manufacturers.

These industry categories enjoyed modest growth in employment between the years 1990 and 1993. However, none of them are seen to be basic (exporters) to the region. In fact, the industries are currently under represented in the region, which indicates that they may currently be products that are imported into the region. There might be a possibility for import replacement. Further analysis of these sectors would be required before a definitive statement could be made along these lines.

### Construction Machinery

This industry manufactures heavy construction equipment, including such things as cranes and dredging machinery. This industry showed significant growth in employment in the region between 1990 and 1993 (154 additional employees over that three year period). Total employment in 1993 was over 400 individuals. The industry is not shown to be a particularly fast growth industry nationally, so the local performance was above and beyond what would have been expected had it mirrored national performances.
Electronic Components, n. e. c.

The products of this manufacturing industry include such things as receiving antennas, switches, and waveguides. The industry experienced an increase of 120 employees in the region between 1990 and 1993 to a total employment of 395 employees. The industry is relatively fast growth nationally and, in addition, the region picked up more employees than would be predicted if it mirrored the national performance. It is an interesting industry perhaps worthy of further study for future development potential.

Photographic Equipment and Supplies

This industry had an employment of 55 in 1993, up only slightly from 1990. The industry is not currently identified as being basic to the region, although its level of representation relative to the nation increased between 1990 and 1993. There is some indication that its products are imported into the region which could mean that this industry’s commodities are possible candidates for import replacement.

Computer Programming Services

Moving from manufacturing to services, computer programming services showed up as a growth sector in the region. This industry added over 70 additional employees between 1990 and 1993 to a 1993 total of 93 employees. The industry is not basic to the region and could be a candidate for import replacement. A related industry, Data Processing and Preparation is located in the region (46 employees in 1993), but showed only limited growth in employment between 1990 and 1993. This industry is also not basic to the region but its relative presence did increase slightly.

Testing Laboratories

This is an industry that is primarily engaged in clinical testing processes. It had 56 employees in the region in 1993, up 25 since 1990. It is not a basic industry in the region.

TECHNOLOGY CANDIDATES FOR RETENTION EFFORTS IN NORTHEAST MINNESOTA

We found a number of industries in the Northeast region which are contributing significantly to the region’s economy but that are displaying signs of difficulty or that are declining in importance. (Our next several observations are in terms of employment.) These industries should be the focus of retention efforts on the part of local governments and development agencies. A successful retention effort is likely to pay dividends at least as large as high risk efforts to attract new industry into the region.
Technology industries either disappearing from the region or declining in competitive advantage include: Hoists, Cranes, and Monorails (apparently has left the region), Electron Tubes, Semiconductors and Related Devices, Electrical Equipment and Supplies, n.e.c., and Engineering Services. With the exception of Hoists, Cranes, and Monorails which lost 239 employees between 1990 and 1993, none of the others lost over 50 employees. Other industries of possible concern include:

# Management Services

This is described in the Standard Industrial Classification manual as, “Establishments primarily engaged in furnishing general or specialized management services on a day to day basis and on a contract or fee basis.” The industry lost 476 employees in the region between 1990 and 1993. Its 1993 employment level was 440 employees.

This industry is among the fastest growing national industries (along with other consulting services). It is also a growth industry in much of the other Greater Minnesota regions. It is unusual, in this day of outsourcing, that it has not performed up to par in the Northeast region. Further analysis as to why this is the case could be well worth while. Retention of this industry and provision for the conditions for its turn-a-round may very well pay employment dividends to the regional economy.

# Periodicals Mfg.

This industry had 818 employees in the region in 1990. It had 358 employees in 1993. The industry is not particularly fast growth nationally, but the region lost out to the nation most of those 460 jobs. The industry is still seen as being basic (exporting) to the region, but its level of importance in this regard also decreased by over 57%.

# Private Social Services, n.e.c.

This industry includes individual and family social services, private job training and vocational rehabilitation services, day care services, and private residential care, among other possibilities. The industry employed 460 individuals in 1990 and 189 in 1993. It was a growth industry nationally, so this loss is even more dramatic. The industry is seen to be basic to the region, but much less so in 1993 than in 1990. What is happening to this industry is most curious given the region’s historic commitment to social services and given the performance of this industry nationally. One component of this broad industry classification, Private Social Services, n.e.c., has shown some strength in the region and was identified as a leader in this regard.

# Nursing and Personal Care Facilities

Related to the social services identified above, the private nursing and personal care facilities lost a little over 200 employees between 1990 and 1993. Total employment in this industry fell from 3,118 in 1990 to 2,915 in 1993. This regional decline occurred despite the fact that it is identified as a growth industry nationally. Such decline is all the more surprising given the generally positive performance of health care related services in the region.

# Gray and Ductile Iron Foundries

This industry produces a variety of products running from cast iron cooking utensils to cast iron water pipe. It is not a major employer in the region. However, its employment fell from 123 to 75 individuals between 1990 and 1993, a loss of 48 employees. It went from an industry that was basic to the region (brought money in from other regions through export activity) to one that was not basic. It is not a particularly fast growing industry nationally. However, the loss in employment at the local level was greater than would have been predicted from changes in activity for this industry nationally. This is a value added industry associated with iron and could represent a significant loss for the region.

# Other Industries: Retail Trade

A topic of some concern in the region during the focus group session was the loss of locally owned retail activity.
While there was an increase in activity in some retail categories, many retail trade categories were somewhat troublesome. This could be due to a movement towards fewer labor-intensive processes in everything from general merchandise to grocery stores. An apparent trend towards concentration in larger establishments, often owned by individuals outside the region, is affecting both the number and diversity of locally owned retail establishments, many of which are located in downtown areas.

There is an apparent desire on the part of those interviewed to retain a diverse retail sector in downtown areas of the region. It could be that special retention oriented actions will need be taken if this goal is to be realized.

**RECOMMENDATION II:** Because basic industries buy many of their inputs to production from other local firms, attention to these local suppliers’ needs helps make the basic industries more competitive.

A region’s economic future requires that the region be efficient in production. Efficiency lowers the cost of production, making the region more competitive. Efficiency can be associated with those industries supplying the basic sector, the provision of government services, the character of the region’s infrastructure regarding roads and communications, and the efficiency of local resources, such as the productivity of its workforce. So much attention is often paid to a region’s exporting industries that those local industries supporting the base are often ignored and forgotten. This section looks at a few of those local industries that supply the economic base.

### Construction

One sector identified as the leading local supplier time and time again was that of Construction. Three basic sectors were shown to be especially dependent on Construction: Health Care, Metal Mining, and Paper Production.

Because the industry is competitive, little government encouragement or involvement is necessary. However, making sure the industry has what it needs in the way of skilled workers could be viewed as a responsibility of the local education structure. Monitoring the finance picture in the region to make sure funds for construction are there when needed could be the responsibility of government, and the business community itself. Quality assurance is the responsibility of everyone associated with construction in the region. These would be the recommendations associated with this apparently critical regional local supply industry.

### Business and Management Services/Consulting and Research

We lumped these two sectors together. They are shown to be important suppliers in the region by the IMPLAN database and software system. However, when looking at employment, both are industries in apparent decline in the region. We expressed some surprise at this earlier in this report, since these are extremely fast growing sectors nationally and in other regions of the state of
Minnesota. Producer services such as these are also the higher paid, potential exporting services that are often highlighted by development specialists as potential growth sectors for regional economies. A separate analysis on what is happening to this sector, what its potentials are in the region, and what could be done to encourage them may be warranted.

# Chemicals and Allied Products

This has been an interesting sector in the region for some time now. Many separate analyses of the region over a number of years have shown this industry to be under represented in the region. Indications have been that the products of this sector have been imported into the region. However, when looking at the data, we find that this industry is also identified as a major local supplier to the basic sectors of the region. This industry appears to be a critical link in the industrial complex base of the region making it a likely candidate for further consideration and analysis.

# Motor Freight Transportation and Warehousing

This IMPLAN industry is a composite of several industries identified by the government through the Standard Industrial Classification code. Therefore, it is somewhat difficult to tell whether this is an industry that would also be a possible candidate for import substitution. We can say that it was a major local supplier to various basic industries in the region. We will point out later that transportation was also identified by the focus groups/interviewees as a potential impediment to the future development of the region.

# Other Suppliers

Other industries that are identified and that are probably self-explanatory in terms of their importance include:

- Printing and publishing
- Railroads and related services
- Water transportation
- Communications
- Utilities
- Banking
- Wholesale trade
- Automotive services
- Hotels and lodging places

**RECOMMENDATION III:** Substituting locally produced goods and services for those previously imported defines a niche for future development. We recommend this option be explored.

The substitution of local goods and services for those previously imported, or import substitution, is a particularly strong economic growth strategy when it works because it not only provides the direct employment associated with the new facility, but it increases the interaction between local industries. As discussed earlier in this report, local supplying industries are part of the infrastructure that makes a basic industry competitive.

We do not have dependable, direct measures of imports into the region. To obtain such a list would require a research project unto itself. However, we do have evidence on industries that are under represented in the region in terms of employment. Under certain circumstances, under representation could be interpreted as industries producing commodities that are imported into the region. A few of the currently (1993) under represented industries include:

# Aircraft Parts and Equipment

This is an industry that is not currently
located in the region. Until quite recently, there would be no reason for its location here. However, with an expanding aircraft industry in the region, this may represent a future possibility and is thus listed here.

# Several Varieties of Computer and Computer Software Production

Again, this industry is essentially located somewhere other than in Northeast Minnesota. However, the focus group and one individual interviewee stated that this general category could be a development potential for the future. The industry is listed here based on those discussions.

# Medical Instrument Design and Manufacture

This is another composite industry not currently located in the region. Responses from the focus group and individual interview process indicated that this is an industry currently being explored by development officials in the region. Such sectors might fit the expanding medical base in the region. It is included here on the strength of the interview/focus group process.

IV. POTENTIAL IMPEDIMENTS AND OPPORTUNITIES FOR ECONOMIC GROWTH IN THE REGION

This last section draws primarily on the information provided by focus groups and individual interviews. We asked the focus groups and those interviewed individually what might be their concerns and recommendations for future development. We also asked what government, local development agencies, and the business community itself might do to aid meaningful economic development. What follows is our interpretation of the interview responses categorized by topic.

# Resources

We would have to say that the focus group and individual interviewees were fairly upbeat about the near term prospects for the Northeast economy. Most said that the iron mining industry was doing well, although most also felt that this should not be an excuse for ignoring the iron mining sector. Most argued that the wood products industry was robust. Tourism was seen as doing well, although further infrastructure development in this area was seen to be necessary by some of the respondents. The transportation system was seen to be adequate. And, at least at the present time, the workforce seemed to be adequate and available.

There were some caveats, however. Obviously, the iron mining industry depends on there being an adequate supply of the resource. There is such a supply at the present time in the respondents’ estimations. However, we should plan for the time when future supplies will run out. We should diversify our economy to lesson the
dependence on this most important industry.

The timber industry also depends very much on resource supplies. There was seen to be a lot of pressure on available supplies according to the respondents. While better information is now available concerning the location and level of supply, pressure keeps building without adequate planning. This could be an area of potential concern.

Finally, while workforce supply does not seem to be a problem currently, successful economic development could turn it into a problem in the near future. In fact, there are pocket regions, according to the respondents, where new development has put pressure on workforce availability. It was also mentioned that the iron mining industry is about to experience a significant number of retirements and that these individuals will need to be replaced. This industry’s pay and benefit levels probably assures an adequate supply of workers to fill the retirement slots. However, filling these slots could put pressure on other industries in the region.

### Development Agencies

While there were some calls for greater coordination between development agencies, the response from the focus group/individual interviews was that agencies were generally doing a good job. Many agencies were singled out for praise and a few for criticism.

There was a general feeling that the region should grow from within. Agencies should help this growth with financing when possible and with technical assistance. Research and development was also mentioned as a task for development agency attention. Some thought development agencies were too concerned with technology development and that they did not have good business sense for implementing these developments. There was also some concern that it was difficult to find the right agency to solve a particular problem. There was even a call for fewer agencies taking on more responsibilities.

Finally, there was a concern that politics played too big a role in agency decisions to pursue or not pursue a particular project. We want to remind the reader that these concerns were expressed in an atmosphere that showed general satisfaction with development agencies in the region.
We specifically asked the respondents “What can business itself do to help promote economic development in the region?” The responses are categorized below:

• Businesses need to increase networking and need to develop a mechanism for doing so. There was a general feeling that businesses could do more to cooperate in making their workforce skill needs known to the education community, for example. There is also a need to share information between business units. One person suggested the formation of an *entrepreneurs club* as a possible move in this direction.

• One suggestion was that businesses need to be more involved in various economic development processes. Helping each other and creating a climate for compatible business development ought to be of concern to existing industries.

• Businesses might play a bigger role in the region’s education and training processes. Business itself might provide direct worker training. But at a minimum, business should be willing to go to high school and technical classes to explain what will be expected of workers in their companies, not just in terms of occupation skills, but in life skills and personal habits as well.

• Finally, business should play a role in industrial prospecting. Business should help sell the region to other businesses through their attitudes and by telling prospects that they can succeed in Northeast Minnesota.

# Special Role for Technology-/Manufacturing in the Region?

When asked if there was a special role for technology and manufacturing in the region, the responses were quite varied. There was a general feeling that the perception of a tough labor market in the region, stemming from heavy union membership, discouraged manufacturers from locating in the region. Most felt that this was a perception and not reality, however. In order to diversify the manufacturing base from outside the region, this perception would have to be dealt with in some manner.

One interesting comment with respect to technology industries came out of the focus group. One individual felt that technology happens. We can try to provide an atmosphere that is conducive to and supportive of technology development and implementation. But in the end, it is the entrepreneur that must come up with and implement a technology idea. This particular individual felt that there was little that government and development agencies could do to make this happen. The role of government and development agencies would be to provide a climate of regulation, taxation, and technical assistance conducive to technology based manufacturing.