Alaska Forward:
Phase I Situational Analysis

GLOBAL INSIGHT

Prepared For:

Alaska Partnership for Economic Development

TABLE OF CONTENTS

EXECUTIVE SUMMARY

About this Report

Alaska's economy is challenged to provide quality jobs for the state's residents, cover the costs of government services, and build the economic infrastructure needed to be globally competitive. With support from the Denali Commission, the Alaska Partnership for Economic Development (APED) has initiated a multi-phase process to analyze the economy, create an economic development strategy and identify action initiatives to address the state's challenges.

This report is a first step in that process. It is a situational analysis that describes and analyzes the current economic development system in Alaska and the state's unique set of economic and business climate factors. Along with a suggested path forward, the report is designed to inform a next phase of collaborative formulation of practical strategic and tactical action initiatives to safeguard the future success of Alaska.

APED is a 501(c)(3) umbrella organization consisting of the 12 designated Alaska Regional Development Organizations (ARDORs). APED selected a team to undertake this report consisting of IHS Global Insight (lead consultant), the Economic Competitiveness Group, and Alaska's McDowell Group. The project's steering committee comprised representatives of the ARDORs, as well as representatives of other industry and public sector organizations, such as the State Chamber of Commerce, the University of Alaska, Western Alaska Community Development Association, Office of the Governor and the Economic Development Administration.

The research for the report was conducted from September to December 2009. The team collected and analyzed existing information and insight, conducted surveys and interviews, presented and discussed preliminary results at conferences, and engaged in a wide variety of discussions with steering committee members and other public sector and business stakeholders.

Key Findings

The economic development system in Alaska is largely ineffective both from the perspective of Alaskans as well as in comparison to best practices in other jurisdictions. A web survey of 300 business and community leaders showed that 52% of them felt that economic development efforts in Alaska have been ineffective and 61% of them felt that, at best, the outlook for Alaska's economy over the next 10 years is uncertain.

Alaskans should worry not because of any immediate economic crisis, but because of the accumulating levels of future risk and declining economic resiliency associated with:

- Poor relative economic performance compared to the rest of the country.
- A high level of dependence on the price of oil, federal government spending, and natural resource industries facing supply or regulatory/legal constraints.
- Weak linkages to rapidly expanding global market opportunities.
- Ignoring opportunities for diversification and increased resiliency by optimizing the needs and linkages within and among the state's existing portfolio of export-oriented industry "clusters."
- Weak culture of entrepreneurship.
- Sub-par support from the state's economic foundations compared to other peer states in the area of transportation and other infrastructure, quality of workforce/education, and technology.

This risk represents the basis of our call to action for a different approach to economic development. Oil prices may stay at or above current levels, significant new sources of oil and gas may be tapped, and federal government spending may keep rising. However, the probability that these events will not happen is uncomfortably high.

The path forward involves moving away from competition among industries, regions, and communities. It involves moving towards a more collaborative, state-wide approach to economic development that is focused on developing a stronger portfolio of export-oriented industry clusters. The effort should be lead by the private sector and supported by the public sector and to take a state-wide approach knowing that a stronger portfolio of industry clusters will benefit all the regions of the state.

Existing Economic Development Objectives and Strategies

The economic development system in Alaska is decentralized and fragmented with little overarching structure tying the pieces together to foster a sustainable and resilient economy for the future. Only 2.5% of the respondents to our survey felt that economic development efforts have been very effective and only 6% felt that the economic outlook over the next 10 years was very good. Interviews with economic development professionals and business leaders produced a more detailed diagnosis of the situation, but overall painted a consistent picture of generally ineffective economic development efforts and concern about the longer term outlook for the state's economy.

Past development efforts have come up short largely because of poor implementation planning and resourcing, inadequate consideration of market fundamentals, and shifting political priorities. Furthermore, it is clear that very few economic development best practices from other regions are being deployed or even tested in the state. There is no shortage of imaginative economic development ideas across the state. However, without a framework for action, these ideas are just biding their time in reports on shelves or flowing in the daily stream of ad hoc policy discussion.

While the interviews and web survey uncovered a broad range of views and insights, the following common themes were identified:

Alaska's Economic Development Organizations (EDOs) operate in an extreme environment. Alaska is a relatively new state that is remote from other business or industrial regions and has under-developed infrastructure, high energy and labor costs, and severe geographic and climate conditions.

Large-scale development of publicly owned resources has been a dominant theme in the Alaska economy. This includes seafood harvesting, mining, timber harvesting, oil exploration and, most recently, large-scale tourism. Alaska's economic development efforts have evolved, in part, around how to minimize regulatory restrictions and how to siphon off local benefits from these large, externally driven industries.

Government funding of local services, particularly rural healthcare and local and tribal government is another dominant theme. Federal funding has the greatest impact, but state employment is also very significant.

Alaska has established a workforce training infrastructure, but some question whether the types of training available are strategically targeted to support development. Although many say that consolidation of the Alaska community colleges within the University of Alaska in the 1980s was a setback to vocational education, workforce training efforts are now wide-spread. Training typically has focused on replacing imported labor with resident labor in existing industries. Critics say that training gaps include higher level technical and professional education. Other criticisms are that entry-level workers lack basic reading and math skills and what are often referred to as "soft skills" or "work ethic" by employers.[1]

[1] These criticisms are typical of feedback obtained during workforce assessments and training program evaluations performed by McDowell Group.

There is a lack of state-wide planning, leadership and coordination. Although Alaska has a large number and variety of economic development entities, their focus is local or regional, rather than statewide, and this limits their effectiveness.

Alaska has a wide diversity of economic interests that must be aligned for major development efforts to succeed. For example, the large oil and gas producers and the largest seafood and shipping companies are multi-national corporations for which Alaska is only one of a portfolio of operating venues.

Within the environment described above, Alaska EDOs typically:

- Have small staffs and uncertain funding.
- Have limited established networks with other EDOs, federal and state economic development programs, businesses, or the University of Alaska. However, there has been some recent progress in this area.
- Can find themselves overwhelmed by the sheer size and number of challenges they face. For example, EDOs are largely unequipped to have an impact on natural resource development.
- Have often focused on infrastructure projects because basic issues like transportation and energy cost seem to preclude more typical business development efforts.
- Feel the State should provide more strategic direction and resources for economic development.
- Have a hard time attracting enough resources (of all kinds) to have a statewide impact.
- Have been frustrated by the financial, regulatory and practical barriers to developing projects, especially larger ones.
- Have been frustrated by what many consider an over-reliance by Alaskans in general on government, rather than business, to take the lead in economic development.
- Have had success in helping to foster workforce development programs.
- Have had some success working with the oil, mining and seafood industries (primarily) to maximize employment and other benefits to Alaskans.
- Have had limited success at fostering in-state value-added industries, either for purposes of export or for import-substitution.

In summary, the effectiveness of Alaska's EDO's is subject to six key overarching economic development issues:

1. Need for leadership and coordination. Lack of high-level leadership and coordination was among the most-cited challenges facing Alaska's development efforts. This leaves local, regional and statewide efforts fragmented and potentially contradictory.
2. Need for explicit goals and strategies. Economic development is an incremental process that requires long-term consistency and commitment.
3. Need to integrate short-term and long-term initiatives. Economic development is a long-term undertaking, but funding and local priorities tend to be driven by short-term needs.
4. Challenges of geographic isolation. EDOs have no choice but to try to address the fact that geography and climate define much of Alaska's development potential. Transportation was identified as one of the state's most significant barriers in both EDO and industry interviews.

5. Challenges supporting and adding value to existing industries. Import substitution, value-added processing, and support services have been widely recognized as key to Alaskans reaping more of the benefits of in-state development.
6. Developing an institutional framework to elevate the impact of knowledge within all industries. Alaska's next-generation economy must be one that produces and utilizes knowledge workers to facilitate growth in traditional industries and emerging industries.

Comparison with Best Economic Development Practices in Other Regions

Much can be gained by an inward analysis of Alaska's economic development system. However, a look at how other regions have tackled similar issues is also informative. From these insights and "best practices," a number of lessons for Alaska are drawn. Each should be instructive as leaders grapple with the question of how to organize for, and improve the state's economy.

In highlighting best practices, we have focused on leadership approaches, systemic changes and/or institutional efforts that were implemented in order to transform the subject region's economy. Of course, there is no single domestic or international best practice that aligns perfectly with Alaska's particular situation. But there are no doubt elements within these models that are appropriate to Alaska's particular context and the state's long-term goals.

Six regions were examined in this overview of best practices:

- Puget Sound Region—Economic development leadership and coordination
- Oregon—Explicit economic development goals and strategies
- Alberta, Canada—Integration of short- and long-term initiatives
- Chile—Addressing the challenge of geographic isolation
- Austin, Texas—Adding value to existing industries
- North Carolina—Institutional framework to elevate the impact of knowledge in its industries

Some leaders may feel that Alaska's unique history and atypical development challenges are such powerful constraints on economic development that the system and approaches that have evolved over the years are the best way forward. But the examples show that other regions having different fundamental characteristics than Alaska's have nevertheless been successful in overcoming barriers to economic development. In many instances these barriers are not so different than those faced by the state. All of the cases presented have just a few themes in common, and each theme is relevant to Alaska.

Leaders can take steps to affect the trajectory of an economy—the destiny of a state's economy is not preordained. Interventions in the status quo in the form of new public policies, bold private sector initiative, new public-private partnerships and strategic resource allocation can all affect the trajectory of an economy. The province of Alberta in Canada is a good example. The vision of a single leader in the 1970's drove new thinking in the 1980s about how to achieve a far more diverse economy. Subsequent policy initiatives launched new economic development organizations with new missions. New initiatives in education and training and in science and technology began to shift the structure of the economy in the 1990s. Analysts looking at the province's economic transformation typically note that its success relative to neighboring provinces can be attributed to successful diversification into new economic sectors that now complement resource extraction and industrial manufacturing.

Strategic planning can have a payoff—Economic analysis cannot end with a simple statement of the problems. The Situational Analysis contained in this report is meant to be a foundational document

upon which a strategic plan will be based. The situation analysis is necessary but insufficient to spark the new thinking and new behaviors that will be needed to move Alaska's economy in new directions. In every best practice case analyzed, leaders took steps to design, launch and implement a comprehensive strategic plan to guide their region's development.

Leaders in states whose economies are threatened cannot afford to be idle and wait for economic conditions to improve—Waiting for new economic conditions is not a strategy. Oil prices might go up, and that would be good. But they might, as they have in years past, go down. By their nature commodity prices will vary according to demand conditions far removed from Alaska's control. Alaska's leaders need to inform residents of the "razors edge" on which the economy rests and organize for new collective action.

Assessment of Entrepreneurship and Business Climate

Alaska doesn't appear to have a particularly good climate for business risk-taking. We are told by interviewees that Alaskans do not have a willingness for "change," "innovation" or "rejuvenation." Many informed leaders told us that Alaskans seems to have an "entitlement mentality."

Ultimately, the goal is to provide a good environment for innovation—for new companies to start-up and grow and for new thinking and new behavior within and among the state's EDOs and other development organizations. This will require a significant shift in both how leaders think about the economy and in economic policies going forward. On the other hand, if incentives in the economic system can be fundamentally altered, the entrepreneurial spirit is never lurking far below the surface, and can rise to strike at good economic opportunities and to meet new economic challenges.

The Economy

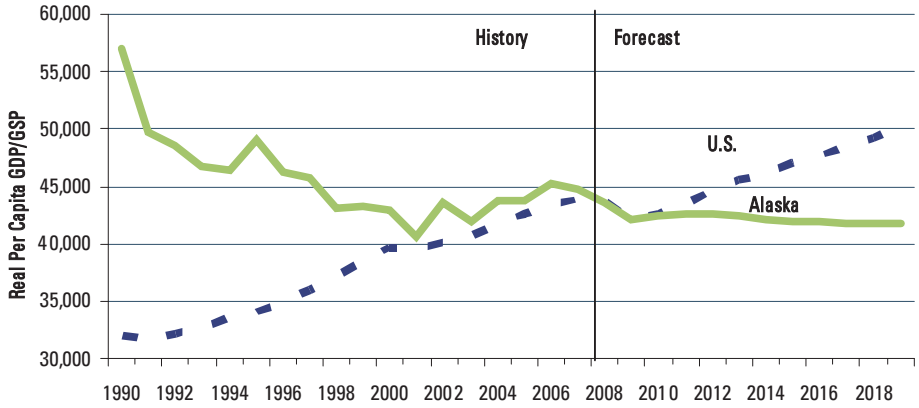
Alaska weathered the Great Recession of 2009 well compared to other parts of the U.S. economy and Alaska will be participating in the global recovery. However, from a longer term perspective there are risks and concerns that ultimately provide a rationale for a new approach to economic development to deal with potential risks and a loss of economic resiliency.

The top line view of Alaska's economy is one of stagnation and lagging economic performance in large part due to declining oil production.

Gross state product (GSP) measures the output or total value added of all industries in Alaska. By this measure, Alaska's economy has been stagnating for the past 20 years. Over the 1990 to 2020 period we expect the U.S. economy to have doubled in constant dollar terms. Over the same period, Alaska will have barely returned to its level of total economic activity in 1990.

Overall employment in the state economy may reflect more directly how people feel about the economy's performance. The oil industry is very capital intensive, so both increases and decreases

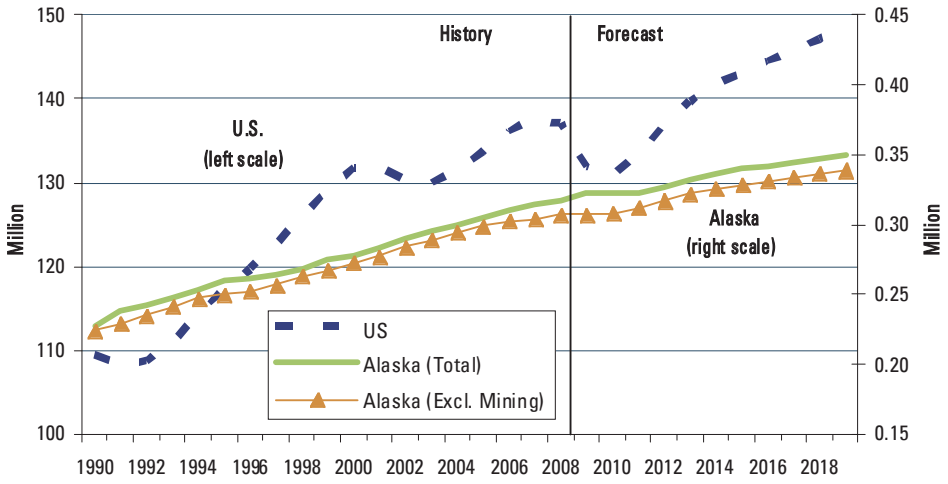
Figure 1. Twenty Years of Comparative Stagnation



Sources: BEA and IHS Global Insight

in output have a more muted impact on employment than in labor intensive industries. Second, sectors with large numbers of workers like travel and tourism have been growing and generating jobs. Third, while prices of the state's commodities are lower than the highs of 2008, they are still at historically high levels. These high price levels are supporting income and employment across the state. In this way Alaska is doing better than the GSP data alone suggests.

Figure 2. Steady, but Lagging, Employment Growth

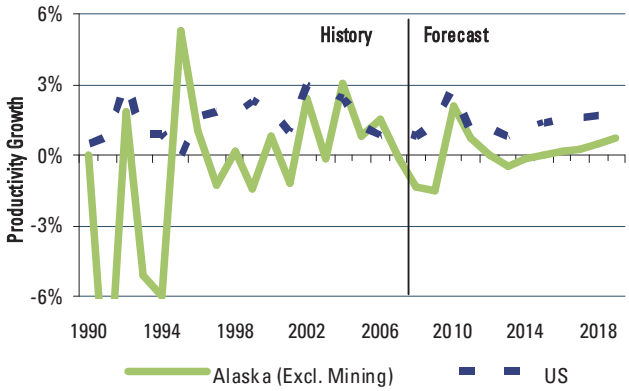


Sources: Bureau of Labor Statistics (BLS) and IHS Global Insight

It's important to notice that per capita income and non-mining labor productivity is lagging. High commodity prices are hiding structural problems and of course commodity prices can quickly become a curse when they start to fall. IHS CERA has published a number of alternative scenarios for world energy markets and not all of these scenarios envision higher prices for crude into the future. The Global Fissures Scenario has West Texas Intermediate (WTI) averaging only about $40 per barrel. In addition there is significant risk that future cutbacks in federal government spending will have a large impact on Alaska.

Figure 3. Future Risk: Lagging Labor Productivity and Oil Price Risk

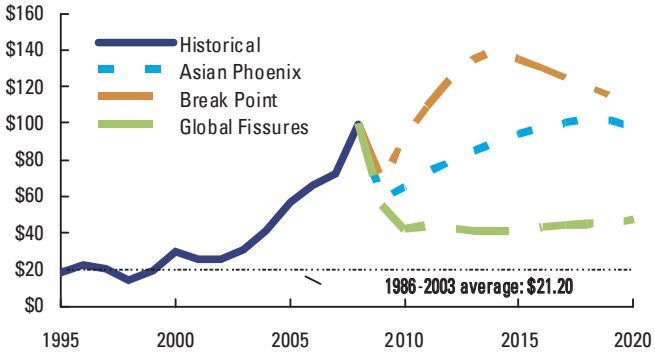
Labor Productivity, Excluding Mining and Oil and Gas



Sources: BEA, BLS and IHS Global Insight

WTI Price Scenarios to 2020

(Nominal US$ per barrel)

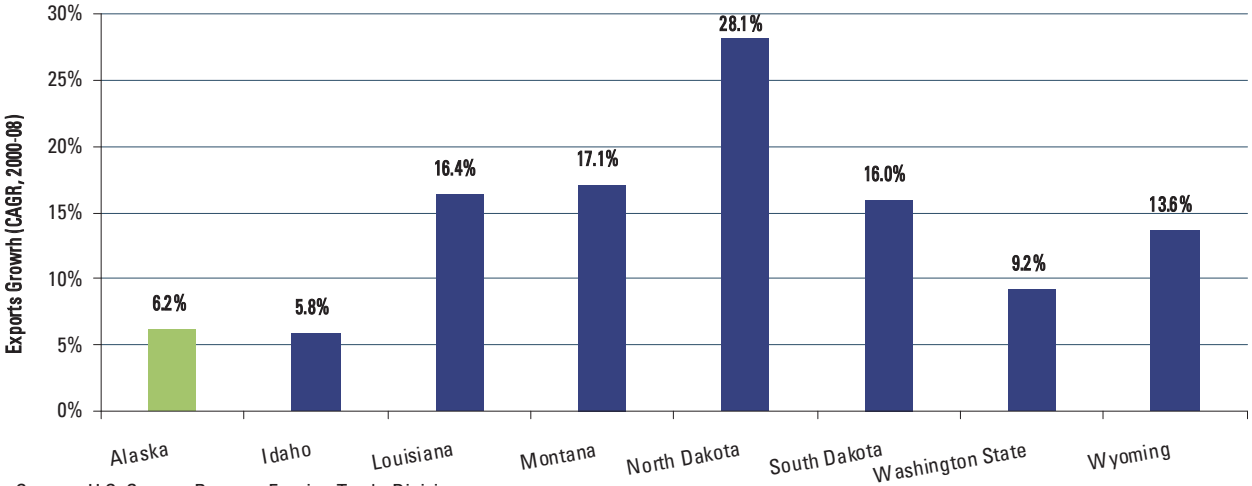


Source: IHS CERA, Global Insight

Global Opportunities

There are many attractive market opportunities around the world for a resource-rich state like Alaska. However, the state is in danger of letting those opportunities go to competing regions around the world. Alaska's trade with the rest of the world expanded at a compounded annual rate of 6.2% over the period from 2000 to 2008. Most of the peer states[2] we selected for this study had considerably stronger export performances.

Figure 4. Export Perfomance of Peer States



Source: U.S. Census Bureau, Foreign Trade Division

Table 1. Top-Five Exports, 2008—Alaska and Peer States

Alaska	Idaho	Louisiana	Montana
Fishing and Seafood Processing (50.6%)	Computer and Electronic Products (58.6%)	Crop Production (37.7%)	Chemical Manufactures (25.3%)
Mining (20.2%)	Processed Foods (9.3%)	Petroleum and Coal Products (23.9%)	Mining (15.8%)
Oil and Gas Extraction (8.6%)	Chemical Manufactures (5.2%)	Chemical Manufactures (16.9%)	Machinery Manufactures (13.3%)
Transportation Equipment (6%)	Paper Products (4.6%)	Processed Foods (8.9%)	Transportation Equipment (10.9%)
Primary Metal Manufactures (4.2%)	Transportation Equipments (4.4%)	Machinery Manufactures (3.0%)	Primary Metal Manufactures (8.2%)
North Dakota	**South Dakota**	**Washington State**	**Wyoming**
Machinery Manufactures (42.7%)	Computer and Electronic Products (30.7%)	Transportation Equipment (41.1%)	Chemical Manufactures (73.1%)
Crop Production (22.1%)	Processed Foods (21.0%)	Crop Production (20.9%)	Oil & Gas Extraction (7.4%)
Transportation Equipment (8.4%)	Machinery Manufactures (15.7%)	Computer and Electronic Products (5.9%)	Machinery Manufactures (6.6%)
Processed Foods (7.9%)	Beverage & Tobacco Products (7.2%)	Processed Foods (4.9%)	Mining (5.4%)
Oil and Gas Extraction (7.5%)	Transportation Equipment (5.7%)	Petroleum and Coal Products (4.9%)	Fabricated Metal Products (1.2%)

Note: number in parenthesis is the share in total exports
Source: U.S. Census Bureau, Foreign Trade Division

[2] The peer states chosen for this study include Idaho, Louisiana, Montana, North and South Dakota, Washington and Wyoming. The criterion used for selecting the peer states is explained in Economic Foundations.

There are many countries around the Pacific Rim that offer export opportunities for Alaska. However, taking advantage of these opportunities will require more of a state-wide approach to focusing on Alaska's position in the global market.

The growth prospects for Alaska's exports depend on the economic outlook for its major trading partners. These are the important end markets for Alaska's exporters. The outlook for certain industry sectors is also important.

Real GDP contracted in most of Alaska's export markets in 2009 however China and South Korea managed to avert a recession. As the world economy recovers from recession demand for Alaska's key exports will revive. The recovery patterns differ significantly across the countries. China will be leading the recovery with real GDP growth forecast of 9.8% for 2010. For Germany and Japan real GDP growth is expected to stay below 2% until 2012.

Table 2. Real Global GDP Growth
(% change)

Alaska's Trading Partners	2009	2010	2011	2012	2012	Real GDP, CAGR 2009-19
Canada	-2.6	2.2	3.4	3.6	3.2	2.7
China	8.5	9.8	8.5	8.6	8.6	8.4
Germany	-4.8	1.5	1.6	1.8	1.9	1.6
Japan	-5.3	1.4	1.3	1.9	2.3	1.5
South Korea	0.1	4.1	3.2	4.3	3.9	3.7
Belgium	-3.2	1.2	1.5	1.5	1.9	1.8
France	-2.3	1.1	1.3	1.7	2.2	1.9
Netherlands	-4.1	1.1	1.2	1.7	1.9	1.7
Portugal	-2.7	0.9	1.1	1.4	2.2	1.7
Switzerland	-1.2	1.5	1.7	1.6	1.8	1.5
Taiwan	3.8	4.4	5.7	5.3	4.7	4.3

Source: IHS Global Insight

Alaska's Clusters

The consulting team has identified 11 industry clusters that can serve as a powerful focus for a new approach to economic development. By developing strategic and tactical action initiatives on expanding and deepening the capabilities, foundations, and linkages within and among its "portfolio" of clusters, Alaska can start down the road of diversification and increased value added.

The clusters that have been identified are

- Fishing and Seafood Processing
- Oil and Gas Extraction / Pipeline / Refinery
- Military
- Mining
- Federal Government

- Tourism
- Logistics and International Trade
- Community and Social Services
- Advanced Business Services
- Specialized Machinery/Capital Goods
- Forestry and Wood Products

The clusters are grouped into four segments based on employment concentration in Alaska compared to the U.S. national average and the estimated dynamism, or growth potential over the next 10 years. This segmentation is an important consideration when formulating strategic economic development policy.

In addition, we found evidence of some unique, technology-based capabilities in the state that can serve as potential future seed clusters or assets to potentially aid the 11 identified clusters. These are: Cold climate technology, Rocket launch technology, Cold climate housing, Specialized super computing capabilities, Distance delivery -- education, medical, and management services, Alternative energy and Clean-energy (bio fuels, clean coal/coal gasification, etc), Specialty solvents, Light aircraft operations and maintenance/navigation, Marine and arctic biological sciences/potential for aquaculture, Remote communications technologies/systems, Aerospace technology/operations, and Naturally grown/grazed food products.

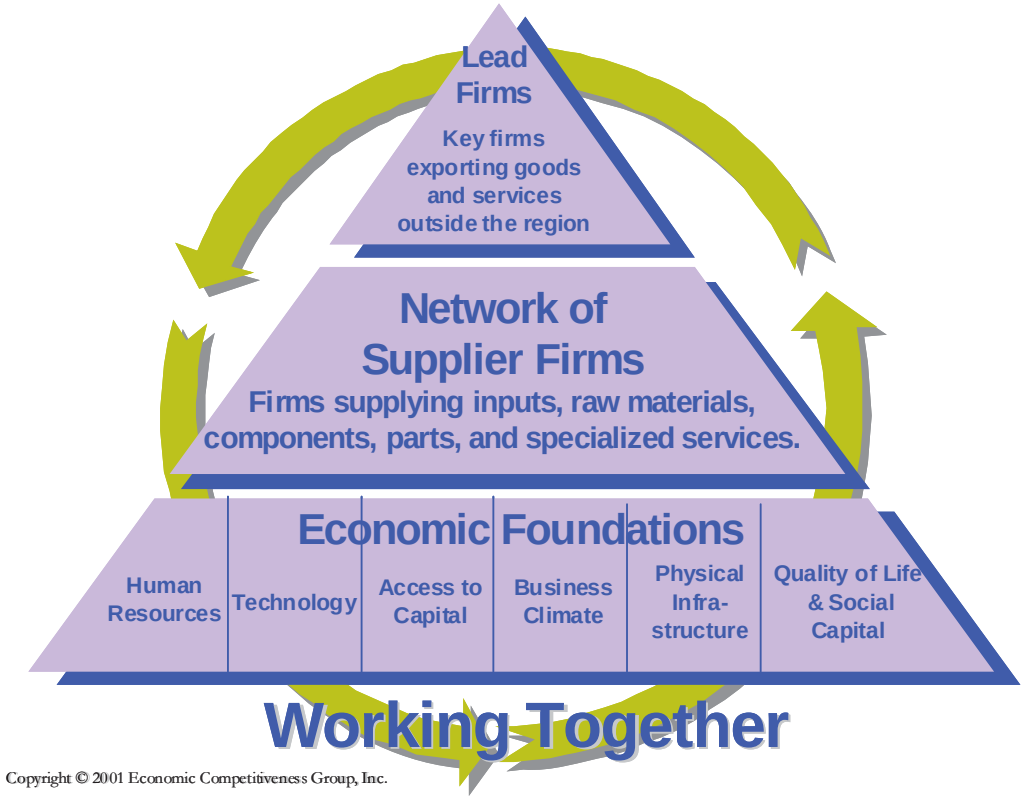
Economic Foundations

Six key economic foundation areas underpin the development of these clusters. A strong foundation is a vital element for cluster development. Alaska's economic foundations are evaluated against a set of peer states including North and South Dakota, Louisiana, Idaho, Montana, Washington and Wyoming. The selection of these states was based on a number of factors that include: (1) population and urban orientation; (2) cluster structure; (3) economic performance; (4) strategy-oriented economic development; and (5) multi-modal transportation issues.

Underpinning every successful cluster are the economic foundations of a region as described here and shown as the base of the pyramid in the cluster diagram below.

- *Human Resources:* an educated and productive workforce.
- *Technology:* the quality of research and development and other sources of innovation.
- *Access to Capital:* the ability of firms in the region to obtain financing.
- *Business Climate:* a competitive business climate; adequate funding for necessary services.
- *Physical Infrastructure:* well-developed, cost-effective and efficient roads, highways, transit, ports, and airports that meet the transit and transportation needs of both workers and business.
- *Quality of Life and Social Capital:* The quality of life a region offers its residents is comprised of many things—many of them intangible. It also consists of what is known as "social capital"—the inter-personal and organizational networks that enhance a region's ability to facilitate transactions and investment due to trust and access to information.

Figure 5. Economic Foundations of a Cluster-Based Economic Development Framework



Relative to the peer regions, Alaska offers a low tax business environment and a high level of quality of life for those that have settled in the state. In addition, the state's workforce is relatively well-educated.

Relative weaknesses of the state are its high secondary school dropout rate and the associated need of its resident workforce for educational remediation for employment. Cluster development would benefit from a tighter linkage between education and industry so that specific occupational skills are targeted. There is also evidence of a relative lack of technological commercialization within the state. Indicators such as per-capita or per-employee R&D spending show an average level of innovative activity. Data on the number of patents registered shows challenges related to the commercialization of new technology within the state. Finally, a poor system of roads and highways is a unique challenge that Alaska faces.

Conclusion: A Path Forward

Alaska's EDOs and approaches to economic development have evolved according to the state's unique characteristics and needs. This report analyzed the current situation from several perspectives. In the first section, we looked at the array of EDOs in the state and provided an outline of their various strategies and objectives. We then looked at the strengths and weaknesses of today's organizational structure and provided comments on the main features of Alaska's approach to economic development. Our findings in these two sections came from a review of past reports as well as from input from informed leaders in interviews and surveys.

From these analyses, we developed six overarching economic development themes for continuing study. Each theme highlights a critical issue for Alaska, ranging from the need for more leadership and coordination of Alaska's economic development infrastructure, to the need for new thinking about how to add more value to Alaska's important natural resource sectors. Finally, we looked at how other

states and regions have addressed similar challenges. There are lessons here for Alaska's leaders that focus on how the state should organize its efforts and work toward a more competitive economy.

The next step in the analytical process was to understand the state and global economic challenges and opportunities and match these with our understanding of the state's clusters and economic foundations. For example, we noted in the Economic Profile section of the report that the slowdown in revenues from the natural resources sectors, notably in oil and gas, has caused real GSP to stagnate since 1998-9 when compared to the national economy. Over the last few years GSP has slipped even further behind the national average and the forecast is for this gap to widen. As a result per capita income has also slipped alarmingly. The forecast is for Alaska to fall well below the national average.

Looking Forward

Our comprehensive approach has lead us to conclude that Alaska's economic future is, at best, cloudy we have identified a few significant risks. Going forward commodity prices might work to the state's advantages and push per-capita income higher. Betting on this outcome however would be unwise. The conclusions of our economic research has been largely confirmed by our recent interviews and surveys. Informed leaders in Alaska know that the state is potentially facing serious economic challenges.

It seems that economic development efforts at the state, regional and local levels need to be stepped up however the basic organizational infrastructure and today's typical economic development objectives and strategies are less than optimal. The state's institutional capacity to address fundamental economic problems, while well intentioned and at times successful with tactical interventions, may not have evolved a shared economic vision among key stakeholders. Stronger and higher-level leadership and coordination is needed in order to make the most of efforts expended.

The area where we see opportunity is largely at the statewide level. We believe that a different overarching approach to economic development is needed, perhaps one driven by a public-private leadership group, with the public sector providing the initial funding and the private sector providing its knowledge of how markets work, where the opportunities for diversification lie and what makes an economy competitive. The approach might be based on contemporary economic development models used in other states (such as Oregon's cluster-based economic development networks or the Puget Sound region's well coordinated Prosperity Partnership and industry working groups to define needed policy initiatives).

With a different policy framework, such as a statewide cluster development and leadership and coordination towards this end, regional and local practitioners would have both an overarching policy framework and the flexibility to implement the policy as local needs dictate. A cluster policy strategy would not only outline the main implementation features and suggest tools for regional and local EDOs, but provide a way of coordinating most of the practices of regional and local economic development agencies. It is important to point out that whatever economic development model Alaska's moves toward in the future it needs to be an "Alaska Model." The state is too atypical in too many ways for a textbook approach to have the desired outcomes.

Moving Forward: Toward What Kind of Economy?

If asked, most people in Alaska would say that the state, fundamentally, has a natural resource economy, and that it always will. Our analysis suggests that Alaskans begin looking at the state's economy in a broader way, as a "*natural resources, PLUS*" economy. Oil, gas, mining, and fishing, along with tourism, will be the most important engines of economic growth for as long as one can see into the future. Economic development policy and practice must continue to focus on making the most of these sectors. But the notion of "*natural resources, PLUS*" means that in the future, Alaska will look to its natural resources as the state's primary economic engines while simultaneously developing emerging sectors (e.g., logistics and trade, advanced business services, specialized machinery) where the state has

comparative advantages. Some attention must also be paid to the pre-clusters, where much more research is needed to better define if these or other "faint signs on the radar" can, with the right policy support, be elevated from "radar blips" to something more. To a great degree, economic development efforts should be shifted from the very difficult task of trying to get more job and revenue impact from the state's natural resources sectors to trying to make the most of the PLUS side of the envisioned new economy.

The country's security equation is changing and these changes are likely to affect both the missions of Alaska's military installations as they shift to respond to changing threats as well as the role and reach of the Department of Homeland Security Coast Guard. Keeping abreast of how agency missions are changing, and are likely to change in the future as well as how federal resources will be spent on military and national security priorities should be a high priority of the state's economic development leaders. Federal funding for national security is not likely to decrease in the near- to mid-term.

Developing the PLUS side of the new economy should be a high priority of APED's Phase 2, Strategy Development. But there is little doubt that new strategies will be needed to address the state's climate for business entrepreneurship. For example, young people in Alaska should learn about small business, the pros and the cons, throughout their formal education. They should have a working knowledge of markets and how investment flows to economic opportunity.

New policies are most likely needed at University of Alaska (UA) to try to move basic research closer to commercialization and to support more applied research. The key roles that the university can play in long-term development strategies include: educating and nurturing the next generation of workers and leaders; conducting applied research that is critical to industrial innovation; engaging in transferring new technology and processes to businesses; conducting policy analysis to inform decision-makers; supporting small business development with skills and information and creating forums for networking and information exchange. To perform these roles well, universities must examine and mitigate policies, procedures and organizational structures that could interfere with their economic development functions. Furthermore they should initiate and align internal incentives so that faculty and staff work toward common development goals. This process must be led from the top and must be ongoing.

Putting in place other features in the state's economic environment should likewise be a priority. For example, Alaska doesn't need to lose its applied research investments, or its graduates to other states. Keeping both in-state might require implementing not only technology commercialization strategies but also complementary "technology capture" strategies that work to keep innovation in-state, within existing firms and in the hands of local entrepreneurs. Fledgling entrepreneurs will need help from the state's EDOs to secure financial resources and other pre-requisites for market success, suggesting in this light at least a review of small business programs and state financing programs designed to help launch small businesses. The range of potential new economic development strategies is wide and deep.

Three Stategic Thrusts

We envision three main strategic thrusts (similar to the three-legged stool[3] suggested by the Institute of Social and Economic Research at the University of Alaska (UAA ISER). The first strategic thrust would be to make the most of the natural resources that have made the state what it is today. Existing priorities will need to be reviewed in the context of economic forecasts and specific tactics will need to be developed to support the strategy of making the most of the state's resource advantages. An essential element of such a strategy would be continued refinement of approaches to natural resource preservation—in which Alaska is already a leader in many respects—so that future generations also derive benefits from those resources.

[3] This is referenced at http://www.alaskaseconomy.org/.

The second strategic thrust would be to work with the federal government in strategic ways to maintain, if not grow, its presence in the state and generate all the public and private sector jobs associated with the government's priorities in Alaska that are possible. While this thrust has been a strategic priority for some time, opportunities noted earlier may exist for new or expanded military and homeland security initiatives as global security threats evolve. Even changes in polar region access can change the military and security calculus, potentially leading to new federal investment in preparedness. Again, specific program tactics will need to be developed to achieve this objective. Keeping track of these opportunities should be a heightened priority of Alaska's Congressional delegation. Put in the context of this initiative, *Alaska Forward: Towards a Next Generation Economy*, elected leaders and their staff should be encouraged to redouble efforts to get inside the decision-making processes of key federal agencies and influence decisions with an aim at securing new jobs and new investment, consistent with broad government needs.

The third strategic thrust would be to create a stronger entrepreneurial climate that is pro-small business. The suggestion is to nurture those that take the risks to create small companies and who most likely live in Alaska because they love it. These business people and entrepreneurs, while present today, are not particularly well-supported with the necessary ingredients for growth-oriented, commercial success. This area is wide open for new, contemporary initiatives designed to achieve the goal of new firms in small population centers. Books have been written on the topic, one published just a few months age titled "Generating Local Wealth, Opportunity and Sustainability through Rural Clusters," by Stewart Rosenfeld of Regional Technology Strategies, Inc. The author is a thought leader on the topic because his work is empirical, years of study of what kinds of firms cluster in less populated regions, and why. Rosenfeld's conclusions regarding cluster development success factors in places with small populations point to the importance of certain community characteristics including social capital trust and connections to urban centers, all of which can be enhanced through policy interventions and new community and economic development practices.

Next Steps

Can Alaska make the necessary changes in policy and practice to build a more diversified and sustainable economy? This report has made the point that when faced with similar challenges, other regions have made difficult decisions and moved in new directions with new thinking, new economic development policies, and new practices.

This report concludes that Alaska's leaders need to begin to address the risk of declining economic resiliency by transitioning from today's approaches to economic development to new approaches, based in part on the best practices of other regions. Bridging from this Situational Assessment to the upcoming Phase 2 Strategy Development work should begin immediately. We recommend the process start as other regions have started their strategic planning efforts. Puget Sound's Prosperity Partnership, for example, moved quickly from its analysis of economic conditions and opportunities to form a new strategic planning-oriented "Alaska Forward Leadership Council."

This group should be comprised of leaders drawn from companies, institutions and organizations across the state. By virtue of their position and visibility, these leaders would command a degree of authority. Involving high level government leaders who have a strong incentive to address the state's economic challenges would bring resources to the effort. Having top level private sector leaders involved would help assure that market-based principles would guide new initiatives and help avoid undesirable focus on grand, "pie in the sky" efforts. Private sector leadership would also bring executive and managerial talent to the task, helping to keep the strategic planning process lean, focused and "business-like."

From this starting point, the leadership group would prepare to launch Phase 2. If the strategy development process has a significant component which is cluster-based, as we suggest, the next step would

be to select specific clusters for priority attention. All the clusters would eventually be given full attention, but the Leadership Council should not try to take on too much at once. Top-level leaders in each cluster would be identified and briefed on their role to help coordinate and lead from their cluster's perspective an 8-10 month-long cluster development strategy effort. The notion is that each cluster would generate a set of cluster-specific priorities aimed at addressing impediments to growth and development. Facilitated discussions would lead to a shared economic vision for each cluster as well as development of a number of policy initiatives, each designed to address an impediment to the cluster's growth. Each initiative would have its own business plan and an "implementation champion" (i.e., ownership) to help take the initiative forward. In addition, a limited number of cross-cutting initiatives and policy recommendations would also emerge from each cluster group, which would be integrated into the broader state-wide strategy.

With the overall plan to move from Phase 1 to Phase 2 laid out, the Leadership Council should consider launching the effort with a high visibility event, perhaps a statewide Economic Summit. Stakeholders from across the state would be invited to a day-long program, hosted by the Leadership Council who would be introduced to the assembled leaders by the chairman. Presentations of the Situation Analysis would be made with the objective of impacting how the audience hears the messages. Questions would be solicited and answers provided by knowledgeable leaders, economists, and other experts.

In this way, Alaska will have kick-started the needed transition from its current approaches to economic development to a more strategic approach, led by leaders from the private and public sector. Similar approaches have been used, in many cases repeatedly making collaborative strategic economic development planning the prevailing practice in many regions. There is no reason that Alaska's leaders can't move in similar ways, evolving a 21st century "Alaska Model" for economic development and start afresh to build a more diverse and more sustainable economy.

INTRODUCTION, OBJECTIVES AND METHODOLOGY

Since statehood, Alaska has evolved its EDOs and approaches to economic development according to the state's unique characteristics and needs. This report analyzes the current situation from several perspectives. In the report's first section, we look at the array of EDOs in the state and comment on the various strategies and objectives of these and other organizations. We comment on the main features of Alaska's approach to economic development then look at the strengths and weaknesses of today's organizational structure. Our findings in these two sections come from a review of past reports as well as input from informed leaders in interviews and surveys. From these analyses, we develop six overarching economic development themes for continuing study. Each theme highlights a critical issue for Alaska, ranging from the need for more top level leadership and coordination over what we refer to as Alaska's economic development infrastructure, to the need for new thinking about how to add more value to Alaska's important natural resource sectors. Finally, we look at how other states and regions have addressed similar challenges and draw potential lessons for Alaska's leaders who must now focus on how best to organize economic development efforts and move the state toward a better performing and more sustainable economy.

The report then looks at the overall economic and competitive context that allows for an assessment of the impact of any deficiencies revealed in the economic development system. The consulting team analyzed Alaska's economy and produced an up-to-date economic profile and analysis of global market opportunities. Another section of this report identifies the state's existing and nascent industry "clusters." Then the analysis proceeds to benchmark Alaska against a set of peer comparator states in several areas we refer to as "economic foundations" (e.g., worker skills, technology, business climate, etc.). This report brings into the overall analysis:

- Alaska's economic history and current approach to economic development
- Existing economic development objectives and strategies
- Strengths and weaknesses of the state's economic development organizations in terms of their ability to provide relevant, coordinated, business development services.
- Conditions in Alaska that foster or impede economic development, entrepreneurial climate and business retention.

To examine these issues, the consulting team completed a data collection approach that included research into the economic development history of the state through a review of relevant reports. The team also obtained a large and varied amount of insight from one-on-one interviews and stakeholder meetings with top leaders in the public and private sector across the state. The team has completed 75 one-on-one interviews.

Overall, our research includes interviews or surveys of three audiences:

1. Economic development organizations,
2. Specific industry and business leaders, and
3. Other interested parties through an on-line survey.

Additionally, the team made presentations to, and took questions from large audiences in group meetings including the State Chamber of Commerce, the Alaska Municipal League and the Resource Development Council. While non-Alaska-based team members were in Anchorage, Fairbanks and Mat-Su, additional information was collected in large and smaller scale meetings with economic development stakeholders, including industry representatives, local government officials, and elected officials.

ANALYSIS OF EXISTING ECONOMIC DEVELOPMENT OBJECTIVES AND STRATEGIES

Key Organizations Responsible for Economic Development: An Overview

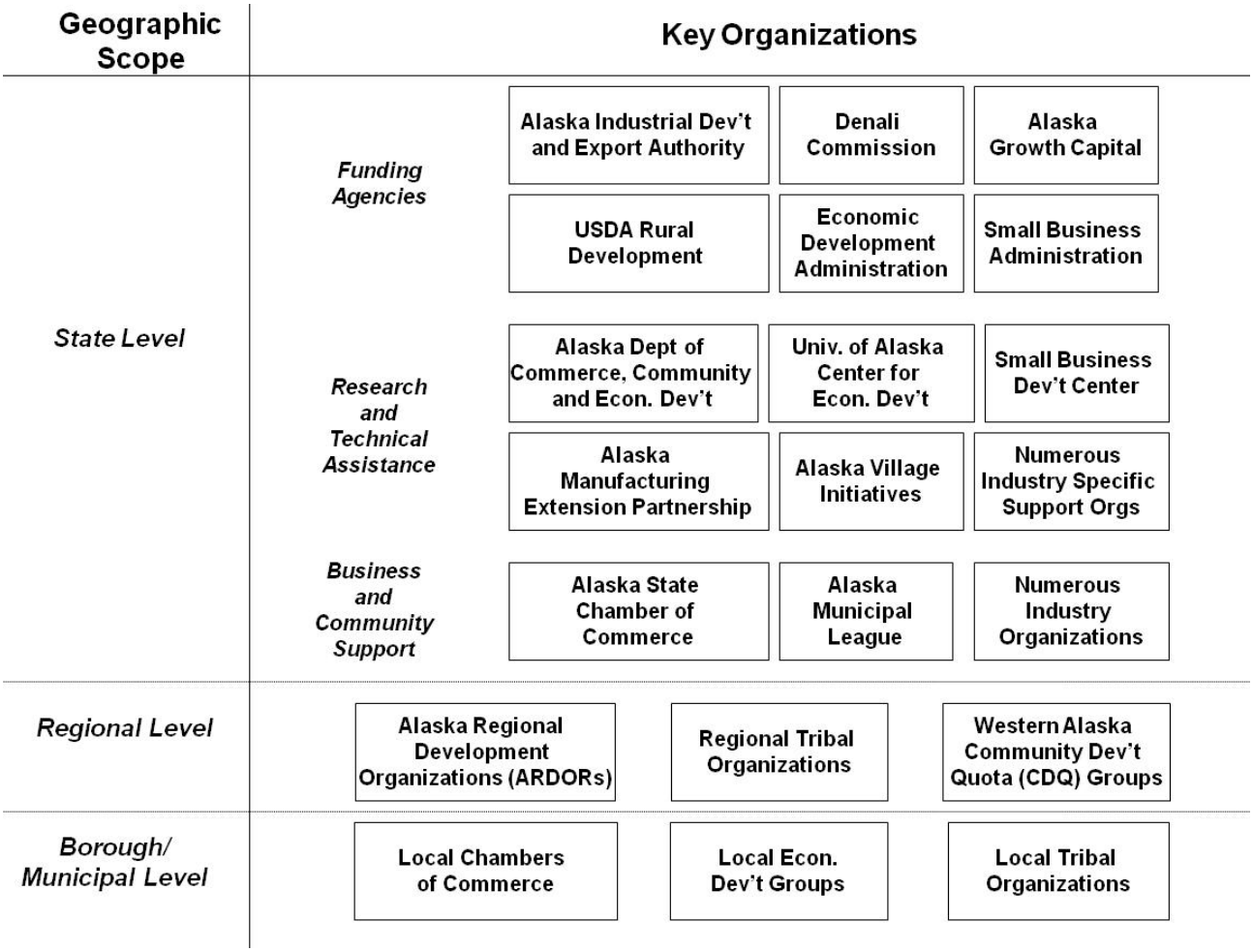
Alaska has a large number of economic development organizations with diverse funding sources, geographic scopes, and approaches to creating economic wealth, retaining and attracting companies and generating new jobs. This section examines the state's economic development "infrastructure." Figure 6 —Key Organizations Responsible for Economic Development—provides an overview, with selected examples, of the variety of organizations whose purpose includes enhancing economic conditions within Alaska. The entries in the figure are clearly not exhaustive. Instead, the purpose here is to show representative examples of economic development organizations (EDOs) and the scope of their work, whether statewide, regional or more sharply focused at the local level. They are also in the figure *to support an important point*: Alaska's organizational infrastructure for economic development is multifaceted with little overarching structure tying the various pieces together.

The figure highlights organizations that are funded at the federal level but have state-level programs such as the U.S. Economic Development Administration, U.S. Department of Agriculture and the U.S. Small Business Administration. We note that the federally-funded Denali Commission has funded the APED project and has funded a broad range of infrastructure projects as part of its broader mandates.

The only state-funded, statewide EDOs are the Alaska Department of Commerce, Community and Economic Development (DCCED) and the Alaska Industrial Development and Export Authority. The latter is a financing entity created with state funds but is now self-supporting. Various divisions within DCCED focus on community and economic development. Within the DCCED is the Office of Economic Development (OED), which is intended as the focal point for state leadership and coordination in economic development. Its mission is broad, including initiatives to support and create jobs across the economy– from forest products to film to fisheries, minerals and tourism. A division within DCCED is the Division of Investments where direct state lending occurs, for example to commercial fishermen for permits and gear and to pilots for avionics upgrades.

The Alaska Industrial Development and Export Authority (AIDEA) is a public corporation of the State, with a mission to "promote, develop and advance economic growth and diversification in Alaska by providing various means of financing and investment." AIDEA provides financing for projects and programs designed to spur economic growth and development. It offers an array of financing programs and holds investments in large projects supported by the government.

Figure 6. Key Organizations Responsible for Economic Development (Examples)



The University of Alaska Center for Economic Development (UACED), while located in Anchorage, serves the entire state. Its mission is to leverage the university's resources to build the capacity of Alaska to engage in sustainable economic development. The UACED is funded, in part, by a grant from the U.S. Department of Commerce, Economic Development Administration. Matching funds are provided by the University of Alaska Anchorage, the Institute of Social and Economic Research and fees for client services. The center provides entrepreneurial focused technical assistance (business planning, feasibility studies, marketing analysis, etc.), conducts applied research, and disseminates information through outreach and economic development courses to support statewide economic development initiatives and providers.

The University of Alaska's Small Business Development Center (SBDC) offers free business counseling by professional staff consultants and volunteers. The SBDC (which receives federal, state and local funding) also offers business training through workshops, seminars and conferences on marketing, loan proposals, record keeping, business plans and other business-related areas. In addition, the SBDC maintains a business library stocked with books, periodicals, videotapes, computers and business software for use by small business owners. Additional programs designed to promote the growth and development of small business offered through the SBDC network include the Procurement Technical Assistance Center (PTAC) which provides assistance with government contracting, Buy Alaska, which works to promote in-state purchase of goods and services via the Buyer-Seller Network, and the Technology Research and Development Center (TREND).

Alaska Growth Capital offers loans backed by guaranteed programs of the SBA and USDA. Loan amounts range from $100,000 to $10 million.

Finally, Alaska is experimenting at the state level with new forms of business assistance. For example, the AKSourceLink network launched in 2009 consists of nonprofit organizations, university programs, and government agencies that provide resources to promote the success of small business. Resource partners include economic development organizations, educators, technical assistance providers, state and federal programs, networking groups, loan providers and others.

In the middle of Table 1, are a much larger number of EDOs whose scope is mainly regional. Included here are the non-governmental Alaska Regional Development Organizations (ARDORs). ARDORs offer technical and other forms of assistance to public and private parties in their area, basically serving as regional economic development service centers. The ARDORs represent Alaska's different regions and bridge, through partnerships, locally driven initiatives with State and Federal initiatives to stimulate economic development and produce healthy, sustainable local economies. The ARDORs are intended to:

- Enable communities to pool their limited resources, and work together on economic development issues, through comprehensive economic development strategies.
- Develop partnerships among public, private and other organizations within their region,
- Offer technical expertise to economic development strategies.

Alaska's unique ANCSA corporations can also be put into this regional category. The mission for many ANCSA Corporations includes economic, social and cultural growth through subsidiaries, foudations and partnerships.

Non-profit tribal organizations also assume some regional economic development responsibilities. This includes organizations such as the Central Council Tlingit Haida Indian Tribes of Alaska (CCTHITA), an organization interested in (among many other things) economic development in Southeast Alaska. The Tanana Chiefs Conference (TCC) plays a similar role in Interior Alaska.

Somewhere between regional and local lie the unique Community Development Quota Groups. Each of the six groups represents a cluster of traditionally fisheries-dependent communities in western Alaska. The groups use a share of the federal fisheries harvest to operate businesses that allow residents of their communities to participate in, and benefit directly from, the groundfish fisheries off their shores.

At the local level are the array of Chambers of Commerce, independent local development organizations and tribal organizations. Chambers of Commerce have the mission of supporting local business interests—an element of any state's economic development mosaic.

Addressing the Challenge: From Decentralized Approaches to a Leadership Model

Alaska's economic development infrastructure is different than that of other states, not surprising given its relatively recent granting of statehood, the large role played by the federal government and the state's mainly resource-based economy. Alaska's unique geography, varying physical environments and cultural diversity are other factors that have brought the EDO "system" to the point we see today.

While Alaska's unique characteristics and huge development challenges may argue for today's organizational infrastructure, many leaders who responded to our surveys and in interviews commented on whether the increasingly cloudy economic picture might suggest different approaches in the future. With the wide variety of organizations, some with potentially overlapping missions and different funding sources and thus outcome expectations, it is understandable that questions arise about statewide leadership and coordination.

We can conclude that in the past a largely decentralized organizational approach made a good deal of sense. The economy was more narrowly based on commercial fishing, oil and other natural resources. But the economy is changing. Newer sectors like tourism are playing a much larger role, while manufacturing and business services are emerging, albeit slowly. In this context, is increasingly clear that Alaska needs a more strategic approach to retain and strengthen its core industries while at the same time develop the much smaller sectors and "pre clusters" identified in the cluster analysis report. From this vantage point, what is needed is a broadly accepted source of leadership, and a coordinated, more systematic and networked array of regional and local economic development organizations where policies meet practice.

Whether or how the state moves to a more focused and coordinated statewide strategy does not necessarily mean abandonment or even serious curtailment of regional and local practices. It may, however, mean evolving a unique and overarching "Alaska Model" for economic development that takes lessons from other states but puts them into practice in ways that recognize Alaska's special circumstances.

Economic Objectives and Strategies

The EDO survey and related research provides a way of looking at the economic development objectives being employed in Alaska. Again, this is just a glimpse because of the wide array of economic development programs and initiatives in the state, but is nevertheless instructive. Table 3—Economic Development Objectives and Example Alaska Strategies—is presented as a framework to further assess Alaska's approaches to economic development against the typical economic development objectives and approaches in most U.S. states. We look at eight typical economic development objectives and some example initiatives used in Alaska.

1. Economic Diversification for Income Stability: Diversification in an economy is desirable for a number of reasons including smoothing out the peaks and valleys and the booms and busts that are possible in any economy as market forces and other factors out of local control impact economic sectors. A diversified economy is desirable as well because diversification minimizes seasonality of economic activity and the resultant fluctuations that affect employment, wage and other local markets.

2. Industrial Attraction: In order to build a diversified regional economy, nearly every state focuses efforts to attract industries that would find competitive advantages in the state. Industrial attraction objectives are achieved by marketing the state's attractions to targeted industries and firms. States generally offer tax or other publicly supported incentives (e.g., special purpose infrastructure) designed to induce firms to relocate from one area to another. In this way, however, industrial attraction strategies are controversial because regions who lose "their" industry to another region that offers a "better deal" often feel taken advantage of. From a national perspective, industrial attraction and targeted marketing can also be seen as "zero sum" in the sense that there is no net growth in jobs or income to the country if companies simply move from one state to another to take advantage of lower costs. Industrial attraction can be viewed as a "race to the bottom," a good example being how the U.S. footwear industry left the northeast for lower costs in the southeast, and then for even lower costs in the Caribbean, then China and now Vietnam.

3. Development of the Workforce: Increasingly, states and regions are focused on job skill training as a way to both attract firms from the outside but also to provide local firms with the competitive advantage of a skilled workforce. Workforce development as a tool for economic development is a win-win proposition, paying dividends to residents, firms and a state's overall economy. The down-

side is that it can take a long time to scale up worker skills and can be costly, as education and training institutions often require new resources for teachers, curricula development and facilities.

4. Technology Commercialization: Most states have reasonably comprehensive programs designed to develop for commercial purposes technology from the labs of land grant universities into the state economy. "Tech transfer" is the process of identifying patentable technologies from the applied research of universities, and systematically providing training in entrepreneurship and management, business plans, capital financing and other resources in order to create small companies whose purpose is to produce and sell the technology product or service. Most states can point to many economic development successes coming from the commercialization of university-based technology.

5. Assistance to Small and Medium Enterprises: It is widely agreed that most jobs are created by small and midsize business, typically firms with 250 or fewer employees. Economic development organizations around the country are assisting small businesses with capital financing, targeted job skill training and other inputs to help them gain stronger footholds in their markets, grow and generate jobs. The key to success in small business formation is having a business culture that nurtures entrepreneurship and effective small business management. While entrepreneurs may be "born not created," there is little doubt that state level public policies and programs have had a positive impact on the growth of small businesses.

6. Improved Business Climate: Businesses, large, small or just starting up, require a supportive tax and regulatory climate to succeed. Economic development organizations can help shape a pro-growth business climate through advocacy and by lobbying legislative bodies for changes in tax policy, permitting processes and other impediments to business formation and growth. Pro-growth policies provide the umbrella under which new business investments are made and efforts to expand or modernize existing businesses can be successful.

7. Reasonable Regulations and Resource Management: An element of a region's business climate is its regulatory environment. Economic development organizations can advocate to agencies and administrations for more efficient processes and for relief from rules and regulations that unnecessarily impede investment, business formation and growth.

8. Improved Logistics and Physical Infrastructure: Successful commerce requires physical facilities, particularly transportation and logistics infrastructure. Many industries have a need for specialized infrastructure such as access to air freight, advanced access to communications and location advantages (e.g., specialized business or industrial parks). Economic development organizations can advocate for roads and highways, for telecom infrastructure and other physical advantages needed by firms to be competitive.

The connection between the objectives based on typical practice in most states (listed in the left-hand column of Table 3) and the example strategies found in Alaska in the right hand column is inferred. No one program or activity raises any particular question. From a strategic standpoint Alaska has focused its economic development resources largely in the more traditional areas, notably economic diversification, infrastructure development, and the like. These efforts are often driven by "big picture" initiatives (e.g., gas pipelines, ANWR exploration). Some attention has historically been paid to developing international business relationships, but mainly with respect to the seafood and forest product industries.

Table 3. Economic Development Objectives and Example Alaska Strategies

Objective	Strategies (Implicit and Explicit) (Initiatives that have tended to receive the most statewide attention and resources in the past are in italics.)
Economic Diversification	• *Small planning grants (mainly for start-up and expansion feasibility studies).* • *Supporting value-added processing (e.g. seafood and wood products; mainly federally funded).* • *Business and industrial investments—Alaska Industrial Development and Export Authority (AIDEA).* • *Proposed gas line (e.g., Alaska Gasline Inducement Act).* • Development of Alaska's cultural resources sector—arts, crafts, cultural tourism [e.g., Alaska Department of Education and Early Development (State Council on the Arts) manages the Silver Hand Program, which authenticates Alaska Native crafts]. • Commercialization of underutilized resources (e.g., proposed gas line, seafood species and byproducts, including shellfish mariculture, farm and meat products, and timber products). • Marketing Alaska [e.g., Alaska Travel Industry Association (ATIA), Alaska Film Office, Alaska Seafood Marketing Institute (ASMI)].
Industrial Attraction	• Practiced regionally by a few ARDORS and some municipalities. • Minor emphasis at the state level (e.g., Alaska Exploration Incentives Tax, feasibility analysis of Foreign Trade Zones).
Development of the Workforce	• *Minimize non-resident employment; maximize job skills of residents through training programs that address demonstrated employer needs such as oilfield services, construction, health services personnel and teachers.* • Workforce development has received substantial attention in many parts of Alaska.
Technology Commercialization	• Focus has been primarily on small-business applications (e.g., University of Alaska Office of Technology Transfer, SBDC's TRENDAlaska and the former Alaska Science and Technology Foundation). • Recent interest in alternative energy may promote new technology.
Assistance to Small and Medium Enterprises	• *Industry-specific research and technical assistance [e.g., Alaska Visitor Statistics Program, Office of Fisheries Development, Office of Tourism Development, ASMI (primarily industry funded), Regional Seafood Marketing Authorities (RSDAs—industry funded)].* • *Financing programs (e.g., AIDEA, DCCED Division of Investments, Alaska Growth Capital BIDCO),* • *Grants to subsidize equipment and industry-specific infrastructure and, occasionally marketing efforts (e.g., fishing, seafood processing, sawmill, agricultural and other equipment - mainly federally funded).* • Web-based networking and technical assistance (e.g., www.AKSourceLink.com). • Support for value-added processing (primarily seafood and wood products (e.g., Wood Certification Program for Alaska species—mainly federally funded). • Technical assistance for urban and rural small businesses (e.g., SBDC (state and federally funded), Alaska Village Initiatives. • CDQ program (i.e., federal program that grants a percentage of Bering Sea and Aleutian Islands commercial fish harvests to six regional development organizations).

Table 3. Economic Development Objectives and Example Alaska Strategies (Continued)

Objective	Strategies (Implicit and Explicit) (Initiatives that have tended to receive the most statewide attention and resources in the past are in italics.)
Improved Business Climate	• *Minimize taxes and regulation.* • Facilitate investor networks (minimal activity in the past, e.g., Alaska InvestNet, Alaska Growth Capital BIDCO). • Facilitate buyer networks (e.g., ASMI, Buy Alaska, World Trade Center Alaska) • Facilitate state procurement by local firms (e.g., Alaska Bidders Preference)
Reasonable Regulation and Resource Management	• *Lobby Congress to allow more private development of federal resources—especially oil, minerals and timber—on federal lands.* • *Manage state-controlled, renewable resources for sustained yield.* • *Exploration incentives.* • Ensure state-imposed business and regulatory costs are reasonable and related to legitimate public interest (e.g., ongoing regulatory review, Small Business Regulations Program).
Improved Logistics & Physical Infrastructure	• *Seek federal funding for major transportation infrastructure such as roads, bridges, airports and ferry system improvements.* • *Seek federal funding (e.g., Denali Commission, EDA) funding for smaller, local infrastructure such as rural diesel generation, fuel storage, medical clinics and some local transportation and other community infrastructure.* • *Quasi-public provision of services [e.g., Alaska Railroad Corporation, Alaska Marine Highway System, Alaska Energy Authority (AEA), Alaska Aerospace Corporation (Kodiak launch facility)].* • *Various AIDEA investments (e.g., Ketchikan Shipyards, Delong Mountain Transportation System, and FEDEX Aircraft Maintenance Facility.)* • Recent: Encourage development of potentially lower-cost, renewable, and alternative energy.

Bold thinking has, of course, been a hallmark of the state's development. The Trans-Alaska Pipeline System (TAPS), Red Dog Mine road and port, and hydroelectric projects in the Southeast have transformed the economy. But long-term transformational initiatives, while clearly visionary, cannot be the only approach at a time when the economy is showing strains.

The question that is not easy to answer is: Has Alaska worked on its economy in a strategic way, or more of a scatter shot way? The purpose of Table 4 and this discussion is to make the case that Alaska's economic development leaders have had no shortage of "big ideas' as well as smaller, more tactical programs. The key question is: *if driven by an informed economic development vision, a more strategic approach, with strong leadership, would Alaska have more to show from its economic development investments and efforts?*

Examples of Past Statewide Economic Development Planning

A review of recent statewide economic planning documents available electronically or in the Alaska State Library identified several reports from the Hickel and Knowles administrations. The only formal document found from the Murkowski administration is *State of Alaska Seafood Economic Strategies*, an industry-specific study by the McDowell Group in 2006.

Table 4. What Is Alaska's Overall Economic Development Strategy

The list below shows a selection of projects that have been referenced in past planning documents as having economic development potential.

- Alaska Science and Technology Foundation (ASTF) - a state-endowed "innovation" loan fund to support research applications by Alaska businesses (e.g., value added processing and fish waste utilization)
- Alaska branding to consumers (e.g., Alaska Seafood Marketing Institute [ASMI].
- Market aerospace and military sites
- Loan guarantee programs
- Business tax credits (to encourage seafood value-added, etc.)
- Establish state fees for federal fisheries
- Public/private partnerships
- Promote "high latitudes" research and collaboration. Market AK as Cold Weather Tech center
- Oil and gas exploration incentives
- Overturn prohibition against crude export
- Support the CDQ program (Community Development Quota)
- Advocate for ITQs (Individual Transferable Quotas)
- Strengthen and restore fish stocks (including moratorium in Bering Sea donut hole)
- Northwest Arctic Coal Transportation Study (for transport of coal to villages)
- Resolve AK Mental Health Land Trust disputes
- Reduce permitting delays and appeals process
- "Future of Agriculture Task Force" 1992
- Stable public/private financing for Alaska Tourism Marketing Council (ATMC)
- Market Alaska as headquarters location for financial and insurance firms
- "Work with" ARDORS, SBDC, Made in AK, and numerous other programs for small business
- Water treatment technologies (ASTF)
- Attract aerospace spin-off industries
- Develop Alaska "Foreign Trade Zones"
- Attract software and semi-conductor firms to Alaska
- Promote additional communications services in Alaska
- Support school-to-work efforts

The older planning documents tend to document lists of development projects and generally lack a strategy framework with which to prioritize them. Many of the projects referenced are region- or industry-specific and lack a statewide rationale.

Two documents from the Knowles administration take a somewhat more analytical approach than the others, but they also avoid posing difficult choices. The first was based on a comprehensive, but not necessarily representative, planning process designed around public/private working groups from the following sectors:

- Cultural resources
- Forest products
- Mining and minerals
- Oil and gas
- Seafood

- Small business
- Technical services
- Tourism

The working group recommendations—entitled *Marketing Alaska, the Governor's Economic Development Initiative 1996*—were similar to those in earlier documents, but somewhat more detailed and analytical about the role of state government. Marketing Alaska identifies a wide range of specific policy and regulatory steps and strategies. The recommendations are too extensive to summarize here.

The second Knowles-era document, in 1997, was facilitated by the Hubert H. Humphrey Institute of Public Affairs and is documented in the report, *Alaska's New Deal: An Economic Development Strategy for Alaska*. In addition to developing a basic overview of Alaska and its economy, the study included location quotient and shift-share analyses that identified several Alaska sectors as having competitive advantage compared to other states. These were:

- All resource extracting and producing industries (export industries)
- Transportation-related industries
- Social service and personal service industries

The report concluded that Alaska did not have an advantage with respect to manufacturing and said manufacturers would need to be "lured" to Alaska.

Alaska's New Deal included seven "visions":[4]

1. Alaska will become a leader in the use of telecommunications technology.
2. Alaska will make land transportation more accessible.
3. Native corporations will provide economic equality for Native Alaskans across the state.
4. Honey buckets will become history.
5. Cost of living in Alaska will steadily decline (through infrastructure investment).
6. Alaska's economy will be diversified and unemployment will drop.
7. The sanctity of the environment will remain intact, while the economy will continue to benefit from natural resource development.

Subsequent action planning addressed three main areas:

- Transportation and telecommunications
    - A public/private Infrastructure Investment Coalition to promote "realistic" infrastructure expansion in transportation and telecommunications.
    - Creation of Regional Telecenters to encourage phone companies to install "backbone" technologies and provide widespread access to teleconferencing.
    - Mechanisms for public subsidy, if needed, to promote backbone infrastructure.
    - Promotion of businesses tied to "remote living" with access to world markets through cutting-edge technology.

[4] The report does not specify, but it appears these visions were developed at a State Economic Development Workshop.

- Economic diversification
  - Natural resources—for example, through long-term policies, active marketing and low-interest financing.
  - Aerospace—location marketing, business attraction, and University of Alaska partnerships.
  - Tourism—help rural operations, assist with infrastructure and marketing, and loosen land controls.
  - Native corporations—encourage information sharing and cooperation between them and the State.
- Quality of life
  - Increase home ownership.
  - Provide financial support for water and sewer systems.
  - Increase educational attainment.
  - Increase the supply and quality of healthcare.
  - Reduce crime.
  - Resolve differences among sport, subsistence and commercial harvesters.

Alaska's New Deal represents the most recent formal statement of statewide economic development goals and priorities identified.

Conclusions and Issues for Strategy Development

Why have Alaska's previous statewide economic development efforts come up short? Probably the most important reason is that implementation planning was not part of the process. Other probable reasons include

- Lack of overarching (across industry) leadership or ownership of the planning effort,
- Lack of resources to support next-steps in the planning and implementation process, and
- Shifting political priorities.

Alaska has no shortage of economic development organizations and institutions nor has it come up short with its historical array of large and smaller scale economic development activities. But too many of the state's past efforts to analyze economic development issues have focused more on problems than on viable, longer term solutions. The result has been tactical shifts in policy and practice to address specific needs rather than higher level, strategic efforts to address broad weaknesses in the economy. Indeed, few would be able to credibly argue today that Alaska has a coherent economic development strategy.

Put this in context with the upcoming profile of the state's economy that makes the case that the state's economic picture, especially looking forward, is clouded by higher risk and a key question arises. Should the spending and array of programs of the past simply continue, or is broad new thinking required about the economy and how it should be developed? If the answer to the question is that new thinking and new approaches are necessary, then the state's organizational approach to economic development and the strategies and tactics used need to be more cohesive, more part of an overarching economic vision, with strong leadership from the top, improved staff capacity and much more coordination within and among the economic development organizations throughout the state that operate where policy meets practice.

For all the reasons mentioned in this report, building a more diverse economy better able to meet the longer-term needs of the state is clearly a tough order for Alaska's EDOs. Yet from this review, we must conclude that the state's institutional capacity to address fundamental economic problems, while well intentioned and at times successful with tactical interventions, may lack the overarching vision and higher-level leadership and coordination needed to make the most of efforts expended.

Assessment of Strengths and Weaknesses of the State's Economic Development Organizations

Survey Results

Three research components were designed to obtain information about the baseline status of Alaska's economic development efforts. These are:

- Approximately 50 interviews with individuals who represent organizations engaged in economic development, or development-related activities (EDOs)
- Approximately 25 interviews with individuals who represent associations or other organizations that represent Alaska's major industries
- A web-based survey available to any interested parties and the general public. This survey was designed to accept a wide variety of input.

The three research components were selected to provide a broad range of perspectives. However, the reader should note that none of the three is based on statistical (random) sampling. The degree to which results reflect, or diverge from, those of all Alaska economic development professionals, industry associations, or the general public therefore cannot be calculated.

The interview process was designed to examine a broad spectrum of activities and perspectives. It is an exploratory outreach to help identify 1) the full range of barriers to development faced by Alaska, and 2) the major development ideas, strategies and activities currently being pursued. The interviews also asked about new development possibilities.

The interview and survey tasks focused on complex issues. The reader interested in all the information developed in this work should review the companion survey results appendix material.

Economic Development Organization Interviews

More than 50 interviews were conducted with people who represent a wide variety of economic development organizations including the following:

- Alaska Regional Development Organizations (ARDORs)
- State agencies
- Municipal officials
- Tribal organizations
- Labor organizations
- Private consultants
- Federal development programs
- Post-secondary educational institutions
- Community Development Quota groups

- Organizations that promote discussion and analysis of economic issues

Summary of Major Themes

Respondents were generally optimistic about the future of Alaska. There was, though, a general feeling of frustration at what is perceived as a lack of leadership and coordination of economic development resources. Some believe that the State of Alaska should provide the leadership. Others believe that the private sector needs to do more. A few said the State is not supportive of rural Alaska needs.

What are the greatest opportunities for economic development?

Natural resources, especially oil and gas, tourism, and fishing, were the most common responses. Others included education (for example, expand community colleges and research at the University of Alaska), technology, renewable energy, transportation and Alaska's strategic location, development of small businesses and entrepreneurship, mining, arctic engineering and architecture, the film Industry, aerospace, military expansion, value-added processing, mariculture, healthcare services, timber, retail, port expansions. Small business development was seen as especially important for rural Alaska.

What are the greatest barriers to economic growth?

Most of those interviewed mentioned high costs of transportation, shipping and energy. Also mentioned was lack of leadership and vision at high levels in business and public policy. Respondents felt there was no coordinated plan for development efforts in Alaska.

Other responses include the following:

- Alaska's entrepreneurial spirit is not well-developed, especially in bush communities where the subsistence lifestyle remains a mainstay
- Lack of educational opportunities and training for small business startups
- Lack of financing for major projects and lack of business capital in general
- Vast distances and geographic isolation along with small population centers and severe climate
- Lack of available land for development
- Inadequate public infrastructure to support businesses
- Gaps in workforce training
- Gaps in communications and other technology (for example, internet services in some areas)
- High cost of living, especially in rural communities, and the high cost of doing business in general.

Respondents were then asked to rate16 potential barriers to economic development. A rating of 1 meant "not at all a barrier," and a rating of 10 meant "a significant barrier." Since each of the 16 barriers received at least one rating of "1" and at least one rating of "10," it is clear that different disciplines and geographic locations result in different perspectives. It should be kept in mind that the sample is not random and specific priorities vary from region to region and industry to industry.

The barriers with the highest ratings (6.7 to 6.9) included transportation links with markets and suppliers, energy costs and federal regulations. A large group of barriers received moderate ratings (4.3 to 5.9). These are access to capital, state regulations, availability of professional/technical workforce, availability of economic development incentives, technology competitiveness, local regulations, cost of business property, telecommunications infrastructure, availability of semi-skilled workers, and job-readiness of entry-level workforce. The two factors with the lowest ratings (3.2 to 3.3) were quality of life and local taxes. The latter is understandable, since taxes in Alaska tend to be low compared to other states.

The quality of life rating is interesting from the perspective of attracting new business and industry, since quality of life in Alaska is different, or perceived as different, from what many Americans and others are used to.

Looking 25 years out, what are the best opportunities for diversifying Alaska's economy beyond resource extraction?

Longer term opportunities identified included tourism; transportation (Alaska as a hub for the world); technology (IT, Arctic climates technology, software development, fiber optics, call centers); education and vocational training; manufacturing; shipping (for example in the Bering Sea and Northwest Passage); energy innovation; telecommunications; commercial fishing; the film industry; university research; alternative energy (wind, solar, tidal, and hydro); value- added processing and services, and small business development.

How confident are you that Alaska will be able to compete globally over the next 25 years?

Answers overall were positive, in part, respondents said, because Alaska has resources that the rest of the world values. Respondents also said that to develop Alaska's resources, political and economic challenges must be addressed. Here, again, respondents cited lack of statewide planning, lack of information on how to implement economic development, lack of cooperation among the various agencies and economic development organizations, and a lack of leadership. Several respondents said the ANCSA corporations are one key to future development.

What is the focus of your organization's current economic development efforts, and how effective are they?

Respondents said they use a number of different strategies to greater or lesser extent. These include:

- Support for infrastructure development
- Local or regional marketing
- Community and economic development grants
- Industry/business attraction
- Workforce development
- Small business assistance
- Other strategies—Respondents listed many other activities, including education, advocacy, renewable energy projects, technical assistance, and general networking.

All the areas above receive some attention from EDOs. The amount varies widely depending on the type of organization and its geographic orientation. The greatest percentage of overall EDO effort is directed at workforce development, industry/business attraction, and support for infrastructure development, according to the interview results.

Asked to rate how effective their organizations are at individual strategies, respondents gave the highest ratings to specific projects that fall into the "other" category above. Taken as a group, respondents said they were most effective at writing economic development grant proposals and workforce development and least effective at industry/business attraction and technology commercialization. They rated all the major strategies listed as moderately effective.

Who do Economic Development Organizations partner with?

The variety of answers to this question offers a sense of the wide and challenging scope of Alaska development efforts. Organizations cited by respondents include, in no particular order:

> U.S. Economic Development Administration; Denali Commission; U.S. Housing and Urban Development (HUD); U.S. Small Business Administration (SBA); University of Alaska; local economic development councils, corporations; convention and visitors bureaus; the ARDORs; USDA Forest Service; various State of Alaska agencies; Indian Health Service; Rasmuson Foundation; Foraker Group; regional housing authorities; mortgage lenders; community development finance institutions (CDFIs); municipal and tribal governments; regional and village Native corporations; regional and village Native nonprofits; various workforce training programs; Resource Development Council; Alaska Energy Authority; chambers of commerce; Alaska Railroad Corporation; Port of Anchorage; school districts; airports; Alaska Natural Gas Development Authority; mining companies; community colleges; UAF's Fisheries Technical Center at Kodiak; CDQ groups; U.S. Coast Guard; various industry associations; Associated General Contractors of Alaska; labor unions; business leaders; Federal Emergency Management Agency (FEMA); Environmental Protection Agency (EPA); Army Corps of Engineers, and the U.S. Congress.

A complete list of the organizations that comprise Alaska's statewide economic development network would be even larger. The range of EDO partnership efforts underscores the frustration of many interviewees who commented on a sense of poor coordination of economic development activities.

What additional resources are needed?

The most common needs among EDOs are, not surprisingly, money and staff time. More specifically, respondents said they needed funding for program grants, bringing state personnel to rural areas, getting information out, travel money, and planning and analysis.

Sample Comments

When asked for any additional comments, EDO respondents made a variety of observations. Those below are not to be interpreted as study conclusions. Rather, they represent some of the more common themes and frustrations that were expressed.

- Government cannot drive economic development for the State of Alaska. Opportunities should be developed in the private sector and then have government support.
- It is important to continue the dialog among state, federal, land local entities. Be realistic about what to pursue and do not let egos get in the way.
- For a state of our population size, we are wealthy. Much wealth has been developed, but we need to do a better job of retaining that money in the state.
- The State of Alaska has been a non-player with respect to industry recruitment and foreign and domestic investment. Need the State to be active partner.
- The challenge is to move projects forward. There are too many steps, feasibility studies, etc. Permitting process takes too long.
- Need more coordination of resources. People do not work together.
- The State isn't supportive of rural Alaska. Flying people out to villages does not accomplish anything.
- Workforce development is key. Grants are funded but there is a shortage of trained people to do the work.

- Workforce and economic development work hand in hand. Economies in rural Alaska are mixed between cash and subsistence with a cash economy not always seen as valuable.
- The biggest challenge is finding good employees in-state—to hire Alaskans rather than "importing" workers.

Industry Association Interviews

Structured interviews were conducted with individuals from approximately 25 associations or other organizations that represent Alaska business interests.

Summary of Major Themes

Opinions about Alaska's current business climate and the outlook for economic growth ranged from positive to uncertain to negative. As with the EDO representatives, many respondents said there is a lack of leadership and coordination of resources.

What are the greatest opportunities for growth in your industry?

Whereas EDO respondents were asked about opportunities for Alaska in general, industry representatives were asked to address their own industries. Many said Alaska should expand its natural resource development, for example mining, outer continental shelf (OCS), other oil and gas (e.g., ANWR, Chukchi Sea and gas line), and fishing. Other opportunities cited include tourism (and ecotourism), Anchorage as a transportation hub, the military presence in Alaska, and exploiting the increasingly ice-free Northwest Passage for freight transportation.

Other responses include biomass and bio-energy development; timber harvesting; carbon trading; aerospace (for example, rapid response and medium-lift launches); encouraging innovative entrepreneurs; training more youth in the construction trades; technology (such as putting fiber optic cable in rural Alaska communities); construction of the Point MacKenzie Bridge (to open up land near Anchorage); building housing and rental housing (to accommodate workforce and create jobs); Native arts and crafts; off-site and remote participation in high-tech jobs; and developing more jobs in the health care industry.

What are the specific barriers to growth in your industry?

Most often mentioned were lack of infrastructure and road access; the high costs of transportation and energy; and lack of coordination and planning by the State. Some respondents said there is an anti-business climate in Alaska.

Other responses include education and recruitment of labor; environmental groups (and the Endangered Species Act); federal taxes, laws, regulations and public policy; capitalization; lack of state incentives or recognition of possible economic growth sectors; zoning laws in the Municipality of Anchorage; litigation and permitting; and difficulty obtaining construction loans or mortgages.

Sample Comments

Again, these comments are only examples and should not be interpreted as study conclusions. Instead, they represent some of the more common themes discussed above.

- The State needs to take a leadership position in economic development. There is no statewide development plan, no vision, no direction to follow and too many silos.
- The State should have an office of economic development that identifies opportunities and obstacles and that proactively engages with communities and helps bring opportunities to fruition.
- The State should pay for strategic infrastructure so development will follow.

- For economic development, people need to take calculated risks but the public sector does not reward risk. Be aggressive and targeted.

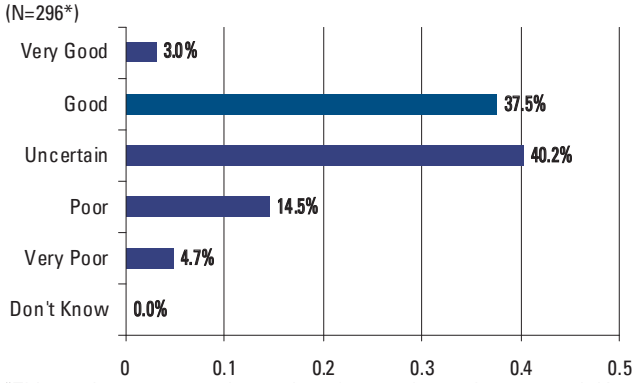
Web Survey Results

This section presents partial results from a web survey designed to gather input from business and community leaders. As of survey closing approximately 300 people had logged on and answered some or all of the questions. The sample is self-selected, so the degree to which responses are representative of the population of Alaska as a whole cannot be specified.

Respondents expressed considerable uncertainty about Alaska's economic future in the short term. While many more said they think the outlook over the next two years is good compared to those who think it is poor, the largest group, 40%, said they are uncertain.

Figure 7. How Do You View the Economic Outlook for Alaska Over the Next Two Years?

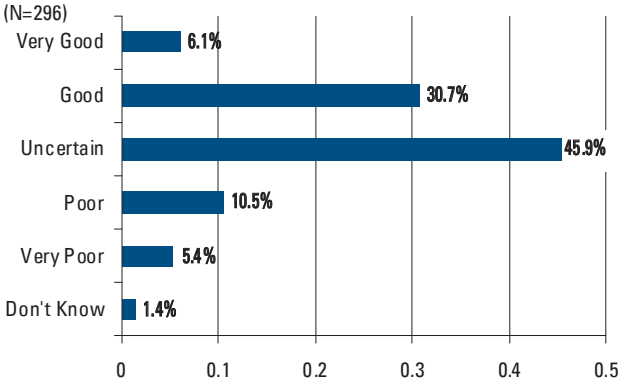
(N=296*)



*This number represents the number of respondents who answered this question.

Figure 8. How Do You View the Economic Outlook for Alaska Over the Next 10 Years?

(N=296)



Opinions about the longer term were more positive than negative, but again the dominant response was uncertainty.

Attitudes about the current business climate are similar to those about the future, above. Even when considering the business climate today, one-third of respondents aren't sure whether it is good or poor. The fact that respondents answered "uncertain" rather than "don't know," suggests that they are truly unable to decide what the information available to them means.

Figure 9. How Do You View the Overall Business Climate in Alaska?

(N=296)

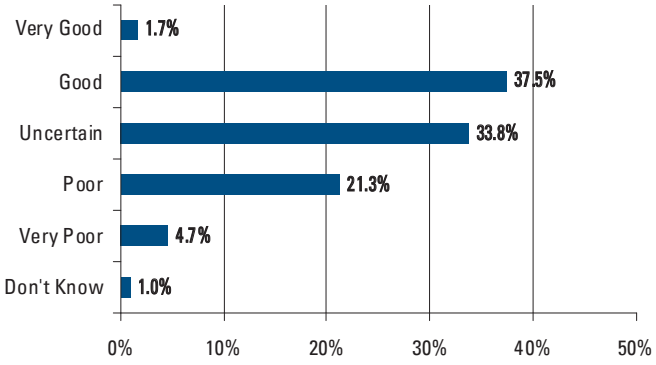


Figure 10. How Would you Rate the Effectiveness of Economic Development Efforts in Alaska?

(N=240)

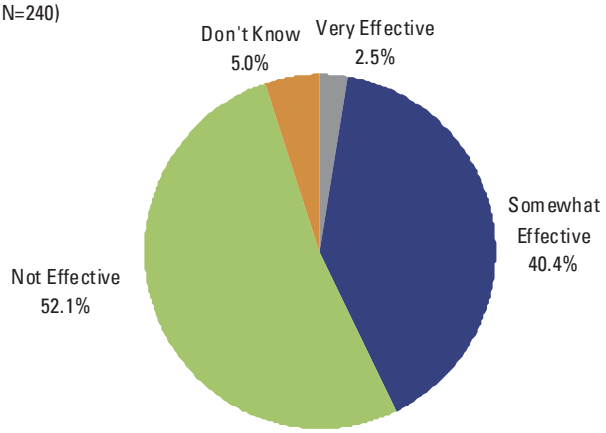
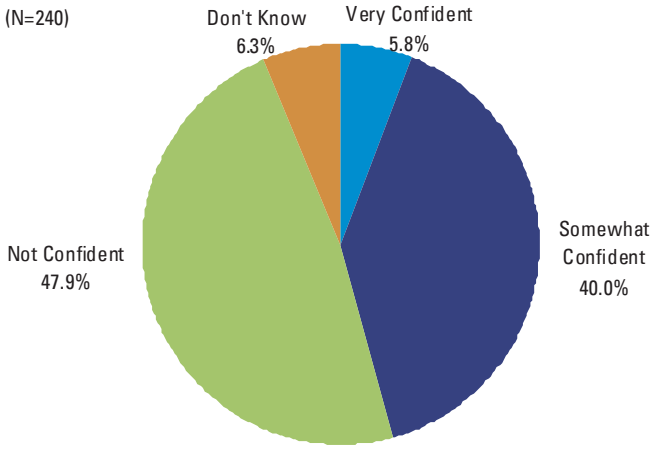


Figure 11. How Confident Are You in Alaska's Ability to Compete Globally?

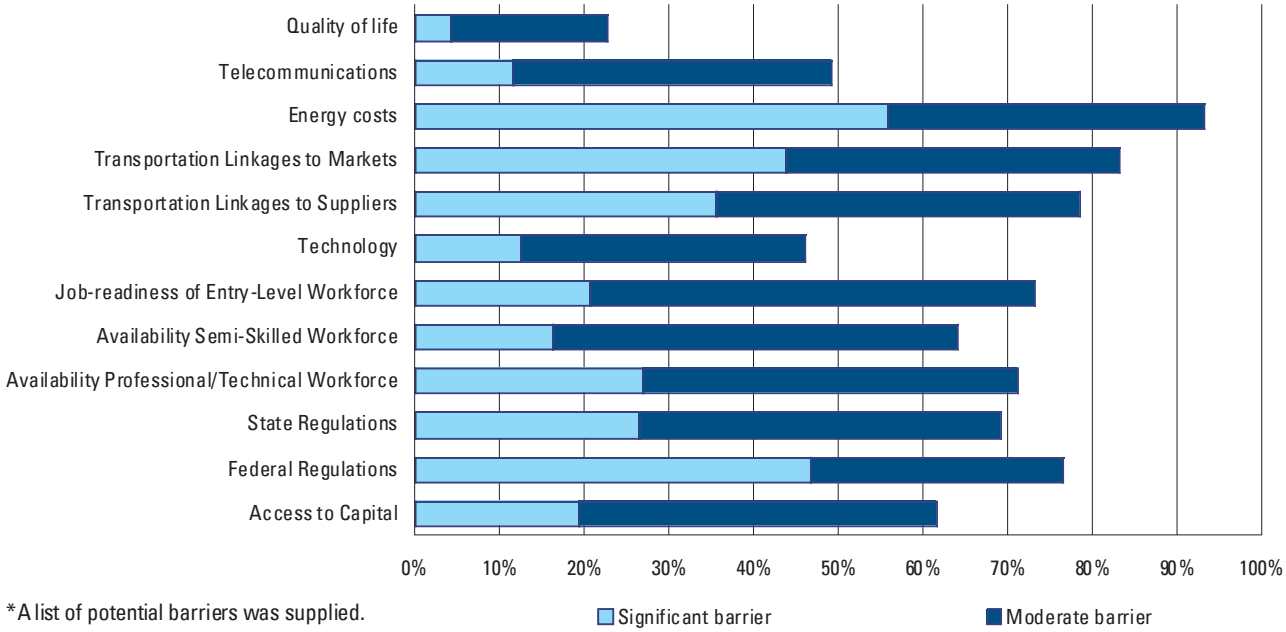


Web-survey respondents were split on the effectiveness of current and past economic development efforts in Alaska, with a small majority saying that efforts were not effective.

Respondents attitudes toward Alaska's ability to compete globally were similar to those about the effectiveness of the state's development efforts. Less than 6% said they were very confident of the state's ability, a sentiment that echoes the uncertainty expressed in the earlier questions.

Energy costs and transportation links are seen as the biggest barriers to development by survey respondents. Federal and state regulations are viewed as significant barriers while workforce capacities are viewed as moderate barriers. Al-

Figure 12. How Significant Are the Following Barriers* to Economic Development in Alaska?



*A list of potential barriers was supplied.

though many firms have difficulty attracting workers from outside Alaska, quality of life is seen as a moderate, not a significant barrier by most respondents.

Conclusions and Common Themes

Alaska EDOs operate in an extreme environment. Alaska is a relatively new state that is remote from other business or industrial regions and has under-developed infrastructure, high energy and labor costs, and severe geographic and climate conditions.

Large-scale development of publicly owned resources has been a dominant theme in the Alaska economy. This includes seafood harvesting, mining, timber harvesting, oil exploration and, most recently, large-scale tourism. Alaska's economic development efforts have evolved, in part, around how to minimize regulatory restrictions and how to siphon off local benefits from these large, externally driven industries.

Government funding of local services, particularly rural healthcare and local and tribal government is another dominant theme. Federal funding has the greatest impact, but state employment is also very significant.

Alaska has established a workforce training infrastructure, but some question whether the types of training available are strategically targeted to support development. Although many say that consolidation of the Alaska community colleges within the University of Alaska in the 1980s was a setback to vocational education, workforce training efforts are now wide-spread. Training typically has focused on replacing imported labor with resident labor in existing industries. Critics say that training gaps include higher level technical and professional education. Other criticisms are that entry-level workers lack basic reading and math skills and what are often referred to as "soft skills" or "work ethic" by employers.[5]

There is a lack of state-wide planning, leadership and coordination. Although Alaska has a large number and variety of economic development entities, their focus is local or regional, rather than statewide, and this limits effectiveness.

Alaska has a wide diversity of economic interests that must be aligned for major development efforts to succeed. For example, the large oil and gas producers and the largest seafood and shipping companies are multi-national corporations for which Alaska is only one of a portfolio of operating venues.

Implications for Alaska EDOs

Within the environment described above, Alaska EDOs typically:

- Have small staffs and uncertain funding.
- Have limited established networks with other EDOs, federal and state economic development programs, businesses, or the University of Alaska. However, there has been some recent progress in this area.
- Can find themselves overwhelmed by the sheer size and number of challenges they face. For example, EDOs are largely unequipped to have an impact on natural resource development.
- Have often focused on infrastructure projects because basic issues like transportation and energy cost seem to preclude more typical business development efforts.
- Feel the State should provide more strategic direction and targeted or associated resources for economic development.
- Have a hard time attracting enough resources (of all kinds) to have a statewide impact.
- Have been frustrated by the financial, regulatory and practical barriers to developing projects, especially larger ones.
- Have been frustrated by what many consider an over-reliance by Alaskans in general on government, rather than business, to take the lead in economic development.
- Have had success in helping to foster workforce development programs.
- Have had some success working with the oil, mining and seafood industries (primarily) to maximize employment and other benefits to Alaskans.
- Have had limited success at fostering in-state value-added industries, either for purposes of export or for import-substitution.

[5] These criticisms are typical of feedback obtained during workforce assessments and training program evaluations performed by McDowell Group.

Key Strengths and Challenges of Existing Organizations

The research reported in the previous section suggests that the effectiveness of Alaska's EDOs is subject to six overarching issues. In the section that follows, the report addresses the major strengths and challenges of Alaska's EDOs with respect to each issue.

Need for Leadership and Coordination

Lack of high-level leadership and coordination was among the most-cited challenge facing Alaska's development efforts. While a few organizations have created or facilitated venues where EDO leaders meet for informal discussions on topics of mutual interest (e.g., Commonwealth North, Institute of the North, the University of Alaska Center for Economic Development and a few entities focused on specific industries), there is no organization or mechanism providing overall leadership, direction and coordination to the universe of EDOs (other than the emerging Alaska Partnership for Economic Development). This leaves local, regional and statewide efforts fragmented and potentially contradictory.

Strengths

- Some EDOs, in particular Southeast Conference and the Southwest Alaska Municipal Conference (SWAMC), have developed regional models for planning and development initiatives. Other, more locally focused models include the Anchorage Economic Development Corporation, Juneau Economic Development Corporation, and the Fairbanks Economic Development Corporation.
    - Alaska's EDOs operate within an extensive and complex framework of public, private and nonprofit institutions with relevant expertise, networks and other resources. For example:
    - Community development organizations such as the Denali Commission have helped improve the capacity of Alaska communities and regions to participate in formal planning.
    - Alaska's regional health organizations have institutionalized an important body of talent, knowledge, and relationships, especially in rural Alaska, that could be leveraged for development initiatives. The regional housing authorities are not as large or uniform in this regard, but bring some similar assets.
    - The ANCSA corporations, as a group, represent the largest set of Alaskan-controlled private assets and business expertise in the state.

Challenges

- Federal agencies such as the Economic Development Administration, USDA Rural Development and the Small Business Administration, provide most of the resources for economic development in Alaska. However, these agencies have primary responsibility to a national agenda that may not be aligned with Alaska priorities.
- Though local and regional planning has increased, efforts to ensure that planning efforts are consistent with one another are not yet formalized.
- Like the EDO sector, the private sector, especially outside Anchorage, consists mainly of very small firms and is constrained in its access to business expertise and resources. For example, private industry in Alaska spent only $32 million on R&D in 2005 and contributed only 12% of total R&D spending in the state, according to the National Science Foundation and the Bureau of Economic Analysis. This is very low compared to the national average (70%) and most other states.
- Alaska has a great diversity of economic and geographic interests that must be aligned for major development efforts to succeed. Local, state, federal and private sector interests are as multifaceted as the landscape.

- The major private corporations doing business in Alaska, though they engage in a wide variety of community and charitable activities, have had minimal participation in efforts to develop comprehensive strategies for the state's economic health.
- EDOs have uncertain funding and are thinly staffed. Only Anchorage has a significant mass of local economic development organizations. State funding for EDOs is minimal. At the same time, the geographic and operational challenges facing EDOs are immense.

Need for Explicit Goals and Strategies

Economic development is an incremental process that requires long-term consistency and commitment. Explicit goals and strategies are necessary to sustain initiatives through shifts in political and other leadership and allow progress to be documented. Strategies allow orderly periodic reassessment of tactics and priorities.

Strengths

- The amount and quality of strategic planning at the local and regional levels has increased substantially over the past decade, largely in response to federal and Denali Commission requirements. The state's overall planning skills are improving, but are by no means fully developed.
- The Alaska Constitution provides guidance on the goals of resource management.

Challenges

- A significant barrier to forming and carrying out strategies consistent with Alaska's constitution is inadequate data and weak analytical capacity for estimating the impact of strategy options. For example, a study for the Murkowski Administration found that lack of data and analytical capacity is a significant barrier to managing state fisheries for the "maximum benefit of (Alaska's) people," as required by the Alaska Constitution.[6]
- Efforts to define formal development strategies at the state level in the past typically have not done a thorough job of prioritizing and funding actionable options. This has tended to result in long lists of activities and potential programs that are either vaguely defined or hopelessly under-resourced.

Need to Integrate Short-Term and Long-Term Initiatives

Economic development is a long-term undertaking, but funding and local priorities tend to be driven by short-term needs. Alaska's diverse communities and regions need the continuity of long-term initiatives in order to develop short and mid-term strategies that build mass and momentum.

Strengths

- One advantage of the state's large number and diversity of EDOs, is that in sum they have experience with a wide variety of strategies and initiatives for maximizing local and regional benefits from economic activity. Long-term planning could draw on that body of knowledge.

Challenges

- Lack of long-term planning at the state level means there is little strategic guidance to local and regional planners about where to look for future opportunities.

[6] Draft Report: *State of Alaska Seafood Economic Strategies*, McDowell Group, December 2006.

Challenges of Geographic Isolation

EDOs have no choice but to try to address the fact that geography and climate define much of Alaska's development potential. Transportation was identified as one of the state's most significant barriers in both EDO and industry interviews. However, it is impossible for EDOs to effectively address enormous challenges such as transportation infrastructure alone. Further, the process needed to design, approve and construct major transportation projects can leave industries paralyzed by uncertainty for decades.

Strengths

- Alaska's location, though isolated from the rest of the U.S. has strategic shipping, scientific, military and other advantages.

Challenges

- Alaska's climate and relatively high energy and transportation costs create an enormous challenge for EDOs whose options for practical strategies and initiatives are thereby limited.
- Alaska has a history of large-scale development, and sometimes exploitation, of publicly owned resources—salmon harvesting, mining, timber harvesting, and oil—by non-Alaskan interests. The state is often characterized as having a "colonial" relationship with such firms in that capital and expertise typically have been controlled by entities outside the state.

Challenges of Supporting and Adding Value to Existing Industries

Import substitution, value-added processing, and support services have been widely recognized as key to Alaskans reaping more of the benefits of in-state development. Some firms have had success developing support services for major industries such as oil, mining, and seafood, particularly where Alaska's climate and geography have created unique challenges that out-of-state firms are less accustomed to solving. In-state processing and manufacturing to add value and displace imported goods have proven more difficult.

Strengths

- Existing workforce training infrastructure offers a foundation for future strategies. In addition to many training programs available through the university system and union- and contractor-affiliated organizations such as AlaskaWorks Partnership and Associated Builders and Contractors, Alaska also has several regional training facilities. Prominent among them is the Alaska Vocational and Technical Center operated by the Department of Labor and Workforce Development in Seward and Anchorage. Others include the Alaska Technical Center sponsored by the Northwest Arctic Borough School District in Kotzebue, Yuut Elitnaurviat in Bethel, and the Vocational Training and Resource Center in Juneau. Workforce development is also supported by broad partnership networks. For example, the DHSS website describes a healthcare industry network that includes rural and Native health providers, state agencies, private sector associations, and the Alaska and Washington State university systems.[7]
- Alaska EDOs understand well the potential benefits of keeping dollars circulating longer in the local economy and bringing in additional dollars through value-added manufacturing and import substitution. In spite of significant challenges, many initiatives have been tried, and some—for example, seafood processing using new filleting, cold storage and quality control equipment—have experienced a measure of success.

[7] http://www.hss.state.ak.us/dph/healthplanning/workforce/workforce_home.htm

Challenges

- The substantial, even dominating, economic importance of government-funded services is seen by many as having eroded the state's entrepreneurial and business climate.
- Most of the natural resources in Alaska are under federal, not state or private control. For example, most of the commercial-grade timber remaining in Alaska is on federal land and must be managed in accordance with mixed-use principles that, in combination with Alaska's geographic and operating-cost disadvantages, make economic utilization extremely challenging.

Developing an Institutional Framework to Elevate the Impact of Knowledge-Based Industries

Alaska's next-generation economy must be one that produces and utilizes knowledge workers to facilitate growth in traditional industries and emerging industries. Adding knowledge-based industries to resource-based industries will place new demands on an educational system that must also address the challenges of a diverse and geographically diffuse population.

Strengths

- Alaska leaders understand that education is at the heart of the state's future. Considerable effort and resources have been devoted to improving what many view as an inadequate pre-statehood education infrastructure, and many would agree that progress is being made, if frustratingly slow for some.
- Work of many academic and other institutions over the years has improved Alaska's knowledge of itself, its challenges and its potential. One example is the University of Alaska Anchorage Institute of Social and Economic Research, which is producing important economic forecasts and analyses of energy, fisheries, and a deeper understanding of environmental and other critical issues facing the state.
- Experience has shown that access to resources coupled with a certain degree of flexibility to adapt to local needs and changing times can speed innovation.

Challenges

- The challenge of consistently advancing both academic and vocational education in a state as large and heterogeneous as Alaska is significant at both the university and secondary levels. Many Alaska primary schools are still under-performing, often because of delayed language development.
- As a young state, Alaska has a relatively short history of developing its own intellectual property.
- The university system has not always been managed for maximum economic development impact. For example, the university established a Center for Economic Development in 1992, but as recently as 2006 it was staffed only by a director, an administrative assistant, and a student research position. (UAA Center for Economic Development Annual Report, 2006.)

COMPARISON WITH BEST ECONOMIC DEVELOPMENT PRACTICES IN OTHER REGIONS

This section expands on the above analysis that identified six overarching economic development issues by looking at how other states have addressed similar challenges. From these insights and "best practices," a number of lessons for Alaska are drawn. Each should be instructive as leaders grapple with the question of how to organize for, and improve the state's economy.

In highlighting best practices, we have focused on leadership approaches, systemic changes and/or institutional efforts that were implemented in order to transform the subject region's economy. Of course, there is no single domestic or international best practice that aligns perfectly with Alaska's particular situation. But there are no doubt elements within these models that are appropriate to Alaska's particular context and the state's long-term goals.

Note that the region's selected to highlight "best practices" and lessons below are not the same as the peer states used in the upcoming analysis of Alaska's Economic Foundations. Peer states were chosen because their populations and economic structures are similar to Alaska. The regions below have been highlighted for their innovative approaches to economic development and the potential that their innovations would address critical issues facing Alaska. Footnotes in this section provide leads to additional sources of information.

Six regions are examined in this overview of best practices:

- Puget Sound Region
- Oregon
- Alberta, Canada
- Chile
- Austin, Texas
- North Carolina

Addressing Alaska's Need for Economic Development Leadership and Coordination: The Puget Sound Prosperity Partnership's Approach[8]

Seattle's Puget Sound region offers Alaska several lessons for addressing the issue of a large and diverse infrastructure of economic development organizations having the same, but poorly coordinated missions. Puget Sound is home to more than 20 cities with a combined population exceeding two million people. The region's economy, once driven by aerospace manufacturing, forestry resources and the logistics capability of ports in Seattle and Tacoma, has changed. Today, information technology, sophisticated business services and tourism supplement the economic impact of older industries and several military bases.

As new economic opportunities emerged in the latter half of the 20th century, new economic development organizations were formed throughout the region. Each county in the region established its own economic development council. Large and small cities strengthened or formed their own Chambers of Commerce or economic development departments. By the turn of the century, economic opportunity continued, but it would not be in aerospace as new competition emerged in Europe or in forestry or fur-

[8] http://www.prosperitypartnership.org/

ther expansion of the military presence. And it surely was not going to be in high tech as the region suffered the pain of the dot.com bust. But there were still all those economic development organizations, each competing for a larger piece of a smaller pie.

State and regional leaders began to see the unhealthy affects of county-to-county and city-to-city competition as aggressive entities tried to attract economic opportunities away from their neighbors. Duplication of other economic development efforts and generally wasted resources was increasingly apparent to all.

To address the need for improved economic development leadership and coordination, leaders of the Puget Sound Regional Council (PSRC) began to consider ways of weaving together the various county and local economic development organizations into some kind of regional, networked economic development "system," one with a degree of centralized leadership. In 2003, officials of the four counties whose land use and transportation planning PSRC coordinates, with input from the legislature, decided to fold a state-mandated but duplicative Economic Development Commission nominally representing the region in under the umbrella of PSRC.

Prosperity Partnership Co-Chairs: A diverse group of civic leaders have provided important leadership to the effort[9]

Rick Bender
President
Washington State Labor Council
AFL-CIO

Scott Carson
President and CEO
Boeing Commercial Airplanes

Mark Emmert
President
University of Washington

Elson Floyd
President
Washington State University

Tomio Moriguchi
Chairman
Uwajimaya

Rita Ryder
President
Strategic Initiatives
YWCA

Brad Smith
Senior Vice-President
Microsoft Corporation

Ray Stephanson
Mayor
City of Everett,
President
Puget Sound Regional Council

Dr. Jill Wakefield
Chancellor
Seattle Community Colleges

The move had positive results almost from the outset. Recognizing the cost in wasted effort of each county agency targeting the same opportunities, leaders in each of the four counties agreed to cooperate and work together in new ways. For example, instead of each individual county marketing itself, it was decided by all that the entire Puget Sound region would be promoted to firms looking to relocate. In effect, local economic development organizations had agreed to a mostly hands-off policy once a firm was attracted to the larger region, leaving to the new firm final decisions about which particular area offered the most advantages. Over a period of just a few years, cooperation and coordination became the prevailing mode of operation rather than county-to-county competition for the relatively few business attraction opportunities that existed at any given time.

County and municipal-level economic development organizations continue to implement their own workforce and job skill training programs and support initiatives designed to help their small businesses and entrepreneurs.

As recently as ten years ago, it was not a joke that "economic development organizations" was a growth industry in Puget Sound. But by 2004, the PSRC-oriented regional, coordinated and more collaborative modus operendi seemed to have replaced the old decentralized model.

[9] http://www.prosperitypartnership.org/coalition/index.htm

Lessons for Alaska: Use Collaborative Strategy Development Approach to Integrate Efforts and Significantly Involve the Private Sector in the Policy Making Process

With a much better coordinated, collaborative and regional approach seemingly making a difference, PSRC's leaders then set about the next step in the change process. In late 2004, they launched a high visibility initiative called the Prosperity Partnership. This largely informal partnership of cooperating economic development agencies from across the 4-county region continues today to guide regional economic development organizations.

Funding for the Partnership comes from PSRC's member county and city organizations. With approximately $700,000 banked at the outset to move the Partnership from concept to reality, PSRC's leaders moved to produce a major economic research project—a situation analysis. With the analysis as a baseline, PSRC's economic development leaders then coordinated efforts to produce sector-specific "action initiatives" to further develop the region's economy. The new economic development model, based on the concept of "industrial clusters" was specifically designed to enable regional coordination of cluster working group activities.

Case in Point: Prosperity Partnership and Monitoring and Measuring Progress Towards Economic Goals[10]

It is now widely accepted that more formal, rigorous and standardized methodologies are required for assessing the performance and impact of economic development programs. That said, there is still much debate about what actually needs to be measured. In general, indicators should be adapted to region-specific contexts and the community's priorities rather than drawn in a mechanical way from a pre-prepared list. However, the selection of indicators and metrics should also be largely based on the particular needs and priorities of a region's private sector companies and what they need to be successful in the increasingly competitive international marketplace.

Puget Sound's Prosperity Partnership: One of the main factors that drove the development of the Prosperity Partnership was the recognition that the region's economic health is at risk. Puget Sound's leaders recognized that in the emerging global economy, many of the world's most prominent companies could be headquartered anywhere on the globe. Businesses locate where there is a high quality of life, good schools, efficient transportation, affordable housing, and supportive government policies. Thus, there was no guarantees that the Puget Sound region will be able to attract new businesses, or keep and grow existing firms.

However, the region had not been tracking its progress in these key areas that are increasingly important to private sector companies. Consequently, a set of indicators was established that closely matched the priorities of the 2005 Regional Economic Strategy, structured around six economic foundation areas: 1) Education & the Workforce, 2) Technology & Innovation, 3) New & Small Business Support, 4) Business Climate, 5) Transportation & Infrastructure, and 6) Quality of Life & Social Capital.

These indicators are evaluated on an annual basis and benchmarked against five peer regions providing the region's leaders with useful information to inform resource allocation decisions and guide policy development.

Under PSRC, a high level Prosperity Partnership Leadership Council was formed to give the initiative visibility and guidance. The council (see above) represented public, private, academic and non-profit sectors. It included the President of the University of Washington as well as very senior leaders from Boeing, Microsoft and other companies. The top official of the YWCA and others representing all social service organizations brought widespread community leadership to the effort.

The situation analysis research identified the presence of 15 industrial clusters in the region, ranging from the large and complex Aerospace and Logistics clusters, to the smaller Biotechnology cluster to much smaller clusters such as Boatbuilding, Tourism and Military.

Recognizing that they couldn't focus on developing new growth strategies for all 15 clusters at the same time, among the first decisions of the Leadership Council was on which of the 15 clusters the

[10] http://www.prosperitypartnership.org/indicators/index.htm

2005-007 work program would focus. A number of "first priority clusters, among equals" were selected, including Aerospace, Logistics, Biotechnology and Information Technology (Military and Tourism were selected for the immediately subsequent efforts).

For each cluster, a working group of leaders representing the cluster was formed. Besides top executives of large and small firms, university deans, the heads of vocational training organizations and others representing the full cluster were included in each cluster working group. Over more than a year, each Cluster Working Group met regularly to develop a consensus economic vision of their cluster, in effect, putting all the industry's stakeholders on the same page. Each group then developed from 5-7 cluster action initiatives, each designed to address a priority impediment to cluster growth and development as identified by the cluster working group through their facilitated processes.

Within a year, each cluster group had what amounted to a shared vision of the cluster to guide new economic development activities. More specifically, each had a number of business plans for "action initiatives," with "champions" to lead specific policy or program projects. By late 2006, nearly all of these cluster action initiatives were moving forward—each designed to address impediments to growth and to achieve higher levels of cluster competitiveness.

Today, PSRC's Prosperity Partnership is widely acknowledged to be a success. It has brought together formally disconnected economic development organizations under a central approach—cluster-based economic development. It is being guided by top level leaders from business, government, academia and social services agencies in the region. Observers of the initiative often comment on the effort's strong "bias to action," noting that its leaders generally avoid elaborate studies and aim instead at taking direct action in the Legislature and within other key institutions (e.g., the University of Washington, vocational training centers, technology transfer organizations).

The Prosperity Partnership, while not a panacea, illustrates what can be accomplished in a region with a complex infrastructure of economic development organizations by shifting to a development model having strong leadership from the top and coordination of efforts throughout 100 or more economic development organizations making up the Partnership.

Similar top level leadership and coordination would appear to be necessary to better align Alaska's economic interests and to implement consensus-based initiatives designed to promote economic development at both the state and local level.

Addressing Alaska's Need for Explicit Economic Development Goals and Strategies: Oregon's Approach[11]

Oregon's economy initially grew as a result of industries driven by abundant natural resources– the success of the state's lumber and wood products sectors as well as the agricultural sectors of the Willamette Valley and from the fields to the east. Geography also played a large role, as Portland's primacy as a regional port was determined by the Columbia River drainage. Later, hydropower development on the Columbia helped fuel a new round of industrial growth tied closely to the natural resource advantage.

As the 21st century dawned, the state's leaders embarked on a strategy centered on industrial specialization as the means of developing a more diverse, more value-added economy. Specialists analyzed the state's, and each region's, strengths and weaknesses and then implemented policies to support those industrial activities in which each region enjoyed some clear advantages or was especially specialized.

[11] http://www.regionalbusinessplan.com/plan.shtml and http://www.oregonclusters.org/ and http://www.oregonbusinessplan.org/plan_view.html#plan

In 2005, the Oregon Business Plan launched the Oregon Cluster Network to identify Oregon's mature, emerging, and potential industry clusters and assist cluster participants as they work to accelerate innovation and the growth of their industries. By consciously connecting industry leaders with university researchers, schools, media, venture capital, and other resources, the network helps cluster facilitators across the state share best practices and develop regional collaborative advantages. Leaders understand that cluster organizations generating new prospects for business recruitment, developing relevant economic and market data, and guiding public policy will help strengthen the Oregon economy.

Case in Point: Oregon provides significant resources and a coordinated statewide approach to business development[12]

Twelve state-level business development officers serve as liaisons linking regional and local actors to the Oregon Economic & Community Development Commission's programs. Two of these business development officers support statewide recruiting efforts, providing site-selection assistance to firms seeking to locate in Oregon. Ten business development officers connect Oregon firms and industries that have similar interests or corresponding needs. These efforts promote the state's industry cluster strategy and help ensure that the full complement of market intelligence, financial resources and services from across public and private sectors are brought together to meet common needs.

In addition, four international trade officers located in the state as well as a number of overseas trade representatives in Tokyo, Seoul, Beijing, Shanghai and Taipei assist small and medium-sized businesses and industries expand exports of goods and services. International trade officers provide one-on-one business counseling, market research and market entry strategies, and due diligence assistance to identify or evaluate international partners, i.e., agents, distributors and customers.

Cluster Network activities are guided by the Cluster Network Leadership Council, a smaller group of thought leaders representing diverse professional backgrounds and a balance of industry, academic, and public agency representatives. The Leadership Council sits at the top of the cluster network, coordinating programs and activities being implemented at the regional or local level.

The Council meets every few months to discuss progress on cluster-based economic development, focus on areas of interest that cut-across clusters and plan for events and opportunities such as the Oregon Leadership Summit, the Oregon Innovation Council and grant/funding opportunities. Some of the specific questions focused on in these meetings include:

- What are the needs of each cluster in terms of economic infrastructure,: workforce skills, technology, finance and infrastructure?
- How well do we currently address those needs?
- What could be done to enhance the relevant economic infrastructure and improve the relationships between public, private, academic and social service stakeholders?
- What specific actions would move the cluster forward in the near-, mid- and long term?

Oregon's industry cluster approach to economic development allows policy makers to have a better understanding of the way businesses in the Oregon economy compete in the global marketplace and to develop more effective means of understanding their challenges and supporting their success. The approach helps firms to be more successful by promoting their common interests, and it helps the public and academic sectors better understand how they can best support industries overall, and the firms within industries.

[12] "Fiscal Year 2008 - Annual report of the Oregon Economic & Community Development Commission." http://www.oregon4biz.com/

Lessons for Alaska: Explicit Statewide Policy Effort to Create a Rationalized Economic Development System

The Oregon model offers an alternative to Alaska's today—leadership from the top, a network approach focused on developing competitive clusters, with action initiatives at the state, regional and local level—in short, a cohesive economic development framework.

Case in Point: Oregon's rationalized economic development system allows for flexibility and realignment[13]

The state economic development commission began its six-month realignment project by seeking input from our stakeholders across the state about what was working well and what needed to be changed in the way the agency's programs were administered.

One of the commission's key recommendations was a call for a more strategic focus on business retention, business expansion and business attraction through the provision of existing and all new services to Oregon's businesses and communities. That recommendation included improved efforts by business development officers located in Oregon communities, new innovation services to Oregon's industries by the department and access to international market services from the department's international trade officers.

The realignment effort required the agency to focus its activities on developing sound economic strategies and utilizing the commission's expertise to help to directly create jobs in Oregon, thus positively impacting the state's economy. Towards that goal, the department now partners with regional economic development organizations to address economic development opportunities and concerns.

Having a rationalized economic development system can help solve the problem of myopia, or the case where organizations with a limited scope or mission fail to think about the macroeconomic picture and how various regional groups or policies interrelate to create a positive or negative environment for local businesses to grow and thrive. It also alleviates diffusion of responsibility across different regional entities, whereby each individual region, organization, city or business membership group thinks a statewide or regional economic problem is somebody else's problem. Regional entities sometimes lack the impetus to reach out to groups or address policies that extend or originate beyond their borders, regardless of the impact these other groups or decisions may have on their local business climate. Single-issue interest groups, nonprofits, or government agencies with a limited jurisdiction are also unlikely to address complex regional economic problems.

Because economic development requires coordination across many types of institutions, creating a rationalized economic development system can benefit the state by bringing together many organizations working on distinct issues (i.e. workforce training, affordable housing, transportation planning, permit streamlining, land use, technology transfer, etc.). A rationalized economic development system can provide direction to distinct groups and help them to recognize the synergies across their organizations and the relationship they have to each other, to the economy, and to local businesses.

An active clustering agenda facilitates the integration of what would otherwise be nothing more than a disconnected set of co-located firms and organizations into a high performance "cluster system." Optimization is focused at a system, rather than at individual organizational levels. An active local cluster would include firms and support organizations working together to achieve results that would be unlikely individually.

[13] "Fiscal Year 2008 - Annual report of the Oregon Economic & Community Development Commission." http://www.oregon4biz.com/

Addressing Alaska's Need to Integrate Short- and Long-Term Initiatives: Alberta's Approach

Alberta's economic evolution presents an interesting best practice model for Alaska. First, because the province has many of Alaska's characteristics: cold climate, a relatively sparse population, significant infrastructure shortcomings and an economy once based almost solely on natural resources. Yet, within these constraints Alberta has experienced noteworthy economic diversification success. Most importantly is *how* Alberta evolved from a narrowly-based economy into a more diversified economy. The defining characteristic of Alberta's approach is that while the province's economic development leaders worked on "nuts and bolts" type activities such as business attraction and retention, they simultaneously looked towards the future and launched a cohesive long-term strategy to close gaps and nurture knowledge-based industries and value-added activities. As such, the province's leaders linked their ongoing, short-term activities with their long-term strategy for the future.

Alberta's leaders gave the notion of "economic diversification" policy priority early on:

> The actions of Alberta stand out among the provinces. As early as the mid-1970s, then Premier Lougheed of Alberta told the Alberta Legislature that secular stability was an important economic objective and could be secured by less dependence on the sale of unprocessed resources. By 1985 the government had issued a White Paper, Proposals for an Industrial and Science Strategy for Alberta 1985 to 1990, which emphasized the upgrading and further processing of Alberta raw materials—effectively product and market diversification. Just prior to the crucial 1987 Western Premier's Conference, the province released a report titled Economic Diversification Policies and Programs, summarizing the actions and budgetary commitments of government departments for these purposes. The report said:
>
> > Diversification of Alberta's economic base has been, and remains, a major objective of the Government of Alberta. Diversification is viewed as a means for building additional stability into the province's economy, while at the same time contributing to the growth of employment. The aim of Alberta's diversification efforts is to encourage and strengthen activities that result in upgrading and further processing of the province's resources.[15]

"While growth created opportunities and challenges, wealth always raised expectations. Choices needed to be made. Prosperity was both a boon and a burden, and it left Albertans and their government with important questions. Could Alberta seize the opportunity and sustain its economic performance over the long term? Could it transform its wealth into a higher quality of life for all Albertans? Could Alberta become a leader in Canada and globally? Some saw the future as a place of difficult challenges; others as a field of opportunities. Both were right. Both recognized the need for urgency, vision, leadership and action [and] that ultimately, the invisible threat was complacency."[14]

And although the provincial government drove the initial phases of the economic diversification strategy, the government recognized that it could not sustain momentum unless it transitioned towards a private sector-led model:

> The provincial government play[ed] an active part in creating partnerships to spur the evolution of the new economy. In building on the "Alberta Advantage," the province's premier, Ralph Klein, created an unusual alliance to expedite economic growth. In 1995 Premier Klein put the private sector in the driver's seat of the Alberta Economic Development Authority (AEDA). The volunteer members of AEDA are drawn from the front ranks of Alberta's business community. They identify directions for the province to pursue, pointing out obstacles that may stand in the path of development, yet they have full responsibility to see actual economic development become a reality.[16]

[14] "Building a Great Future for Alberta - Dateline: September 1, 2020." Alberta Economic Development Authority.

[15] "Breaking The Boom And Bust: Exploring Thirty Years Of Diversification In Western Canada." Edward J. Chambers and Chris Ryan Western Centre for Economic Research School of Business, University of Alberta Edmonton. Information Bulletin, Number 121, April 2009.

[16] "The Alberta Advantage" by Carolyn Stout - www.developmentalliance.com/docu/pdf/44012.pdf

Key elements of this approach involved defining priorities that clarified both what would be supported and what would not and then developing explicit strategies to implement them successfully. Consequently, several important integrated strategic plans were developed that guided Alberta's development:

Case in Point: Alberta's Research Council helps link research to market opportunities[17]

The province's leading research organization, the Alberta Research Council (ARC) provides a full spectrum of R&D and advisory services, bridging the gap between basic research and market development. ARC works with industry and universities through strategic alliances, contract research, joint ventures, consortia and licensing arrangements. A market-driven corporation, the ARC focuses on the sectors of Alberta's economy where it believes it can have the greatest impact. These include the primary resource sectors of agriculture, energy and forestry, and the emerging or support sectors of biotechnology, advanced computing systems, environment, health "informatics" and manufacturing.

In 1993, "Seizing Opportunity" set the province on a course towards fiscal responsibility and the development of the "Alberta Advantage" initiative. A bold target of 110,000 new jobs was set—and exceeded. In 1997, the Alberta Economic Development Authority provided further directions for the development of the Alberta economy in Building on the Alberta Advantage. People and Prosperity, a human resource development strategy for the province, soon followed. In the fall of 1997 the Growth Summit engaged Albertans in a province-wide discussion about priorities for action. At the same time, the Alberta Science and Research Authority developed Sustaining the Alberta Advantage, an innovation strategy designed to grow Alberta's knowledge-based economy."[18]

Recognizing that long term progress toward greater diversification required short term initiatives to enhance local capacity, Alberta invested significantly in technical and trade schools, in universities, in research centers and in promoting entrepreneurship.[19] And when compared to the other three provincial governments in Western Canada, Alberta's orientation and level of dedication stand out, "none of the other three provincial governments exhibited such sustained concern and explicit actions."[20]

Alberta's sustained private sector driven, yet government supported approach has resulted in noteworthy achievements:

> [By] 1997 the value of Alberta's industrial manufacturing shipments almost matched energy sector shipments totaling US$11.4 billion. The remarkable thing about these [figures] is that they no longer solely rest on the state of Alberta's energy sector or on world oil prices. According to Coopers and Lybrand's most recent report "Alberta's growth may be attributed to the steady increases experienced in non-resource-based or industrial manufacturing.[21]

Lessons for Alaska: Transitioning from Short-term Tactics and "Gap Filling" to Long Term Strategies and Action Initiatives

Alberta is a good example of how a region's leaders developed a unified vision of what kind of economy would be right for their region and its residents and then designed long term strategies to implement that vision -all linked in some way to existing short term initiatives to avoid the problem of "start and stop" depending on

"Those who once viewed it as Canada's energy province now see Alberta as North America's hottest market for manufacturing and business investment. It's where a new brand of thinking is creating a new breed of opportunity." [22]

17 "The Alberta Advantage" by Carolyn Stout - www.developmentalliance.com/docu/pdf/44012.pdf

18 "Get Ready Alberta: Strengthening the Alberta Advantage." Government of Alberta, February 2000.

19 "Breaking The Boom And Bust: Exploring Thirty Years Of Diversification In Western Canada." Edward J. Chambers and Chris Ryan Western Centre for Economic Research School of Business, University of Alberta Edmonton. Information Bulletin, Number 121, April 2009.

20 "Breaking The Boom And Bust: Exploring Thirty Years Of Diversification In Western Canada." Edward J. Chambers and Chris Ryan Western Centre for Economic Research School of Business, University of Alberta Edmonton. Information Bulletin, Number 121, April 2009.

21 "The Alberta Advantage" by Carolyn Stout - www.developmentalliance.com/docu/pdf/44012.pdf

22 "The Alberta Advantage" by Carolyn Stout - www.developmentalliance.com/docu/pdf/44012.pdf

changing political leadership. The importance of strong leadership in the province's economic evolution cannot be overstated:

> As reflected in the consultation process, Alberta's success has been a product of political leadership. Most important was the early development of a compelling vision for the province. The vision has evolved and changed over time and in each case renewed foresight and stimulated action. Part of the vision has been a series of projects. Projects provided achievable goals within a clear timeframe. Major projects included the development of an integrated energy industry, the conservation of water, the reduction in poverty and homelessness, diversification of the economy and the project to build the highest level of human capital in the world."[23]

The main point is that the province's government leaders recognized that collaborative strategy development with significant input from and leadership by the private sector was the appropriate approach to help achieve the province's long-term vision.

> "Strong leadership by government was instrumental in resolving [Alberta's economic development] issues. While strong consultation processes had been established, a new level of decision-making was required. Albertans needed leaders to build consensus, develop innovative solutions to difficult problems, and implement those solutions effectively. New commitments to a process for collaboration and new technologies to enable communication allowed the government to broaden public consultation. This new process encouraged shared understanding, built mutual respect and improved conflict resolution. The government still had the responsibility to make decisions and act, but the outcome was more visible and understandable.
>
> Process was not enough. Effective and pragmatic solutions were also necessary. Considerable investment in research and development was [required]. At the same time, integrated land management data banks provided more information on which to base decisions and develop new approaches to primary resource development that minimized short term and long-term disturbance to the economic development landscape.
>
> The culmination of these developments has been the successful implementation of government policy initiatives. Yet, issues and conflicts persist but they are better understood and are more likely to be addressed when they arise. Evaluation reports have noted that improved decision-making processes have greatly enhanced the ability to develop better scientific and community-based solutions and resolve issues effectively."[24]

As a result of Alberta's approach:

> "The provincial government has become both a coach and facilitator encouraging economic development and moderating and resolving disputes. The government is also a leader and decision-maker, setting priorities and goals, building support and implementing policies effectively. The economy is prosperous and future-oriented. Energy remains the most important sector but with new entrepreneurial businesses and value-added production, a more diverse, robust and adaptive economy has emerged.[26]

"In an expanding and competitive global economy, Alberta has grown and prospered. Strong political leaders able to articulate a compelling vision of the future, the development of centers of excellence that strive for world class achievements, the evolution of open and accountable decision-making processes, and the implementation of strong integrated plans with clear strategies: all of these have been instrumental in the economic success of the province." [25]

[23] "Building a Great Future for Alberta - Dateline: September 1, 2020." Alberta Economic Development Authority.

[24] "Building a Great Future for Alberta - Dateline: September 1, 2020." Alberta Economic Development Authority.

[25] "Breaking The Boom And Bust: Exploring Thirty Years Of Diversification In Western Canada." Edward J. Chambers and Chris Ryan Western Centre for Economic Research School of Business, University of Alberta Edmonton. Information Bulletin, Number 121, April 2009.

[26] "Building a Great Future for Alberta - Dateline: September 1, 2020." Alberta Economic Development Authority.

Addressing Alaska's Challenge of Geographic Isolation: Chile's Approach

Globalization and related trends have forced Chile to confront the challenges associated with its geographic isolation. Recognizing the country's largely natural-resource-based economy, constraints related to the country's geographic location, limited R&D investment, and culture of non-collaboration, the government established Fundación Chile several decades ago to "create new businesses as a main means to diffuse and transfer technology."

Fundación Chile's mission was to, "add economic value to Chile's products and services by promoting innovation and technology transfer activities, aimed at taking better advantage of Chile's natural resources and productive capacity."[27] To accomplish this mission, the organization identified key advantages that could potentially be leveraged (e.g. complementary seasons with respect to northern hemisphere fruit and vegetable markets, Mediterranean and other climactic advantages, and access to in-demand natural resources) and set out to identify the most appropriate means to make the most of those advantages. How did leaders spur the needed economic transformations? Following is an overview of Chile's approach:

> "The main business model developed by Fundación Chile begins with the identification of an innovative opportunity with high potential, based on a technology transfer or development, that is then adapted to the local conditions. Then strategic partners are invited to create a company that uses the new technology, financing is obtained and the scale-up process is defined. The working model includes three phases.
>
> 1. The process begins with an exploration of market needs and its evaluation. The institution carries out innovations that involve changes in the products, services, productive processes and modifications in the business models, in order to offer a proposal of unique value to its target clients. It also actively participates in correcting market imperfections, mostly public goods, by significantly improving the management and elimination of information asymmetries. The innovations in products, services and productive processes often occur with the creation of a new company or with the sale of a technology package to a strategic agent who is able to place this technology in the relevant markets.
> 2. The second phase involves obtaining the technologies. Fundación Chile uses three procedures for this stage: transfer and adapt a technology furnished by an outside supplier; develop it using a Fundación R&D process; or generate it through the work of a network of key R&D institutions.
> 3. The third phase is the scale-up of the technology and its dissemination. This is especially important because it generates the innovation's social benefit. In Fundación Chile's model, dissemination occurs through the creation of innovative companies, the sale and licensing of technologies, the supply of technological services undertaken by Fundación Chile's different areas and business units, certification and implementation of standards and broad dissemination through training, seminars, publications and Internet websites.[28]

An analysis of market opportunities guided Fundación Chile's initial approach in each area targeted for development, focusing on areas with clear development potential including salmon farming, raspberry and blueberry crops, oyster farming and boxed beef products, among other areas.

---

[27] "Latin America: The New Frontier, An Emerging Location for Outsourcing, Offshoring, and BPO - The Case Study of Chile." - www.fundacionchile.cl

[28] "Fundación Chile: The 30 Years of Fundación Chile," - http://www.fundacionchile.cl

In large part as a result of Fundación Chile's successful interventions, several industries including salmon cultivation, wine, fresh fruit (e.g., table grapes, raspberries, blue berries) have grown significantly in the period since the organization's strategic planning began. Noteworthy results of Fundación Chile's efforts include:

- More than 75 companies have been created accounting for over $2 billion of value.[29]
- "As a result of these measures, salmon production in Chile grew about 17-fold between 1990 and 2002. Its share in the global production of farmed salmon and trout increased from about 10% in 1990 to about 35% within the same period. Indeed, Chile has moved from being a learner to a major player in the production and marketing of salmon products."[31] In 2006, Chile exported $2.2 billion representing over 23% of Chile's total food exports, resulting in more than 35,000 direct and indirect jobs. . "[And importantly,] the growth of the industry has brought about a general improvement in regional infrastructure and services: the poverty index of the salmon production region decreased from 40% to 13% between 1990 and 2000 while the index of extreme poverty decreased from 24% to 7% over the same period."[32]
- "Developed quality control and certification of fruit exports, the cornerstone of this sector which generates over US$1.9 billion in exports (2003-2004 season)."[33]
- Developed berry crops in Chile, which represent US$200 million in exports for 2003.[34]

Lessons for Alaska: Employing a Market-Driven Model to Identify and Leverage Natural Resource-Based Comparative Advantages

Currently, Fundación Chile is broadening its scope by, "establishing better linkages between Chile's productive sector and the domestic and international scientific community…to permit the transfer of innovations [and] supporting improvements in local capital markets, including venture [and] seed capital."[36] It has taken further steps to ensure adequate access to cutting edge technologies and research through the establishment of a series of alliances with international organizations such as UC Davis, … Cornell University, Centre de Cooperation Internationale en Recherche Agronomique pour le Développement, France and Bundesanstalt für Geowissenschaften und Rohstoffe (BGR) in Germany.

""The successful development of the industry highlights Chile's approach to industrial and economic development. Chile promotes scientific and technological innovation that adds value to or generates industries based on its natural resource endowment. In this case, the long coastline, abundant freshwater sources and islands, and good climatic conditions are part of its natural endowments, which, with the appropriate technologies, have played a vital role in [the country's industrial] development."[35]

Chile's model presents an interesting best practice for Alaska because it is an example of a situation, "in which a country's factor endowments were modified through investment in physical capital, human resources and the building up of capacities required to develop and use new technologies."[37] A key take-

29 "A Case Study of the Salmon Industry in Chile." United Nations Conference On Trade And Development - Transfer of Technology for Successful Integration into the Global Economy, 2006.

30 www.gkpeventsonthefuture.org/

31 "A Case Study of the Salmon Industry in Chile." United Nations Conference On Trade And Development - Transfer of Technology for Successful Integration into the Global Economy, 2006.

32-34 "Latin America: The New Frontier, An Emerging Location for Outsourcing, Offshoring, and BPO -The Case Study of Chile." - www.fundacionchile.cl

35 "A Case Study of the Salmon Industry in Chile." United Nations Conference On Trade And Development - Transfer of Technology for Successful Integration into the Global Economy, 2006.

38 "San Diego - Clusters Of Innovation Initiative." Council on Competitiveness, May, 2001.

37 "A Case Study of the Salmon Industry in Chile." United Nations Conference On Trade And Development - Transfer of Technology for Successful Integration into the Global Economy, 2006.

away for Alaska here is that Fundación Chile did not try to develop industries where no strong competitive advantage existed. Rather, it looked to markets first for opportunities related to the Country's comparative advantages and areas of specialization. Consequently, the institution's efforts were focused on activities that aligned with the country's strengths and in which they had a realistic chance of achieving some success. As such, it is a successful example of a market-driven model and public/private technology transfer mechanism that allowed the country to more effectively leverage key natural endowments and comparative advantages.

Chile's economic evolution demonstrates that the challenge of geographic isolation can be addressed through economic diversification programs that build on a region's existing strengths in a realistic way.

Addressing Alaska's Challenge of Adding Value to Existing Industries: Austin's Approach

Austin's three-decade long strategy to purposefully transform its economy--from one based largely on state government jobs to one now heavily oriented to high technology and entertainment--has been undeniably successful. The story began in the early 1980s when business leaders operating within the Greater Austin Chamber of Commerce took the initiative to shift the Chamber's traditional approach to economic development of broad based industrial attraction to a more strategic and more highly targeted approach. The main features of the 1984 Austin Strategic Plan included firm statements about private sector economic development leadership, the development of university-supported institutions designed to support the economy's underlying technologies and a local government role focused on partnerships designed to build up specialized economic infrastructure that would be "purpose-built" to support the city's economy.

For more than a decade following the 1984 strategic plan, Austin enjoyed economic growth based on the core sectors of state government and university employment but complemented by a robust computer technology sector. In the period 1984-1995, the applied research capacity at UT/Austin and from two privately operated research centers (MCC and Semi Tech, both semiconductor industry consortiums) provided a continuing source of innovation to a growing number of computer hardware firms. With these resources at hand, Austin's tech firms found themselves front-runners in their markets. But by the mid-1990s it was clear to the area's leaders that off-shore producers, mostly in Asia, were increasingly eating away the market share of the economy's key companies with much lower labor costs and even indigenous product and process technologies.

> *""Institutions for Collaboration are formal and informal organizations and networks that (1) facilitate the exchange of information and technology; and (2) foster various kinds of coordination and collaboration that can improve the business environment in a cluster or in the overall economy."*
>
> — Michael Porter[38]

Austin's civic leaders came to the conclusion that their coveted high tech economy was becoming little more than a handful of brand name manufacturers producing commoditized hardware products and that these plants were destined to move off shore. As they did in the early 1980s, these civic boosters agreed in 1996 to a comprehensive economic review with the objective of developing a more diverse and higher value-adding economy. A working group was formed that brought together CEOs, academic researchers and other economic development stakeholders. They took responsibility for launching a second Austin Strategic Plan process, this one designed in part to put in place a broader base of "strategic institutions" whose primary purpose would be to help existing companies stay at the leading edge in their markets and new companies to find market success. The new plan focused largely on adding value to the products of the

[38] "San Diego - Clusters Of Innovation Initiative." Council on Competitiveness, May, 2001.

computer hardware cluster while building new capacity in the region's fledgling biotechnology, music, film and tourism clusters.

As before, leaders of each of the target clusters, existing and emerging, were organized to develop new ideas and take new action. Over a six month process of problem identification, priority-setting and the development of new policy and practice initiatives, the strategy to add value to a still relatively strong computer technology cluster and build new economic engines in the other sectors took shape.

Each cluster working group developed their own programs and initiatives and for each initiative, an implementation champion, mostly from the private sector stepped forward to lead the effort. The new projects ranged from policy development and legislative lobbying to the creation of new financing mechanisms to support start-up firms. Each action initiative was the product of the cluster, not from a consultant's point of view. Each initiative was designed for what was called "fast-track" implementation and many were in full implementation mode within a year.

Just as was the case in the early 1980s, Austin's bold and decisive civic culture of private sector-led and strategic economic development planning began to once again drive the economy forward. The Austin Technology Incubator, America's first (formed in 1984, as a result of the first strategic plan) shifted gears. Priority was given to incubating software and firms specialized in providing highly tailored business services (e.g., consulting), even while entrepreneurs in other tech areas continued to be brought into the incubator. The Austin Ventures group, supported by the wealth of local business leaders, placed a priority on software development. The Greater Austin Chamber of Commerce, noticing that young software entrepreneurs (as well as local biotech entrepreneurs, musicians and filmmakers) were not active in chamber affairs, changed their programming and moved from the typical chamber business model (sponsoring mixers and other "match-making" efforts), to become more of an institution for collaboration among cluster stakeholders. A high priority was to bring into the Chamber's orbit young business people who were increasingly feeling left out of the picture. The idea was to shift the chamber's prevailing business culture, which was self-admittedly "staid," to one that was far more interesting and relevant to young business people and entrepreneurs who sought much more collaboration with venture capitalists, university professors and other people like themselves.

Computer software soon became the most important value-added element to the existing computer hardware expertise that was what the civic boosters were looking for. From semi-conductors and consumer computers (both sectors now declining in Austin) emerged a second economic wave. With the traditional sectors, software, biotech, music and filmmaking now better define the Austin economy. And, with the strong research and development capabilities of the University and the other research centers tuned to meet the changing needs of local firms, Austin's economy has remained as dynamic as any in the country.

Lessons for Alaska: Regions and their economic development organizations can support existing industries through the provision of specialized institutional infrastructure, programs and activities

Alaska needs to add more value to the basic products that now define the state's economy. While high tech Austin may seem like an unusual "best practice" for Alaska to learn from, there is little doubt that this case offers several lessons. First, Austin's leaders have established an especially entrepreneurial approach to economic development. While state and local government have historically played a role in job creation, it has been one of convening and partnering with the private sector rather than taking a leadership position and advocating for economic development policies. Second, Austin's private sector leaders have learned how important strategic planning can be when economic concerns loom. They have evolved a culture of strategic planning that emerges directly from the culture of the firms in the region. Third, Austin's approach (not unlike Seattle's regional Prosperity Partnership and Oregon's cluster network approach) goes well beyond economic research, studies and the like. The prevailing economic

development model works first to mobilize cluster leaders to put them all "on the same page." And while research studies remain important to Austin's approach, the region's "bias to action" is what sets it apart from many areas. Economic development is about "getting things done", in the legislature, in the academic and training sectors, and in companies. While it might be the Texas machismo at work, there is little doubt that Austin's strategically planned economy, implemented in this region's unique business culture, time and again, has produced good results. Austin remains, with California's Silicon Valley and only a few others, one of the country's most dynamic local economies.

The IHS-Global Insight team's earlier cluster analysis report pointed to several fledgling clusters now present in Alaska's economy. Alaska's business services cluster is a good example. Remoteness from markets, weak transportation and high energy costs are less an issue for the providers of business services (such as management consultancies, accounting and legal services). Also, that report noted that there may be small-scale opportunities in niche technologies unique to Alaska (e.g., cold climate technologies, specialized chemicals and solvents, and others like UA's proprietary technology for fish bone removal). Austin shows that strategies to add value to basic products and services, and investments in specialized economic infrastructure to support new technologies, can lead to good outcomes.

Addressing Alaska's Need to Develop an Institutional Framework to Elevate the Impact of Knowledge in Regional Industries: North Carolina's Approach

Although North Carolina is obviously quite different from Alaska in most respects, this state still presents an interesting best practice for Alaska, namely as a now fast-growing state whose success with strategies to spur economic transformation demonstrates the type of results that can be achieved through sustained focus on the goal, political support and sufficient allocation of resources.

Sustainable innovation seldom comes from individual inspiration alone. It is clear that linkages among researchers, and between researchers and industry, are the key to having a certain kind of infrastructure—an "innovation infrastructure" that can result in higher levels of business vitality and the generation of new jobs.

> Networking and collaboration play an important role in innovation. Commercially valuable innovations generally do not arise in isolation, but rather develop out of collaboration between firms, customers, suppliers, employees, universities, government research institutes and other players. The degree to which such linkages exist may be an important indicator of the strength of a state's innovation system as a whole.[40]

The importance of focusing on knowledge based Industries that align with a region's particular comparative advantages and areas of specialization[39]

"Too many [regions] are seized by ambitions that bear no relation to their particular comparative advantages. Although Malaysia had few skilled biologists (or entertainment experts) the country's politicians decided to build BioValley on the ruins of Entertainment Village, an attempt to create a Malaysian Hollywood that failed for lack of media attention, among other problems.

Two [other] foolish tendencies are particularly hard to resist when politicians are struggling with high unemployment. The first is the temptation to spread the wealth around to every region and interest group. France's attempt to transform Brittany from one of its more backward regions into a hive of high-tech activity failed dismally for an important reason: entrepreneurial firms cluster in particular places-where other entrepreneurial firms are clustering. The second is a suspicion of foreign investors. The Japanese government lavished money on start-ups in the 1990s but at the same time was reluctant to embrace foreign venture capitalists. Japan now has one of the wealthy world's weakest venture-capital markets."

39 "Fish out of water." The Economist, Oct 29th 2009.

40 http://www.med.govt.nz/

A common definition of innovation is "the design, invention, development and/or implementation of new or altered products, services, processes, systems, organizational structures, or business models for the purpose of creating new value for customers and financial returns for the firm."[41] And in the latter part of the twentieth century, North Carolina found itself at a crucial juncture as foreign competition increased and the state's traditional industries (e.g., footwear, apparel, simple furniture) began losing market share to lower-cost competitors. Yet, the state enjoyed several non-traditional (at the time) advantages, namely, a high concentration of educational and research and development infrastructure in the region known at the Research Triangle (defined as the area between three universities, Duke, North Carolina and North Carolina State), a strong banking and financial services sector, agriculture, a large military presence and a long tradition of decentralized decision-making at the regional level:

> North Carolina's economy is in a period of transition with their traditional industries of textile and furniture manufacturing and tobacco all in rapid decline and "new age" industries of financial services, pharmaceutical manufacturing and high tech research all on the increase.[43]

The state responded to the challenge of transitioning the economy through the establishment of a state-sponsored research park designed to attract the kind of firms and institutions that would, over time, transform the state's economy.

The Research Triangle Park (RTP) initiative is widely considered to be the state's most successful regional economic development effort. State economic development leaders recognized that the educational institutions in the Raleigh-Durham area "create knowledge assets and provide a steady supply of trained scientists, engineers, managers, and technicians to the region's workforce."[44] These leaders set out to harness the potential of this institutional infrastructure in order to position the state to more capably adapt to the challenges of the changing global economy. And given the number of other regions around the world that have tried, and failed, to replicate this model, the effort's leaders should be commended for their ingenuity, determination and long-term vision.

Case in Point: The role of the Hosiery Technology Center in helping this industry in the state's Catawba Valley adapt to changing market trends[42]

About 60% of all men's hose made in the U.S. comes from within a 60-mile radius of Hickory, N.C. The Catawba Valley Hosiery Association formed in 1959 to: provide a forum for discussing common problems, identify new markets, advance industry branding, and implement new skill training. In 1988, its members were able to lobby the state legislature for support of a Hosiery Technology Center at Catawba Valley Community College. In 1990, after learning about the success of cluster networks in Italy, they explored this concept as a theme for their annual meeting and made marketing and production networks a strategic goal.

While the state's hosiery cluster has been hit hard by pressures from big box stores to cut prices and take back unsold goods and buy from China, the cluster's response has been proactive: to move upscale and develop more appealing niche products, such as Thurlo's differentiated action socks or the Vermont "Sock Lady's" mismatched pairs of socks.

An association-sponsored trip to similar clusters in Italy (Castel Goffredo) opened cluster leader's eyes to the potential of design and resulted in changes in their community college-based Hosiery Technology Center to include testing, quality standards, and increased emphasis on training in design and understanding markets.

This cluster began as a narrowly focused industry effort, but once its success was evident, the state government and community college system recognized it as a replicable model for cluster and workforce development centers across the economy.

---

[42] "A Compendium of Clusters in Less Populated Places: Circumstances, Interventions, and Outcomes." Regional Technology Strategies, Inc., March 2009.

"Generating Local Wealth, Opportunity, and Sustainability through Rural Clusters." Regional Technology Strategies, Inc., March 2009.

[43] http://www.delni.gov.uk/index/press-releases/press-releases-apr-jun-2007/minister-explores-best=practice-in-north-carolina.htm

[44] "Research Triangle Park: Evolution and Renaissance." Rick L. Weddle, President & CEO, Elizabeth Rooks, Executive Vice President, Tina Valdecanas, Vice President - Corporate Strategy. The Research Triangle Foundation of North Carolina, June 2006.

However, it should also be noted that the RTP effort did not happen overnight, and in fact, has experienced quite a few setbacks and strategic reconfigurations throughout its evolution. And as the effort's mantra succinctly reminds us, "all overnight successes are at least 20 years in the making."[45]

The Research Triangle Park effort originated as a response to foreign competition, a rapidly changing global economy and North Carolina's relatively weak competitive position within the new economic paradigm:

> The idea for RTP stemmed from the need to reverse a number of negative economic trends facing the state's economy. In the 1950s, North Carolina had the second-lowest per capita income in the United States. Moreover, the economy was heavily dominated by low-wage manufacturing industries such as furniture, textiles, forestry, and small-scale agriculture. The airport was small and regional. The state was facing a serious "brain drain" as graduates in the state were leaving in search of better jobs, and those attending college outside the state were not returning.[46]
>
> Given the expected consequences, leadership at the highest public and private sector levels set about to reverse these trends. At the urging of key private sector leaders such as Robert Hanes, the president of Wachovia Bank and Trust Company, and Romeo Guest, a Greensboro building contractor, and with the help and support of North Carolina State Chancellor Carey Bostian, Governor Luther Hodges commissioned a concept report on the idea of the establishment of a research park to diversify the state's economic base. By the end of 1956, the University of North Carolina and Duke University joined the effort and the Research Triangle Development Council was formed. The vision was to attract research companies from around the nation to locate in a parcel of land surrounded by the state's research universities. The resulting "Research Triangle Park" would be a place where companies could take advantage of the region's intellectual assets in individual campus settings that provided a ready physical infrastructure.[47]
>
> In December 1958 the three educational research institutions founded the Research Triangle Institute (RTI), which was provided with a 157-acre campus in the middle of the park and a $500,000 start-up fund to cover projected operating deficits for the first three years.[48]
>
> The first five years of the Park's existence saw relatively slow growth. While Chemstrand, a company jointly owned by Monsanto Corporation and America Viscose, announced its decision to move into the Park in 1960, it was not until 1965 that growth in the Park concept truly took hold. In that year, IBM announced that it would locate a 400 acre, 600,000 square foot research facility in the Park. Also that year, the U.S. Department of Health, Education, and Welfare decided to locate its new $70 million National Environmental Health Science Center at the Park. With the location of a substantial government presence and a few notable private sector companies, the Park gained credibility as a place for research and development."
>
> The guiding assumption behind the initial recruitment strategy was to attract larger, more established companies that would build a culture in which smaller, start-up industries could thrive. The theory has proved well founded, as a number of smaller, spin-off companies have emerged."[49]

---

[45] "The Research Triangle Park: Past Success & Future Opportunities." Presentation by the Research Triangle Foundation of North Carolina. "Research Triangle Park: Evolution and Renaissance." Rick L. Weddle, President & CEO, Elizabeth Rooks, Executive Vice President, Tina Valdecanas, Vice President - Corporate Strategy. The Research Triangle Foundation of North Carolina, June 2006.

[46] "Research Triangle Park: Evolution and Renaissance." Rick L. Weddle, President & CEO, Elizabeth Rooks, Executive Vice President, Tina Valdecanas, Vice President - Corporate Strategy. The Research Triangle Foundation of North Carolina, June 2006, and http://www.kansasinc.org/pubs/kcspu01/appendix_c.pdf

[47] "Research Triangle Park: Evolution and Renaissance." Rick L. Weddle, President & CEO, Elizabeth Rooks, Executive Vice President, Tina Valdecanas, Vice President - Corporate Strategy. The Research Triangle Foundation of North Carolina, June 2006.

[48] http://www.kansasinc.org/pubs/kcspu01/appendix_c.pdf

[49] "Research Triangle Park: Evolution and Renaissance." Rick L. Weddle, President & CEO, Elizabeth Rooks, Executive Vice President, Tina Valdecanas, Vice President - Corporate Strategy. The Research Triangle Foundation of North Carolina, June 2006.

> In the late 1980s with a downturn in real estate, the three counties of Raleigh, Durham and Chapel Hill decided to cooperate in their regional development efforts. This collaboration was gradually expanded to include 13 counties and at the end 1994 became known as the Research Triangle Regional Partnership (RTRP). Today, RTRP is a private, non-profit corporation funded by the state and these counties.[50]
>
> Unlike the organic successes in developing and nurturing clusters of industry in California and Massachusetts, the genesis and growth of RTP was (like the Austin, Texas case) the result of a well-formed, strategically planned vision and supporting public policy and investment.…By establishing a place where educators, researchers, and businesses come together as collaborative partners, the founders of the Park hoped to change the economic composition of the region and state, thereby increasing the opportunities for the citizens of North Carolina."[51]

Lessons for Alaska: Focusing on Knowledge-Based Industries that are Rooted in a Region's Particular Comparative Advantages

RTP's success was built around its first-mover status in the field of science parks; its ability to build a critical mass of technology companies and knowledge workers; and the Park's linkages to the region's universities' research and development strengths. And the subsequent impacts of the Research Triangle Park have been widely touted:[52]

- 157 world class firms employing 39,000 full-time workers
- 20 million square feet of built space
- $2.8 billion in capital investment
- $2.7 billion annual payroll

But perhaps more importantly, in addition to the quantitative results of the Park, RTP has succeeded in raising the level of involvement of the corporate, political, and academic communities in the region and state as they work together toward a common cause. In the words of former University of North Carolina president, William Friday, "Research Triangle Park is the most significant economic and political manifestation of will in the state in the last century."[53]

"Alaska's university system is not organized for maximum economic development impact. For example, the Fisheries Program is housed at the University of Alaska Fairbanks, rather than at one of the coastal campuses where the seafood industry is active."

— Consultant to the seafood industry

As a result of the Research Triangle Park Initiative and other long-range strategic initiatives, North Carolina has moved to the forefront of innovative regional economic planning and has significantly transitioned from more labor or capital-intensive industries towards knowledge-based industries—banking and financial services, high-tech, R&D, biotechnology, etc.

With this approach to technology-based economic development, North Carolina has become a best practice reference region for countries and regions across the globe. In 2007, Northern Ireland's Em-

[50] http://www.kansasinc.org/pubs/kcspu01/appendix_c.pdf

[51] "Research Triangle Park: Evolution and Renaissance." Rick L. Weddle, President & CEO, Elizabeth Rooks, Executive Vice President, Tina Valdecanas, Vice President - Corporate Strategy. The Research Triangle Foundation of North Carolina, June 2006.

[52] "The Research Triangle Park: Past Success & Future Opportunities." Presentation by the Research Triangle Foundation of North Carolina. "Research Triangle Park: Evolution and Renaissance." Rick L. Weddle, President & CEO, Elizabeth Rooks, Executive Vice President, Tina Valdecanas, Vice President - Corporate Strategy. The Research Triangle Foundation of North Carolina, June 2006.

[53] "Research Triangle Park: Evolution and Renaissance." Rick L. Weddle, President & CEO, Elizabeth Rooks, Executive Vice President, Tina Valdecanas, Vice President - Corporate Strategy. The Research Triangle Foundation of North Carolina, June 2006.

ployment and Learning Minister, Sir Reg Empey conducted a fact finding mission to North Carolina specifically to learn from the state's experiences and policies:

> Commenting on his meetings, the Minister said "In order to compete in a global market, Northern Ireland must learn from examples of best practice from around the world. The work being done in North Carolina is an excellent example of how a holistic approach encompassing Further and Higher Education and the business community can raise skills levels and attract inward investment.[54]

Transition to an economy that both needs and produces knowledge workers places difficult demands on the educational system. As Alaska considers the type of institutional framework that would be most appropriate to elevate the impact of knowledge-based industries in the state, it should be reiterated that knowledge-based industry development strategies often take a long time and that they require strong commitments and a long-term perspective. Furthermore, the model must be scaled and conceptualized to the state's particular context and comparative advantages and designed for the particular kinds of companies that are most likely to spin out of university and other research.

Why Are these Case Examples Important?

Some leaders may feel that Alaska's unique history and atypical development challenges are such powerful constraints on economic development that the system and approaches that have evolved over the years are the best way forward. But these case examples show that other regions having different fundamental characteristics than Alaska's, for sure, have nevertheless been successful in overcoming barriers to economic development not so different that those faced by the state. All of the cases presented have a few themes in common, and each theme is relevant to Alaska.

Leaders can take steps to affect the trajectory of an economy—a state's economy is not somehow preordained towards a particular destiny. Interventions in the status quo in the form of new public policies, bold private sector initiative, new public-private partnerships and strategic resource allocation can all affect the trajectory of an economy. Alberta makes this case quite clear. The vision of a single leader in the 1970's drove new thinking in the 1980s about how to achieve a far more diverse economy. Subsequent policy initiatives launched new economic development organizations with new missions. New initiatives in education and training and in science and technology began to shift the structure of the economy in the 1990s. Analysts looking at the province's economic transformation typically note that its success relative to neighboring provinces can be attributed to successful diversification into new economic sectors that now complement resource extraction and industrial manufacturing.

Strategic planning can have a payoff—Economic analysis cannot end with a simple statement of the problems. This Phase I Situational Analysis for example, is envisioned to be a foundational document on which the most important task to come, a strategic plan, is based. In effect, the situation analysis is necessary, but insufficient to spark the new thinking and new behaviors that will be needed to move Alaska's economy in new directions. In every case presented above, leaders took steps to design, launch and implement a comprehensive strategic plan to guide their region's development.

Leaders in states whose economies are threatened cannot afford to do nothing and wait for economic conditions to improve—Waiting for new economic conditions is not a strategy. Oil prices might go up, and that would be good. But they might, as they have in years past, go down. By their nature commodity prices will vary according to demand conditions far removed from Alaska's control. In this context, Alaska's leaders need to mobilize around the need to inform residents of the "razors edge" on which the economy rests and organize themselves for new, collective action.

[54] http://www.delni.gov.uk/index/press-releases/press-releases-apr-jun-2007/minister-explores-best=practice-in-north-carolina.htm

How leaders respond to the state's challenges will depend on their willingness to take this report and the others that echo the same themes and boldly go to work on the all important next task of strategy development. If this moment of Denali Commission funding and APED leadership slips away without broad based new action, the next opportunity to take such action will not come along for some time because the resources that have been invested in this effort are becoming increasingly scarce to come by.

ASSESSMENT OF ENTREPRENEURSHIP AND BUSINESS CLIMATE

Factors Affecting Economic Vitality

This section is presented at this point to look in more depth at some factors that, while related to the EDO strengths and weaknesses analysis presented earlier, instead addresses the broader question of whether Alaska has within itself wherewithal to do what is necessary to make the economy more sustainable for future generations. Overall, is the climate (in the widest possible sense) conducive to economic change, growth and prosperity? In particular, is it a good environment for both business entrepreneurship (the generation, growth and sustainability of new and innovative enterprises) and civic entrepreneurship (the collective action of leaders to think and act differently to achieve a new economic vision)? Business and civic entrepreneurship are mechanisms for *change*. In combination, we are talking about an *innovation economy*—one that can adapt to challenges from the outside.

Since the world economy is quite dynamic, with constantly changing commodity prices, market demands, new technologies and new products, any regional economy that lacks mechanisms to allow for corresponding changes in resource allocation, technological progress, institutional adaptability and other aspects of what we can broadly call entrepreneurial initiative, will quickly fall behind. Even if the region's goal is to "tread water" and simply maintain its quality of life, the region's economy must be generating new companies, new products and new ways to rejuvenate itself at some minimal level. This kind of flexibility is at the very heart of a market economy.

It is a challenging task to characterize Alaska's climate for entrepreneurial initiative, since it is in fact such a unique economy. Its uniqueness has been noted elsewhere, but in this section, some of the relevant characteristics include:

- The two extremes of a large subsistence economy (mainly Alaska Natives) juxtaposed with a highly "outward-oriented" economy (resource industries, federal government, military and research). The subsistence economy is largely un-documentable according to standard metrics, while the most visible economic activities are oriented toward "traded goods" to an extraordinary degree. One of the many consequences is that some of the most common measures of entrepreneurship, such as the well-known Kauffman Index of Entrepreneurial Activity, presents a distorted picture.[55]
- At the mercy of exogenous factors. The relative prosperity or lack thereof of the traded sectors of the economy is to a large degree totally independent of the actions of Alaskans—whether it be the prices of oil, other minerals, fish and wood products, or the priorities of the U.S. Military and other government departments. Of course there are some ways in which Alaskans can influence these factors, by for example moving toward more value-added fish products, or lobbying government agencies, both of which can serve to mitigate somewhat these exogenous swings in basics affecting the economy, but for the most part the economy is extraordinarily dependent on the actions of others.

Thus, characterizing Alaska's climate for entrepreneurial initiative is a task that needs to be undertaken with care.

The issues of entrepreneurship and business vitality are best examined by evaluating the environment for new businesses and existing businesses separately.

[55] Alaska ranks 5th in the country in the Kauffman Index for 2008, tied with California - although this is driven to a large degree by the fact that many jobs, such as in the fishing sector, are not salary positions, and the influence of the subsistence economy. These measures do capture a very important characteristic of the Alaskan economy, but the entrepreneurial activities in question are for the most part qualitatively different from the activities captured by the corresponding statistics in the "lower-48 states." In particular, a far lower percentage of these activities lead to so-called "gazelles" - fast-growth small companies that soon become medium and occasionally large enterprises.

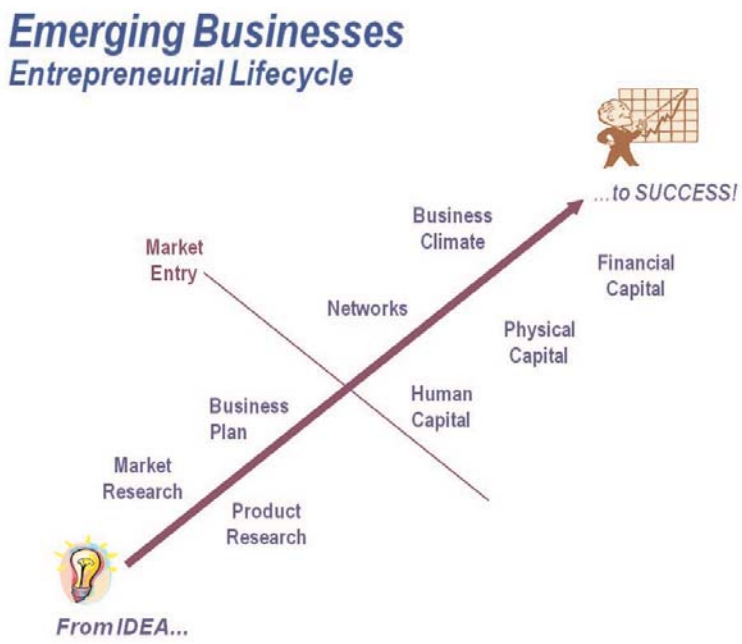
The Business Environment for Start-ups

A new business must overcome several hurdles as it goes from initial concept to sustainable operations.

To be successful, an entrepreneur must first build a business plan based on market research, product research, and financial analysis. By the time the business is actually launched, the source of trained workforce must be identified, physical plant must be installed and operational, financial resources must be located and deployed, licenses need to be obtained from the regulators at all levels, networks of suppliers and distributors established, and marketing and promotion must take place (see Figure 13).

However, in Alaska, several key factors serve to undermine this basic system for generating high-growth enterprises.

Figure 13. The Entrepreneurial Lifecycle



Several interviewees for this project focused on a single theme, noting that cost levels are so much higher in Alaska that the decision to launch an entrepreneurial activity is not just quantitatively different but qualitatively different from other parts of the U.S. Examining the entire range of potential activities that would normally make sense, these leaders find the constraint quite severe. To summarize:

- Processing of natural resources—the normal evolution of natural resource based industries such as fishing, timber, and mining is to move up from low value-added activities (extraction) to higher value-added activities, such as processing. However, the cost of most of the necessary inputs to such high value-added processing is prohibitively high—so most of the fish, timber, oil and ores that leave Alaska are processed elsewhere. While certain niches can always be found, an across-the-board shift into higher value-added activities seems unlikely.
- Manufacturing—labor costs are significantly higher in all occupations, while transportation drives up the cost of key inputs and capital goods that need to be brought in.
- Services—there are a variety of non-traded services that provide good wages for Alaskans. But when it comes to traded services, such as technical and engineering services, which can in principle be largely provided using the internet,[56] the high cost of living still makes such activities dubious, unless locals have some specialized knowledge based on Alaska's geographic location and resource mixture that can overcome the labor cost disadvantage.

These objective factors are exacerbated by the cultural and behavioral legacy of Alaska's high-spending economy. Because of Alaska's unique history and economic characteristics, the business community is used to the creation of economic activity through spending (mostly by government or oil companies), not through innovations that lower costs and provide new products more cheaply. A population that has experienced 50 years of "cost-plus" billing doesn't suddenly shift gears overnight to become lean and

[56] As service industries don't carry the same burden of needing to transport inputs and finished products over long distances, one hopes they can be more competitive in cost terms than manufacturing. However, the cost of developing out-of-state markets for new or growing businesses is often overlooked. Every business trip out of state begins with $500 to $1000 or more (per person) in plane tickets. For the same reason, it is difficult to make and maintain what might be viewed elsewhere as obvious business and professional networks.

competitive. In short, using the standard definitions, Alaskans are on the whole not very entrepreneurial in the business sense.[57]

There are additional constraints to creating an entrepreneurial mindset in Alaska. For example, when high paying jobs dwindle, in most economies the labor force adjusts, and workers are re-trained in new industries, even if the wages are somewhat lower. Alaska's urban labor force, on the other hand, is exceptionally mobile—so that instead of accepting lower wages, many will relocate to the "lower 48." Conversely, when new high-tech jobs do become available, they often go to outsiders, who have generally received more specialized training in such fields.

In this kind of business environment, the most talented residents will migrate toward government jobs, or what economists call "rent-seeking" activities—jobs dependent on special licenses, allowances and sinecures that are typically more prevalent where governments and regulations dominate, or where geographical constraints create "local monopolies" in the private sector.

This difficult situation is partly inevitable given the geographic and resource endowment of Alaska—but it is also in large part a direct by-product of existing government policies. The extensive use of government supports as a policy instrument contributes to the high-cost economy while dulling the impact of market-based incentives. In general, a company, industry or interest group which is facing economic hardship calculates that it will probably return to prosperity sooner by pursuing government largesse than by finding more efficient technologies, cutting costs, discovering innovations, and finding new markets—e.g., but pursuing the "entrepreneurial" solutions.

Government support is also the story of civic entrepreneurship in Alaska, if to a lesser degree. Alaska's vast geography and the varying needs of residents as they live farther from the urban centers has evolved a non-system of EDOs and other development agencies supported entirely or largely by government. These organizations have a presence in remote places and attempt to address the specific or unique needs of the people they represent, but there funding is generally not up to the task nor, we were told in the interviews, their staff not up the challenge. The way Alaska's institutional approach to economic development has grown has been more government spending, aimed as best as possible at overcoming enormous development challenges in regions far removed from even basic economic development opportunities. Civic entrepreneurship, the collective action of the private sector, is not encouraged when the government plays such a large role in the economic development game.

Frontier Spirit or Welfare State

When looking for appropriate regions to compare to Alaska in the benchmarking exercise, the utility of benchmarking Alaska against Norway was debated. Both straddle the Arctic Circle, both have significant Native populations, and both have significant oil revenues; but the point was often made that Norway's social democratic system is quite different from our capitalist system, and that Norway is a country with considerably more autonomy regarding economic policy as compared with a state—so that apples-to-apples comparisons might not be possible or productive. Nevertheless, one of the private sector interviews with a private business executive, who had been based in Norway for several years, was illuminating. This executive—a born and bred American—stated that the business climate was far more 'business friendly' in Norway than in Alaska.[58]

---

[57] This is not a moral judgment, but an almost inevitable result of the historical economic reality. With a population of 680,000, the internal market size has been insufficient to spur innovation. Before the opportunities now made possible by globalization, Alaska's only economic advantages have been its natural resources, which were beyond the financial capacity of locals to exploit. Seen in this context, Alaska's past dependence on the wealth of others (oil companies, mining companies, federal government, etc.) has been a necessity, not a choice.

[58] In addition, this interviewee reported that the public's confidence in the technologies and safeguards used in exploration and recovery appears to be higher there, allowing for a less contentious public debate regarding the role of that industry in the overall economy. This is also in part explained by the much narrower gap between the haves and the have-nots in Norway as compared to Alaska - when the distribution of income is less skewed, people tend to be less suspicious of being exploited by big industry.

This would appear surprising to those who were raised with the notion that the U.S. system is far more entrepreneurial than Europe's. However, he pointed out that the general public is far more supportive of the oil industry in general, while universities, research centers and business organizations were far more pro-active in finding ways to invest in value-added activities to leverage the oil resource. In fact, knowledgeable Alaskans are aware that not only Norway, but also Sweden, Denmark and Finland are actively involved in business investments, public private partnerships, and perhaps more development-oriented (rather than protectionist) trade policies. Norway's oil policies have in general plowed a greater share of the oil revenues into investments (in infrastructure, research and education) than into consumption (e.g. subsidies) than Alaska.

Thus, the standard notion that Europeans live in "welfare states", while Americans have a natural bent towards the "frontier spirit", may need to be revised when characterizing Alaska. Certainly Alaska still has plenty of rugged individualists, and a subsistence/barter economy is still an important part of many communities—so a single label cannot be applied to Alaska with impunity. However, time and again during the interviews, phrases like "entitlement mentality" and "welfare state" kept coming up in place of "market-driven" and "entrepreneurial spirit." Clearly, any types of programs designed to promote entrepreneurship that have been successful in other regions (such as loan programs, incubators, and technology commercialization funds) will be fighting against a strong current unless the underlying policies that have created this non-entrepreneurial mindset can be reversed.

The Alberta "best practice" case provided another example, where leaders recognized the need for an entrepreneurial mindset and persistence to achieve greater economic diversification. Although Alberta took the lead, the other western provinces followed, to varying degrees, by investing their resources in technical and trade schools, in universities, in research centers and in promoting entrepreneurship. What this "Western Canada strategy" recognized is that long term progress toward greater diversification starts at home. These provinces took a strategic look ahead and placed their bets on building up new, more knowledge-based industries.

Despite this less than glowing assessment of Alaska's climate for change, it is possible to change this mindset and foster a more entrepreneurial culture. However, it would require that state government no longer operate by being "all things to all people", providing resources at the first sign of trouble. With stronger fiscal discipline (which is likely to be forced anyway by forecasted declines in oil revenues) and a clearer vision of Alaska's future economy, incentives for new business investments should begin to lead to more entrepreneurial behavior.

The state has several assets and trends that can assist in this transition:

- The University of Alaska—the university has been the generous recipient of federal research dollars, and boasts a significant research infrastructure (Alaska ranks 3rd in the U.S. for university R&D spending per 1,000 workers).[59] The challenges of mobilizing this expertise into an effective technology commercialization "engine" are significant,[60] but can be overcome through intelligent application of the basic principles of a 'knowledge economy.' Over time, the share of income from Alaska's resources will go less to the owners of those resources, and more to the owners of intellectual property needed to extract value from that resource. It is in Alaska's interest that a significant share of that intellectual property is developed in Alaska.

[59] Source: National Science Foundation/Division of Science Resources Statistics, Survey of Research and Development. Average annual expenditures from 2002 - 2007 is $472,000 per 1,000 workers, ranking only below Maryland ($895,000) and Massachusetts ($611,000).

[60] In addition to the purely economic challenges (e.g. high costs), there are mindset challenges in this area as well. In the process of conducting interviews with economic development professionals throughout the state, the interviewers found that some 90% had nothing to say about technology commercialization as a strategy - in fact, so many asked the interviewers to please define that term, that the interviewing staff asked if that question could be dropped from the questionnaire. Research dollars in Alaska have mainly been seen as increased spending in the local economy, not as investments that provide a key stepping stone to developing indigenous technological capabilities and creating new industries.

- Native Corporations—Much of the capital generated from economic activities in Alaska is controlled by interests that are not based in Alaska, so even though wealth is generated, this doesn't mean that investments automatically take place in Alaska. The Alaska Native corporations (ANCSA corporations) represent a partial solution to this problem. By their charter, most of these entities have some motivation or incentive to take the long-term view regarding investments in Alaska. Many of them are free to invest their assets (which exceed $4 billion currently) anywhere in the world, and they do so aggressively. However, most of their stockholders are based in Alaska, and their wellbeing will ultimately be driven by the underlying health of the Alaskan economy. Thus, they have an incentive to direct a significant part of their assets into investments that will have a pay-off in the medium to long term, an incentive that offshore investors don't share. Thus, as part of a well-conceived and clear economic policy for the state, active ANCSA involvement[61] in selected technology commercialization efforts, business incubators, loan programs and other activities designed to generate entrepreneurial activities should be in their "narrow" (profit-oriented) as well as "broad" (community-oriented) interests.
- Existing entrepreneurship organizations—In general, there is a severe lack of organizations to promote an environment that is supportive of entrepreneurship. One exception is the "Alaska Innovation and Entrepreneurship Support Group"[62] founded by Allan Johnston. This network of business leaders, investors, and support organizations boasts a remarkably diverse membership, across most major economic sectors, geographic regions, ethnicities and levels of experience to be found in Alaska. The group provides a resource for information, problem-solving, best practices and what can best be termed as "moral support" for (primarily young) entrepreneurs who have embarked or are considering embarking on a risk-based venture. Members of this group who were interviewed reported that their time was "well spent" and, especially since the cost to state and local governments is zero, the returns are obviously significant. However, this group represents a single point of light in what needs to be a spectrum of related support organizations designed to support entrepreneurship across the state (see Figure 14 for an example of what such a network looks like in Florida, for example).

Figure 14. The Entrepreneurial Lifecycle with Supporting Programs

[61] In some respects, we may also look at the Western Alaska Community Development Quota Program (CDQs) similarly. Their investments were restricted to the seafood industry until quite recently, but even with regulations being a bit looser now, they are quite different from the ANCSA corporations. Nevertheless, they also represent an asset that could potentially help shift the balance on entrepreneurial investments to some degree.

[62] Now branded as TEAM.

Conclusion

For reasons having to do with history and the state's special characteristics, Alaska doesn't appear to have a particularly good climate for business risk-taking nor, we are told by interviewees, a willingness for "change," "innovation" or "rejuvenation" the state's strongest characteristics. Instead, Alaska seems to have evolved what too many informed leaders told us is an "entitlement mentality" for us to not report this conclusion.

Ultimately, the goal is to provide a good environment for innovation—for new companies to start-up and grow and for new thinking and new behavior within and among the state's EDOs and other development organizations. This will require a significant shift in both how leaders think about the economy and in economic policies going forward. On the other hand, if the fundamental incentives in the economic system can be fundamentally altered, the entrepreneurial spirit is never lurking far below the surface, and can rise to strike at good economic opportunities and to meet new economic challenges.

ECONOMIC PROFILE AND OUTLOOK

Macroeconomic Summary

From the perspective of an analysis of Alaska's economy, the need for a new approach to economic development is made even clearer.

Any economy is a complex system. From a short-term perspective, Alaska appears to have weathered the Great Recession of 2009 well compared to other parts of the economy and will be participating in the global cyclical recovery. However, from a longer term perspective there are risks and concerns that ultimately provide a rationale for a new approach to economic development to deal with potential risks and a loss of economic resiliency.

In order to come close to understanding how an economy works and where it is going, one needs to investigate it from a variety of perspectives and different levels of detail. From the perspective of total real value added or Gross State Product (GSP), Alaska looks stagnant, largely because of declining oil production. The top line view is one of stagnation and lagging economic performance.

Aggregate GSP in this case is a somewhat misleading indicator – employment and real incomes are much better indicators of how people feel and these indicators are much more positive than GSP. First, the oil industry is very capital intensive, so both increases and decreases in output have a more muted impact on employment than in other more labor intensive sectors. Second, labor intensive sectors like travel and tourism have been growing and generating jobs. Third, while prices of the state's commodities are lower than the highs of 2008, they are still at historically high levels. These high price levels are supporting income and employment across the state. Finally, federal government spending has stayed relatively strong. Therefore in many ways, Alaska is doing much better than the aggregate GSP data describe.

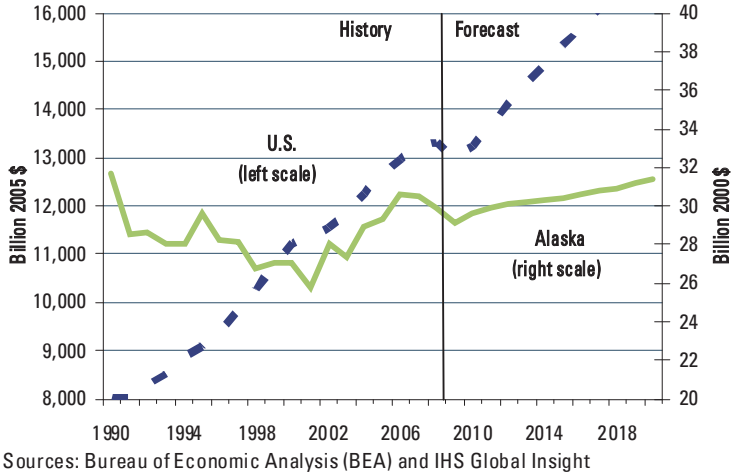
Upon closer examination of the comparatively brighter employment and income situation, one can find the seeds of concern for the future. The state's per capita income and non-mining labor productivity is lagging. The "income effect" of high commodity prices could be hiding structural problems and commodity prices can quickly become a curse when they start to fall. Similarly, future cutbacks in federal government spending could have a disproportionate impact on Alaska than other states.

Gross State Product

As measured by GSP, compared to the total U.S. Economy, Alaska's economy has been stagnating for the past 20 years. Over the 1990 to 2020 period we expect the U.S. economy to have doubled in real terms (constant dollar). Over the same period, the economy of Alaska will not even have reached its level of total activity in 1990, although it will have grown modestly from the secular trough in economic activity in 2003.

From year-to-year the state economy tends to rise and fall with the fortunes of the primary resource sector. The price and demand for these commodities are volatile in general and in the last few years the cycle has been severe. On an annual basis real

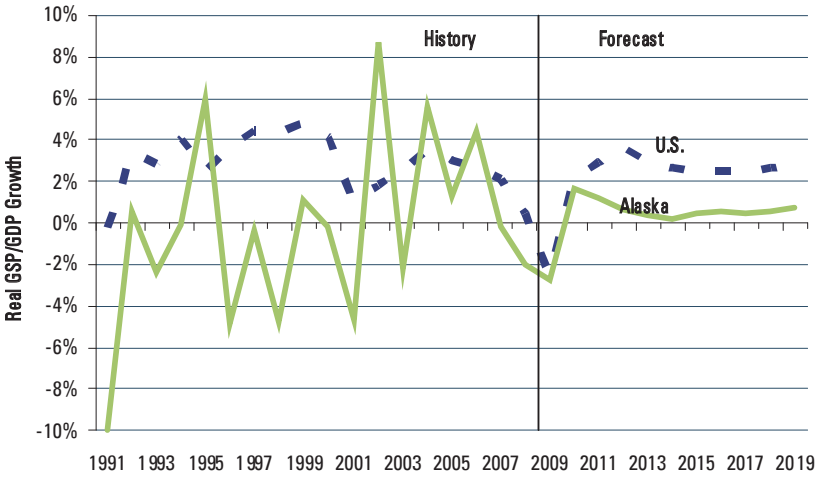
Figure 15. Twenty Years of Comparative Stagnation
(Real gross state/gross domestic product)



Sources: Bureau of Economic Analysis (BEA) and IHS Global Insight

Gross State Product actually contracted in 5 of the last 10 years. In years when the primary resource sectors are thriving the overall economy performs well and when these sectors are contracting the overall economy struggles. More recently real gross state product was flat in 2007 and it contracted by 2% in 2008. IHS Global Insight is projecting a 3.2% contraction in 2009 and a modest rebound in 2010 followed by much slower growth than the rest of the country over the next 10 years.

Figure 16. Volatile GSP Growth

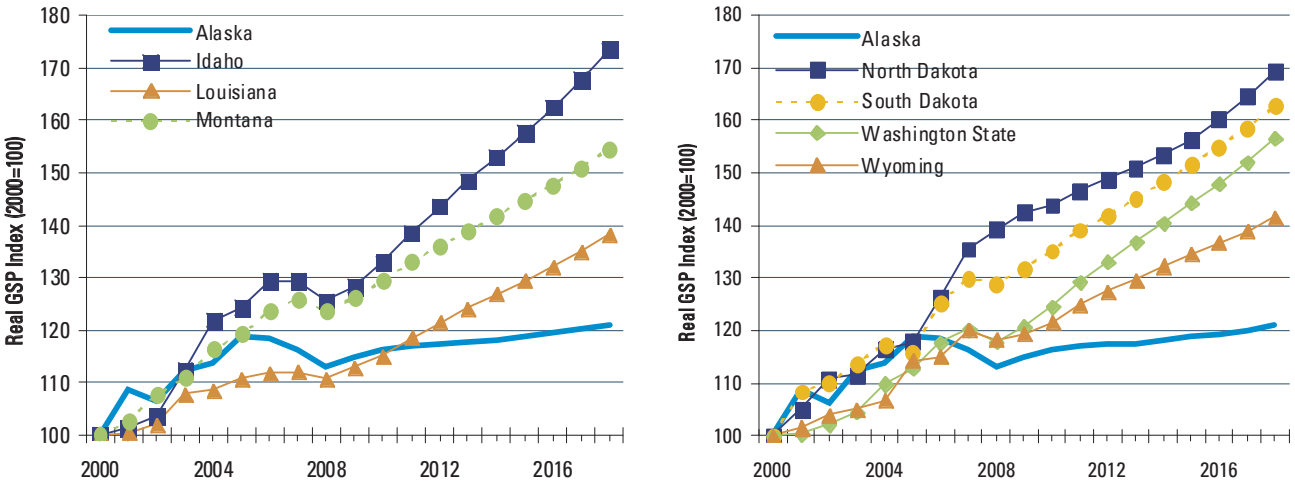


Sources: BEA and IHS Global Insight

The most important single reason for this stagnation is the marked decline of the state's basic industries which include oil and gas extraction, commercial fishing and seafood processing as well as the military and government sectors. For instance the mining sector (including the oil industry) is the largest industry in the state, however its share of the state economy has fallen from 35% in 1990 to just 16% in 2008. While this is in some manner a sign of diversification, other sectors have not particularly stepped in to contribute to a pace of overall economic growth that is expected elsewhere in the country. The tepid performance of these basic industries has constrained growth in industries that sell services including financial services, utilities, construction and professional and business services. Retail and wholesale trade as well as health services are growth sectors in Alaska primarily due to growth in the population.

Later in this report, Alaska's economic foundations will be compared to a set of peer states: North and South Dakota, Idaho, Montana, Louisiana, Washington and Wyoming. Figure 17 below compares Alaska's real GSP to the same group of peers beginning in 2000 and extending over the forecast period. It is clear that Alaska has lagged behind most of these states over the last 8 years. More important is that the base case forecast is for the economic performance gap to increase.

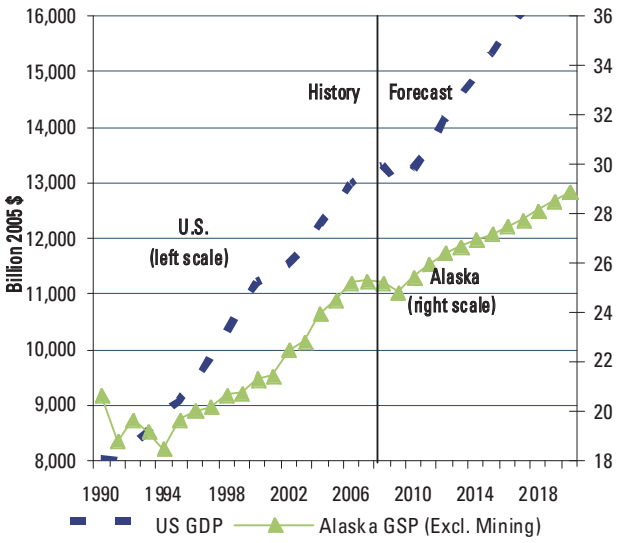
Figure 17. Lagging Economic Performance to Continue



Beyond GSP—Non-Mining Economy

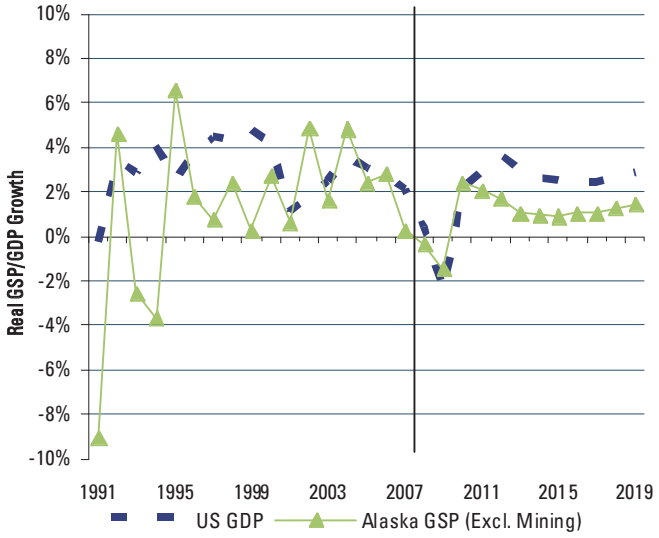
As will be discussed later in this report, the state's energy sector is in decline and is a powerful force underlying the relatively dismal GSP perspective. How does the rest of the economy look? One simple approach is to subtract the mining sector (which includes oil and gas production) from the state's total GSP. This is a simplistic exercise in that it does not also remove the indirect and induced impacts of the oil industry. Still, the indication is clear that the non-mining portion of the economy is not stagnating.

Figure 18. Alaska's Economy, Excluding Mining



Sources: Bureau of Economic Analysis (BEA) and IHS Global Insight

Note: Mining includes the oil and gas sector for the purposes of this chart



Sources: BEA and IHS Global Insight

Still, the non-mining economy is clearly lagging the rest of the country and IHS Global Insight sees the long term performance gap widening over the next 20 years.

Population

Population trends have an important impact on the economy. Over long periods population growth is needed to support growth in the labor force. The compounded annual growth rate in Alaska's population since 1980 has been 1.9%, however over the last 10 years population growth has slowed to just 1% and over the next decade we expect population growth to slow even further to 0.8%.

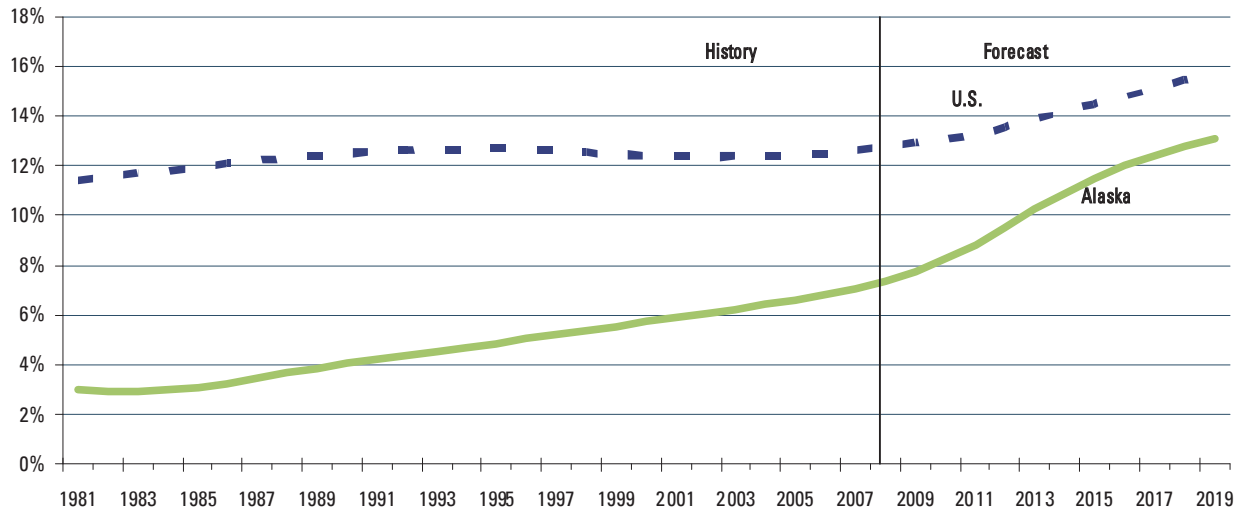
The limiting factor for growth in the economy is the source population for the labor force. The source population for the labor force is the number of people between the age of 15 and 65 years. Over the last 10 years this population has grown by 1.3% on a compounded annual basis—not much slower than during the previous 10 year period.

A large proportion of workers in some Alaska industries are nonresidents. This is partly due to the seasonality of these industries but also an indication of labor shortages and low wage rates in certain industries. Nonetheless net migration has been negative in recent years. Net migration out of the state was running at over 3,000 annually over the last two years—high by the standards of the last decade but not unprecedented. Our expectation is that this outmigration will continue and will average about 2,500 annually over the medium term.

Compared to the rest of the country, there is a smaller share of senior citizens in Alaska; however the gap is expected to narrow over the next 20 years. The dependency ratio will rise with the number of senior citizens increasing relative to the working age population, and this will create increased demands

on government and health care services. Retirees with financial means still tend to spend much or all of their retirement years in states with more moderate climates.

Figure 19. Aging Population

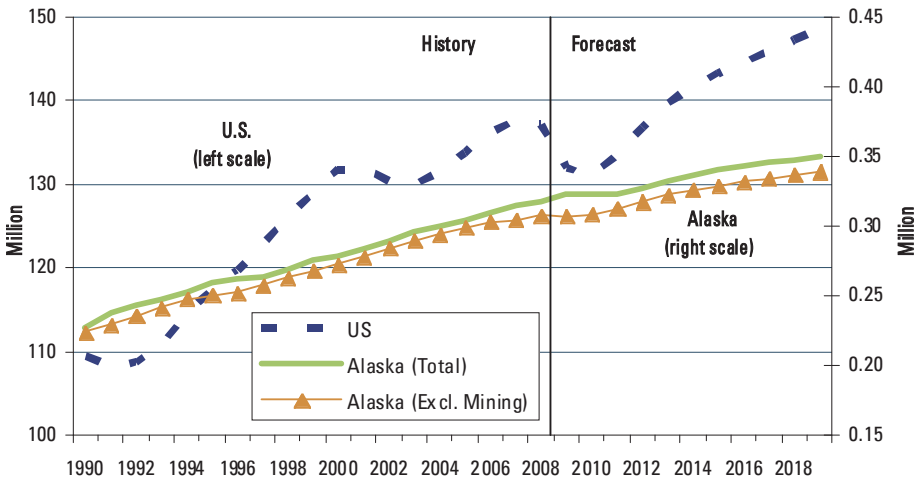


Sources: US Census and IHS Global Insight

Employment and Income

A remarkable feature of Alaska is the overall steady growth and stability of its level of employment. Employment growth in general has lagged the rest of the country, but its stability has provided Alaskan's with relatively more peace of mind than others might have in a more cyclical labor market. With the deep trough in national employment still lying ahead in 2010, Alaska looks to be an oasis of calm.

Figure 20. Steady, but Lagging, Employment Growth



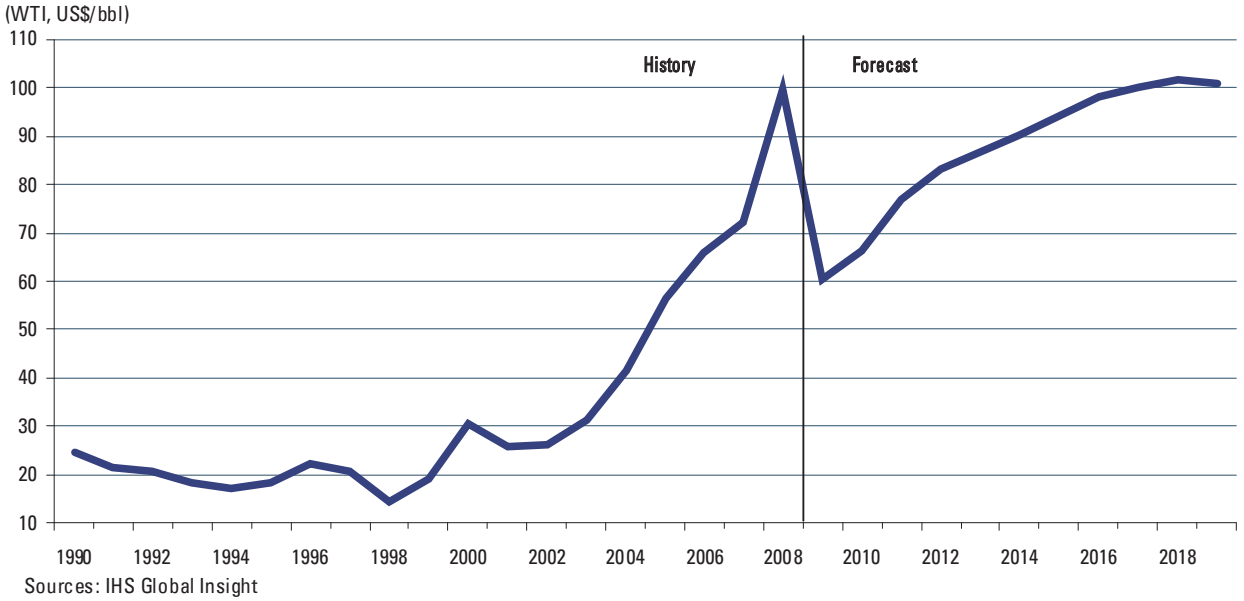
Sources: Bureau of Labor Statistics (BLS) and IHS Global Insight

In line with employment growth, real personal income has grown from $20 billion to $29.7 billion since 1990, a 48% increase. Real per capita income has increased at a much slower rate, up by 18% over the same period, a rate somewhat behind national per capita income growth of 24%.

However, it is important to understand that while employment in the overall mining sector (including oil and gas) is a relatively small portion of total employment, the sector has a powerful income effect on the economy. While some income does leave the state, a lot of it stays in the state or contributes to some powerful multiplier effects in the rest of the economy. The key driver of income in the sector is the price of oil which has been on a strong long term upswing since 1990.[63]

[63] Price of oil is defined as average annual price where average is taken over quarters. For 2008, the price of $100/bbl means for some quarters in that year the price of oil was below $100/bbl and for other it was above it.

Figure 21. Oil Price—a Positive Income Effect for Alaska



Sources: IHS Global Insight

In the current base case forecast, IHS Global Insight projects that oil prices will resume their growth and will reach a level of $100/bbl in 20 years, driven by continued expansion of demand, particularly in Asia. This strong outlook for oil prices, mirrored in other relevant commodity prices, will provide a strong economic buffer for the state. However, given the inherent uncertainty around commodity prices, there is a much higher risk surrounding this outlook of support than one might have for other more fundamental economic foundations.

While this is a "most likely" scenario, there is a lot of uncertainty with regards to the future price of oil and it is important for any company, or economy, that is dependent on the price of oil to consider other, potentially equally likely scenarios.

Three scenarios are provided by IHS CERA:

The Asian Phoenix scenario examines a future in which the global economic and political center of gravity shifts to Asia, changing the global strategic and business environment and restoring the place in the global economy that Asia held two centuries ago, when it accounted for over 60% of the world economy. The region's economic fortunes boost global economic growth above its recent historical average. The global economy expands at an average rate in real terms of 4.0% between 2006 and 2030, compared with 3.4% from 1980 to 2005.

World oil demand increases at a rate of 1.6% annually (the strongest of all three scenarios). By 2030 total world oil demand is 124 million barrels per day (mbd), an increase of 40.4 mbd over 2005. Prices for West Texas Intermediate from 2006 through 2030 average $64 per barrel in nominal terms, with a high price of $81 and a low price of $49.

The Break Point scenario explores a future in which oil supply difficulties limit production growth, leading to sustained high prices and a significant market response toward alternative fuels and technologies. By 2015 the break point is materializing—the world's energy system has evolved in ways that make it very different from the one that existed in 2005. Significant new sources of liquid fuel for transportation are produced at scale and are competitive with products derived from conventional oil. The industrial countries are endeavoring to limit carbon emissions through growing reliance on renewables, nuclear, and emerging carbon capture and storage technologies. On the consumption side the world as a whole is 32% less energy intensive by 2030 compared with 2005.

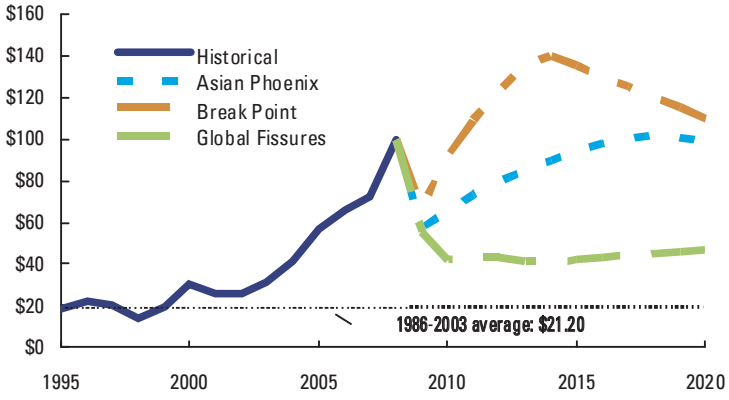
The world oil market undergoes severe stress between 2007 and 2015 as annual average prices for light, sweet crude oil rise to $120 per barrel ($96 per barrel in real 2005 terms). The foundation of this very high oil price environment is rooted in production limitations that keep demand tightly balanced with supply. Strife-related production disruptions, most notably the oil shock of 2013-14, contribute to restricting production and driving prices to new historical highs. But in the years after 2015 supply growth, including that of nontraditional liquids, combined with rising end-use efficiency of oil products leads to falling oil prices as supply increases relative to demand.

Total world oil demand increases from 83.8 mbd in 2005 to 108 mbd in 2030—a total gain of 24.2 mbd, which translates to an annual increase of 1%, or 970,000 bd. This weaker growth in demand reflects the impact of high prices, which leads to faster fuel efficiency gains.

The Global Fissures scenario provides a window onto a world where the limits of globalization are reached and world economic growth is lower than in recent experience. A confluence of factors turns large parts of the world against liberal trade and to a lower growth trajectory. Barriers to trade and investment are higher, and the incentives for technology innovation are more muted. Security concerns increase. Nationalism becomes a stronger driving force in shaping domestic and international politics. At the same time social pressures increase within and between nations to address gaps in wealth and opportunity. In short, Global Fissures marks a fundamental shift from the recent past in relationships among government, society, and the marketplace.

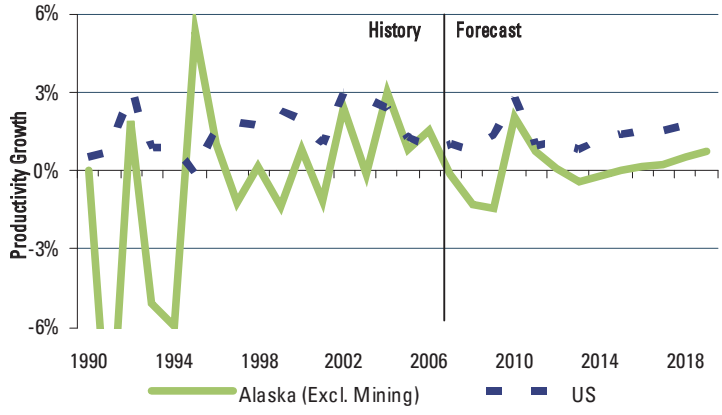
Figure 22. WTI Price Scenarios to 2020

(Nominal US$ per barrel)



Source: IHS CERA, Global Insight

Figure. 23. Labor Productivity, Excluding Mining and Oil and Gas



Sources: BEA, BLS and IHS Global Insight

World oil demand slows to a rate of 1.1% annually, notably less than the 1.6% annual increase recorded from 1970 through 2005. By 2030 total world oil demand is 110 mbd, an increase of 26.1 mbd over 2005. From the standpoint of oil markets one of the most significant features of Global Fissures is the dramatic drop in oil prices in the first part of the scenario. By 2011 nominal prices fall to $19 per barrel. Prices are pushed downward by weak demand growth, which slows to an annual average of just 1 mbd from 2007 through 2011. They are also pushed downward by a surge in liquid production capacity fueled by large projects that are sanctioned before the price collapse but come onstream as prices weaken. Oil prices do not stay at very low levels. The oil price downturn leads to reduced upstream spending, which helps to rebalance supply with demand. Prices rebound from $19 to the $40 level within several years, supported by more aggressive supply management by many major oil-producing countries. However, prices remain well below 2005-06 levels through 2030.

Labor productivity is another key driver of current and future income levels. After excluding the mining sector (which includes

oil and gas), there is concern that the state has and will continue to lag the national economy. This trend will be a drag on personal income growth in the future.

Alaska's Regional Structure

The state of Alaska is comprised of seven regions defined as aggregations of boroughs and census areas that are logically considered as economic units by virtue of their geographic proximity, industrial structure, and infrastructure requirements. The table below provides estimates of the value of economic activity in each region.

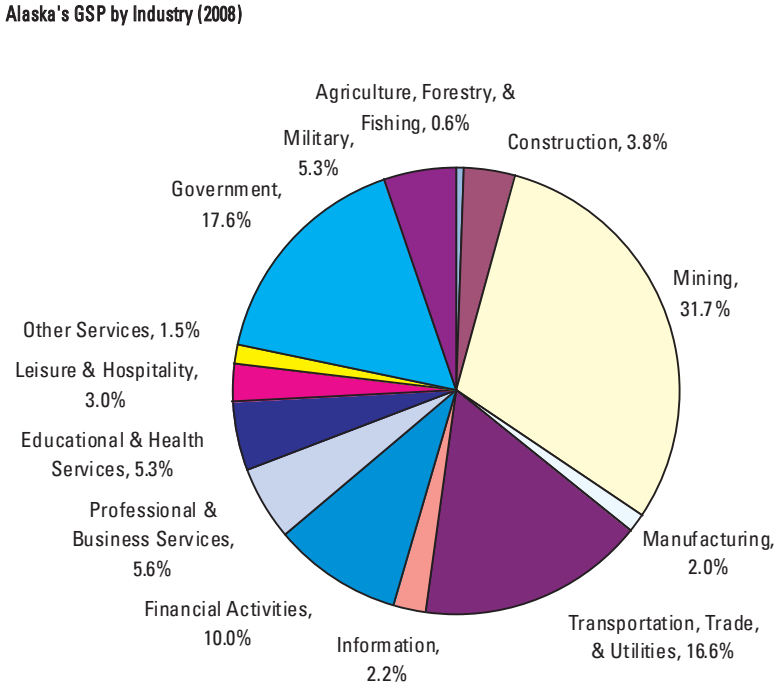
Table 5. Regional Economic Growth

	2008 Level (Million 2001 $)	Share of State (%)	2008 Estimated Growth (%)	2009 Forecast Growth (%)
Southeast	2,984	10	-5.2	-3.6
Anchorage/Mat-Su	16,969	54	-1.8	-3.4
Gulf Coast	2,277	7	-2.3	-2.5
Fairbanks	4,094	13	-3.8	-3.2
Interior Western	998	3	-4.8	-3.1
Southwest	1,075	3	-4.7	-3.6
Northern	2,916	9	5.3	-1.8
Total	31,304	100	-2.0	-3.2

Source: IHS Global Insight

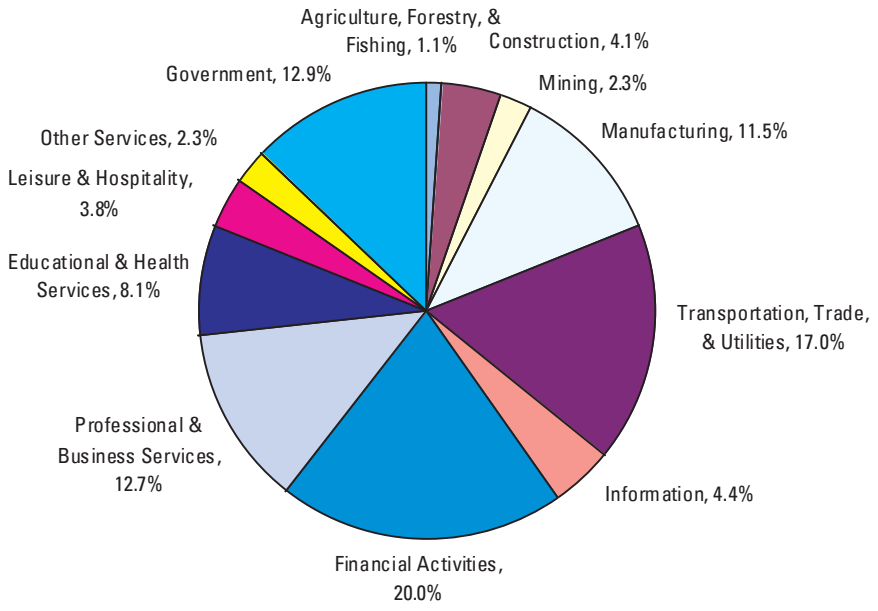
Alaska's Industry Structure

Figure 24. Alaska and National Industry Structure



Source: Bureau of Economic Analysis (BEA)

US GDP by Industry (2008)



Source: Bureau of Economic Analysis (BEA)

Table 6. Industrial Economic Performance
(Real gross state product)

	2008 Level (Million 2000 $)	2008 Estimated Growth (%)	2009 Forecast Growth (&)	2003-08 (CAGR)	2008-13 (CAGR)	2013-18 (CAGR)
Agriculture, Forestry, & Fishing	287	-6.4	-4.1	-2.1	0.2	0.2
Construction	1,058	0.4	-1.7	-4.6	2.1	2.1
Mining	4,733	-9.9	-9.4	0.8	-5.6	-4.6
Manufacturing	602	-9.1	-4.8	-2.5	1.5	2.2
Transportation, Trade, & Utilities	7,361	-0.2	-0.3	**4.2**	3.1	2.4
Information	1,225	8.0	2.5	**7.8**	2.7	1.3
Financial Activities	3,858	2.9	0.9	2.1	2.8	2.0
Professional & Business Services	2,298	10.0	2.6	**6.6**	3.0	1.9
Educational & Health Services	2,018	3.4	4.4	**3.2**	5.7	5.0
Leisure & Hospitality	1,112	1.7	0.5	**2.1**	3.5	2.7
Government	5,780	2.4	0.3	1.5	1.4	0.2
Military	1,554	4.6	1.0	**4.0**	1.5	0.3
Real Gross State Product	29,947	-2.0	-2.7	1.8	0.2	0.4
Real GSP (excl. Mining)	*25,215*	*-0.3*	*-1.5*	*2.0*	*1.2*	*1.0*
Real US GDP		*0.4*	*-2.5*	*2.4*	*1.8*	*2.6*

Note: Military not included in GSP, sum of sectors to not equal total due to chain weighting

Source: IHS Global Insight

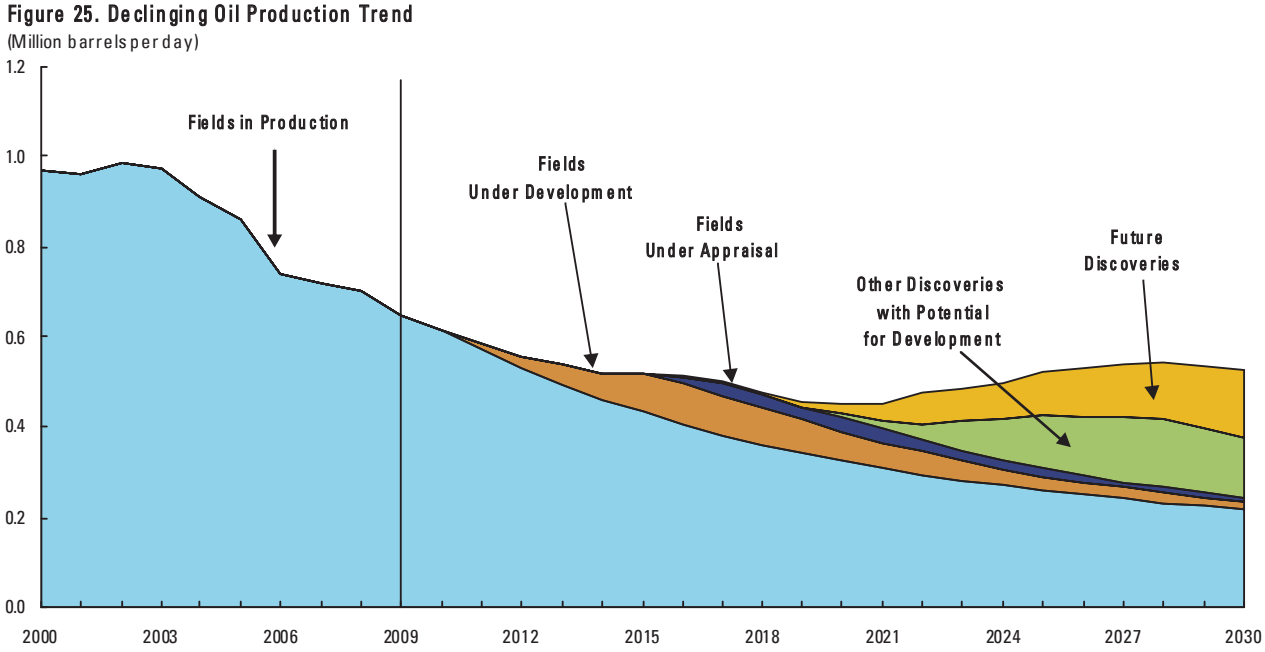
Taking another view of the Alaskan economy by means of its industry structure reveals a complex mix of trends. Over the last five years, the Information, Business Services, and Military sectors have been a powerful source of growth. Industries such as Construction, Manufacturing, Fishing, and Mining (incl. oil and gas) have been a negative force on overall growth. Looking forward over the next five years, Mining will continue its secular decline due to the decline in oil production and sectors like Education and Health Services, Transportation, Trade and Utilities, Leisure & Hospitality, Financial Activities, and Information will outperform the average.

Oil and Gas Industry

Alaska's oil and gas sector is massive. It has held the position as the second largest oil producer in the nation for 30 years. It produces about 15% of the nation's domestic supply and employs 3% of the national oil and gas work force. It is no surprise that the Alaska's fortunes are highly dependent on the oil and gas sector.

The central challenge is that Alaska's oil production has been in decline since 1988. The fields that are currently producing have an aggregate decline rate of just over 6%. Without any new developments, we expect these fields to be producing only about one-third of their current levels by 2030. However, we can expect some modest relief in the near term with three fields that are under development, coming on stream between 2011 and 2014. These developing fields will slow- but not reverse- the current decline rates in the near term. We expect Alaska's production in 2015 to be about 522,000 b/d or 75% of 2008 levels.

Figure 25. Declinging Oil Production Trend



Source: IHS CERA

There are 39 discoveries in Alaska that are not developed, yet among these we anticipate that only six might be large enough for commercial development. One of these is currently being appraised and may move forward with development and first oil in the 2012-2014 timeframe. The other undeveloped discoveries are far from infrastructure in the northwestern planning area of the NPR-A. As a result, oil from these discoveries is at least a decade away. If they are developed, they can substantially impact Alaska's production, allowing production to plateau for several years post 2020.

The United States Geological Survey (USGS) estimated in 2008 that Alaska holds 30 billion barrels of technically recoverable oil that has not yet been discovered. However, these are most likely to be in remote regions far from infrastructure. As such, much of this oil will remain undiscovered for a number of years and undeveloped for years beyond that.

Exploration, however, will continue. To estimate the impact on future production, we assumed that the volumes brought on-stream in the future will be less than those brought on-stream in the recent past but that the pace of bringing the volumes on-stream will be about the same. In this scenario and combined with the assumed production from the undeveloped discoveries, it may be possible to maintain

production at or near the levels predicted for 2015. Much depends, however, on the pace and location of exploration. More substantial discoveries in the northwestern planning area of the NPR-A will facilitate development of existing discoveries there.

In 2008, employment in the industry climbed to 13,000 when oil prices reached an all time high at $150. While additional employment growth has been reported in 2009, based on our oil production projection scenario, the trend in employment will be negative. Gas production is also declining rapidly in the Cook Inlet region, and the region could face a gas shortage as early as 2010.

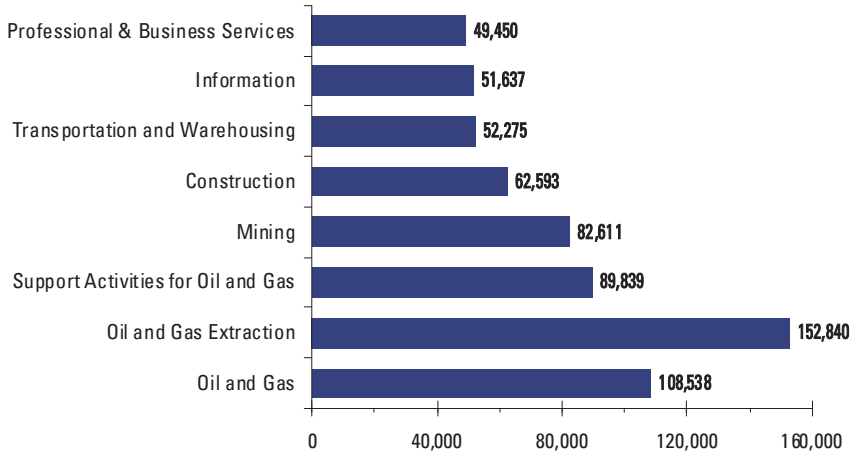
To alleviate this, Alaska is reviewing options for a gas pipeline to bring gas to the region from the North Slope. If either of the two export lines is built, then the smaller regional line can be built as a spur off the large trunk line.

The oil and gas industry in Alaska is narrowly focused and can be classified into four groups—oil and gas extraction, support activities for oil and gas operations, pipeline transportation, and refinery operations. The payroll contribution of these sectors was over $1.5 billion in 2008. The industry makes an enormous contribution to state government revenues in fact petroleum royalties have increased sharply over the last 10 years. These royalties and taxes make up about 85% of state revenue. Unfortunately, oil production has been declining for the last two decades due to depleted reserves.

The production of crude oil has fallen by 60% since 1990 and it stood at 257 million barrels in 2008. The production of crude oil is concentrated on the North Slope and most of the crude is transported by pipeline and tanker to refineries located outside of the state. Alaska's refineries meet local demand and are located at Fairbanks, Nikiski, and Valdez. Some of the major oil producers and oil field service companies are—BP Exploration Alaska, ExxonMobil Production Company, ConocoPhillips Company, Nabors Drilling, Doyon Drilling, Alaska Petroleum Contractors, CH2M Hill, Schlumberger Technology Group, Peak Oilfield Service Company, Udelhoven, Halliburton, and ASRC Energy Services, among several others.

The production of natural gas is concentrated in two regions—North Slope and the Cook Inlet region. About 95% of gas is produced in association with oil in the North Slope fields and the remaining non-associated gas is produced in the Cook Inlet region. Natural gas is also used to re-inject in oil reservoirs to maintain pressure in order to keep oil production as high as possible. Over 1990-2005, the production of gas in the Cook Inlet region, has stayed roughly constant 205 billion cubic feet (bcf) in 1990 to 208 bcf in 2005.

Figure 26. Oil and Gas: A High Wage Industry
(Average annual wages, 2007, US$)



Source: Alaska Department of Labor andWorkforce Development , Research and Analysis Section

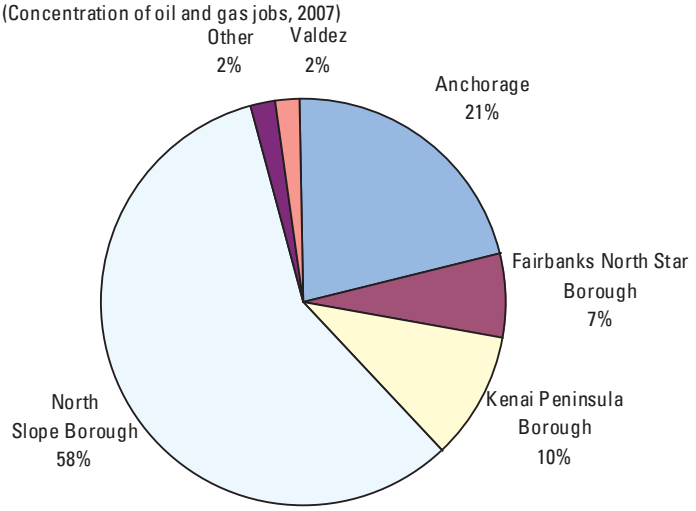
The oil and gas sector pays wages that are higher than the others in the Alaska economy partially because these are very high skilled jobs. In 2007, the total employment of the sector was about 12,500, representing 4% of the total wage and salary jobs in the state. The industry's average annual wage in the same year was $108,538, compared to state average of $43,524.

About 90% oil industry employment is concentrated in three areas—Anchorage,

North Slope and Kenai Peninsula boroughs. Anchorage is home to state headquarters for many industry players. Kenai Peninsula borough is a mature oil region and has oil and gas production wells, pipeline transportation, LPG facility, and oil refinery. North Slope has the largest concentration of the oil industry jobs, though the workforce is almost entirely from outside the borough. About one-third of North Slope workers are from outside of the state and this proportion will be rising in the future. Earnings paid to nonresidents working in the oil industry totaled about $365 million in 2007, up from $328 million in 2006. However, the nonresident share of earnings declined to 27.7% in 2007 from 28.7% in 2006.

Figure 27. North Slope: The Major Player

(Concentration of oil and gas jobs, 2007)



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

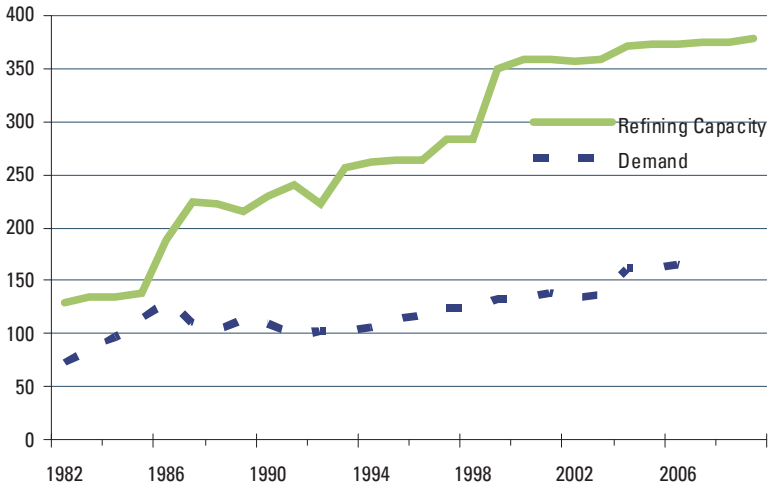
The sector faces the challenge of volatile prices however there has been a dramatic improvement in technology in the last 10 to 15 years that has helped to sustain production. These technologies include horizontal drilling and 3-D and 4-D seismic surveys. The impact has been to reduce the number of wells that need to be drilled and brought major changes in the way other activities are performed.

Although there has been long-term demand growth for petroleum products in Alaska, significant spare refining capacity remains.

In 2007, Alaska consumed 156 thousand barrels per day of petroleum products and maintained 375 thousand barrels per day of refining capacity. Demand for refined products is low, except for jet fuel. Flint Hills Resources' North Pole refinery shut one of its crude processing units in March 2009 in response to reduced jet fuel demand. The company previously considered closing or selling the facility because of low profitability. Given the amount of spare refining capacity in Alaska, eventual rationalization of capacity seems likely.

Figure 28. Refinery Sector Over Capacity

(Thousand barrels/day)



Source: IHS CERA

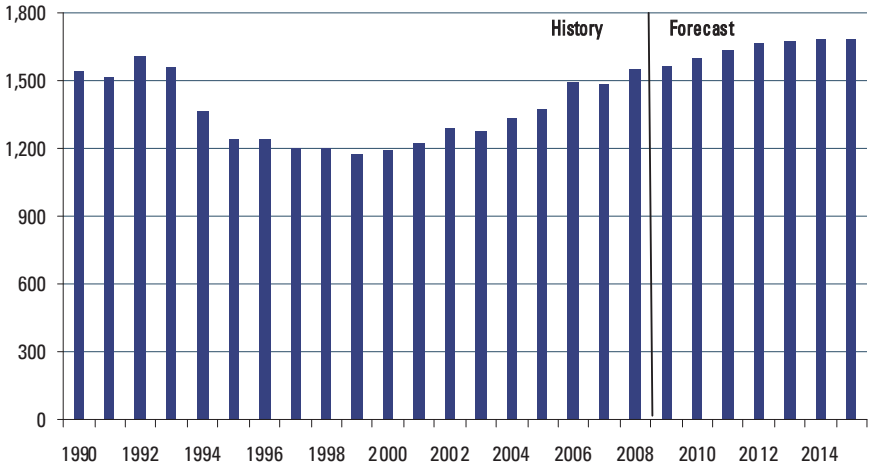
Military and Federal Non-Defense

The military is another important sector in the Alaska economy. The major installations include Fort Richardson and Elmendorf Air Force Base in Anchorage and Fort Wainwright and Eielson Air Force Base in the Fairbanks area. The U.S. Coast Guard has a significant presence in Kodiak, Sitka, Juneau and Ketchikan. Alaska has a large National Guard presence. Military personnel from other states come to Alaska for specialized training purposes. The state also has a very high concentration of veterans.

In 2008, defense spending was $3.63 billion. The spending accounted for 38% of total federal funding for the state in that year. Procurement contracts account for about $2 billion or 55% of defense spending with salaries and wages accounting for most of the balance. On a per capita basis, defense spending was $3,847 compared to a national average of $1,148.

Military employment in Alaska peaked at 30,800 in 1992. However, some bases were downsized sharply starting in the mid-1990s and real gross state product of the military sector is no larger now than it was in 1990. Military employment stood at 27,400 in 2008. There was a significant risk in 2005 that Eielson Air Force Base would be closed under the Defense Department's Base Realignment and Closure Program, however the recommendation was changed. More recently the news has been positive as the army has announced a 5-year plan to add soldiers at Fort Richardson and Fort Wainwright. In addition a new missile defense system was recently deployed to a number of sites in Alaska including Fort Greely in the Delta area.

Figure 29. Military Spending Trend
(Real GSP, million 2000 US$)



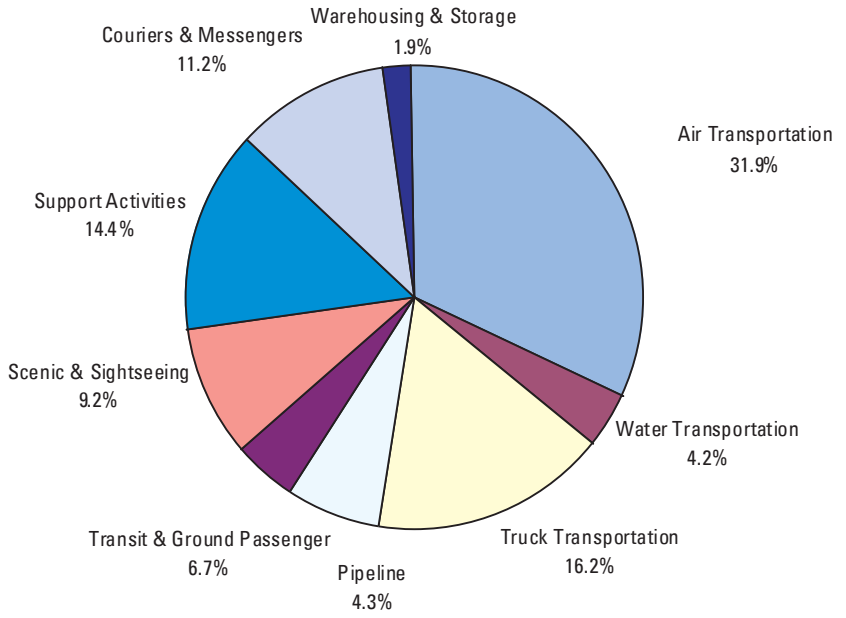
Sources: BEA and IHS Global Insight

Federal non-defense services are divided into three categories—federal agencies like postal services; services that are related to transfer payments to individuals and other organizations such as social security programs and Medicare; and services that provide capital and operating grants to state and local government and non profit organizations, for example, for state infrastructure projects. In 2008, non-defense federal spending in Alaska totaled $5.8 billion. The total civilian federal payroll in the same year was $1.1 billion.

Transportation Sector

Alaska's transportation network is complex and unique compared to other parts of the country due to its size, geography and weather, and its isolation from the rest of the nation. Transportation is provided both by private and by public sectors. Public sector transportation includes the high profile Alaska Marine Highway System (AMHS) and the Alaska Railroad. The sector can be divided into 9 broad categories—Air, Water, Trucking, Transit, Pipeline, Courier, Scenic and Sightseeing, Warehousing, Support and Other. Air transport is the largest segment accounting for about one third of employment in the industry in 2008. In the same year, trucking and courier segments accounted for 15% and 12% of total transportation employment, respectively. The Transit category is about 7% of industry employment and includes bus companies, charter buses, special needs transportation, limousine services, and taxis. Water transport (not including the AMHS) accounts for about 4% of transportation employment in Alaska. Scenic and sightseeing transportation, 9% of the total, is oriented toward Alaska's visitor industry and includes bus tours and whale watching excursions.

Figure 30. Air Transport Dominates Transportation Sector
(Share of employment, 2007)



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Since 1990 the trend in employment in the private sector is rising and the average growth rate for the industry was about 20% compared to 17% for overall employment in the 1990s. Employment reached 19,831 in 2007, slightly up from 19,723 in 2006. In 2007, average monthly earnings and total annual wages of the private sector were $3,935 and $932 million respectively (excluding postal services). More than 50% of jobs in the sector are concentrated in Anchorage/Mat-Su region followed by Fairbanks, Southeast and Gulf Coast that accounted for about 15%, 11% and 8% jobs respectively.

Air Transport / International Air Cargo

Air transport is very important in Alaska and a critical mode of transportation, as many Alaskan communities are accessible only by air or marine transport.. Employment in air transportation was 5,800 in 1993. In 2008 the segment provided jobs to 6,438 workers, a 2% increase from 6,299 in 2007. Average monthly earnings were $4,118 in 2008. Some of the largest employers of the air transport segment are Alaska Airlines, ERA Aviation and Northwest Airlines.

The international air cargo segment is an important part of the air transport segment that provides refueling, routine maintenance and other supporting services to the international carriers on their route from the Far East and U.S. through Alaska. Three major carriers—FedEx, UPS and Northwest—have sorting facilities for smaller packages at Anchorage International Airport. The international carriers enjoy certain tax benefits. For example, international carriers who provide support activities are exempt from the state corporate income tax and sales of jet fuel for foreign flights are exempt from the motor-fuel tax. This sub-segment employs about 3,500 workers with a payroll of $150 million in 2006.

In recent years, employment in air transportation has grown little compared to other segments. There are a number of reasons for this sluggish growth—September 11th and its aftershocks, recession and recent high fuel prices and restructuring of the by-pass mail system that favor larger carriers.

Trucking

This sector represents the third largest segment of the state's transportation work force. However, the share of trucking sector in total industry employment is relatively smaller than the nation's trucking industry. This is because Alaska is not well connected by road, unlike other parts of the nation. Compared to the continental United States where there is one mile of road per square mile of land area, Alaska has a mile of road for every 42 square miles of land. Despite such smaller road network, there were more than 11,000 commercial trucks of 12,000 pounds or greater registered in the state in 2003. In 2008, the average monthly wage was $3,995. The sector employed 3,119 workers in the same year.

Water Transportation

Water transportation is also a smaller sector in terms of employment but it handles the greatest tonnage of freight coming into the state. The sector employed about 845 workers in 2008 in jobs like barge operators, and operators of tug boats, freighters, water taxis, lighterage and other services. The sector's average monthly wage was $5,895 in 2008. Valdez is the state's leading port in terms of tonnage, with oil the major commodity. Anchorage is more diversified and handles 90% of all consumer goods sold in the Rail belt area of the state.

Pipeline

The pipeline segment has some of the highest paying jobs in the state but the employment in the segment has been declining for more than a decade due to declining oil production and improvement in technology. Alyeska Pipeline Service Company dominates employment in this field. Most of the sector's jobs are concentrated in Valdez, Fairbanks, and Anchorage.

In 1978, the Trans Alaska Pipeline System (TAPS) started moving crude oil from Prudhoe Bay. Efforts to plan and build a gas pipeline are underway now. In August 2008, TransCanada Corporation (TransCanada) was awarded a license to permit, develop, and build an Alaska natural gas pipeline from Prudhoe Bay, Alaska, to the "lower-48 states." The State of Alaska has committed $500 million toward the $30 billion construction project. The full capacity of the pipeline is expected to be 4.5 billion cubic feet per day.

Currently, there are four major gas line projects being actively promoted—two projects to transport Alaska North Slope (ANS) natural gas to the "lower-48 states," the TransCanada project, and the Denali project. Denali is a joint venture between ConocoPhillips and BP and the project is being designed to deliver 4 billion cubic feet per day of gas from Alaska's North Slope to North American markets. For 2009, the Denali Project is focused on providing the support necessary to meet a successful open season commencing in 2010. In addition, to meet demand within the state, there is a proposed "bullet line" to South Central Alaska and an LNG project with a pipeline to Valdez.

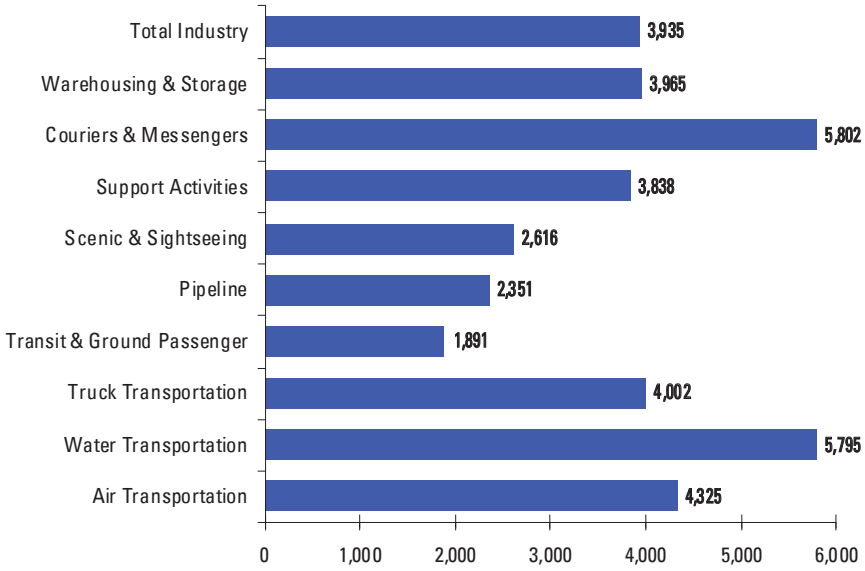
The Alaska natural gas pipeline project has important implications for the state's economic health through construction job creation and revenue generation from production royalties. In addition, the presence of a major interstate pipeline from the ANS to the "lower 48" would change the economics for many local energy markets within Alaska. For example, both TransCanada and Denali have agreed to provide up to five delivery points within Alaska.

Railroads

There is one major railroad in operation in Alaska, the state-owned Alaska Railroad (ARR). The ARR plays an essential role in moving freight and materials such as coal, fuel, and gravel. In 2008, ARR moved 6.1 million tons of freight. It also moved over 500,000 passengers. ARR employed 715 full-time workers in 2008. Another railroad, located in Skagway, the White Pass & Yukon Route, serves the Southeast Alaska visitor market with daily summertime excursions to the scenic White Pass Summit.

Figure 31. Transportation Sector Monthly Wages

(Average monthly wages, 2007)



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Growth of Alaska's overall transportation sector is linked to the health of the economy. Air cargo and tourism activities, which in recent years have contributed to higher than average growth in the sector's employment, will continue to play key roles in the sector's performance in the future. Other events such as major discoveries of new oil fields and construction of pipeline can open up new possibilities and boost the overall growth.

Healthcare Sector

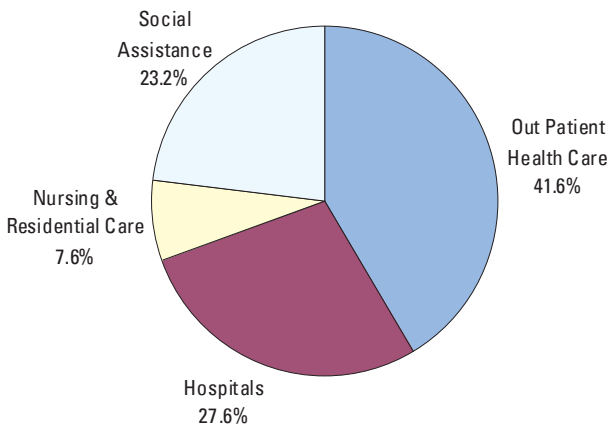
The healthcare industry is the fastest growing industry in Alaska. The industry now employs more workers than the construction sector and non-defense federal government combined. Over the period from 1990 to 2008 the industry grew at a compound annual rate of 3.6%. Over the ten year period from 1992 to 2002 healthcare employment increased by 62% which was three times faster than the state total over the same period. During this period there was an important shift from federal employment to private non-profit Native health care-related employment. In 2008 the industry employed about 27,128 workers (excluding social assistance).

Some of the main healthcare providers in the state are Providence Health Systems in Alaska, Banner Health Systems, Yukon Kuskokwim Health Corporation, Alaska Regional Hospital, Southcentral Foundation, Alaska Native Tribal Health Consortium, Southeast Alaska Regional Health Consortium, and Manilaq Association.

Demographic trends are an important driver contributing to increased demand for medical and health services. Senior citizens put more demands on the healthcare sector and this part of the population is growing rapidly. In 2002 Alaska's 65-plus population accounted for only 6% of the state population compared to 12% for the rest of the nation. IHS Global Insight's population forecast is that the 65-plus population will grow to 10% of the total population by 2013, thereby doubling the proportion of senior citizens in the total population. Alongside this population trend, the healthcare needs of Alaskans are increasingly being met by services offered within the state and fewer residents need to travel out of state for a wide range of services.

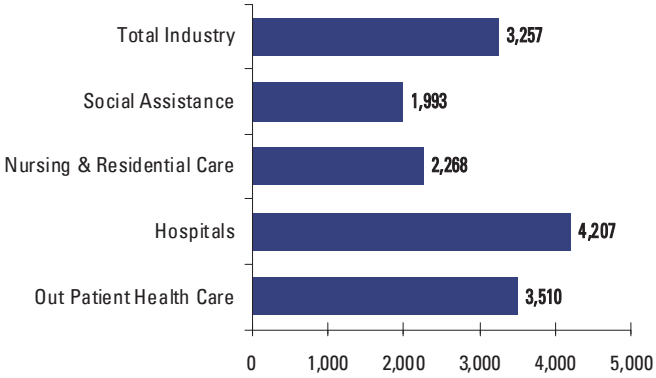
In 2008, the share of employment in the outpatient healthcare segment was the highest at 41.6%, followed by hospitals at 27.6%, and nursing and social assistance 23.2% Nursing and residential care accounted for the remaining 7.6% of total employment.

Figure 32. Healthcare Composition
(Share of employment, 2007)



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

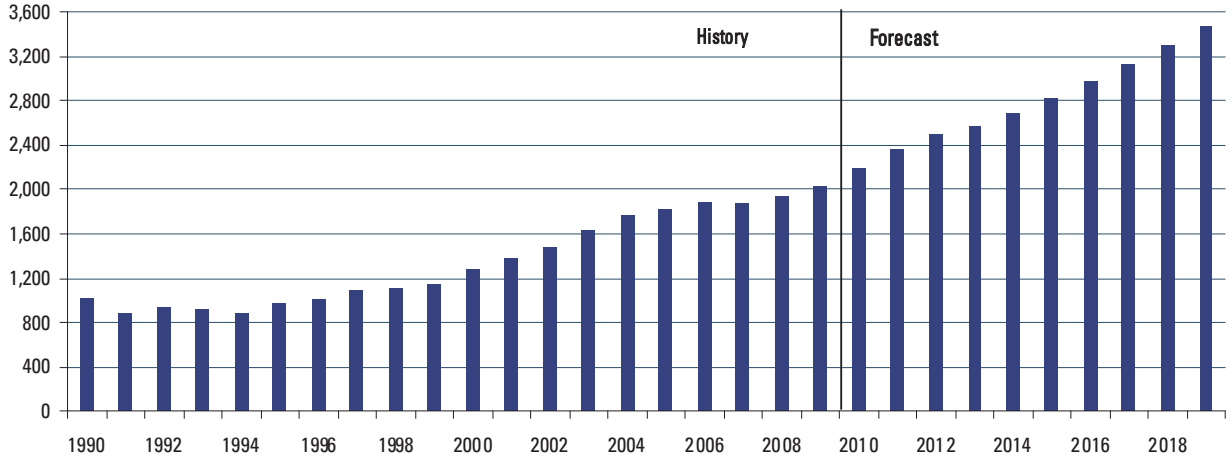
Figure 33. Healthcare Sector Wages
(Average monthly wages, 2007)



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

The overall demand for healthcare services is expected to rise significantly in the future. Over the period from 2008 to 2013, the healthcare and social assistance sectors combined is expected to register a compounded annual growth rate of 4.2%.

Figure 34. Healthcare Sector Expansion
(Real GSP, million 2000 US$)



Sources: BEA and IHS Global Insight

Mining Sector (Excluding Oil and Gas)

The mining sector in Alaska consists of hard rock mining (producing zinc, lead, gold and silver), coal and aggregates including sand, gravel and rocks. The Red Dog Mine and the Fort Knox Mine are the two largest mines in the state. Red Dog is in fact the world's largest producer of zinc concentrate and it has been in production since 1989. It also produces lead and silver. In 2008, the mine employed 485 workers. The Fort Knox Mine is the largest gold mine in the state and employed 450 workers in the same year. The other important mines include Greens Creek Mine (silver, zinc, gold and lead), Pogo (gold) and the Usibelli Coal Mine. Major mine development projects include Kensington (gold, expected to start production in 2010), Donlin Creek (gold), Pebble (copper, gold and molybdenum) and Livengood (gold).

Alaska's mining sector real gross state product in 2008 was $4.73 billion. In 2008 zinc production totaled 626,000 tons while gold production was 797,000 ounces and coal production was 1.5 million tons. In 2008, the industry directly employed 3,500 workers. The industry also paid $330 million in royalties to property owners, taxes and related payments to government in 2008.

Exploration and development activities have been spurred by higher commodity and metal prices. In 2008 the industry spent $328 million on exploration and $380 million on mine development. The mining industry is also a strong contributor to exports—34% of the state's total exports in terms of value.

Mining in remote regions of Alaska has statewide economic benefits. For example, the Red Dog mine pays royalties to NANA Regional Corporation, and under the terms of the Alaska Native Claims Settlement Act, shares 70% of those royalties among all regional Native corporations. Mining companies made $212 million in payments to ANCSA corporations in 2008.

Travel and Tourism Sector

Though the travel and tourism industry suffered declines in 2009, over the long-term the industry has been a growing part of the Alaska economy. About 90% of Alaska's visitors come during the summer months. Approximately one million cruise-ship passengers comprise the largest share of visitors. Most other visitors arrive by air, with smaller numbers driving or taking the ferry. Several international cruise-ship companies—Carnival (including Holland America and Princess Cruise Lines subsidiaries) and Norwegian Cruise Line—dominate the large cruise-ship business in the state.

Properly gauging the size of the sector is difficult because it spans several industries including transportation (air, land and sea), traveler accommodation, entertainment, retail, food and beverage. To size the travel and tourism industry, IHS Global Insight used a Tourism Satellite Account (TSA) approach in its study done in 2004 and found that travel and tourism has helped to diversify the Alaska economy and has been an engine of growth for the Alaska economy. Its economic contribution expanded by 38% from 1998 to 2002.

The study defines a concept called 'core' travel and tourism which allows comparisons to other industries in the state. Travel and tourism's core industry (only the direct impact of end-providers of goods and services to travelers) generated $856 million in local value added in 2002—3% of gross state product. The study ranked travel and tourism as the seventh-largest private sector industry in the state in terms of value added and the third-largest private sector employer with 26,158 direct full-time equivalent jobs in 2002; about 9% of total state employment. The study also found that travel and tourism is a valuable source of revenues for the state and local governments of Alaska. In 2002, $152.4 million in state and local tax revenue was generated by the travel and tourism sector in Alaska.

More recently, a 2006 study by McDowell Group found that non-resident visitors spent $1.7 billion in Alaska during the 2006-07 visitor year (May 06 through April 07). That included $1.5 billion in spending by summer visitors and about $200 million in off-season visitor spending. A 2008 McDowell Group study found that the cruise component of the visitor industry generated the annual equivalent of 14,500 jobs and $565 million in annual payroll. The industry accounted for $100 million in state and local government taxes and fees in 2007.

The leisure and hospitality industry is the closest proxy to travel and tourism. Over the last two decades the real GSP of this industry expanded at a 1.3% compounded annual rate. Our expectation is that this industry will continue to grow at a rate in excess of the state average. Alaska's visitor industry experienced a decline in 2009, with a further decline expected in 2010. Over the long term the industry is expected to resume its growth track.

Seafood Processing Sector

Seafood processing is one of Alaska's oldest industries. The first commercial fish cannery was opened in 1878. It is the largest manufacturing industry in Alaska—representing nearly half of Alaska's manufactured output. Seafood is also Alaska's top international export.

Next to the tourism sector, fish processing is Alaska's most seasonal industry. In some years, state-wide employment in processing varies by more than four-fold from the peak month to the trough. In 2007 the industry's 21,356 workers earned $305.5 million in wages. The seasonality of the industry also attracts large numbers of nonresident workers—in 2007 they represented 75% of total employment.

The number of establishments has not changed much over the last 10 years. In 2008 there were 138 establishments. Trident Seafoods is the largest employer with over 4,500 workers. Icicle Seafoods has over 2,250 workers while Ocean Beauty Seafoods, Peter Pan Seafoods, Unisea and Westward Seafoods all have over 1,000 workers.

A study conducted for the Alaska Fisheries Science Center in 2006 used a social accounting matrix model to determine that the seafood processing industry contributed 4.5% of the state's total employment. The study also found that the industry has the smallest economic multiplier mainly due to a large leakage of labor earnings (due to non-resident workers) and a large share of imported intermediate inputs.

Seafood processing dominates the manufacturing industry in Alaska and this industry has been trending downward over the last 20 years. The compound annual growth rate since 1990 has been -2.2% and it contributed only 2% of real gross state product in 2008. The manufacturing industry is expected to contract by 6% in 2009 and some very moderate growth is expected in 2010 and 2011. We expect the industry's output to be no larger in 2013 than it was in 2008. Four major factors constrain growth in the short run: inherent limits to the size of the wild seafood harvest in Alaska, competition from farmed seafood, competition from processing industries in regions with low labor cost, and relatively stagnant world markets.

Commercial Fisheries

The commercial fishery in Alaska is large. In a given year it generates about half of the total U.S. commercial fishing harvest by weight. Dutch Harbor/Unalaska, Kodiak and Sitka are the top ranked fishery ports in Alaska. Dutch Harbor/Unalaska is the largest fishery port in the country. The value-added of the industry can fluctuate sharply from year to year and in general, its contribution to the state economy has been declining. The Alaska Community Development Quota program is a unique mechanism whereby 65 historical fishing communities share ownership in a portion of certain federal fisheries. Together, the six CDQ entities representing the communities held assets of $416 million in 2005.

In 2008 the estimated gross earnings of Alaska's fisheries was $1.7 billion based on almost 3 billion landed pounds of fish. Gross earnings were up about $200 million from 2007. In terms of landing values, Alaska's seafood industry has enjoyed six consecutive years of growth, from $800 million in 2002 to $1.7 billion in 2008. The fishery has evolved over the years. In the past it was the salmon fishery that made the largest contribution to ex-vessel values. In recent years, however, ground fish accounted for about 50% while shellfish, salmon and halibut were about 15% each of ex-vessel values.

Alaska is recognized as having among the best managed fisheries in the world. Entry into most state-controlled fisheries is limited by permit. Federally controlled fisheries are regulated by harvest quota systems. Harvesting employment consists almost entirely of independent contractors.[64] It is very difficult to quantify industry employment, data is limited to the number of fishing permit holders and fishing boat crew license holders—20,500 permits were issued in 2008.

[64] Employment falls under 1099 income tax regulations.

The industry is very seasonal. According to the Alaska Department of Labor and Workforce Development the average monthly fish-harvesting job-count was 7,500, with a peak in the summer of more than 20,000. This number fell sharply from 2000 to 2002 but has been nearly constant since then. The salmon fisheries account for half of all seafood harvesting employment. The seasonality of the seafood industry fits many rural Alaska lifestyles and also attracts large numbers of nonresident workers. The Alaska Department of Labor and Workforce Development estimates that at least 54,000 people were involved in commercial fishing and processing at some time in 2007.

GLOBAL OPPORTUNITIES

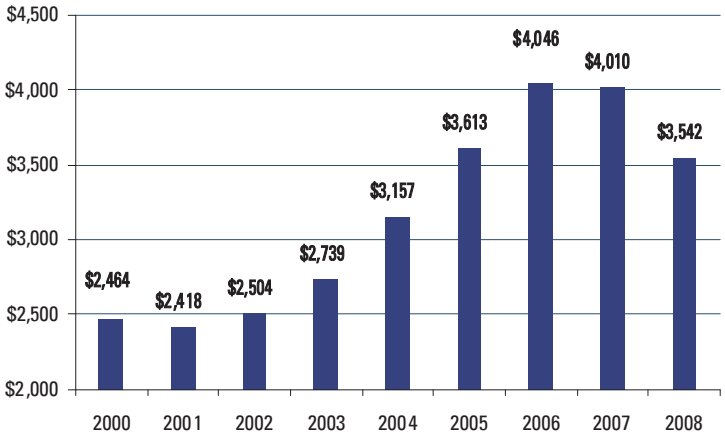
Alaska's trade with the rest of the world has expanded over the years, yet it has been at a slower rate than other natural resource endowed states. There are many countries around the Pacific Rim and elsewhere that resumed or will be resuming strong growth that offers opportunities for Alaska. However, taking advantage of these opportunities will require more of a state-wide approach to focusing on Alaska's position in the global trade market.

In this section of the Phase I Situational Analysis report, we will look at the commodity composition of Alaska's exports and the destination of these commodity flows.[65] We also compare Alaska's export performance and its commodity composition to a number of peer states. An economic forecast for Alaska's important trading partner countries is provided to get a sense of export opportunities over the next 10 years. The export performance of the clusters that were identified in a previous report is examined and some inferences are drawn for the state's likely future economic performance.

We confronted some significant data limitations. The international trade data presented is measured in value terms in dollars and is impacted by changes in the commodity price. As a result we cannot necessarily associate an increase in exports that happens over time with an increase in volumes. In addition data on the exports of services, including Alaska's growing travel and tourism sector and logistics / air cargo sector, are not represented in the published trade data. A further limitation is that detailed data on commodities that are imported from other countries is not available.

Trade Trends

Figure 35. Alaska's Total Exports
(Millions)



Source: U.S. Census Bureau, Foreign Trade Division

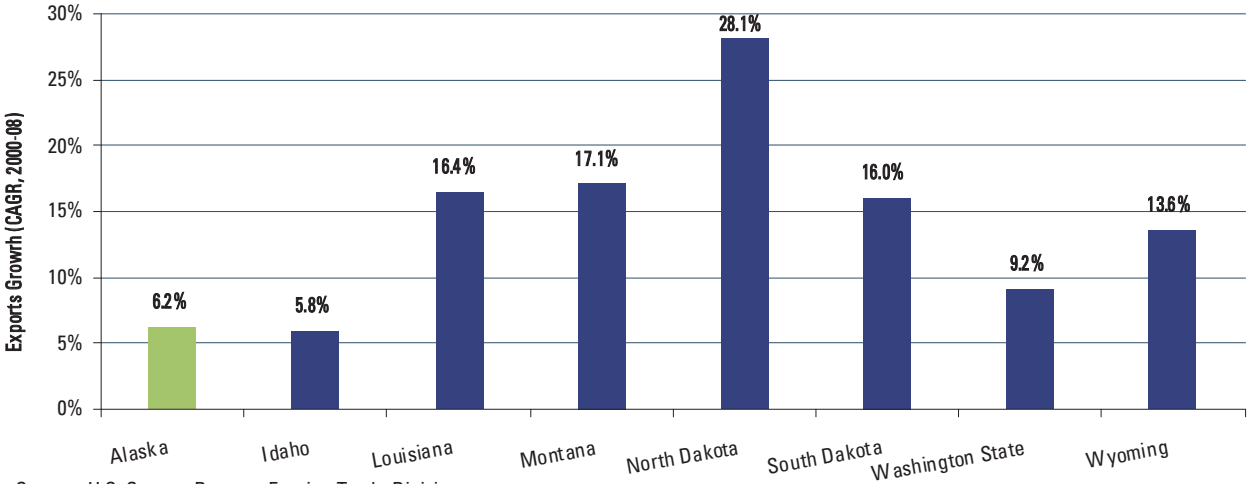
In 2008 the global recession caused many of Alaska's export markets to contract. Total exports were $3.5 billion in 2008, a 12% annual decline. In nominal terms however they were 44% higher than in 2000. We need to keep in mind however that over that period export prices moved favorably for Alaska. The increase in nominal exports was 6.2% on a compounded annual basis over the 2000 to 2008 period.

It's useful to consider the export performance of Alaska's peer states. Exports by the peer states expanded considerably over the same period. North Dakota exports expanded by 28.1% compounded annually followed by Louisiana at 16.4% and South Dakota at 16%. For Washington State and Idaho, the growth rates were 9.2% and 5.8% respectively.

Alaska exports as a share of GSP is lower than most of the peer states, as would be expected when Alaska's largest contributor to GSP, oil production, is shipped to domestic refineries, mostly in Washington and California. In 2008, Alaska's exports were 7.4% of GSP. This was below the national average of 12.7% and the second lowest in the peer group. Exports share of GSP was the highest for Louisiana at 18.9%, followed by Washington State at 16.9%, Idaho at 9.5% and North Dakota at 8.9%. South Dakota's exports were only 4.5% of its GSP in the same year.

[65] The vast majority of Alaska's trade is with the "lower-48 states."

Figure 36. Export Perfomance of Peer States



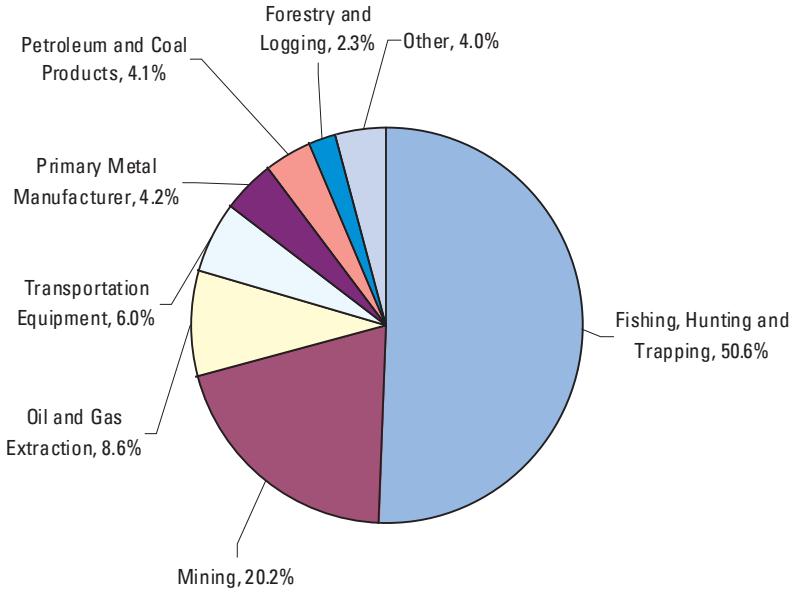
Source: U.S. Census Bureau, Foreign Trade Division

Commodity Composition of Alaska's Exports

The pattern of trade between countries is tied to *comparative advantage*. Comparative advantage can result from a variety of sources—factor abundance is one of these. Natural resources are abundant in Alaska which explains Alaska's large trade surplus in the export of processed fish, oil and gas and various base and precious metals.

In 2008 fishing, hunting and trapping[66] accounted for the highest share of the total exports at 50.6%. Mining and oil and gas extraction were the next highest, occupying 20.2% and 8.6% shares of total exports respectively. These three industries together generated almost 80% of international exports. Transportation equipment, primary metals and petroleum and coal contributed significantly to exports.

Figure 37. Alaska's Exports in 2008



Source: U.S. Census Bureau, Foreign Trade Division

Comparison to Peer States

The commodity composition of exports by the peer states is considerably different than Alaska's. Idaho and South Dakota have computer and electronic products as their top exports, occupying 58.6% and 30.7% share of states' total exports respectively in 2008. North Dakota and Washington State have machinery manufacture (42.7%) and transportation equipment (41.1%) respectively as the top exports products in the same year. The composition of Louisiana's exports is more similar to Alaska. In 2008 crop production generated 37.7% of total exports and petroleum and coal products were 23.9% of ex-

[66] This category is dominated by fish and processed seafood.

ports. The higher value added chemical manufacturing industry in Louisiana contributed an important 16.9% of exports in 2008. In Wyoming chemical manufactures represented 73% of exports in 2008.

Table 7. Top-Five Exports, 2008—Alaska and Peer States

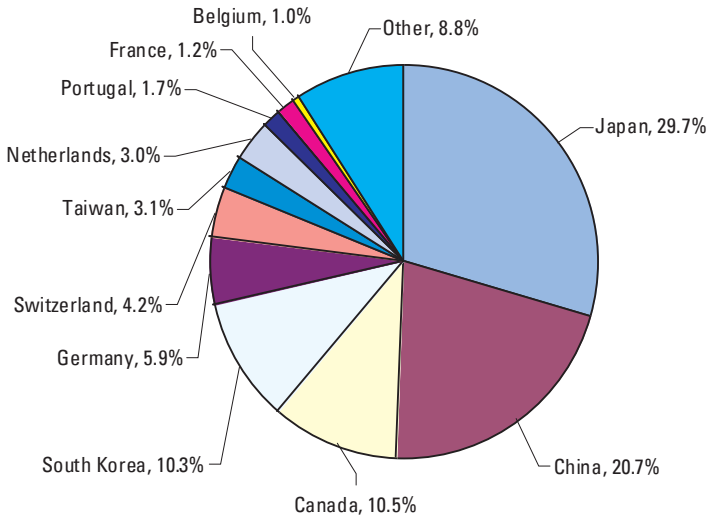
Alaska	Idaho	Louisiana	Montana
Fishing and Seafood Processing (50.6%) Mining (20.2%) Oil and Gas Extraction (8.6%) Transportation Equipment (6%) Primary Metal Manufactures (4.2%)	Computer and Electronic Products (58.6%) Processed Foods (9.3%) Chemical Manufactures (5.2%) Paper Products (4.6%) Transportation Equipments (4.4%)	Crop Production (37.7%) Petroleum and Coal Products (23.9%) Chemical Manufactures (16.9%) Processed Foods (8.9%) Machinery Manufactures (3.0%)	Chemical Manufactures (25.3%) Mining (15.8%) Machinery Manufactures (13.3%) Transportation Equipment (10.9%) Primary Metal Manufactures (8.2%)
North Dakota	**South Dakota**	**Washington State**	**Wyoming**
Machinery Manufactures (42.7%) Crop Production (22.1%) Transportation Equipment (8.4%) Processed Foods (7.9%) Oil and Gas Extraction (7.5%)	Computer and Electronic Products (30.7%) Processed Foods (21.0%) Machinery Manufactures (15.7%) Beverage & Tobacco Products (7.2%) Transportation Equipment (5.7%)	Transportation Equipment (41.1%) Crop Production (20.9%) Computer and Electronic Products (5.9%) Processed Foods (4.9%) Petroleum and Coal Products (4.9%)	Chemical Manufactures (73.1%) Oil & Gas Extraction (7.4%) Machinery Manufactures (6.6%) Mining (5.4%) Fabricated Metal Products (1.2%)

Note: number in parenthesis is the share in total exports
Source: U.S. Census Bureau, Foreign Trade Division

Alaska's Trading Partners

Alaska's main international trading partners include Japan, China, Canada, South Korea and Germany. Minor trading partners include Switzerland, Taiwan, Netherlands, Portugal, France and Belgium. In 2008, 29.7% of Alaska's exports were destined to Japan, followed by 20.7% to China and about 10% to Canada and South Korea.

Figure 38. Alaska's Trading Partners, 2008



Source: U.S. Census Bureau, Foreign Trade Division

Major Commodity Exports by Destination

- Much of Alaska's unprocessed fish is shipped to China. Some is then re-exported back to the United States for further processing.
- Europe is an important export market for Alaska salmon.
- The majority of the lead and zinc concentrates that are produced by Teck Alaska at its Red Dog mine are shipped to the smelter owned by the parent company in Trail, British Columbia for further processing. Lead and zinc concentrates from the Hecla Mining's Greens Creek mine are also sent to the same smelter.
- Silver mined at Greens Creek is sent to a precious metal refiner and then onto the global market.
- Some Alaska North Slope crude oil was exported to Korea and China after the export ban was repealed in 1995 however exports have fallen to zero since 2000. Alaska crude is sent to refineries on the West coast (including Washington and California).
- Liquefied natural gas (LNG) has been exported from the Cook Inlet fields since the late 1960s. The LNG is produced in Kenai and exported almost exclusively to Japan. There is a long standing agreement with Japan and in June 2008, the U.S. Department of Energy extended the export license for two more years.
- Coal from the Usibelli mine is exported to South Korea. Chile has recently been added as an export destination for Alaska coal.
- Forest products produced in Kodiak are destined for China. Sitka Spruce that is logged in southeast Alaska and shipped in round log form to Japan and other countries in Asia.
- Chemicals include urea, ammonia and nitrogen produced at the Agrium plant in Kenai. This plant stopped production in 2008.

Export Opportunities

The growth prospects for Alaska's exports depend on the economic outlook for its major trading partners. The outlook for certain industry sectors is also important.

Table 8. Real Global GDP Growth
(% change)

Alaska's Trading Partners	2009	2010	2011	2012	2012	Real GDP, CAGR 2009-19
Canada	-2.6	2.2	3.4	3.6	3.2	2.7
China	8.5	9.8	8.5	8.6	8.6	8.4
Germany	-4.8	1.5	1.6	1.8	1.9	1.6
Japan	-5.3	1.4	1.3	1.9	2.3	1.5
South Korea	0.1	4.1	3.2	4.3	3.9	3.7
Belgium	-3.2	1.2	1.5	1.5	1.9	1.8
France	-2.3	1.1	1.3	1.7	2.2	1.9
Netherlands	-4.1	1.1	1.2	1.7	1.9	1.7
Portugal	-2.7	0.9	1.1	1.4	2.2	1.7
Switzerland	-1.2	1.5	1.7	1.6	1.8	1.5
Taiwan	3.8	4.4	5.7	5.3	4.7	4.3

Source: IHS Global Insight

Real GDP contracted in most of Alaska's export markets in 2009 however China and South Korea managed to avert a recession. As the world economy recovers from recession demand for Alaska's key exports will revive. The recovery patterns differ significantly across the countries. China will be leading the recovery with real GDP growth forecast of 9.8% for 2010. For Germany and Japan real GDP growth is expected to stay below 2% until 2012.

Table 9. Exchange Rate Forecast
(LCU* per US$)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Canada (Canadian dollar)	1.15	1.16	1.17	1.18	1.19	1.20	1.21	1.21	1.21	1.21	1.21
China (Renminbi)	3.68	3.66	3.70	3.76	3.80	3.85	3.92	3.98	4.05	4.12	4.18
Germany (Euro)	0.67	0.70	0.69	0.69	0.68	0.68	0.67	0.66	0.65	0.64	0.63
Japan (Yen)	9.82	90.83	89.07	88.53	88.27	88.10	87.96	87.89	87.87	87.88	87.89
South Korea (Won)	1,168.32	1,051.32	982.71	976.48	977.50	979.35	981.71	983.94	985.62	986.79	987.92

*LCU=Local Currency Unit
Source: IHS Global Insight

China Outlook

The government's massive fiscal and monetary stimulus measures were effective—the economy averted recession. China's real GDP is expected to grow at around 8% in 2009. The growth in fixed investment and industrial production has rebounded but consumer demand has not picked up significant momentum and export demand still remains depressed. A robust recovery cannot be achieved without a significant rebound in consumer demand and exports. Consumer demand is structurally weak in China because of lack of social safety net and a state-controlled banking system. There does not seem to be an easy fix to sluggish consumer demand but the government has initiated some policy measures including taxes and subsidies to revive China's auto market earlier in 2009. These measures have received positive reactions from consumers and automakers. In 2009, total vehicle production is expected to grow by 24% to 11.77 million units. China is likely to overtake both Japan and the United States to become the largest vehicle production base in the world in 2009.

China's exports account for about one third of its GDP and they are facing the most severe demand conditions in the last 30 years. Consumer spending in the United States and Western European countries has been hit hard in the current recession. The United States, Western Europe, and Asia combined together account for more than 70% of China's export market. Given the importance of exports in China's growth prospects, the government will utilize all policy tools to slow the downfall in the export sector. Not surprisingly the monetary authorities have not allowed the currency to appreciate.

Despite all economic stimulus measures, risks to economic growth in the medium-term outlook cannot be overlooked. This is because the government does not have unlimited fiscal ammunition and if external demand recession remain severe and prolonged, China's economic rebound cannot be sustained by policy stimulus alone. Over the next ten years we expect growth in real GDP of 8.5% compounded annually.

China's currency has appreciated by 21% against the U.S. dollar since 2005 and there is still considerable pressure for further appreciation. Our expectation is that China's imports of consumer goods will remain sluggish. China's domestic market is nonetheless a massive one and will remain important for Alaska's seafood exports.

Japan Outlook

Japan is in its worst economic downturn in more than 30 years. Real GDP fell for four consecutive quarters through the first quarter of 2009. Japan is an export-oriented economy and slow recovery in Europe and the United States will constrain export demand. Domestic demand remains depressed because of low consumer confidence which has caused Japan's thrifty households to save even more than normal. The recovery will be slow and will not happen until other developed economies recover in 2009-10.

Our medium- to long-term forecast for Japan envisions slowing growth as demographic changes and declining productivity growth conspire to dampen the economy's potential. There will be a decreasing number of people in the important 15-65 year age bracket and this will cause labor force growth to flatten and then decline. Japanese manufacturers will find it increasingly difficult to squeeze more output from a limited number of employees. The real exchange rate, which factors in price changes in Japan and its trading partners, has been weakening over the long term by over 2% per year. The main problem for exports is the decline in overseas demand for some of Japan's key export commodities. As the economy contracted last year, yen followed. The factors that lead to its weakening—high savings, high liquidity, and low interest rates—are still in effect.

Over the next ten years IHS Global Insight forecasts compounded annual growth in real GDP of just 1.4%—a relatively slow growing market for Alaska's LNG.

South Korea Outlook

The South Korean government's stimulus package and policy interventions in the current recession have been effective in mollifying the worst effects of the global downturn. In 2010 South Korea will be one of the first major economies to emerge from the shadow of the global downturn. Consumer spending will be weak however in light of higher unemployment, exports will grow slowly in tandem with the sluggish overseas economies, and capital expenditures will be limited by ongoing excess capacity.

For more than a decade the South Korean economy has benefited from the combination of relatively low wages and high efficiency. This has generated an export boom and a rising standard of living. Korea will soon face rising competition from lower wage countries. In the past the country has been known for export success and large current-account surpluses in 2008 however Korea ran external deficits as oil prices rose sharply. The outlook for exports growth is weak due to sluggish overseas demand. This poor performance will be moderated to a degree by the weakness of the won.

Similar to China and Japan, the government in South Korea has also introduced a sophisticated automotive market stimulus programs comprising several specific schemes, tax benefits and subsidies. These measures have been effective in restoring life to domestic vehicle sales. Over the next ten years growth in real GDP will average 3.9% compounded annually. Growing demand for energy means that South Korea will continue to be a strong destination market for Alaska's coal exports.

Canada Outlook

The Canadian economy contracted around 2.6% in 2009 despite significant federal government stimulus. The weakness in U.S. growth, coupled with lagged effects of the Canadian dollar's strength, will cause net exports to obstruct Canada's economic performance. Export volumes fell significantly in real terms in 2008 and will continue to drop in 2009. IHS Global Insight expects the Canadian dollar to remain slightly below par over the medium term. A favorable move in commodity prices (especially energy commodity prices) and significant increase in U.S. debt levels will add some further upside to the Canadian dollar over the medium term.

Consumer spending on auto has been hit the hardest in the current recession and stabilization in employment and a bigger bounce in consumer confidence are not expected until 2011. Over the next ten years real GDP growth is expected to be 2.7% compounded annually.

Germany Outlook

IHS Global Insight expects the German economy to show at least a temporary rebound in coming months as replenishment of stocks and a sharp swing of net exports boost GDP. Consumer spending growth improved somewhat in this year but is expected to relapse in 2010. German exporting firms have made considerable progress in regaining competitiveness since 2002, lowering their cost base and improving productivity. The structural competitiveness of German exporters' will help in the current demand rebound. However, the recovery will be restrained by persisting banking sector woes amid worsening credit quality of non-financial firms, and an unavoidable further increase in unemployment. Similar concerns about creditworthiness of other European countries over the medium term will likely put pressure on the Euro. We expect the euro to trade around US$1.50 in the near term and it will trend modestly lower through 2010 before making renewed gains in 2011.

Over the next ten years real GDP growth will average only 1.4% compounded annually. Alaskan seafood producers will have to focus on gaining market share in Western Europe and Germany in particular.

What About Alaska's Imports?

Data on imports at the state level is limited and we were unable to obtain much commodity detail. In 2007 Alaska imported $87 million of petroleum and coal products and $122 million of machinery and equipment from Canada. These imports are a leakage from the local economy and reduce the economic impact of the oil and gas cluster on other industries in the state. The indirect economic impact of this important cluster could be increased if these goods were produced locally. Unfortunately producers of goods for the local market have experienced limited growth in Alaska. Local production is hindered by the fact that Alaska is underserved in certain support sectors. It's important to be mindful of the impact of the exchange rate on import costs. The general trend is towards continuing U.S. dollar depreciation and imports from countries like Canada, Japan and China will become more expensive in the future. An import substitution policy could be very effective if the trend in the exchange rate persists.

Research by the UAA Institute of Social and Economic Research found that the development of the support sector has been hamstrung by the state's small market size and high cost of business. Their research suggested that the support sector might be responsive to economic development policy. The expansion of local support sector is a strategy of "import substitution." The most effective type of import substitution for Alaska would be to develop support sector for the fast growing star and opportunity clusters. Financial services as well as business and professional services are important support sectors for all of Alaska's clusters.

ALASKA'S INDUSTRY CLUSTERS

In this section the consulting team has employed a cluster identification and segmentation methodology and found there to be 11 established clusters in Alaska. The state's traditional engines of growth are: oil and gas extraction / pipelines / refinery, mining, fishing and seafood processing, travel and tourism and the military. Forestry and wood products is a cluster that is in significant decline but there are a number of dynamic clusters which include: logistics and international trade, advanced business services, specialized machinery / capital goods and community and social services. There are also a number of pre-clusters (or seed clusters) identified including: cold climate technology, rocket launch technology, cold climate housing and others.

A Cluster-Based Economic Development Approach

Clusters are geographically concentrated cooperation networks of interdependent firms, research and development institutions, and other intermediary actors (such as universities, economic or regional development agencies, chambers, etc.), where the close contacts of the members and the continuous, fast knowledge exchange between them contribute to the competitive increase of both the members and the whole region. Industry clustering is a powerful framework for regional economic development because it captures economic relationships among specific industry sub-sectors, and it provides a set of tools to help define economic development strategies.

In a cluster, firms and others within a concentrated geographical area are cooperating toward common goals, and establishing close linkages and working alliances to improve their collective competitiveness. An active clustering agenda facilitates the integration of what would otherwise be a clump of co-located firms and organizations into a high performance system. Optimization is at a system, rather than individual organization level. An active local cluster includes firms and support organizations working together to achieve results that would not be possible individually.

A key component of any high performance cluster is extensive informal and formal networking between firms—even competitors—across the cluster, and between firms and their supporting infrastructure. Soft networks (such as local professional and trade associations) and hard networks (strategic alliances between firms) are both important, and their development is supported by a local culture that enables both competition and cooperation to thrive. Active clustering is "co-opetition," a combination of competition and cooperation that is more sophisticated than most notions of rivalry within an industry, and more appropriately captures the nuances of company interactions within a region. Companies in cluster working groups, as implemented in the Prosperity Partnership, often begin to see that firms once considered direct competitors are actually in slightly different market niches, and that many opportunities for joint effort exist, even while rivalry in some dimensions continue.

Every jurisdiction whether it is a nation, state or region has a set of unique local conditions that underpin the ability of its companies to compete in an industry. The competitive advantage of a location does not normally arise in isolated companies but in clusters of companies. These firms are in the same or related field, or are linked by buyer-seller relationships, common customers, or other relationships. An industry cluster is a group of companies that rely on an active set of relationships among themselves for individual efficiency and competitiveness. These relationships have four prominent characteristics:

1. *Buyer-Supplier Relationships*. Core companies produce goods and services that are sold to final consumers, generally exported outside the region.
2. *Competitor and Collaborator Relationships.* Companies produce the same or similar goods and services at a specific level in the value chain.

3. *Shared-Resource Relationships.* These relationships exist when firms rely on the same sources of raw materials, technology, human resources and information, even though they may use these resources to produce goods and services for very different markets.
4. *Critical Mass of Competitiveness Factors.* Critical masses of information, skills, relationships, and infrastructure accrued in a particular field.

One of the central tenets of the cluster-based model of economic development is that the most economically successful regions have managed to knit together companies, teaching and research institutions, and government at multiple levels to create a uniquely competitive industry. Professor Michael Porter of Harvard Business School introduced the concept of "institutions for collaboration" to represent the myriad public, private, and quasi-public entities that are the glue that effectively binds the cluster together.

Competitive advantage is not created within a single firm alone. Efficiency in internal operations is a necessary but not sufficient condition to compete globally. Factors external to the business, but internal to the regional economic foundation, are increasingly important for the creation of competitive advantage. Each firm is part of a "cluster" of interrelated firms, suppliers, customers, and service providers, as well as supporting organizations (human resources, R&D, finance, infrastructure, and regulatory environment).

According to Porter, clusters increase productivity and efficiency by providing:

- Efficient access to specialized inputs, services, employees, information, institutions and "public goods" (e.g., training programs)
- Ease of coordination and transactions across firms
- Rapid diffusion of best practices
- Ongoing, visible performance comparisons and strong incentives to improve vs. rivals

Clusters stimulate and enable innovations by:

- Enhancing ability to perceive opportunities for innovation
- Improving the presence of multiple suppliers and institutions to assist knowledge creation
- Easing experimentation given locally available resources

Clusters facilitate commercialization:

- Opportunities for new companies and new lines of established business are more apparent
- Commercialization of new products and starting new companies is easier because of available skills, suppliers, etc.

Cluster Identification and Analysis

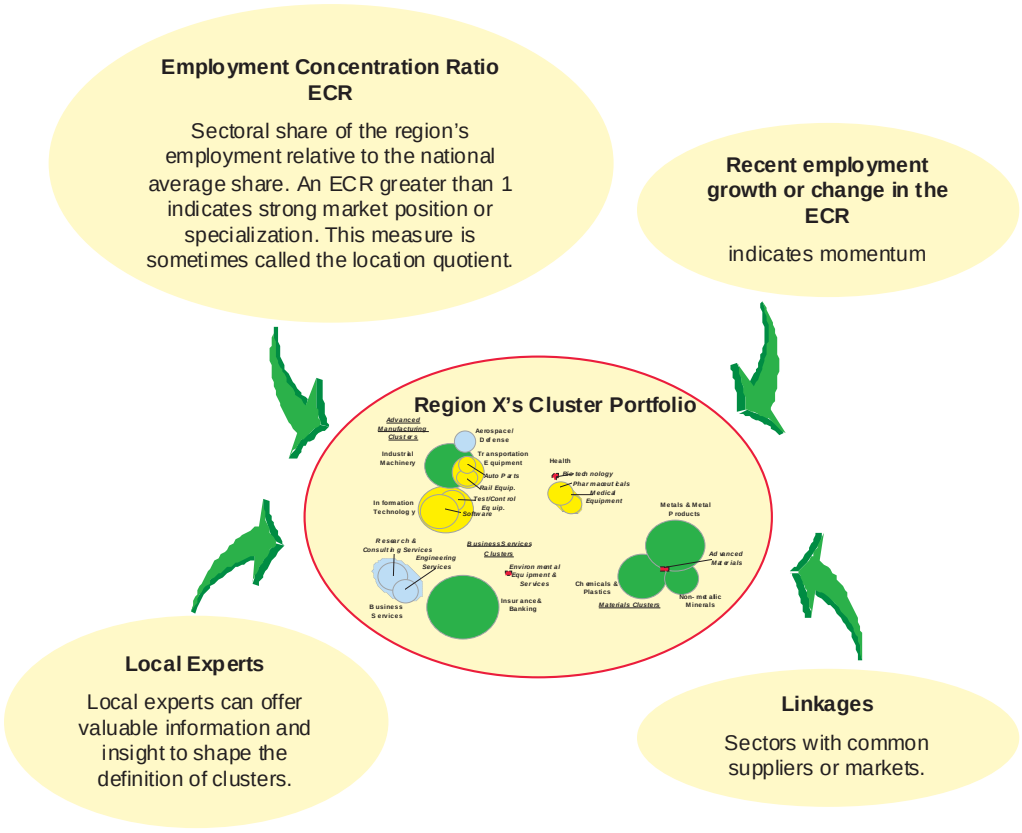
Overview and Methodology

This section presents IHS Global Insight's analysis of Alaska's portfolio of industry clusters. It begins with a description of the methodology used to identify the region's clusters, proceeds to a description of the clusters identified, and then presents a way of segmenting the region's cluster portfolio to guide appropriate development strategies.

Data Sources and Methodology

The process of identifying Alaska's clusters begins with the iterative analysis of detailed sector data, including employment, wages, productivity and sales. Our Business Market Insight (BMI) database and the U.S. Census' County Business Patterns database together form the key data sources, but specialized company databases are also used. Key indicators are evaluated to select and group industries that are defined by industry classifications. The process is illustrated in the figure below.

Figure 39. Cluster Indentification Process



It is important to note that not all industries will be part of a cluster—nor should they be. Clusters are important for their ability to drive economic growth in a region. To that end, they all have the characteristic that they can or do export goods and services outside of the region in which they exist. In all regions, several large industries are primarily local-serving. Education, health services, government services, and local business and personal services are important industries, and are often some of the largest employers in a region. However, their focus is usually centered around serving the local population and economy. These industries are therefore more a product of the local economic growth than a cause of it. This is not to say that local-serving industries are not important—in fact they are some of the most vital services in an area. Nevertheless, the strategies for their development are not the same as cluster strategies. Some of these industries are important in their role as economic foundations, underpinning the basic regional infrastructures that clusters must have in order to develop vibrantly.

Alaska's cluster portfolio represents about 30% of employment in the region. While this may seem to be a low share, it actually falls within the normal range of other regions that IHS Global Insight has analyzed.

It also is important to note that industry clusters may not fit neatly into political jurisdictions. While some of Alaska's clusters may be present across the region, others may be concentrated in certain boroughs. In general clusters may cross state lines, drawing on resources and markets from neighboring

regions. In that sense, the Alaska economy is linked to other states. Nevertheless, as a share of its total employment, traded clusters comprise slightly less than one third.

Cluster Indentification

Using the methodology described above, IHS Global Insight and its partners identified 11 established clusters in Alaska. Classified by the segmentation categories illustrated in Figure 40 they are:[67]

Star Clusters

- Tourism
- Logistics and International Trade
- Community and Social Services
- Advanced Business Services

Opportunity Cluster

- Specialized Machinery/Capital Goods

Mature Clusters

- Fishing and Seafood Processing
- Oil and Gas Extraction / Pipeline / Refinery
- Military
- Mining
- Federal Government

Challenge Clusters

- Forestry and Wood Products

The relative growth rates are expressed as the **"industry dynamism"** concept. We determined industry dynamism for each cluster by adding up the real gross output of each industry within the cluster and then calculating the compound average annual growth of the cluster's total real gross output. Importantly we used the real gross output of each industry at the U.S. national level to capture the macroeconomic or national trends. We considered the period 2009 to 2019 to reflect each cluster's medium to long-term potential.

The **employment concentration ratio (ECR)** is the most essential aspect of this analysis. A concentration ratio larger than one suggests that the cluster is more concentrated in the region than it is nationally. It is calculated using employment levels that existed in 2008. ECR measures an industry's concentration in a region relative to the country as a whole. It compares an industry's share of local employment with its share of national employment. An ECR of greater than 1 implies that the industry produces more goods and services than required to meet the demands of the local market. More than likely, the industry is exporting the good or service out of the region.

Cluster Segmentation

Economic strategy formulation can be strengthened by an understanding of the market position of Alaska's clusters. One useful means of differentiation is to segment clusters and sectors according to Alaska's competitive market position and the dynamism of its markets. This analysis identifies Alaska's

[67] Ordering of clusters here is not important.

"Star," "Mature," "Opportunity," and "Challenge" clusters. Understanding the region's strengths relative to the growth prospects for specific clusters can foster constructive discussion and debate. This framework can be used to segment Alaska's portfolio of established clusters.

Properly crafting economic strategies relies on understanding the market position of Alaska's clusters and carefully differentiating the strategies according to the characteristics of the cluster. Segmentation analysis is a procedure pioneered by IHS Global Insight. This section describes and develops implications from the segmentation chart presented in the figure below.

Figure 40. Cluster Portfolio Segmentation

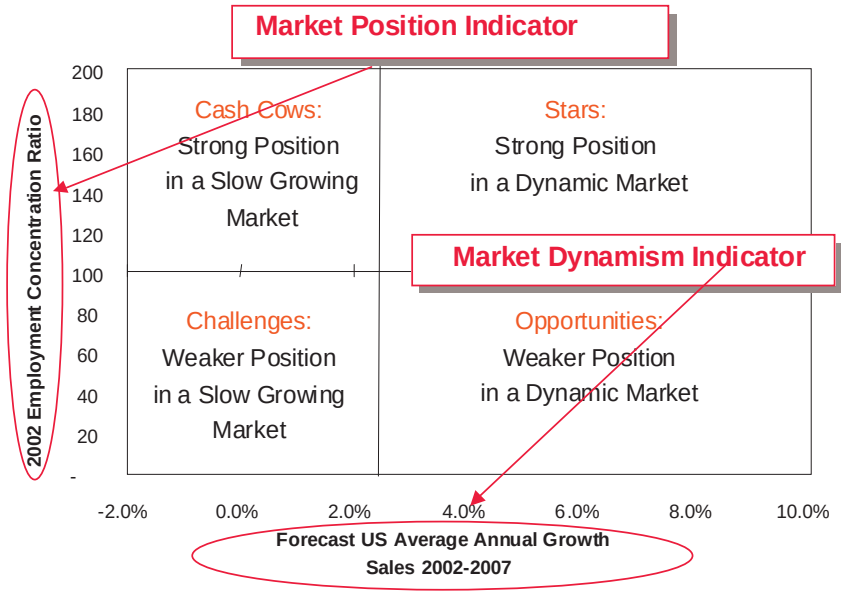
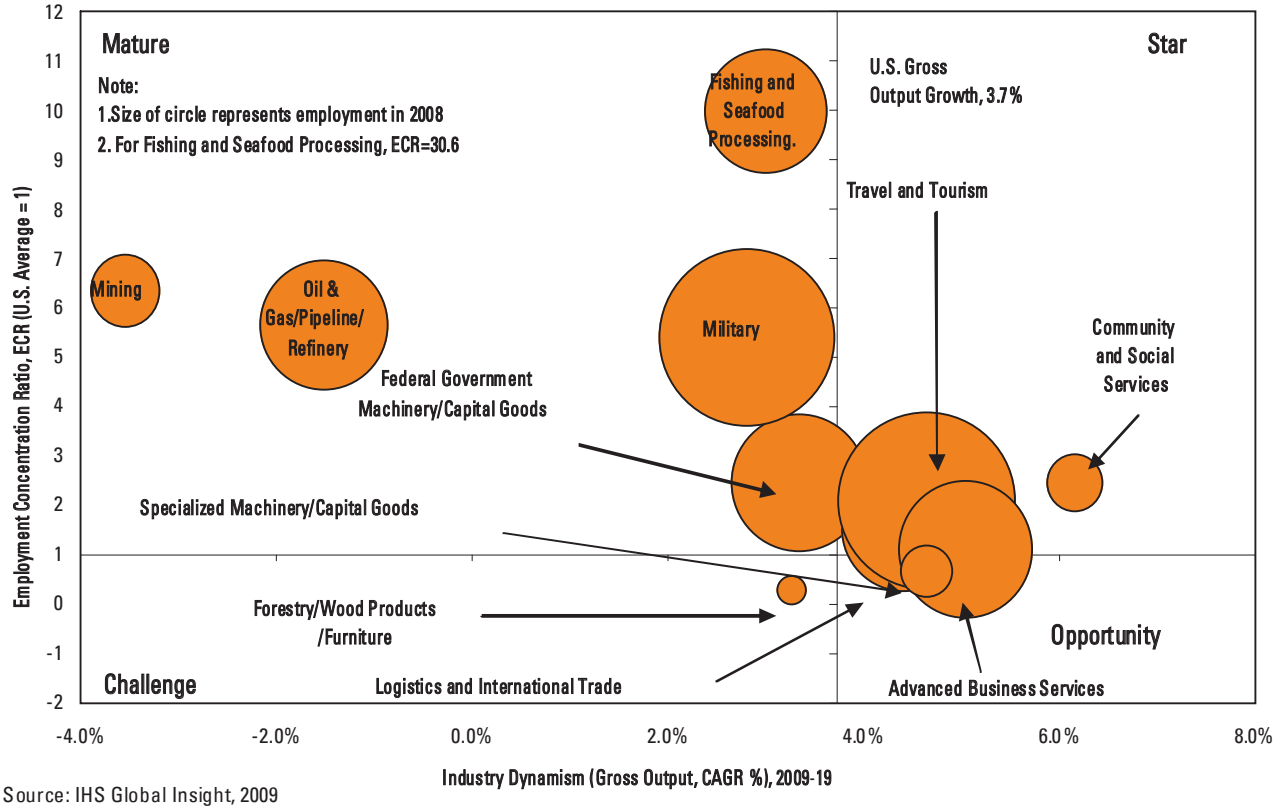


Figure 41. Alaska's Clusters



Source: IHS Global Insight, 2009

Table 10. Alaska's Clusters

Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Federal Government	3.3%	2.5	16,833	-0.3%
Military	2.8%	5.4	27,424	3.8%
Fishing and Seafood Processing	3.0%	30.6	13,351	-1.2%
Logistics and International Trade	4.4%	1.5	13,784	1.7%
Travel and Tourism	4.6%	2.1	28,093	1.2%
Forestry and Wood Products	3.3%	0.3	734	-5.7%
Communities and Social Services	6.2%	2.5	2,858	4.2%
Advanced Business Services	5.0%	1.1	16,354	6.3%
Specialized Machinery/Capital Goods	4.6%	0.7	2,301	14.9%
Oil and Gas/Pipeline/Refinery	-1.5%	5.7	15,067	8.2%
Mining (excl. Oil and Gas)	-3.6%	6.4	4,452	12.1%
Subtotal	2.8%	2.4	141,252	2.9%
Non-cluster	4.4%	0.7	208,435	0.9%
Total	3.7%	1.0	349,686	1.7%

Source: IHS Global Insight, 2009

Star Clusters

Clusters located in the upper right-hand quadrant, "Stars," represent the key areas of focus for Alaska. These clusters represent businesses in which Alaska has some capability, but also ones that will experience above-average growth over the next decade. Clusters in this quadrant have been competitive in markets that continue to hold good future prospects. The region should continue to emphasize these clusters as key sectors for development.

The clusters that we have identified as stars in Alaska include Travel and Tourism, Logistics and International Trade, Community and Social Services and Advanced Business Services.

- Travel and Tourism is a large cluster and falls into the star quadrant because of its above average employment intensity relative to the national average as well as significant dynamism. Total employment in the cluster was estimated at 26,157 in 2002 and employment concentration is 2.1 times the national average based on a Tourism Satellite Account study by IHS Global Insight in 2004. The study also found that travel and tourism's core industry generated $856 million in local value added in 2002—3% of gross state product.
- IHS Global Insight's Tourism Satellite Account approach is consistent with the notion of a cluster. Tourism is a complicated cluster that is broadly composed of accommodation, entertainment, transportation, retail and food. A large number of industries are impacted by tourism however there are varying degrees of tourism intensity. The hotel industry is very tourism intensive as is scenic and sightseeing transportation, museums and historical institutions. There are other industries that are considerably less tourism intensive. The leisure and hospitality industry is the closest proxy to travel and tourism. Our expectation is that this cluster will grow at 4.6% compounded annually over the 10 years to 2019.

Table 11. Travel and Tourism Cluster

Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Travel and Tourism	**4.6%**	**2.1**	**28,093**	**1.2%**
Amusement and Recreation Services	4.0%	8.2	8,345	0.7%
Hotel and Lodging Places	6.5%	4.8	7,948	2.3%
Eating and Drinking	4.2%	1.0	4,081	-0.3%
Air Transportation	4.8%	6.4	2,578	0.0%
Water Transport	3.5%	18.9	701	7.8%
Transportation Services	-2.7%	8.6	1,211	1.3%
General Merchandise Store	5.5%	0.9	1,084	7.2%
Automative Dealers and Service Stations	1.9%	0.4	487	0.6%
Apparel and Accessory Stores	3.2%	0.3	364	-1.6%
Furniture & Home Furniture Stores	0.1%	1.2	298	-2.8%
MembershipSports and Recreation Clubs	4.0%	0.3	323	0.7%
Miscellaneous Retail	6.3%	1.3	320	6.0%
Automobile Repair and Services	6.9%	0.2	126	-0.9%
Automobile Rental and Leasing	3.4%	0.9	141	1.7%
Food Stores	6.8%	0.6	87	-3.0%

Sources: The Alaska Tourism Satellite Account, Global Insight Study 2004 and IHS Global Insight, 2009

- Logistics and International Trade is about the movement of goods / freight. The cluster employed 13,784 in 2008, an increase of 1.7% compounded annually since 2003. This is a star cluster with employment concentration that is 1.5 times the national average and a compounded annual growth rate in gross output of 4.4% over next ten years. Industries in the cluster include air, rail, road and water transportation as well as couriers, warehousing and storage. The sector has good potential in the future as continued cargo expansion should result in solid growth opportunities. Growth prospects for the courier industry are particularly high.

Table 12. Logistics and International Trade Cluster

Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Logistics and International Trade	**4.4%**	**1.5**	**13,784**	**1.7%**
Scheduled Air Transportation	4.8%	4.7	5,242	-0.7%
Support Activities for Air Transportation	-2.7%	2.7	1,022	2.6%
Rail Transportation	1.8%	2.9	705	-3.4%
Deep Sea, Coastal, and Great Lakes Water Transportation	3.5%	6.5	652	15.9%
Inland Water Transportation	7.4%	2.4	104	-10.2%
Specialized Freight Trucking	4.4%	1.9	2,035	7.6%
Support Activities for Water Transportation	1.0%	2.8	664	-4.2%
Support Activities for Road Transportation	-0.9%	0.4	70	1.8%
Freight Transportation Arrangement	-5.2%	0.9	460	-2.3%
Couriers	8.4%	1.9	2,295	6.0%
Warehousing and Storage	5.1%	0.3	407	-0.7%
Aerospace Product and Parts MFG	3.3%	0.1	99	35.1%
Navigational, Measuring, Electromedical, and Control Instruments MFG	2.5%	0.0	9	-12.0%

Source: IHS Global Insight, 2009

- Scheduled air transportation is the largest employer in the cluster with 5,242 workers in 2008 followed by couriers with 2,295 employees and specialized freight trucking with 2,035. Scheduled air transportation has employment concentration that is 4.7 times the national average. Employment concentration is particularly high for water transportation.
- Community and Social Services is a *star* cluster that employed 2,858 workers in 2008. The cluster includes civic and social organizations as well as social advocacy organizations. They are considered a cluster because these organizations are a common platform to connect various industries and groups in the state. Civic and social organizations is quite large, the industry employed 1,878 people in 2008 and had an employment concentration of 2.2 times the national average. Employment with social advocacy organizations more than doubled from 426 in 2003 to 980 in 2008.
- The cluster is 2.5 times more concentrated in Alaska than it is nationally. The social advocacy and civic and social organizations had ECRs of 3.1 and 2.2 respectively in 2008. Cluster dynamism however is higher than average and is estimated to be 4.4%.

Table 13. Community and Social Services Cluster

Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Community and Social Services	**4.4%**	**1.5**	**13,784**	**1.7%**
Social Advocacy Organizations	8.0%	3.1	980	18.1%
Civic & Social Organizations	5.1%	2.2	1,878	-0.2%

Source: IHS Global Insight, 2009

- Advanced Business Services is a large *star* cluster. The cluster employed 16,354 people in 2008. There was a large increase in employment since 2003 in this cluster particularly in the scientific research and development services industry and special food services. Cluster dynamism is estimated to be higher than average at 5%. The cluster includes industries that employ highly skilled labor and provides technical, research and management services to other industries in the state. The architectural, engineering and related service is the largest employer in the cluster (4,414 workers) followed by facilities support services with 2,931. The special food services industry employed 2,897 in the same year while the scientific research and development services industry employed

Table 14. Advanced Business Services Cluster

Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Advanced Business Services	**5.0%**	**1.1**	**16,354**	**6.3%**
Other Specialty Trade Contractors	5.2%	0.9	1,174	1.4%
Architectural, Engineering, and Related Services	1.1%	1.3	4,414	4.6%
Specialized Design Services	3.0%	0.4	124	4.0%
Computer Systems Design and Related Services	9.1%	0.5	1,309	6.1%
Management, Scientific, and Technical Consulting Services	6.4%	0.4	1,005	-0.5%
Scientific Research and Development Services	4.6%	0.9	1,494	16.5%
Facilities Support Services	6.7%	8.3	2,931	8.4%
Vocational Rehabilitation Services	5.6%	1.2	1,006	2.5%
Special Food Services	8.0%	2.2	2,897	10.4%

Source: IHS Global Insight, 2009

1,494. Facilities support services has employment concentration that is 8.3 times the national average. Some of these industries are linked to the oil and gas sector.

Opportunity Clusters

"Opportunity" clusters are those in the lower right-hand corner of the four quadrant cluster diagram. In the case of the Alaska region, there are four clusters that fall into this quadrant. These clusters tend to face above-average national demand growth, but have not yet achieved significant mass in a region. Clusters in this quadrant would benefit from a recruitment and enterprise formation process that would harness existing demand, leading to the creation of new jobs in a region.

Specialized Machinery/ Capital Goods is identified as an opportunity clusters.

- Specialized Machinery / Capital Goods is a small *opportunity* cluster and a part of Alaska's manufacturing industry. Cluster employment more than doubled over the five years to 2008 when employment stood at 2,301. The cluster is composed of architectural and structural metal manufacturing and commercial and industrial machinery and equipment rental and leasing services. Cluster employment concentration is 0.7 but its dynamism is estimated to be above average at 4.6%.
- The commercial and industrial machinery, equipment rental and leasing industry employed 565 workers in 2008. Other general purpose manufacturing employed 996 workers. They are the two largest employers in the cluster. These industries also have the highest ECRs in the cluster. Ship and boat building is a small and not particularly dynamic industry which is primarily linked to the fishing industry.

Table 15. Specialized Machinery / Capital Goods Cluster

Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Specialized Machinery/Capital Goods	**4.6%**	**0.7**	**2,301**	**14.9%**
Architectural & Structural Metals MFG	2.6%	0.2	180	0.8%
Machine Shops; Turned Product; and Screw, Nut, and Bolt MFG	-1.3%	0.3	283	18.1%
Other General Purpose Machinery MFG	0.4%	1.4	996	83.4%
Commercial & Industrial Machinery & Equip Rental & Leasing	5.5%	1.5	565	4.7%
Ship and Boat Building	0.4%	0.7	277	-5.0%

Source: IHS Global Insight, 2009

Mature Clusters

The clusters in the upper left-hand quadrant of our cluster diagram are "Mature." These clusters are the basis of Alaska's historical strengths but they are facing slow-growing markets. Although these clusters have strong capabilities in the region, the low market attractiveness means that they can maintain the status-quo, downsize, or transform their focus into new markets.

These clusters are assets in a region's portfolio and require a great deal of investment to achieve a desired level of growth. There has long been extensive employment and specialization in these clusters, but they have had difficulties in competing with other regions and face uncertain global markets. These clusters probably have the greatest need for undertaking collaborative cluster initiatives that will help them understand market requirements, improve production capabilities, enhance worker productivity, and innovate in marketing and distribution.

The clusters that have been identified as mature in Alaska include Oil and Gas Extraction / Pipeline / Refinery, Fishing and Seafood Processing, Mining and the Military.

- Oil and Gas / Pipeline / Refinery is a large and *mature* cluster in Alaska, it employed 15,067 in 2008. The employment concentration of the overall cluster is 5.7 times the national average. Over the last five years employment increased by a very healthy compounded annual rate of 8.2%. The cluster's future potential is limited. Alaska's oil production has been declining since 1988 and the fields that are currently producing have an aggregate decline rate of just over 6%. We expect Alaska's production in 2015 to be about 522,000 barrels per day or 75% of the 2008 levels. Cluster dynamism is well below average at minus 1.5% over the next 10 years.
- While oil and gas extraction is at the centre of the cluster it also includes support activities, pipeline transportation of crude oil and gas, petroleum manufacturing (refinery), lessors of nonfinancial intangible assets and pesticides, fertilizer and other agricultural chemical manufacturing.
- The extraction industry employed 3,960 in 2008. Support activities for mining is a large industry in the cluster, its activities include: field well drilling, reconditioning, chemical treatment, rig skidding and geological and geophysical exploration. In 2008 support activities employed 9,727. Petroleum products manufacturing employed 420 in the same year. Employment in the pipeline and pesticide and fertilizer manufacturing industries are quite low.

Table 16. Oil and Gas / Pipeline / Refinery Cluster

Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Oil and Gas	**-1.5%**	**5.7**	**15,067**	**8.2%**
Oil & Gas Extraction	-2.9%	3.3	3,960	6.5%
Support Activities for Oil and Gas	0.0%	10.3	9,727	11.2%
Pipeline Transportation of Crude Oil	-0.5%	37.6	661	-2.5%
Petroleum and Coal Products MFG	5.5%	1.4	420	2.2%
Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	0.1%	2.0	131	21.7%
Pesticide, Fertilizer, and Other Agricultural Chemical MFG	-8.3%	2.2	168	-13.7%

Source: IHS Global Insight, 2009

- Fishing and Seafood Processing is a large *mature* cluster, and employed 13,351 workers in 2008. Seafood processing is one of Alaska's oldest industries and dominates the manufacturing industry—representing nearly half of manufactured output. It is also Alaska's top international export.
- The employment concentration of the cluster is highest among all clusters at 30.6 times the national average in 2008. The fishery in Alaska generates about half of the total U.S. commercial fishing harvest by weight. Dutch Harbor/Unalaska is in fact the largest fishery port in the country. The future potential of the cluster is limited and the industry dynamism is estimated to be below average at 3.0% over forecast period.

Table 17. Fishing and Seafood Processing Cluster

Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Fishing and Seafood Processing Cluster	**3.0%**	**30.6**	**13,351**	**-1.2%**
Fishing	3.4%	20.0	7,109	-4.4%
Seafood Product Preparation & Packaging	2.8%	76.4	6,242	3.3%

Sources: IHS Global Insight, 2009 and Alaska Department of Labor and Workforce Development

- Mining in Alaska is a large, *mature* cluster. The cluster encompasses metal ore mining, nonmetallic mineral and quarrying as well as coal mining. Red Dog Mine is the largest in the state; it produces zinc, lead and silver. Overall cluster employment was 4,452 in 2008.
- The cluster expanded rapidly over the last 5 years. Metal ore mining employs about 10 times as many workers as nonmetallic mineral mining however the latter grew much more rapidly since 2003. The cluster employment concentration ratio (ECR) is very high at 6.4 times the national average in 2008. The metal ore mining industry in particular has a very high concentration ratio of 25 times the national average.
- Surging metals prices bolstered growth in gross output of the cluster over the last 5 years. It increased by a compound annual rate of 7.2%, however, over the forecast period this growth slows sharply as price increases are assumed to be more moderate. We expect all industries in the cluster to contract over the next 10 years. Mining is a *mature* cluster.

Table 18. Mining Cluster

Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Mining (Excl. Oil and Gas)	**-3.6%**	**6.4**	**4,452**	**12.1%**
Metal Ore Mining	-3.8%	24.6	3,966	11.3%
Nonmetallic Mineral Mining & Quarrying	-3.1%	0.9	396	24.3%
Coal Mining	-2.6%	0.8	90	6.1%

Source: IHS Global Insight, 2009

- Military is a large and *mature* cluster in Alaska centered in Anchorage and Fairbanks. The Department of Homeland Security Coast Guard has a significant presence as well. The cluster employed 2,858 people in 2008. Employment has increased by a compounded annual rate of 4.2% since 2003. Cluster concentration is very high at 2.5 times the national average and is likely to go even higher as the army has announced its intention to add personnel at Fort Richardson and Fort Wainwright. Overall cluster dynamism is expected to be higher than average at 6.2% over the forecast horizon.

Table 19. Military Cluster

Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Military	**6.2%**	**2.5**	**2,858**	**4.2%**

Source: IHS Global Insight, 2009 and Alaska Command (ALCOM)

Table 20. Federal Government Cluster

Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Federal Government	**3.3%**	**2.5**	**16,833**	**-0.3%**

Source: IHS Global Insight, 2009

- *Federal Government* is a large and *mature* cluster in Alaska and concentration in centered in Anchorage, Fairbanks and Southeast. The cluster employed 16,833 people in 2008. Since 2003, employment in the cluster has declined slightly at a compounded annual rate of -0.3%. The employment concentration ratio is 2.5 times the national average and overall cluster dynamism is expected to be somewhat lower than average at 3.3% over the forecast horizon.

Challenge Clusters

In the lower left-hand quadrant are the "Challenge" clusters. While these clusters have some strength in Alaska, they are not a dominant capability compared to other regions. In addition, the traditional markets for these clusters are growing much slower than average. Here, the strategic focus should be on catching opportunities that might emerge in the region, such as "spin-offs" from existing companies, or a special case where a firm has "discovered" the region and wants to locate here. Within these clusters, expensive marketing and recruitment programs are not likely to pay off.

Forestry and Wood Products is a challenge cluster in Alaska.

- Forestry and Wood Products is a *challenge* cluster, which in its current form has limited future potential. The cluster includes: logging, timber tact operations, support activities, sawmill and wood preservation, and furniture manufacturing.
- It is a small cluster with total employment of only 734 in 2008. The logging and furniture manufacturing industries account for most of employment in the cluster. In 2008, logging employed 349 and the furniture manufacturing industry employed 265 workers. Timber is a small sector and it consists of the harvest and limited processing of timber resources in Southeast and South Central Alaska. Sawmill and wood preservation is another small industry in the cluster with total employment of 95 in 2008.
- In 2008 the cluster's employment concentration ratio (ECR) was low at 0.3 in 2008—a slight decline from 2003. Only logging and timber tract operations have employment concentration that is greater than 1 in 2008 at 2.2 and 1.1 respectively. Cluster dynamism over the next 10 years is about average at 3.3%. It is limited by the logging and timber tract operations; they are expected to grow by only

Table 21. Forestry and Wood Products Cluster

Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Forestry and Wood Products	**3.3%**	**0.3**	**734**	**-5.7%**
Timber Tract Operations	3.1%	1.1	12	-12.2%
Forest Nurseries & Gathering of Forest Products	4.8%	0.4	2	14.9%
Logging	2.7%	2.2	349	-10.7%
Support Activities for Forestry	6.9%	0.3	11	17.1%
Sawmills & Wood Preservation	6.3%	0.4	95	-0.6%
Furniture Manufacturing	6.3%	0.1	265	1.7%

Source: IHS Global Insight, 2009

2.7% and 3.1% respectively over the next 10 years. The cluster is being challenged by significant environmental concerns as well as an inexpensive supply of timber from Russia and South America.

Cluster Analysis by Region

In this section the project team investigates and details the dispersion of the identified clusters across the various regions including Anchorage / Mat-Su, Fairbanks, Gulf Coast, Interior Western, Northern Southeast and Southwest.

Table 22. Anchorage/Mat-Su Clusters

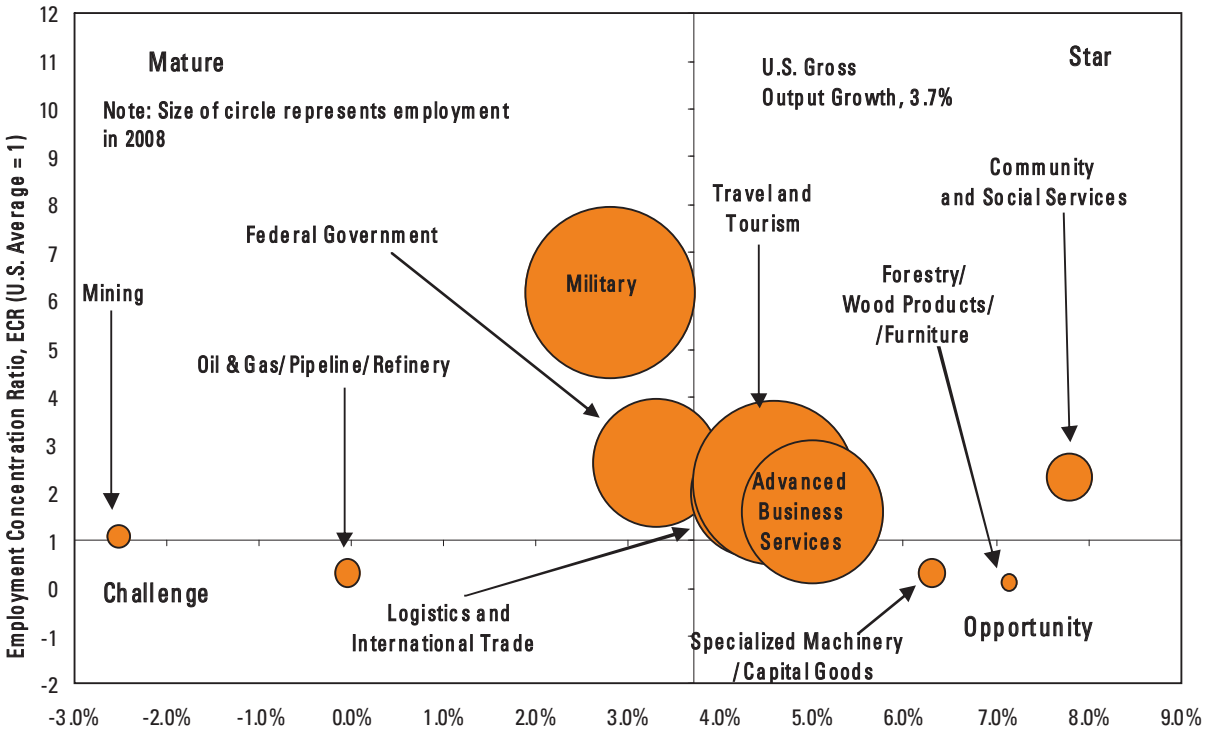
Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Federal Government	3.3%	2.6	9,633	-0.5%
Military	2.8%	6.2	16,806	-
Fishing and Seafood Processing	-	-	-	-
Logistics and International Trade	4.4%	2.0	9,450	1.3%
Travel and Tourism	4.6%	2.2	15,762	0.6%
Forestry and Wood Products	7.1%	0.1	164	-1.7%
Community and Social Services	7.8%	2.3	1,430	8.4%
Advanced Business Services	5.0%	1.6	12,199	6.4%
Specialized Machinery/Capital Goods	6.3%	0.3	566	1.1%
Oil and Gas/Pipeline/Refinery**	-0.04%	0.3	469	14.7%
Mining (Excl. Oil and Gas)	-2.5%	1.1	401	27.1%

** Employment does not inlcude oil and gas headquarters positions. According to ADOL, there are 1300 positions in oil and gas headquarters

Source: IHS Global Insight, 2009

- The majority of Alaska's advanced business services cluster is located in the Anchorage/Mat-Su region. The region accounts for 75% of the cluster's total employment in 2008. The employment concentration ratio is 1.6 times the average. The cluster is very dynamic with industry dynamism estimated to be at 5.0%. It is a *star* cluster in the region.
- Military is a large *mature* cluster in the region with an employment concentration ratio of 6.2 times the national average. It employed 16,806 workers in 2008 in the region—60% of cluster employment in the state.
- Logistics and international trade is a very large *star* cluster and employed 9,450 workers in 2008. The ECR of the cluster is twice the national average and industry dynamism is estimated to be 4.4% over the forecast period.
- Travel and tourism is also a very large cluster in the region and employed 15,762 workers in 2008. The employment concentration ratio of the cluster 2.2 times the national average.
- Community and social services is a small but concentrated and very dynamic cluster in the region.
- Federal Government is a large *mature* cluster with total employment of 9,633 in 2008. The employment concentration ratio of the cluster 2.6 times the national average.

Figure 42. Anchorage/Mat-Su Clusters



Source: IHS Global Insight, 2009

Table 23. Fairbanks Clusters

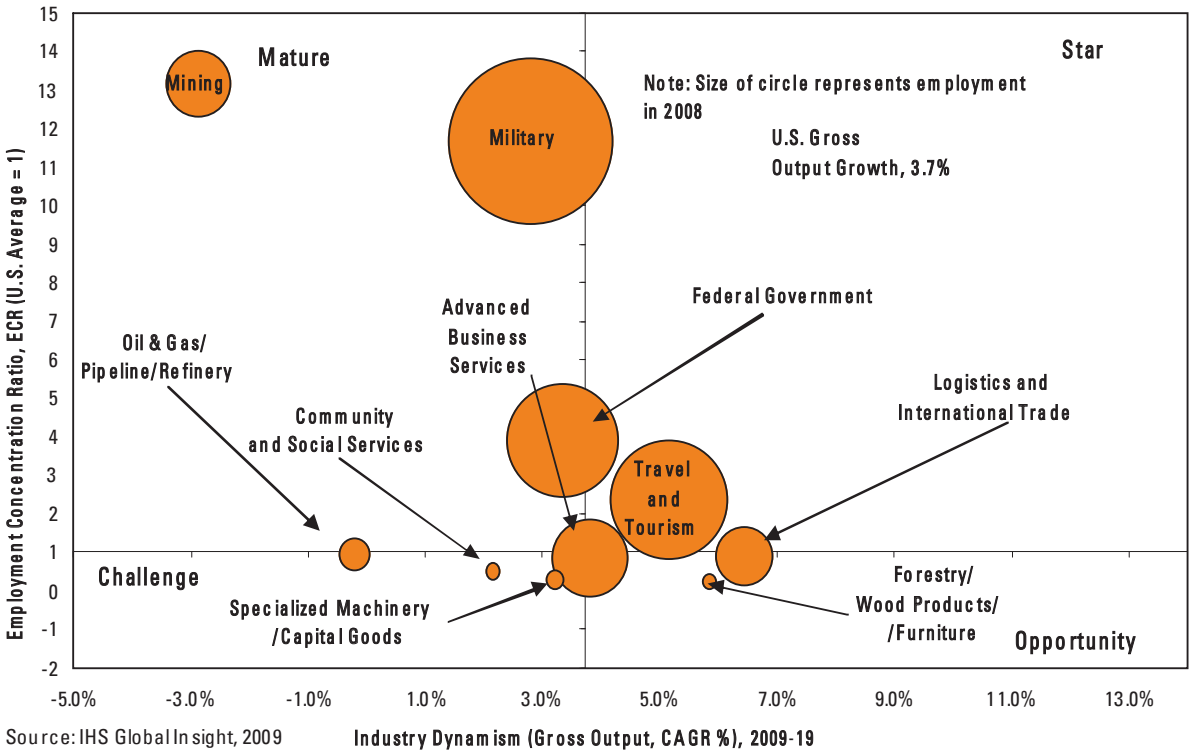
Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Federal Government	3.3%	3.9	3,961	0.9%
Military	2.8%	11.6	8,775	-
Fishing and Seafood Processing	-	-	-	-
Logistics and International Trade	6.4%	0.9	1,175	4.1%
Travel and Tourism	5.2%	2.3	4,668	0.6%
Forestry and Wood Products	5.8%	0.2	94	25.7%
Community and Social Services	2.2%	0.5	86	-10.6%
Advanced Business Services	3.8%	0.9	1,877	10.3%
Specialized Machinery/Capital Goods	3.2%	0.3	161	11.1%
Oil and Gas/Pipeline/Refinery	-0.2%	0.9	369	-4.3%
Mining (Excl. Oil and Gas)	-2.9%	13.1	1,373	5.9%

Source: IHS Global Insight, 2009

- In 2008, travel and tourism cluster employed 4,668 people in Fairbanks. The employment concentration ratio of the cluster is 2.3 times the average.
- The mining cluster has 31% of its total employment in the Fairbanks region. It is also the most concentrated cluster in the region, the ECR is 13 times higher than average. Cluster dynamism is estimated to be minus 2.9%.
- Military is a large cluster with total employment of 8,775 in 2008, 32% of military cluster employment in the state. The cluster's ECR is 11.6 times higher than the national average.

- **Logistics and international trade** is one of the most dynamic clusters in the Fairbanks region. The cluster's industry dynamism is estimated to be 6.4% however cluster employment concentration is only average.
- **Advanced business services** is another large cluster—it employed about 1,877 people in the Fairbanks region or 11% of the entire cluster in the state in 2008.
- **Federal Government** employed 3,961 people in 2008, the third largest employer in the region. The employment concentration ratio of the cluster is 3.9 times the national average.

Figure 43. Fairbanks Clusters



Source: IHS Global Insight, 2009

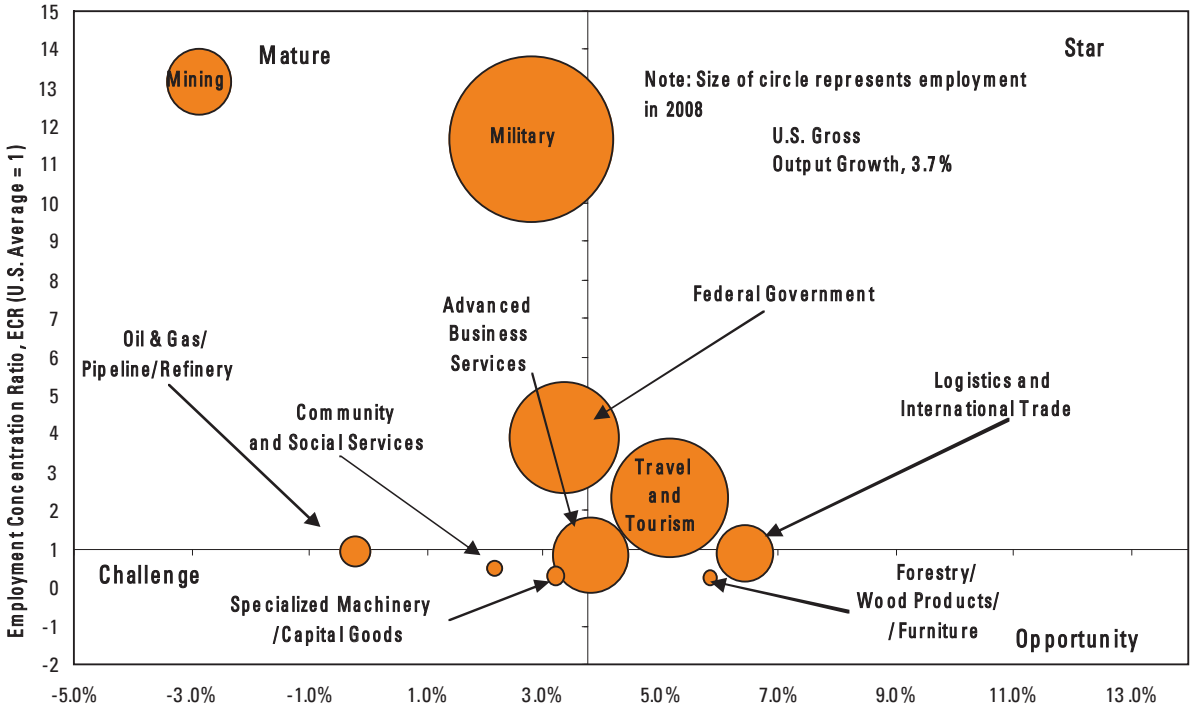
Table 24. Gulf Coast Clusters

Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Federal Government	4.5%	1.2	541	-2.1%
Military	2.8%	0.3	110	-
Fishing and Seafood Processing	3.9%	73.2	2,154	-1.0%
Logistics and International Trade	2.7%	0.8	471	2.6%
Travel and Tourism	4.5%	2.5	2,274	1.3%
Forestry and Wood Products	12.5%	0.2	34	-25.7%
Community and Social Services	3.4%	3.6	282	-1.7%
Advanced Business Services	6.2%	0.7	643	-2.0%
Specialized Machinery/Capital Goods	3.5%	0.6	141	4.5%
Oil and Gas/Pipeline/Refinery	-3.9%	12.3	2,206	-8.3%
Mining (Excl. Oil and Gas)	-3.3%	8.3	392	42.5%

Source: IHS Global Insight, 2009

- Oil and gas, mining and fishing and seafood processing are the most concentrated clusters in the Gulf Coast region.
- The ECRs of oil and gas and mining are 12 and 8 times the national average. Both however have negative cluster dynamism at -3.9% and -3.3% respectively. They are in the *mature* quadrant.
- Travel and tourism is another large and dynamic cluster with 2,274 employees. The cluster's industry dynamism is estimated to be higher than average at 5.1%.
- Military only employs 110 in the Gulf Coast region and has very low employment concentration ratio of 0.3.

Figure 44. Gulf Coast Clusters



Source: IHS Global Insight, 2009

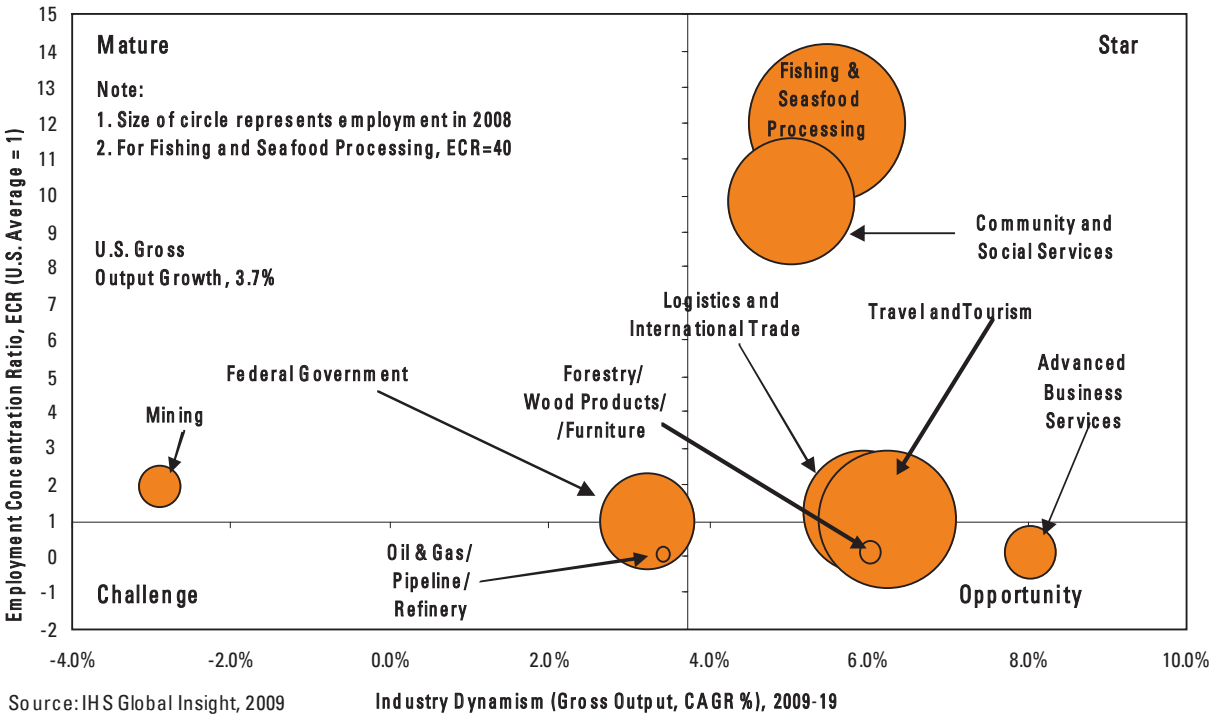
Table 25. Interior Western Clusters

Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Federal Government	3.2%	1.0	291	-2.3%
Military	-	-	-	
Fishing and Seafood Processing	5.5%	40.0	43	4.2%
Logistics and International Trade	5.9%	1.3	475	1.9%
Travel and Tourism	6.2%	1.0	576	3.4%
Forestry and Wood Products	6.0%	0.1	16	-17.2%
Community and Social Services	5.0%	9.8	482	7.3%
Advanced Business Services	8.0%	0.2	94	19.9%
Specialized Machinery/Capital Goods	-	-	-	-
Oil and Gas/Pipeline/Refinery	3.4%	0.1	7	29.1%
Mining (Excl. Oil and Gas)	-2.9%	1.9	57	-5.3%

Source: IHS Global Insight, 2009

- Fishing and seafood processing is the largest cluster in the Interior Western region followed by travel and tourism and communities and social service and logistics and international trade.
- The fishing and seafood processing cluster is the most concentrated with an ECR that is about 40 times the national average.
- Advanced business service is a small but dynamic cluster in the region.

Figure 45. Interior Western Clusters



Source: IHS Global Insight, 2009

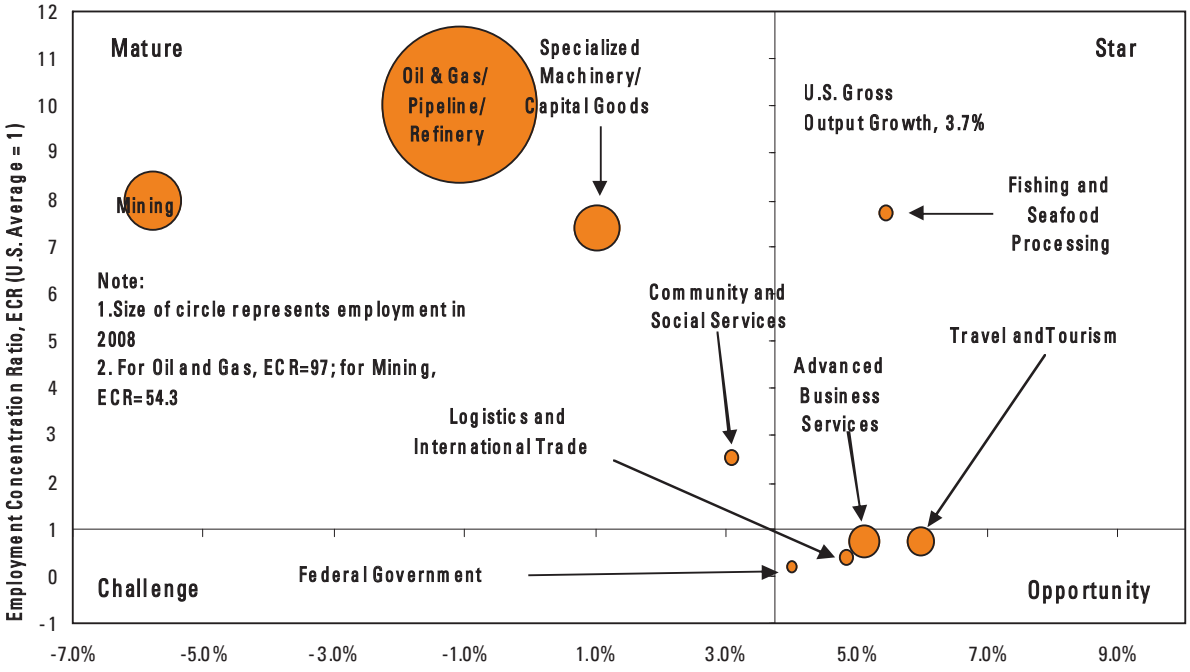
Table 26. Northern Clusters

Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Federal Government	4.0%	0.2	68	-3.4%
Military	-	-	-	
Fishing and Seafood Processing	5.4%	7.8	156	11.8%
Logistics and International Trade	4.8%	0.4	170	-2.4%
Travel and Tourism	6.0%	0.7	449	7.9%
Forestry and Wood Products	-	-	-	-
Community and Social Services	3.1%	2.5	134	-1.2%
Advanced Business Services	5.1%	0.7	487	-3.0%
Specialized Machinery/Capital Goods	1.0%	7.4	1,163	-
Oil and Gas/Pipeline/Refinery	-1.1%	97.0	11,905	14.6%
Mining (Excl. Oil and Gas)	-5.8%	54.3	1,757	13.2%

Source: IHS Global Insight, 2009

- **Oil and gas** and **mining** clusters are the largest employers in the Northern region. In 2008, the oil and gas cluster employed 11,905 workers in the region (79% of cluster employment in the state). The ECR of the cluster is 97 times the national average.
- **Mining** cluster in the Northern region has employment concentration that is 54 times the national average. Cluster employment in the region was 1,757 or 39% of the entire cluster in the state in 2008.
- **Specialized machinery / capital goods** cluster employed 1,163 workers in 2008. The cluster has an employment concentration ratio which is 7.4 times the national average in this region.
- The **community and social services** is a small concentrated cluster in the region. However, the industry dynamism of the cluster is estimated to be below average at 3.1%.

Figure 46. Northern Clusters



Source: IHS Global Insight, 2009

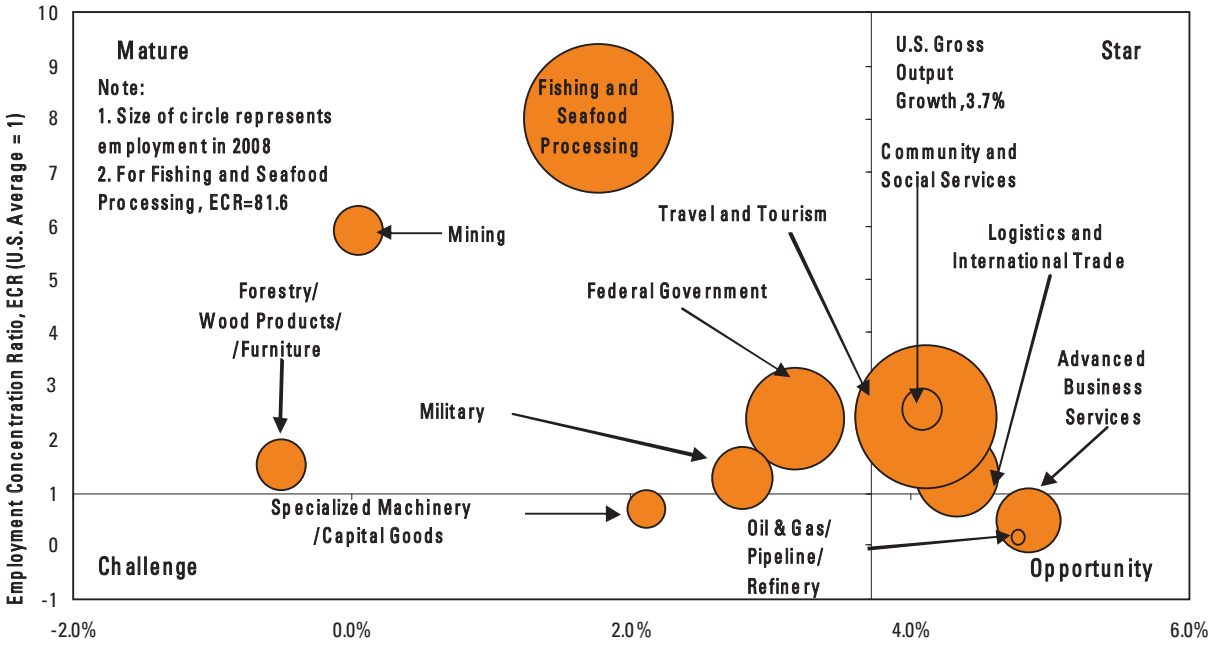
Table 27. Southeast Clusters

Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Federal Government	3.2%	2.4	1,765	-2.1%
Military	2.8%	1.3	695	-
Fishing and Seafood Processing	1.8%	81.6	3,845	-2.5%
Logistics and International Trade	4.3%	1.4	1,300	1.7%
Travel and Tourism	4.1%	2.4	3,481	4.3%
Forestry and Wood Products	-0.5%	1.5	419	-3.5%
Community and Social Services	4.1%	2.6	319	0.6%
Advanced Business Services	4.8%	0.5	726	10.5%
Specialized Machinery/Capital Goods	2.1%	0.7	252	-4.3%
Oil and Gas/Pipeline/Refinery	4.8%	0.2	47	21.0%
Mining (Excl. Oil and Gas	0.0%	5.9	449	11.1%

Source: IHS Global Insight, 2009

- **Fishing and seafood processing** and **travel and tourism** are the largest clusters in the Southeast region with 3,845 and 3,481 employees respectively in 2008.
- **Fishing and seafood processing** has a very high employment concentration in the region.
- **Mining** is the next most concentrated cluster in the Southeast region with an ECR 5.9 times the national average.
- The **community and social services** cluster is quite concentrated in the region. The cluster employed 319 people.
- **Federal Government** is another large *mature* cluster and employed 1,765 people in 2008. The employment concentration ratio of the cluster is 2.4 times the national average.

Figure 47. Southeast Clusters



Source: IHS Global Insight, 2009

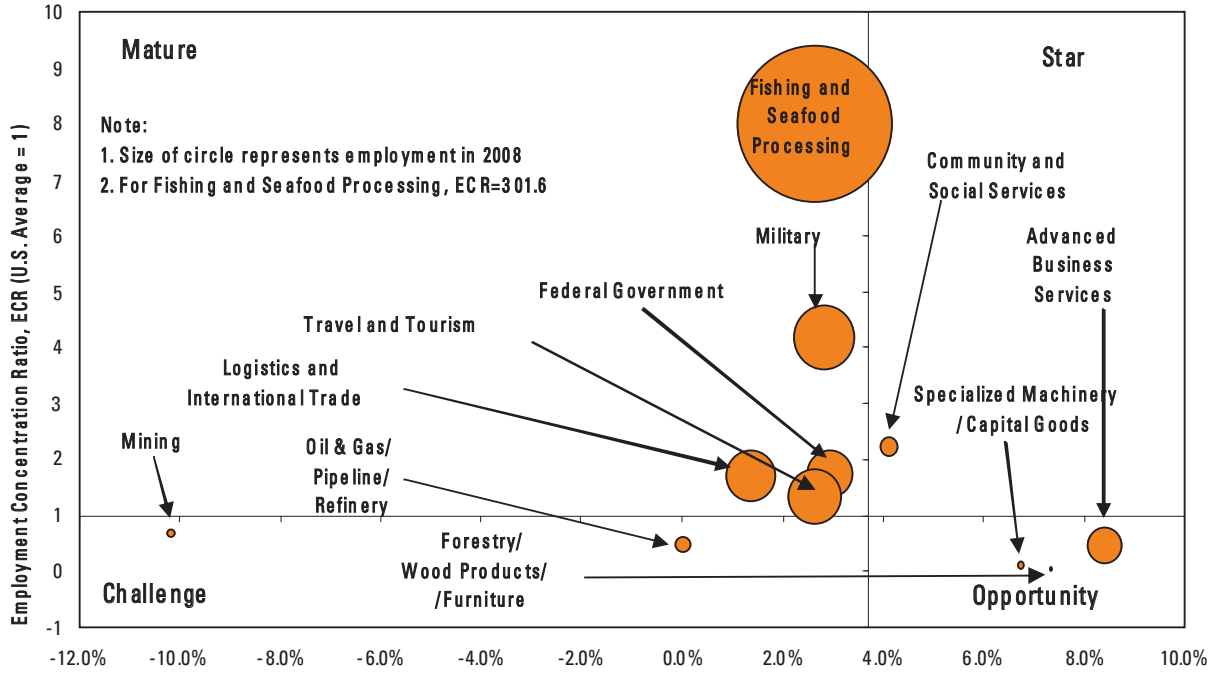
Table 28. Southwest Clusters

Cluster	Industry Dynamism, CAGR Gross Output, 2009-19	Employment Concentration Ratio	Employment 2008	Change in Employment, CAGR, 2003-08
Federal Government	2.9%	1.7	574	4.7%
Military	2.8%	4.2	1,039	-
Fishing and Seafood Processing	2.6%	301.6	6,453	-1.2%
Logistics and International Trade	1.4%	1.7	743	3.3%
Travel and Tourism	2.6%	1.3	885	1.6%
Forestry and Wood Products	7.4%	0.1	7	-39.4%
Community and Social Services	4.1%	2.2	125	0.8%
Advanced Business Services	8.4%	0.5	328	14.2%
Specialized Machinery/Capital Goods	6.7%	0.1	18	43.1%
Oil and Gas/Pipeline/Refinery	-	0.5	63	-
Mining (Excl. Oil and Gas)	-10.2%	0.7	23	6.7%

Source: IHS Global Insight, 2009

- Fishing and seafood processing cluster is a very large cluster in the Southwest region. In 2008, the cluster employed 6,453 workers in the region—48% of the entire cluster in the state.
- Community and social services is a small *star* cluster in the region and employed 125 workers in 2008. The cluster's ECR is 2.2 times the national average and it has above average industry dynamism, estimated to be 4.1%.
- Logistics and international trade cluster is also highly concentrated with an ECR that is 1.7 times the national average. The cluster however is not particularly dynamic in the Southwest region.
- Advanced business services cluster has the highest industry dynamism in the region estimated at 8.4%. The cluster employed only 328 people and concentration is also very low at 0.5 in 2008
- Military employed 1,039 workers in the region in 2008. The employment concentration ratio of the sector is 4.2 times the national average.

Figure 48. Southwest Clusters



Source: IHS Global Insight, 2009

Cluster Indentification: Going Beyond the Data

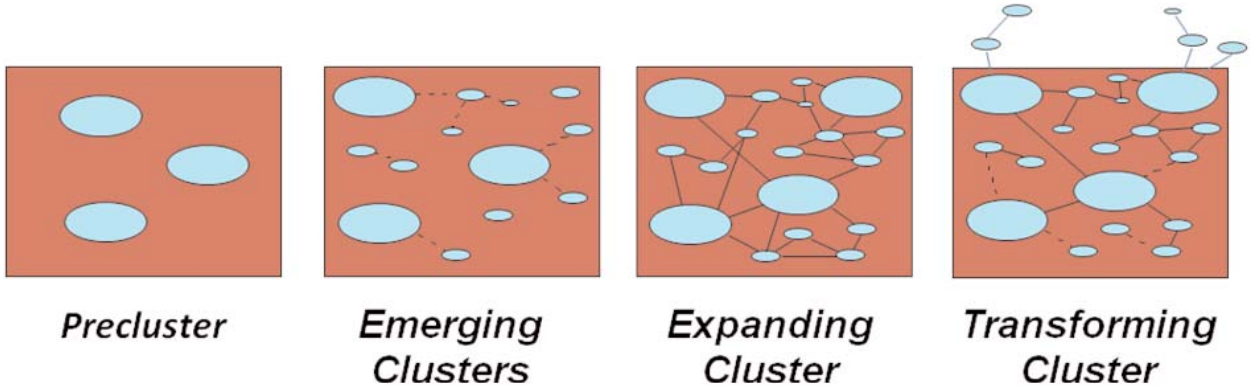
The data and our analysis makes the case that Alaska has 11 clusters. Most of these are the industry sets that nearly everyone in Alaska would recognize as the basic engines of the economy—oil and gas, mining, forestry, fishing and tourism. The other clusters we have identified are smaller, but still show up in the data as clusters—trade and logistics, community services, etc. Most of these we could refer to as "seed clusters" or "clusters-in-the-making." They are yet to be fully developed and would presumably respond well to policy support.

But like any region, Alaska has other strengths that would not necessarily show up in this 4-digit level data, but nevertheless represent latent competitive advantage—faint signs of clusters on the horizon. In some cases, these advantages lie within the University of Alaska, perhaps with a handful of experts in

one department. In other cases, these advantages might be with a small handful of entrepreneurs who have specific know-how but haven't yet had a market breakthrough.

The diagram below shows the stages of development that clusters typically pass though.

Figure 49. Stages in the Evolution of a Cluster



The point is that, for the pre-clusters, certain concentrations of capabilities and know-how exist in Alaska, and thus should be included in any discussion of future economic directions. With the right combination of policy and other kinds of government and/or private sector support, such concentrations could be more fully developed, be they mature clusters, seed clusters, or simply latent sources of competitive advantage.

Our team has identified the following potential areas of "latent competitive advantage" that don't appear to fall within the 11 clusters identified in this draft:

- Cold climate technology
- Rocket launch technology
- Cold climate housing
- Specialized super computing capabilities
- Distance delivery -- education, medical, and management services
- Alternative energy and clean-energy (bio fuels, clean coal/coal gasification, etc)
- Specialty solvents
- Light aircraft operations and maintenance/navigation
- Marine and arctic biological sciences/potential for aquaculture
- Remote communications technologies/systems
- Aerospace technology/operations
- Naturally grown/grazed food products

Going into the strategy development phase, the project should recognize these areas as economic strengths and develop appropriate strategies for them.

ECONOMIC FOUNDATIONS

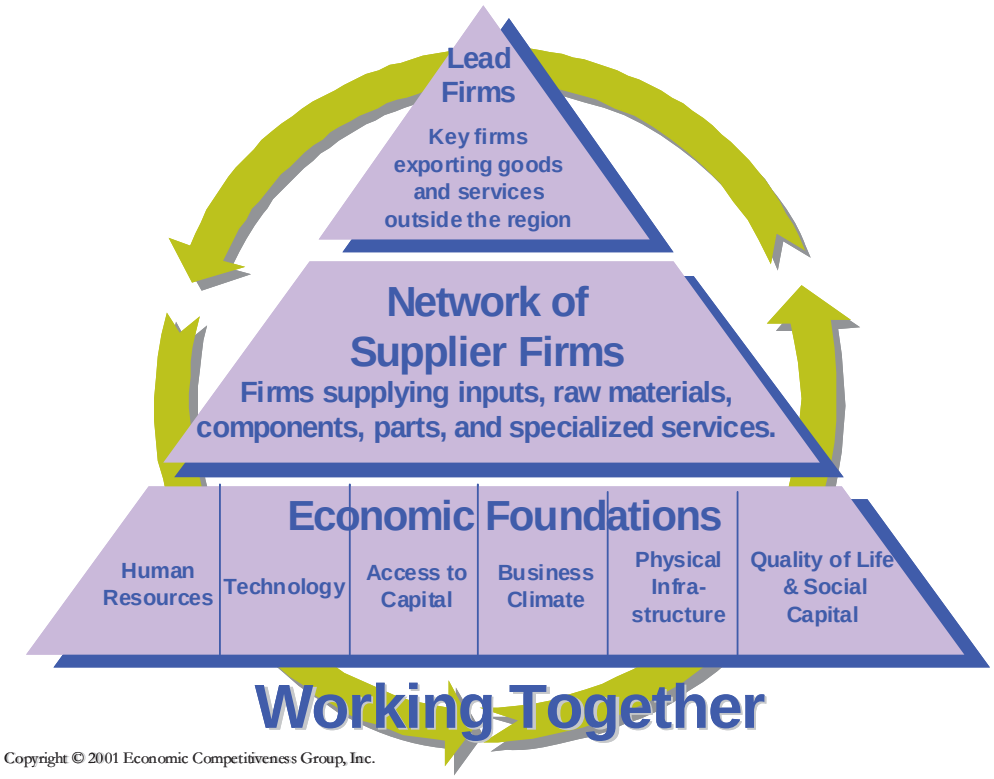
This section examines six economic foundation areas that underpin the development of Alaska's clusters. A strong foundation is a vital element for cluster development. Alaska's economic foundations are evaluated against a set of peer states including North and South Dakota, Louisiana, Idaho, Montana, Washington and Wyoming. The selection of these states was based on a number of factors that include: (1) population and urban orientation; (2) cluster structure; (3) economic performance; (4) strategy-oriented economic development; and (5) multi-modal transportation issues.

Overview

Underpinning every successful cluster are the economic foundations of a region as described here and shown as the base of the pyramid in the cluster diagram below.

- *Human Resources:* an educated and productive workforce.
- *Technology:* the quality of research and development and other sources of innovation.
- *Access to Capital:* the ability of firms in the region to obtain financing.
- *Business Climate:* a competitive business climate; adequate funding for necessary services.
- *Physical Infrastructure:* well-developed, cost-effective and efficient roads, highways, transit, ports, and airports that meet the transit and transportation needs of both workers and business.
- *Quality of Life and Social Capital:* The quality of life a region offers its residents is comprised of many things—many of them intangible. It also consists of what is known as "social capital"—the inter-personal and organizational networks that enhance a region's ability to facilitate transactions and investment due to trust and access to information.

Figure 50. Economic Foundations of a Cluster-Based Economic Development Framework



This section provides summary statistics, or indicators, and a description of the major issues for each of these foundations for Alaska.

Peer State Benchmarking

To assess the strength and performance of the state's economic foundations, this report has identified seven peer states with which to compare Alaska. These states were selected on the basis of a number of criteria including: (1) population and urban orientation; (2) cluster structure (states with similar key clusters were given extra weight in the selection process); (3) economic performance; (4) strategy-oriented economic development (regions that had followed or were developing a collaborative, state economic development strategy were preferred to those without a strategy); and (5) multimodal transportation issues.

On the basis of these criteria, the following "peer regions" were identified:

- Louisiana
- Idaho
- Montana
- North Dakota
- South Dakota
- Washington
- Wyoming

To the extent possible, each of the economic foundations of Alaska examined in the following analysis is compared, or "benchmarked," with these peer states.

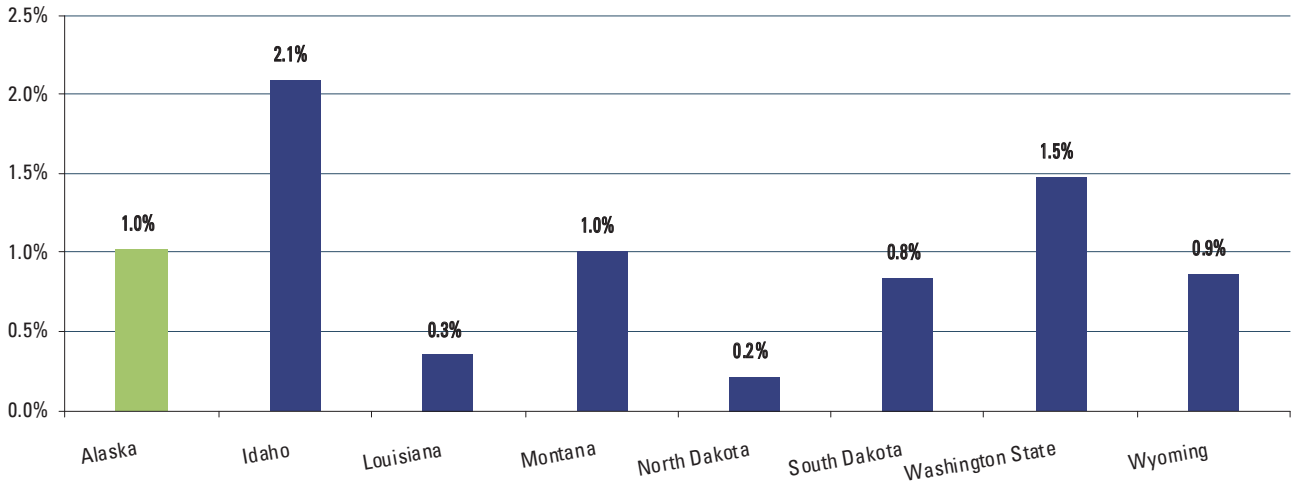
Human Resources

Competitive economies require a workforce that has the necessary technical skills, the ability to continue developing skills as technologies and markets change, and a commitment to perform high-quality work (i.e., a good work ethic). Education and job skill training are the primary ways by which the human capital of a state is preserved and enhanced. The ability of the labor force, industry, educational and training institutions, statewide policy organizations, organized labor, and workforce development councils to respond flexibly and work collaboratively are vital to a strong human resource foundation.

Population

A growing population is vital for labor force renewal. Over the last decade Alaska's population has grown by a compounded annual rate of 1%. Compared to the peer group this is in the middle of the pack. The population in North Dakota and Louisiana has changed very little between 1998 and 2008 while Idaho's population growth was 2% compounded annually. Washington's population increased by 1.3% compounded annually while South Dakota's population increased by 0.8% over the same period. Montana's population growth was very similar to Alaska's while in Wyoming the population growth was somewhat slower.

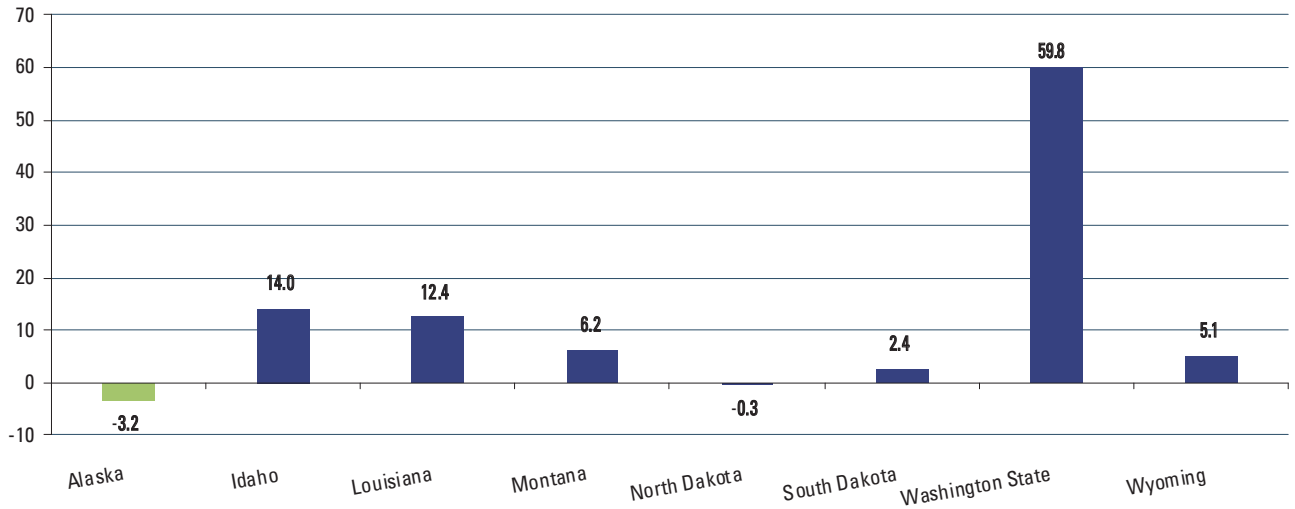
Figure 51. Population Growth Among Peer States, 1990-2019
(CAGR)



Sources: U.S. Census Bureau and IHS Global Insight, 2009

Job opportunities and quality of life are two important factors that impact migration or population flows between states. Migration out of Alaska has been significant in recent years and has been an important part of the population trend. From 1975 to 1985 the economy was booming led by the oil and gas sector and migration into the state averaged 107,000 annually. The pattern reversed from 1998 to 2008, with out-migration of about 10,000 per year. The net outflow in 2008 was 3,200 about 0.5% of the population. In the same year Idaho, Louisiana and South Dakota all experienced net population inflows of 14,000, 12,400 and 2,370 respectively. Washington's net inflow of population was 59,820 in 2008 while in North Dakota there was a small net outflow. Migration into the state was similar in Montana and Wyoming in 2008.

Figure 52. Net Migration, 2008
(Thousands)



Source: U.S. Census Bureau

Work Force and Source Population

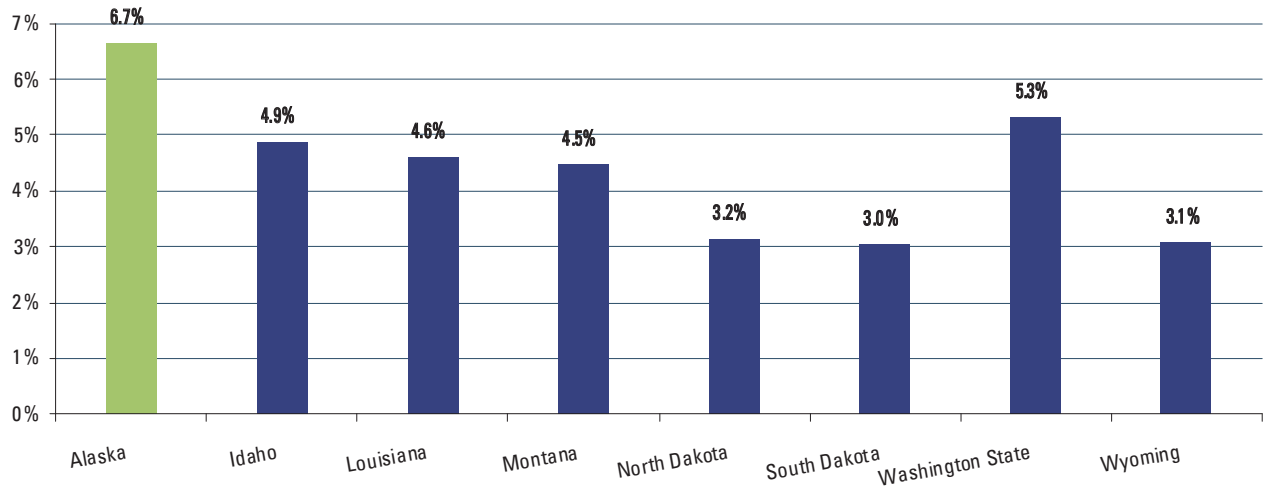
The source population for the labor force is more important than the overall population from the standpoint of economic performance. The source population is the working age population—those between 25 and 64 years of age. Over the last 10 years, this segment of Alaska's population has grown more rapidly than the overall population at a compound annual rate of 1.2%. Based on IHS Global Insight projections this part of the population will experience sharply slower growth over the next decade. This is a common trend among the peer group.

Labor force participation in Alaska was 67.5% in 2008—in the middle of the peer group range. Participation rates are higher in North and South Dakota at 71.8% and 70.7% respectively. Wyoming also has a high participation rate at 69.8%. The participation rate is lower in Louisiana at 60.5%. In Montana, Idaho and Washington the participation rate is similar to Alaska at 65.5%, 65.1% and 66.8% respectively. It's important note that Alaska has both a 'contemporary' urban and rural 'subsistence' economy. The rural economy is a traditional subsistence economy that runs parallel and supplements the urban economy. As a result of the dual economy, published data for employment may underestimate the actual participation rate.

Unemployment Rate

Unemployment rose across the board in 2008. The unemployment rate in Alaska was higher than the peer group at 6.7%.[68] The higher participation rates in North and South Dakota and Wyoming are accompanied by low unemployment rates of 3.2%, 3% and 3.1% respectively. Unemployment rates in Idaho, Louisiana and Montana are in the middle of the range at 4.9%, 4.6% and 4.5% respectively. The unemployment rate in Washington rose to 5.3% last year.

Figure 53. Unemployment Rate, 2008



Source: Bureau of Labor Statistics

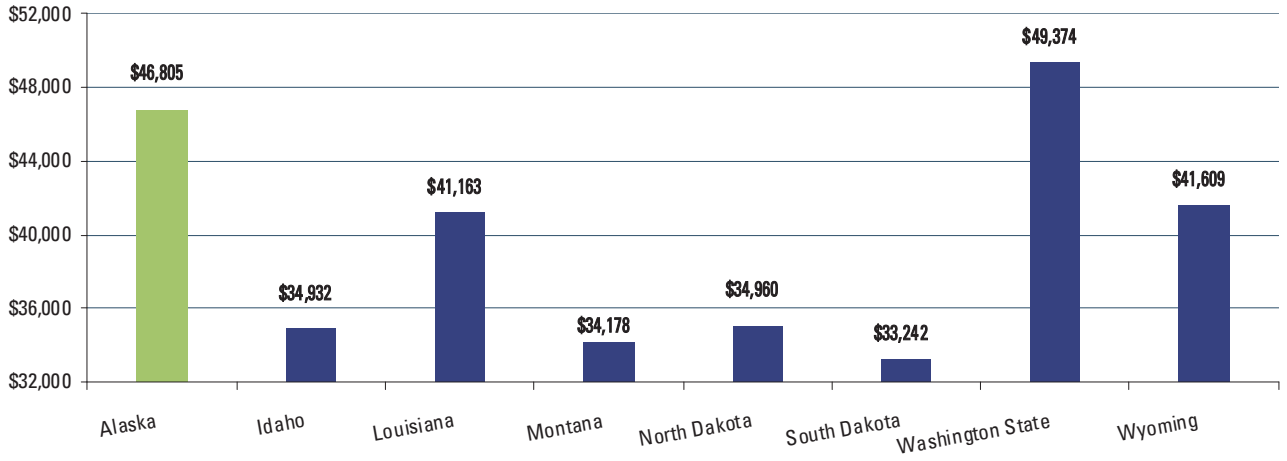
Wages

Alaska's average annual wage in 2008 was higher than most of its peer group members at $46,800.[69] Average annual wages are lower than $35,000 in Idaho, North and South Dakota and Montana. Average annual wages are similar in Louisiana and Wyoming at just over $41,000. Average annual wages are 5.5% higher in Washington than Alaska at $49,374.

[68] Published unemployment data are not very reliable for rural Alaska.

[69] The cost of living in Alaska is considerably higher and offsets much of the perceived benefits of higher wages.

Figure 54. Average Annual Wages, 2008



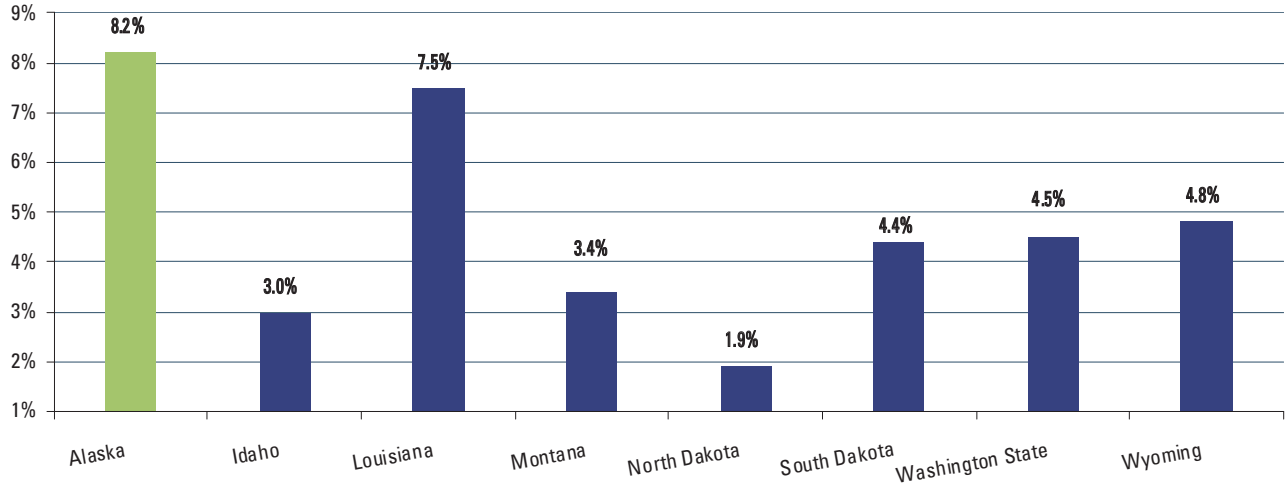
Source: Bureau of Economic Analysis

Educational Attainment

Education is a vital foundation for the workforce in a modern economy. The high school dropout rate however is alarmingly high in Alaska. The National Center for Education Statistics (NCES) U.S. Department of Education states that 8.2% of high school students dropped out in the 2004-05 school year. This is considerably higher than in the peer states; in fact, only Louisiana had a dropout rate that was close to Alaska. The dropout rate is considerably lower in Idaho, Montana and North Dakota. For reporting states as a whole, the rate was 3.9%.

Higher dropout rates are commonly quoted in Alaska, however some of the definitions are inconsistent and include students that simply transfer to other schools or school districts. The NCES provides a consistent definition of "true" drop outs and also has the benefit of providing a consistent measure to benchmark the state. The bottom-line message is that Alaska has abnormally high dropout rates.

Figure 55. Event Dropout Rate for Grades 9-12, School Year 2004-05 [70]

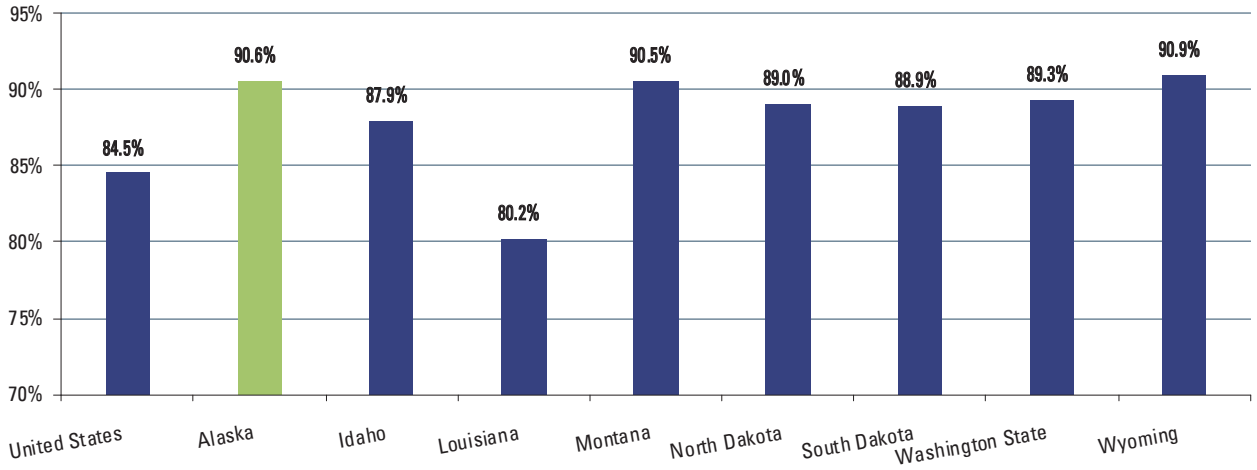


Source: U.S. Department of Education, National Center for Education Statistics

[70] The event dropout rate estimates the percentage of high school students who left high school between the beginning of one school year and the beginning of the next without earning a high school diploma or its equivalent. In contrast the average freshman graduation rate estimates the proportion of public high school freshmen who graduate with a regular diploma 4 years after starting 9th grade.

Despite the high dropout rate, a large numbers of Alaskans ultimately obtain a high school equivalency (either diploma or GED).[71] The American Community Survey conducted by the Census Bureau states that over 90% of Alaskans have completed high school (or equivalency)—well above the national average of 84.5% and higher than the peer states. In Louisiana only 80% of the population completed high school. On the surface this data suggests that the Alaska workforce is well-educated however schools in rural areas are regularly criticized for graduating students without basic skills and employers regularly comment that many entry-level workers cannot read, write or perform basic analytical functions.

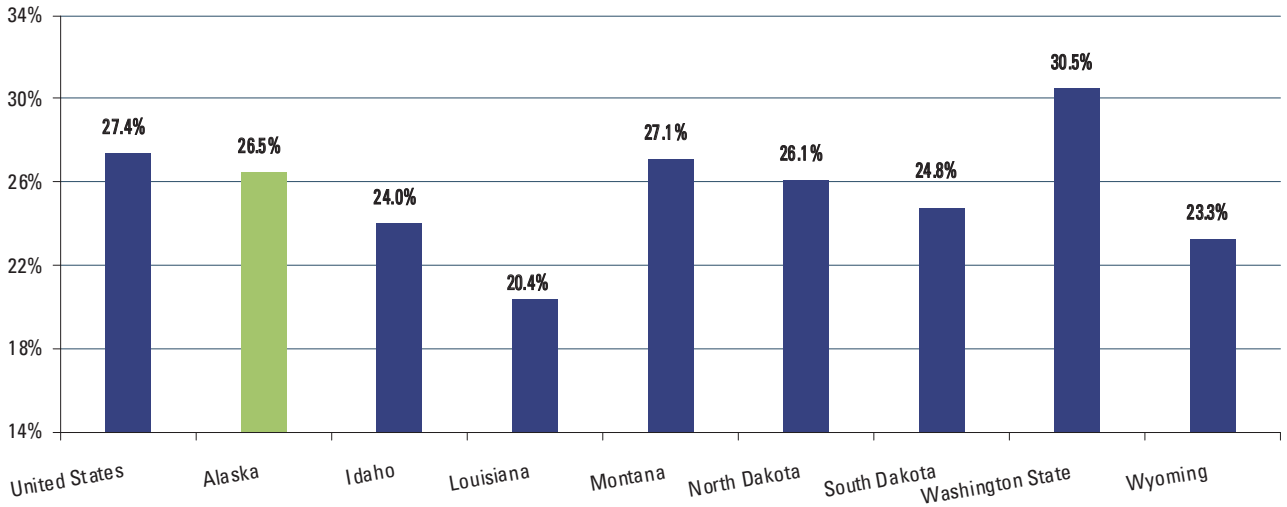
Figure 56. Percentage of Population (25 and Older) Who Have Completed High School (or Equivalency)



Source: U.S. Census Bureau, 2006-08 American Community Survey

An increasing number of occupations require education beyond high school. The American Community Survey for 2008 tells us that 26.5% of the Alaska population held a bachelor's degree or higher, a higher proportion than in its peers with the exceptions of Washington and Montana. The national average was only slightly higher at 27.4%.

Figure 57. Percentage of Population (25 and Older) with Bachelor's Degree of Higher



Source: U.S. Census Bureau, 2006-08 American Community Survey

[71] Alaska has the highest per capita level of GED holders in the country.

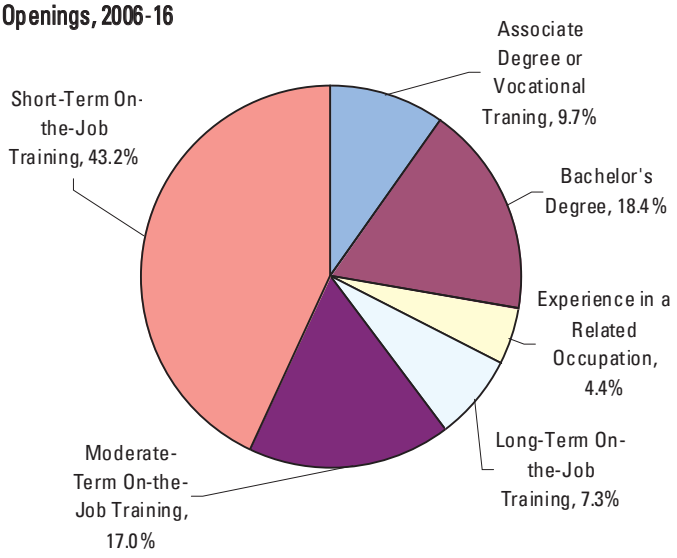
Occupational Forecast

Table 29. Fastest-Growing Occupations in Alaska, 2006-16

	Percent	Number of Openings
Network Systems and Data Communication Analysts	46.1%	140
Medical Assistants	41.5%	430
Environmental Engineering Technicians	36.4%	170
Nursing Aides, Orderlies and Attendant	35.5%	860
Home Health Aides	35.3%	830
Pharma Technicians	34.6%	300
Personal and Home Care Aides	33.7%	1,210
Pharmacists	33.6%	150
Physical Therapists	32.4%	140
Interviewers, Except Eligibility and Loan	32.2%	50
Respiratory Therapists	31.5%	70
Millwrights	31.5%	70
Registered Nurses	31.4%	2,310
Physician Assistants	30.7%	160
Recreational Therapists	30.5%	60

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Figure 58. Required Education and Training Level for Job Openings, 2006-16



Sources: Alaska Department of Labor and Workforce Development, Research and Analysis Section; US Department of Labor, Bureau of Labor Statistics

In an ever changing economy matching the skill set of the labor force with the needs of employers is an important challenge. Early in 2009 Alaska's Department of Labor and Workforce Development published a 10 year forecast for major occupational categories. The forecast has overall employment for all industries increasing by 14% over the period from 2006 to 2016.[72] Over that period the health care and social assistance industry is projected to outperform the average—employment growth will approach 25%. Employment in the utilities industry and professional, scientific and technical services are also projected to grow rapidly at 28% and 25% respectively. Mining and the arts, entertainment and recreation industries will also post well above average employment growth. Underperforming industries include government, manufacturing and information services. Agriculture as well as the forestry and logging industries will continue to lose jobs over the forecast.

Every industry employs workers in a mix of occupations. The industry employment forecast is the basis for the occupation projection. The fastest growing occupations will be concentrated in communication and healthcare related industries. Fast growing occupations are network and data communication analysts, medical assistants, nursing aides, environmental engineer technicians, and pharmacy technicians, etc. Declining occupations include file clerks, computer operators, mail clerks, floral designers, editors, data entry keyers, and radio and television announcers, etc.

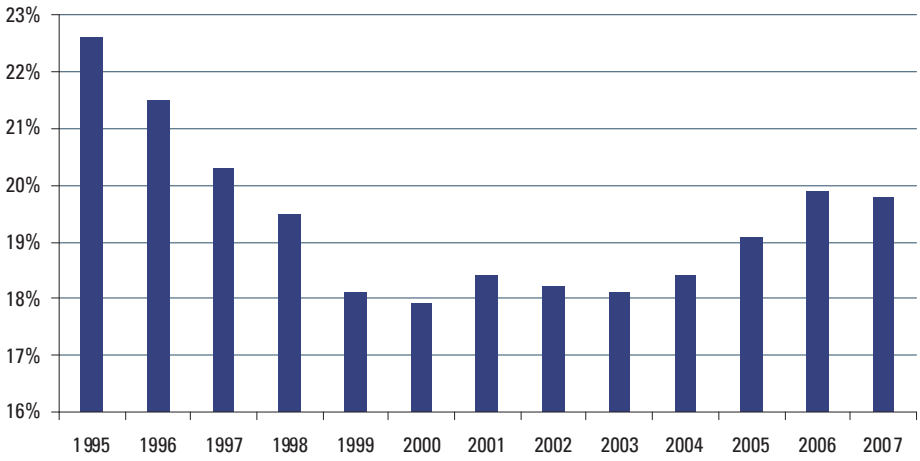
The study has another interesting dimension—the amount of education and training that will be required for these job openings. Eighteen percent will require a bachelor's degree or more while only about 10% will require an associate's degree or vocational training. Over the 10 year period about 60% of these job openings will require less than a year of on-the-job training.

[72] The Department of Labor forecast is considerably stronger than the IHS Global Insight base case forecast for employment to 2016.

Nonresident Workers in Alaska

Nonresident workers are prevalent in Alaska. There are a variety of factors for the large number of nonresident workers. There is a persistent shortage of skilled workers in the state. In addition to this there are significant numbers of seasonal jobs in the commercial fishery and tourism sectors. Nonresident workers made up just less than 20% of the total workforce in 2007. The share was as high as 22.6% in 1995 and it has trended slightly up since 2000.

Figure 59. Percentage of Nonresident Workers in the Total Workforce



Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

The share of nonresident workers is highest in seafood processing followed by accommodation services at 41.0%. Some of the highest paying jobs in Alaska are held by non resident workers, for example, in oil and gas sector, where average annual wage is over $100,000. The share of nonresident workers in the oil and gas sector was 25.9% in 2007. Seafood processing, accommodation services and oil and gas sectors combined together also account for high shares of nonresident wages in the state.

Table 30. Noresident Workers by Industry in 2007

Industry	Total Workers	Nonresident Workers	Percentage of Total Workers
Manufacturing	26,811	16,962	63.3
Agriculture, Forestry, Fishing and Hunting*	1,736	618	35.6
Mining (Including Oil and Gas)	18,617	5,442	29.2
Transportation and Warehousing	26,290	6,340	24.1
Construction	28,155	5,341	19.0
Utilities	2,242	148	6.6
Services	221,287	38,720	17.5
Government	75,844	5,571	7.3
Total	**401,427**	**79,299**	**19.8**

* Does not include fish harvesting employment numbers

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

The Workforce Development System

Workforce development programs bring together industry partners, various vocational training agencies and universities to meet the needs of the economy. These programs offer continuing education and development opportunities to keep incumbent workers current in their jobs.

The University of Alaska develops and executes workforce development programs. In the late 1980s the Anchorage Community College merged with the University of Alaska Anchorage and the College of Community and Continuing Education and the College of Career and Vocational Education were created. The Community & Technical College annually serves more than 6,000 students through 40 programs, leading to occupational endorsement and undergraduate certificates, associate of applied science and baccalaureate degrees, a master's degree and a post-baccalaureate dietetic intern program.

The University of Alaska Corporate Program was launched in 1999. It acts as the point of contact for business and industry to access the university's expertise and resources for continuing education and training. The program through its partnership with the State of Alaska Department of Transportation and Public Facilities provides logistical support for training and the coordination of training locations. The UACP works to develop new training or present existing training on required topics, and has been involved in several research projects.

The university responds to workforce needs by expanding existing programs or developing new ones. For example, in response to the ongoing shortage of nurses in Alaska, UAA's School of Nursing expanded its nursing program in Anchorage and added two-year nursing programs in Fairbanks, Juneau, Kodiak, Bethel, Kenai, Ketchikan and Stika. The university also works closely with business and industry partners to develop programs to fit their needs. For example, the University of Alaska Fairbanks' Tanana Valley Campus and the UAA Community and Technical College recently established a new associate's degree in construction management. The program, which was developed with input from local contractors and professional organizations, is designed to meet the high demand for skilled employees in the construction industry.

The Alaska Human Resources Investment Council developed a plan to guide a workforce development system that is needs-driven, accessible, interconnected, accountable, sustainable, and has collaborative governance. The development plan has two main objectives—achieving statewide alignment of secondary and post-secondary programs and improving the quality of existing tech prep opportunities. It will be implemented through Vocational Technical Education Providers (VTEP) by identifying existing models, disseminating information, and providing both professional development and training statewide using face-to-face, distance, and mobile methods. The VTEP represents secondary education, technical schools, proprietary institutions, union apprenticeship-training organizations, the University of Alaska, business education consortia, rural and urban representatives, and Alaska Workforce Investment Board.

The Alaska Works Partnership (AWP) was formed by Alaska's construction trade unions to build an Alaska construction workforce. The jointly administered trade apprenticeship program represents the largest private sector training enterprise in Alaska. The AWP delivers services in partnership with Alaska's Building Trades unions, the Alaska Department of Labor and Workforce Development, the U.S. Department of Labor, the Alaska Construction Academy, and the Denali Training Fund. For example the Helmets to Hardhats program is in place to transition men and women from the Armed Forces into careers in building and construction. The program works closely with transition offices of the National Guard, Army, Air Force, and Coast Guard in Alaska and ADOLWD Veteran representatives.

Access to Capital

The ability of firms to obtain the start-up and operating capital they need is essential to any state's economic health. In Alaska several trends regarding access to capital are apparent:

- Loans to micro and small businesses is low compared to the peer states.
- Alaska InvestNet is the only organization serving the venture capital market in Alaska.[73] The demographic and physical infrastructure environments in the state are the main factors behind low entrepreneurial activity and limited availability of venture capital.

[73] Alaska InvestNet is now largely defunct.

Small Business Lending and Micro Business Lending

The availability of credit lending facilities and free flow of capital is essential for local small businesses to flourish and in turn for the development of the state economy. However Alaska's small businesses are under-served by the banking sector. In 2007, total small business lending (loan amount less than $1 million) and micro business lending (loan amount less than $100,000) was $1.13 billion. This amounts to 2.5% of gross state product and is low compared to the peer group of states. Total loans as a percent of GSP was highest in Montana at 6.1% and also quite high in Idaho. South and North Dakota, Washington and Louisiana occupy the middle ground while the lending ratio is very low in Wyoming.

Table 31. Small and Micro Business Lending, 2007

	Small Business Loans* (Million $)	Micro Business Loans** (Million $)	Total Loans (Million $)	Total Loans as Percentage of GSP
Alaska	760	371	1,132	2.5%
Idaho	1,806	886	2,692	5.2%
Louisiana	4,263	1,597	5,859	2.8%
Montana	804	568	1,372	6.1%
North Dakota	627	267	894	3.1%
South Dakota	925	400	1,325	3.8%
Washington State	6,813	3,126	9,939	3.2%
Wyoming	224	240	464	1.1%

* Only lenders with small business loan (loan<$1 Million) totals of more than $50 million are considered
** Only lenders with micro business loan (loan<$100,000) totals of more than $10 million are considered

Sources: SBA Office of Advocacy, Small Business Lending and Micro Business Lending in the United States, for Data Years 2007-08; and IHS Global Insight, 2009

Table 32. Employment Concentration Ratio, Financial Service Sector, 2008

Industry	Employment Concentration Ratio, 2008
Commercial Banking	0.87
Securities and Investment	0.33
Insurance	0.38
Real Estate	1.03

Source: IHS Global Insight, 2009

The under-developed nature of the banking sector is evident by low employment concentration ratio of the banking and financial services sector. Only the real estate sector had employment concentration similar to the national average in 2008. Commercial banking, securities and investment and insurance have below average concentration.

Venture Capital

Venture capital is financing for startup firms that are deemed to have long term growth potential. In practice most venture capital comes from wealthy investors who like to have a hand in the important decision making functions of the firm. Alternatively angel investors provide loans at rates more favorable than commercial banks. Angel investors will take a more hands-off approach. Their aim is to help a business succeed rather than profiting from their investment. Seed capital is the initial capital that is required to start a business and is considered to be a high-risk investment.

Venture capital is scarce in Alaska. The state's geography and physical infrastructure do not provide necessary support for new and small businesses to grow and prosper. Investors from outside of the state

are less likely to fund projects in Alaska primarily because of their perceived high-risk nature. Venture capitalists like to have a hand in the management of businesses they are funding and proximity to the actual business location matters when financing a venture capital project.

Alaska InvestNet is the only organization serving the venture capital market. It was established in 1998 by an Alaska Science and Technology Foundation grant. It provides services and education to entrepreneurs and investors in Alaska. The organization also facilitates business relationships and catalyzes the formation of venture capital in Alaska. One of InvestNet's important objectives is to address the "brain drain."

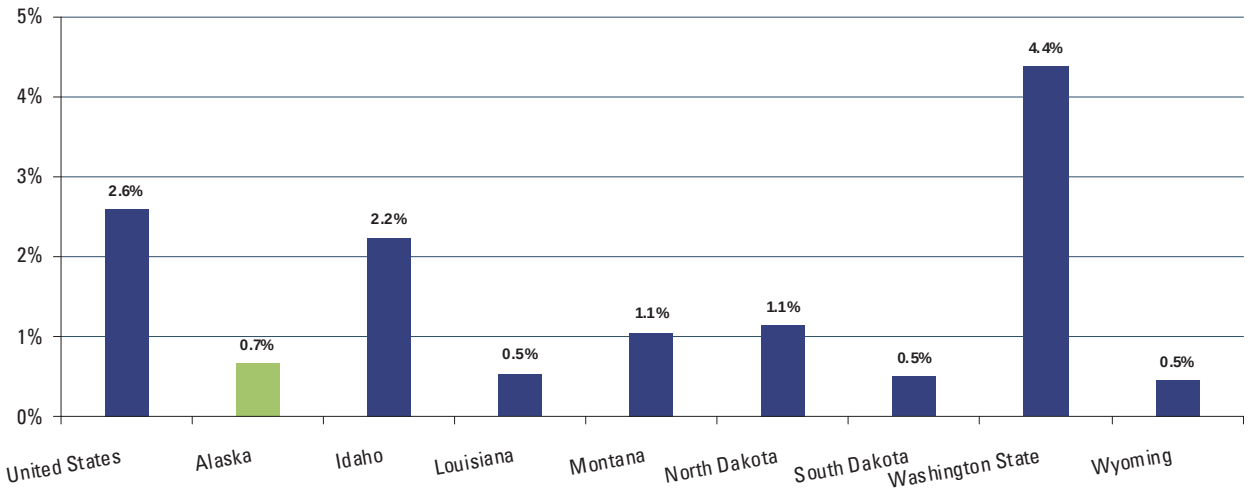
Technology

Tomorrow's truly competitive regions will have found mechanisms for providing ongoing support to research, discovery and the development of new ideas and products. The ability and flexibility of a region's research institutions, both private and public to innovate will be increasingly crucial to the types of companies and economic activity that will be generated in that region. Technology commercialization—or the bringing of new ideas to market will be crucial.

Technology Commercialization

Alaska stands below the national average in R&D spending. In 2005, the state spent $266 million on R&D activities—0.7% of gross state product and ranked 45 among all states. Among the peer group, R&D spending as a percentage of gross state product was very high for Washington State at 4.37%, followed by Idaho at 2.24%, and North Dakota at 1.14%. R&D spending as a percentage of gross state product in Louisiana, South Dakota and Wyoming were also quite low at about 0.5%.

Figure 60. R&D Spending as Percentage of Gross State Product, 2005



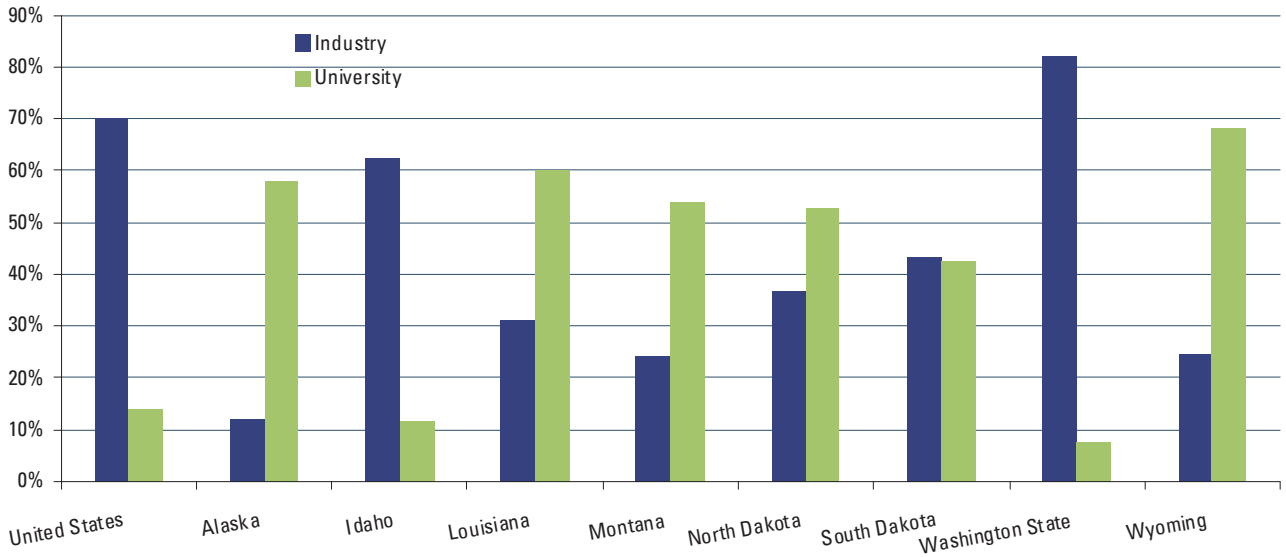
Sources: National Science Foundation and Bureau of Economic Analysis

Private industry in Alaska spent only $32 million on R&D in 2005 and contributed only 12% of total R&D spending in the state. This is very low compared to the national average and the peer group of states. At the national level, industry contributed 70% of total R&D spending in the same year. In Washington, private industry contributed 82.1% of the total R&D spending. Private industry's contribution was also very high in Idaho at 62.3% followed by South Dakota at 43.3%. Industry in Montana and Wyoming contributed less than 25% of total R&D spending.

The majority of R&D activities in Alaska are performed by universities. The R&D activities are primarily focused on marine, ocean and biological science, arctic health and social welfare, and resources development. In 2005, universities in Alaska contributed 57.9% of total R&D spending in the state which is much higher than the 14% national average. Among its peer states university R&D in Louisiana, North Dakota, and South Dakota was 60%, 52.6%, and 42.7% respectively of the total R&D spending. In Washington state university R&D spending was only 7.6% of the state total.

Figure 61. R&D Spending by Industry and University, 2005

(Percentage of total R&D spending)

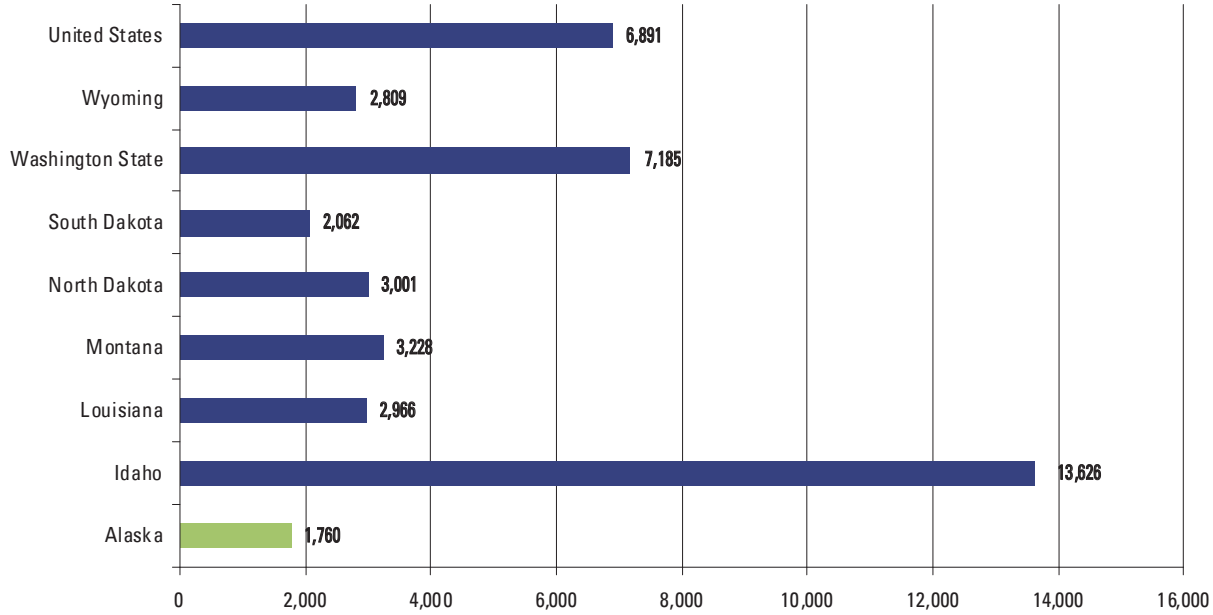


Source: National Science Foundation

There has been very little effort by universities in Alaska to convert research outcomes into commercially viable technology. Alaska stands below its peer member states and the national average in terms of cumulative patents registered per million inhabitants between 1977 and 2008. During that period the number of patents granted for Alaska was 1,760 per one million inhabitants. Idaho has the highest number of patent registered per million inhabitants at 13,626 followed by Washington at 7,185. Over the same period the national average of patent registration per million inhabitants was 6,891.

To foster technology commercialization and business development in Alaska, the legislature provided a $100 million endowment to Alaska Science and Technology Foundation (ASTF) in 1998. The ASTF, however, was closed and the endowment was withdrawn in 2003.

Figure 62. Number of Patents Granted per One Million Inhabitants, 1977-2008



Sources: U.S. Patent and Trademark Office and U.S. Census Bureau

Alaska's universities face the challenge of finding and creating collaborative relationships with industry. A number of studies have been conducted over the last few years to provide recommendations on improving the process of technology commercialization.

A 2004 report called Review and Guidance on Technology Transfer Policy and Practice at the University of Alaska focused on initiatives that would lead to improved technology transfer and industrial liaison programs at Anchorage and Fairbanks campuses. The report found that there is a lack of institutional culture supporting technology transfer and recommended that efforts should be focused on building mission, culture, and infrastructure necessary to support technology transfer.

A more recent report with a similar objective called Leveraging University Research and Accelerating Regional Economic Development Through Technology Transfer and Commercialization recommended that the technology commercialization process be divided into a 6-year, three phase program. The short term phase will require initiating commercialization program with little resource commitment; the medium term will require budget resources to allow the technology transfer process to grow and prosper; and the long term phase will allow the technology transfer program to become a viable part of University of Alaska operations and consolidate it as a major contributor to the region's economic prosperity. The report emphasized that the technology transfer is not merely the identification and protection of "intellectual property" but it should involve transferring inventions, knowledge, and "know-how" that advance commercial products and processes into existing businesses and generate ideas that lead to startup businesses.

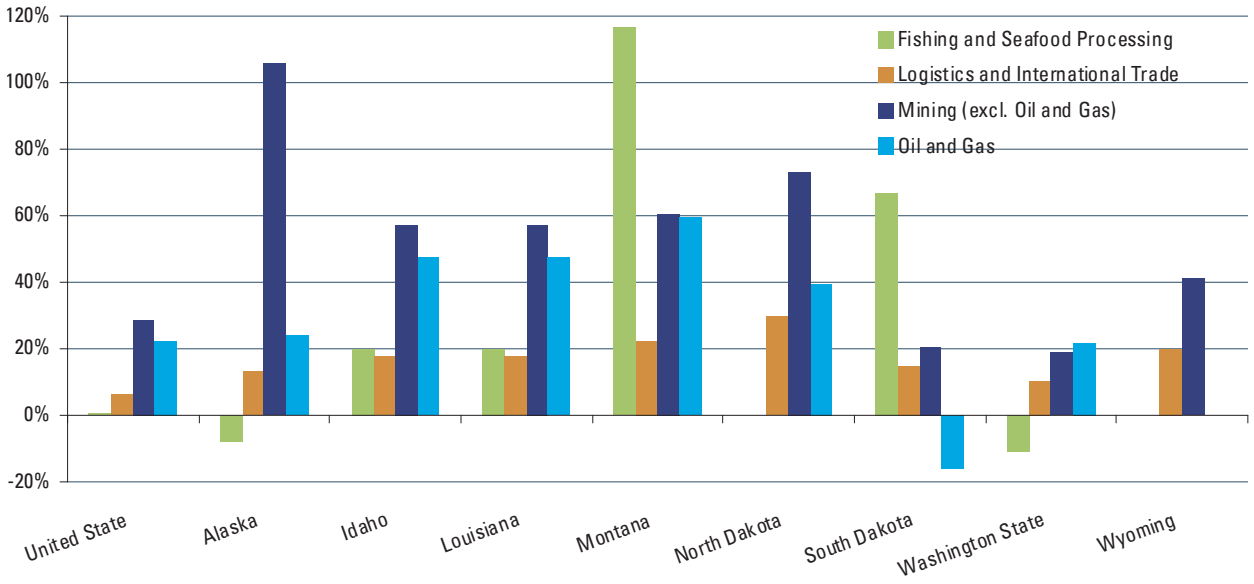
Business Climate

A region's business climate is impacted by a variety of factors including its regulatory and tax environment. Ideally, this environment operates in a streamlined and efficient manner to eliminate unnecessary constraints to economic growth. Competitive regions are those that have struck a balance between regulating business activity to ensure the health and safety of their populations, collecting adequate revenues to provide essential services, while maintaining a vibrant business climate that promotes job creation and business activity.

Change in the Number of Establishments

Alaska has a vibrant economy as evidenced by the 122 new business establishments in the large mature clusters in the state during the five year period ending 2008. This represents a 12% increase in cluster establishments in Alaska and compares favorably with the national total. The largest increase in establishments was in the mining sector followed by oil and gas and logistics and international trade. The only mature cluster that had a reduced establishment count over the period was fishing and seafood processing.

Figure 63. Percent Change in Number of Establishments, 2003-08



Source: IHS Global Insight, 2009

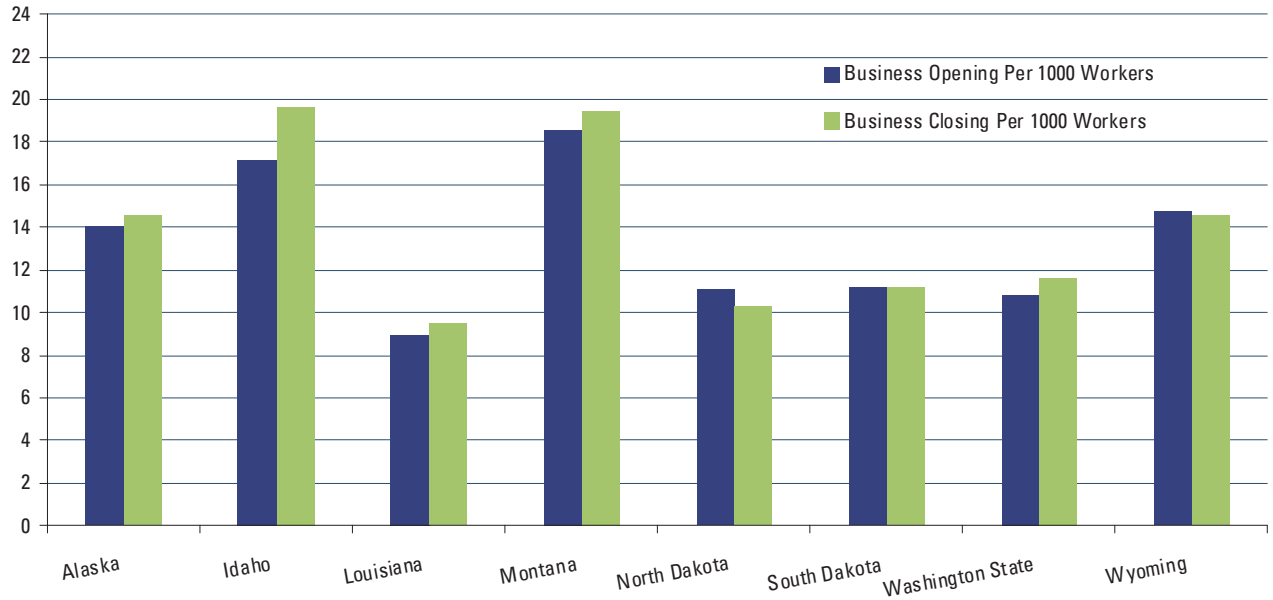
Business Starts and Closures

According to the U.S. Small Business Administration Alaska has both a high rate of business creation and termination.[74] Alaska ranked 11th in the nation in business creation rate and 10th in business termination rate in 2008. The business creation and termination rates were 14.1 per 1000 workers and 14.6 per 1000 workers respectively. Alaska stands next to Idaho, Montana and Wyoming for rates of opening and closing. Louisiana, North and South Dakota and Washington experienced lower rates of business opening and closing in 2008.

Alaska had a net business creation rate (difference between business creation and termination rate) -0.5 in 2008. The net business creation rate is the lowest for Idaho at -2.5. Louisiana, Washington and South Dakota had negative net business creation rate. In North Dakota the net business creation rate was positive at 0.8 in 2008.

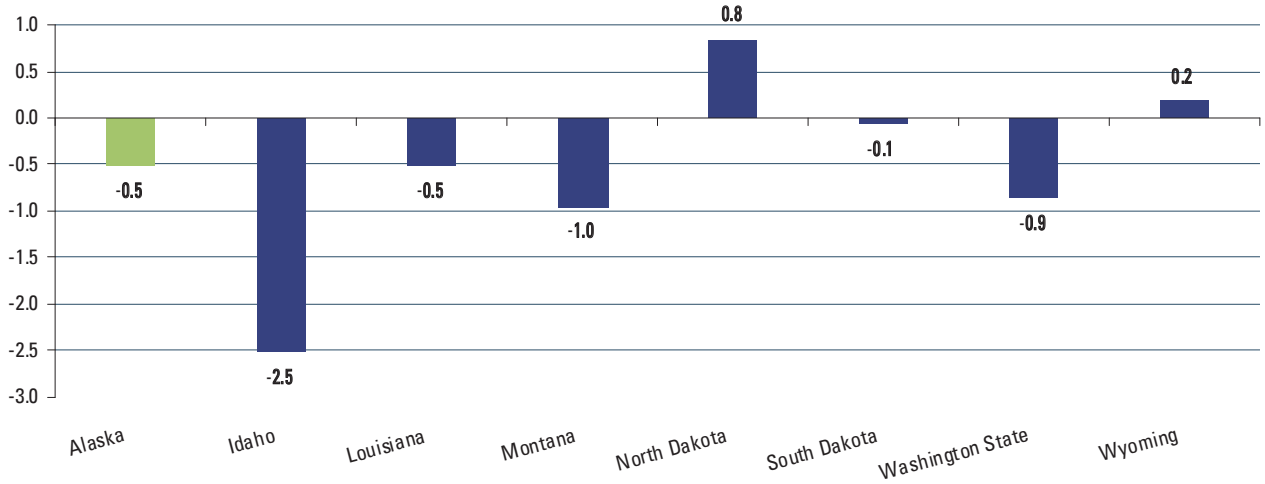
[74] Defined as the number of new establishment opening and closings per 1000 workers.

Figure 64. Business Creation and Termination Rate, 2008



Source: U.S. Small Business Administration, Office of Advocacy

Figure 65. Net Business Creation Rate, 2008



Source: U.S. Small Business Administration, Office of Advocacy

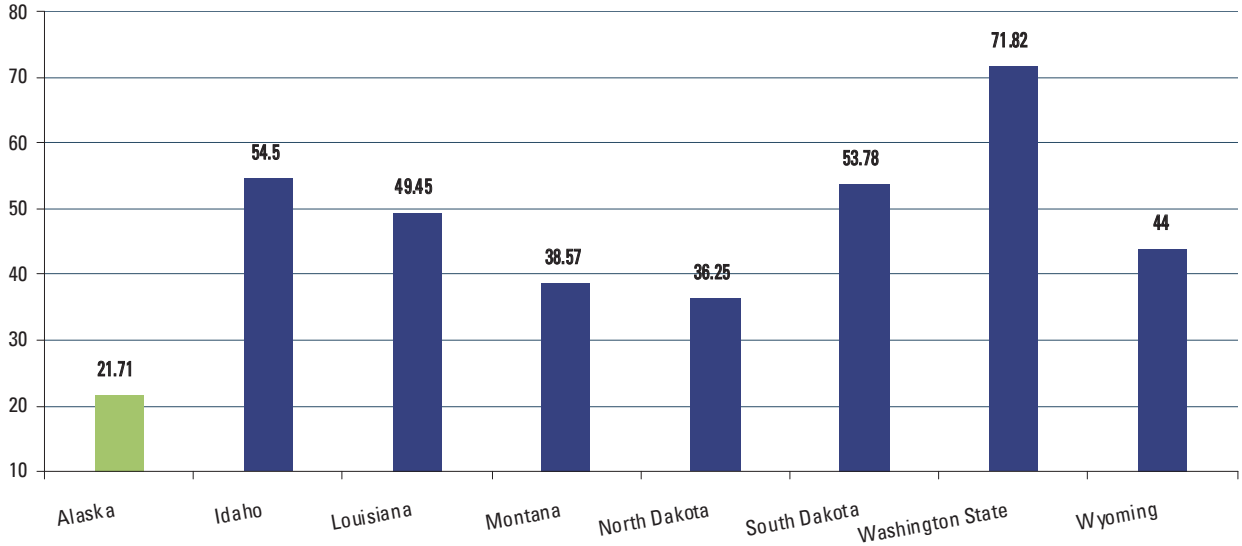
The Small Business and Enterprise Council maintain an indicator that evaluates the environment for small business and provides a ranking for all states. The Small Business Survival Index is a composite of 34 measures.[75] In 2008 Alaska has the 16th most-friendly environment for entrepreneurship according to this measure. South Dakota ranks 1st among the peer states, followed by Wyoming (3rd), Washington (5th), North Dakota (22nd), Louisiana (27th), Montana (33rd) and Idaho (35th).

The Milken Institute maintains a Risk Capital and Entrepreneur Infrastructure index. The index measures the number of capable entrepreneurs and risk capital available to support the conversion of research into commercially viable technology products and services. The index is based on 11 indicators which include: venture capital investment in technology (clean and nanotechnology), total venture capital invest-

[75] The indicator incorporates various tax rates including: personal income tax, capital gains tax, corporate income tax, alternative minimum tax, property tax, sales tax, gas tax, diesel tax and death tax. It also incorporates electricity costs, workers' compensation costs, crime rate, right to work, number of government employees and per capita state and local government spending. There are a number of other indicators that are incorporated.

ment growth, patents issued, proceeds generated by initial public offerings as percent of GSP, number of firms receiving venture capital, number of business startups, number of business incubators, and average annual small business investment companies funds disbursed. Alaska's overall score is 21.71 in

Figure 66. Risk Capital and Entrepreneurial Infrastructure Composite Index, 2008



Source: Milken Institure

2008 (lowest in the country). Among peer states, Washington has the highest score at 71.82, followed by Idaho at 54.50, South Dakota at 53.78, Louisianan at 49.45 and Wyoming at 44.

Regulatory and Tax Issues

There are four primary prerequisites to a sound tax system: taxation needs to be broadly based, statutory rates are low and administration and compliance are not difficult. According to the Tax Foundation, an independent, non-profit research organization in Washington, D.C., Alaska's business tax climate ranks third in the nation.[76] Among the peer states, South Dakota is ranked first in the nation. The business tax climate is not as favorable in the other peer states: Washington state is ranked 9th, Idaho is ranked 18th, North Dakota is ranked 25th and Louisiana is ranked 35th.

Alaska received the number one ranking on individual income tax index from the Tax Foundation along with Florida, Nevada, South Dakota, Texas, Washington and Wyoming because these states do not levy an individual income tax. Another indication of lower tax is that in 2009, Alaska taxpayers had to work until March 23 (50th rank nationally) to pay their total tax bill, 21 days before national Tax Freedom Day (April 13).

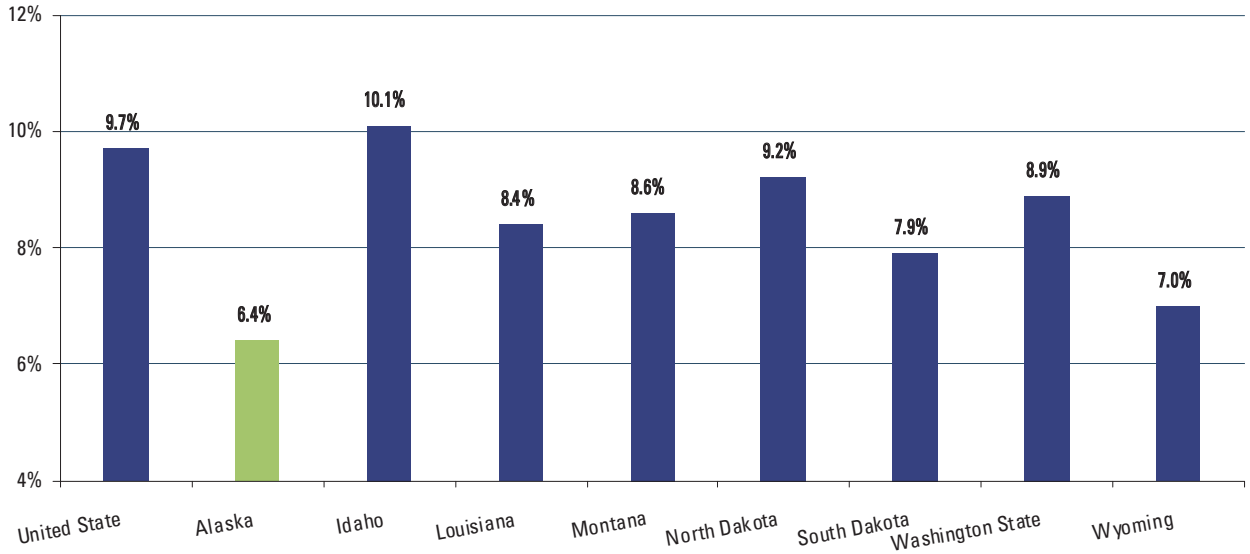
Alaska also does not levy general sales tax or use tax on consumers along with Delaware, New Hampshire, Montana and Oregon and the state has the lowest gasoline tax in the nation at 8 cents per gallon. Before the Trans-Alaska pipeline was finished in 1977, taxpayers in Alaska bore the second-highest tax burden in the country. By 1980, with rising oil tax revenue, Alaska repealed its personal income tax and started sending out Permanent Fund dividend checks instead. In addition, Alaska taxpayers receive more federal funding per dollar of federal taxes paid compared to the average state. In 2005, Alaska received $1.84 in federal funding per dollar tax paid and ranked 3rd highest among all states.

Alaska's state and local tax burden is consistently the lowest among states. In 2008, Alaskans paid an average of $2,871 in state and local taxes per capita (6.4% of income per capita). Among the peer states, Wyoming was next lowest at 7%. The state and local tax burden was highest for Idaho at 10.1%

[76] This rank is a composite of five other ranks: corporate tax index rank, individual income tax rank, sales and gross receipts tax index rank, unemployment insurance tax rank, and the fiscal balance index rank. For more information, visit the Tax Foundation's website at: http://www.taxfoundation.org.

of income per capita, followed by North Dakota at 9.2%, Washington State at 8.9%, Montana at 8.6%, Louisiana at 8.4% and South Dakota at 7.9%. The national average was 9.7% in the same year.

Figure 67. State and Local Taxes as Percentage of Income, 2008



Source: Tax Foundation, 2009

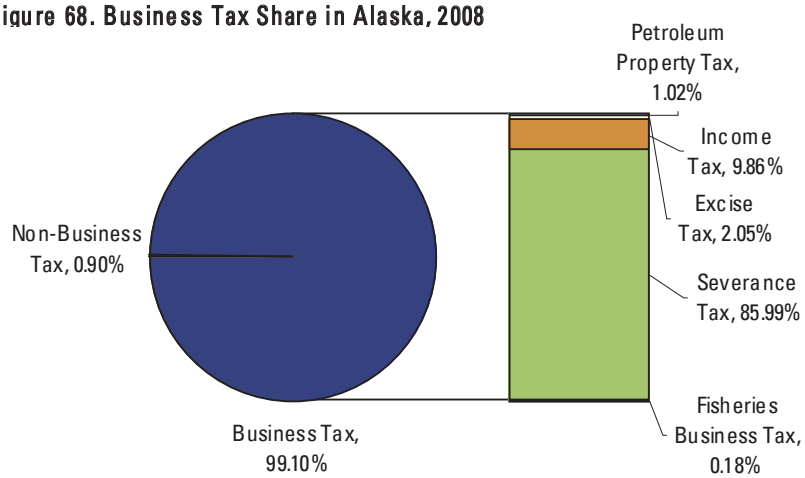
Table 33. Alaska Tax Climate Rankings, 2008

Type of Tax Index	Rank
Corporate Income Tax Index	26
Individual Income Tax Index	1
Sales Tax Index	5
Unemployment Insurance Tax Index	29
Property Tax Index	15
Overall Rank	3

Source: Tax Foundation, 2009

A composite of five other ranks, this index demonstrates that the state has heavy reliance on corporate tax and unemployment insurance tax. Alaska's corporate tax structure consists of ten separate brackets with a top rate of 9.4% starting at an income level of $90,000. In 2007, Alaska's state-level corporate tax collections (excluding local taxes) reached $1,196 per capita, which ranked highest in the nation.

Figure 68. Business Tax Share in Alaska, 2008



Source: Alaska Department of Revenue-Tax Division, 2008

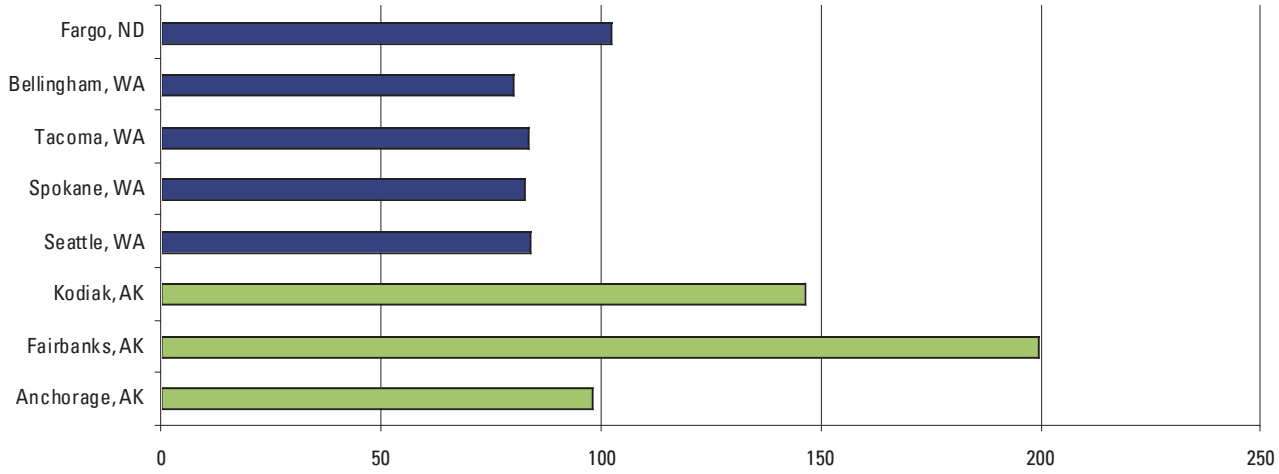
Alaska and New Jersey are the only two states that tax employees in order to pay for part of benefit costs of unemployment insurance (UI). The benefit cost is expressed as the ratio of the amount of benefits paid in the current year to the total payroll during the previous year. This ratio is called the benefit cost rate (BCR). Over the 10-year period from 1990 to 1999, BCR averaged 2.1% in Alaska. In general, the average benefit cost rate in Alaska is higher than in other states due to the seasonality of much employment, and the fact that a larger proportion of the unemployed receives UI benefits in Alaska than in any other state.

Business taxes occupy a 99% share of all tax revenue in the state because Alaska does not levy individual income tax and state sales tax. The business tax revenue can be divided into two broad categories—oil tax revenue and non-oil tax revenue. In 2006, non-oil taxes revenue was $414.8 million or 18% of the total tax revenue. According to the Alaska Department of Revenue's report published in September 2007, over 2006-2011, oil tax revenue is projected to decline at an average rate of 2% a year, while non-oil tax revenue is projected to increase at an average rate of 4%. Some of the major sources of non-oil tax revenue are corporate income tax, tobacco product tax, insurance premium, mining license tax, fishery tax, commercial passenger vessel tax, motor fuel tax, and alcohol tax.

Utilities

The cost of utilities can have an important impact on the business climate. The cost of utilities varies greatly across the state.[77] The ACCRA cost of living index measures the cost of living in U.S. cities. In 2008 the city of Anchorage had an ACCRA index number of 97.7 associated with the cost of utilities—similar to utility costs in other U.S. cities. In Fairbanks and Kodiak the cost of utilities index was much higher at 199.2 and 146.2, respectively. This gap is especially drastic in the rural areas of Alaska. The cost of water and sewer can reach as high $150 per month in rural areas, compared to $49 per month in Anchorage. The huge gap in costs is due to the lack of infrastructure in rural areas. Many of these areas lack roads altogether, so installing sewer or electrical systems is a costly undertaking.

Figure 69. ACCRA Utility Cost Index, 2008



Source: American Chamber of Commerce Research Association (ACCRA), Cost of Living Index

Environmental Protection

The regulatory environment of balancing environmental and development concerns in Alaska is a complex and widely debated topic. The industry in the state operates in overlapping jurisdictions of federal, state and local governments which often have competing goals. The state and federal permit-review processes are criticized as too long and fragmented. The most important state-level environmental influences are habitat preservation regulations and the Alaska Constitution's requirement that resources be managed for the "maximum benefit of Alaska's people" and that renewable resources be managed according to "sustained yield" principles.

The state and federal government employ a number of environmental restrictions in order to protect Alaska's rich wilderness. The National Environmental Policy Act (NEPA) defines and enforces the lengthy

[77] The Index measures relative price levels for consumer goods and services in participating areas. The average for all participating places in each quarter equals 100, and each participant's index is read as a percentage of the average for all participating places.

and elaborate Environmental Assessment and Environmental Impact Statement processes that federal agencies must adhere to when they take actions affecting the environment. The forests of Alaska are protected by regulation on timber volume for the state and the Wilderness act that restricts the activities wilderness portions of Alaska's two national forests (Tongass and Chugach). Air quality is protected through the use of a permit and a compliance program for stack discharge. In 2006 voters approved a $50 per passenger tax on cruise ships entering the state. A portion of this tax goes to a group of observers on board who monitor the ships' environmental compliance. Oil Spill Prevention and Response (SPAR) regulations impose stringent requirements on any kinds of oil storage or shipment over land or water.

Given the competing goals and lack of clear scope of various environment protection acts, disagreement between federal and state regulation authorities appear from time to time. The current disagreement between Alaska and the federal government over whether to allow hunting for polar bear is an example.

Physical Infrastructure

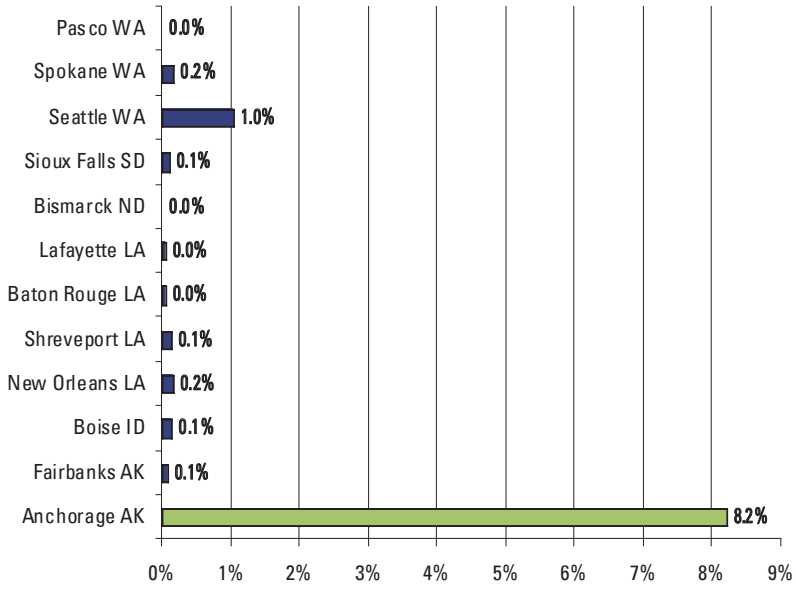
Rail

The Alaska Railroad spans north from Seward and Whittier to Fairbanks and serves both passengers and freight. Freight trains typically carry coal, petroleum, sand and gravel, and manufactured goods. In 2008, trains on the Alaska Railroad carried 542,671 passengers and 6.1 million tons of freight. The major railroad operation is state-owned Alaska Railroad, but another railroad, located in Skagway, the White Pass & Yukon Route, serves the Southeast Alaska visitor market with daily summertime excursions to the scenic White Pass Summit.

Airports

The busiest airport in Alaska is Ted Stevens Anchorage International Airport. The airport handles passenger and cargo transport. According to the Airports Council International, the Ted Stevens Anchorage International Airport is the fifth busiest airport in the world in terms of cargo traffic. The airport handled 2.3 million metric tons of cargo in 2008. Fairbanks International Airport is another airport which handles a lot of cargo traffic. The airport is often used as a refueling stop for trans-polar air shipments.

Figure 70. Percentage of North American Air Cargo Volume, 2008



Source: Airport Council International

There are over 600 airports in Alaska and approximately 3,000 airstrips. This is in large part due to the state's limited number of paved roads. According to the Statewide Transportation Policy Plan, 30% of the population and most of the natural resources in Alaska are not connected by road and ferry systems. As a result aviation is the primary means of transportation in many parts of the state. Nearly all mail in Alaska is carried on an airplane during some part of its delivery. The U.S. Postal Services is required to provide mail service to all U.S. locations, so air service was developed out of necessity to reach rural residents. Two federal subsidies are important to air service in rural Alaska. Bypass Mail is meant to reduce the cost of goods transported by air to rural

communities. Essential Air Service is a program that subsidizes the cost of air service to communities in Alaska and elsewhere in the U.S. that are especially dependent on air transportation

Seaplane bases are another important part of Alaska's air transportation infrastructure. Lake Hood Seaplane Base is located in Anchorage, and is the world's busiest seaplane base. The state has 102 seaplane bases in total.

Pipeline

Oil and gas was discovered in Prudhoe Bay in 1968. Pipeline construction began in 1975 and it was shipping crude oil by 1978. The Trans-Alaska Pipeline stretches 800 miles from Prudhoe Bay to Valdez. So far this year the primary pump station has averaged 667,331 barrels per day. Plans for a natural gas pipeline lost momentum in the early 1980s when natural gas prices dropped. The push to develop a natural gas pipeline to the "lower-48 states" was resurrected in 1997, when the country became a net importer of liquefied natural gas for the first time in its history.

TransCanada Corporation was awarded an official license by the state of Alaska to construct a natural gas pipeline from Prudhoe Bay to the "lower-48 states" in 2008. The state committed to a $500 million grant contribution but it has not been realized yet. The intention is to build a pipeline extending to Alberta and would link to TransCanada's existing natural gas pipelines and to the United States. The initial plans do not include construction of a gas treatment facility.

Conoco Philips and BP also have plans to construct a gas pipeline. Their proposal follows a similar route to the TransCanada plan however their plan involves the construction of a gas treatment facility. Cheaper sources of natural gas in the U.S. and elsewhere are influencing the decision to build the pipeline.

Roadways

Roadway infrastructure in Alaska is severely lacking. The western parts of the state have no highways. The southeast part has highways but communities are not connected. Juneau cannot be reached by highway. The majority of highways are located in the central part of the state, between Anchorage, Fairbanks, and Valdez. The Alaska Highway was built during the Second World War and connects Alaska to Canada's Yukon Territory. Other major highways include the Dalton Highway, the Glenn Highway, the Seward Highway, the Parks Highway, the Richardson Highway, and the Steese Highway. High-volume highways are paved, while others are simply gravel. Back roads provide access to many small towns. Winter weather conditions often render roads and highways impassable. The lack of dependable road infrastructure in Alaska has made aviation and water ferries important transportation methods for residents.

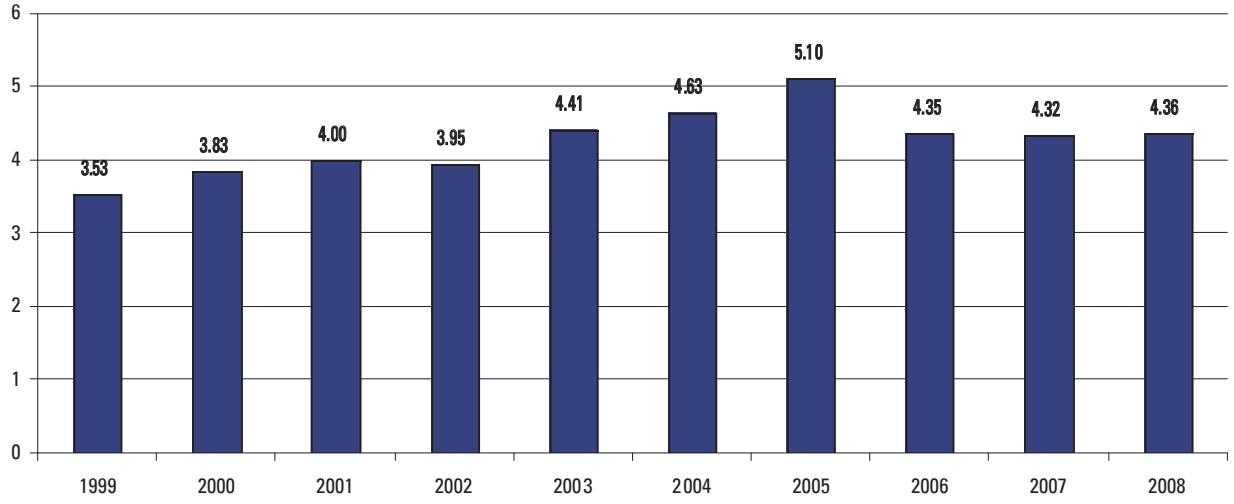
Ports

The southern coast of Alaska is dotted with small port cities. These cities are connected through the Alaska Marine Highway System (AMHS). The ferry system is operated by the state of Alaska and provides transportation for a number of islands that lack road access. The system connects 31 different ports in Alaska and has a number of different routes. The three main routes are the Inside Passage in the southeast, the southwest coast, and the Aleutian chain. The routes are connected by bi-monthly Cross Gulf ferry trips.

The port of Anchorage is much larger and busier than the majority of ports along the Marine Highway system. The port of Anchorage is the busiest port in Alaska, with 4 million tons of material moving across its docks annually. At its peak in 2005, freight volume at the port reached 5.1 million tons. The port handles exports of refined petroleum products from Alaskan refineries and supplies jet fuel to the state's airports. In addition, 90% of Alaskan consumer goods move through the port of Anchorage. The port is currently undergoing major construction which will double its capacity. Completion is expected by 2013.

Figure 71. Port of Anchorage, Annual Dock Tonnage, 1999-2008

(Total tonnage, millions)



Source: Port of Anchorage

The port of Valdez is located at the southern end of the trans-Alaska oil pipeline. In 2002, the port loaded an average of 42 oil tankers per month. Valdez benefits from being the northern-most year-round ice free port in the U.S. Dutch Harbor is a major fishing port, and handled 909 million pounds of fish in 2002.

Quality of Life and Social Capital

People, especially if they are well educated, are increasingly mobile. They have many options about where to live and work. Going forward, the most challenging competition faced by firms will be the competition for people—for human talent. Those regions that offer a high quality of life will be the winners in this competition—places with clean air and water, and that have an array of cultural, leisure time and recreation offerings. According to Carnegie Mellon Professor Richard Florida, the mobile, highly educated "creative class" is seeking to settle in places that provide a high quality of life, systems of governance that work, and human scale. Most of today's mega-regions are seriously lacking in this regard, becoming ever more difficult places in which to live.

Alaska has advantages in "quality of life" sometimes called "social capital." The state's natural beauty and recreational attributes were consistently cited as major strengths by respondents to the interviews and surveys conducted in the course of this study.

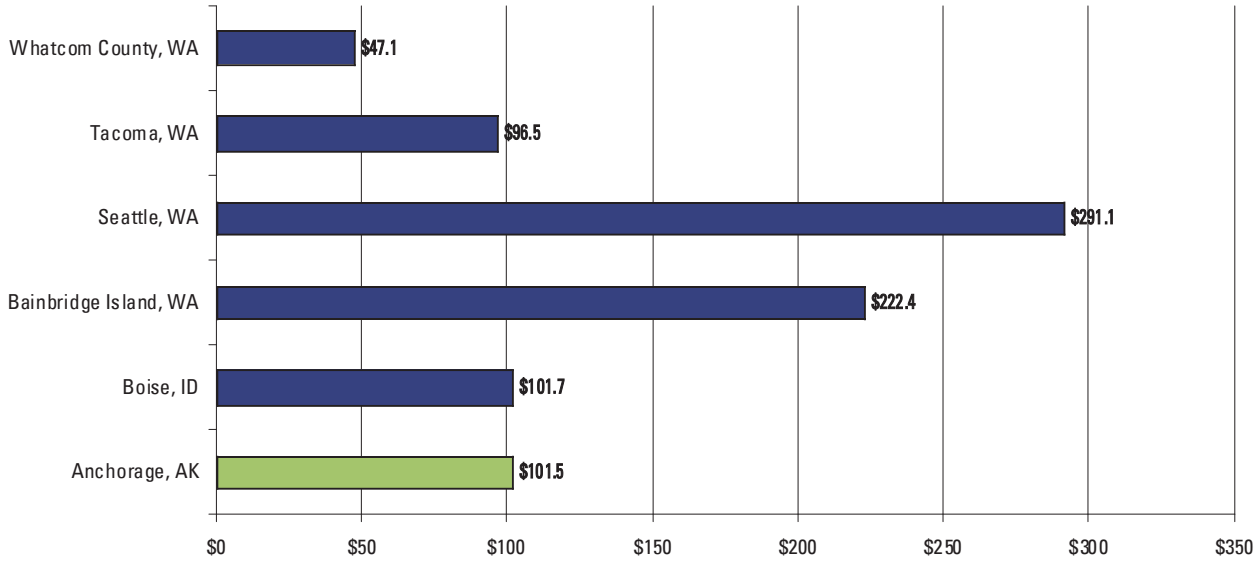
In the context of economic development, social capital is a term increasingly used to describe community functioning and problem-solving attributes. Definitions range from the academic "social relations of mutual benefit characterized by norms of trust and reciprocity," to the pragmatic, "the glue that binds." Although not a precise concept, social capital can be viewed as the set of formal and informal community networks such as business and trade organizations, ad hoc problem-solving groups and other non-profits engaged in what can be viewed, at least in part, as community "quality of life" issues.

Indicators of social capital include per capita measures of community-based non-profits, arts and culture organizations, and philanthropic giving. Higher levels of these and related measures suggest the presence of more workable and more livable communities. A lower level suggests cities less able to work together as a community to address social and economic problems and therefore places with a generally lower quality of life.

Arts and Culture

One good indicator of a region's cultural amenities and its general orientation towards arts and culture is the expenditures made by arts and culture organizations. According to Arts USA expenditure per capita by non profit arts and culture organizations was $101 in Anchorage. This compares favorably to cities in the peer states.

Figure 72. Expenditure per Capita by Non Profit Arts and Culture Organization, 2005



Source: Arts USA National Report

From an economic strategy point of view, social capital offers at least two challenges:

- Leveraging a region's existing social capital for economic gain—This means bringing the social capital-related organizations into the economy for both economic and broader-based community benefits. Here it is suggested that non-profits be an integral part of the economic strategy development and implementation team. Non-profits should play a role in these processes as prominent as that played by education and training providers, by lenders and equity financiers, and by organizations that provide physical infrastructure. For broader-based community gain, a community's social capital (e.g., philanthropy, the arts) should be seen as having the potential to strengthen community quality of life in specific ways. For example, in the competition to attract (and retain) talented people who could live anywhere, social capital should be seen as a tool for helping do so.
- Building up more social capital—If social capital is a community good, then from a strategic perspective more of it should be built up within the community. This suggests steps to build within the economy, especially in the private sector, a "culture of giving." Lessons from Minneapolis-St. Paul may be instructive. This community (like Des Moines, IA and other Midwestern cities), has inculcated a culture of giving in the business community. For years, Minneapolis-St. Paul had an informal "2% Club" that basically expected upstanding firms to give 2% of their after tax profits to local charities.

Whether it will be strategies like these or others, attention to the region's social capital will be important as the Alaska Forward: Toward a Next Generation Economy moves ahead. Just as strategies will be required to enhance job skill training and venture capital, specific strategies will be required to both make more of what social capital the region enjoys today, and strengthen the region's ability to generate more capital of this kind.

SUMMARY AND CONCLUSIONS: A PATH FORWARD

Since statehood, Alaska has evolved its EDOs and approaches to economic development according to the state's unique characteristics and needs. This report has analyzed the current situation from several perspectives. In the report's first section, we looked at the array of EDOs in the state and commented on the various strategies and objectives of these and other organizations. We then looked at the strengths and weaknesses of today's organizational structure and commented on the main features of Alaska's approach to economic development. Our findings in these two sections came from a review of past reports as well as from input from informed leaders in interviews and surveys. From these analyses, we developed six overarching economic development themes for continuing study. Each theme highlights a critical issue for Alaska, ranging from the need for more top level leadership and coordination over what we refer to as Alaska's economic development infrastructure, to the need for new thinking about how to add more value to Alaska's important natural resource sectors. Finally, we looked at how other states and regions have addressed similar challenges and drew potential lessons for Alaska's leaders focusing on how the state should organize its efforts and work toward a more competitive economy for today and for the next generation.

The next step in the analytical process was to understand the state and global economic challenges and opportunities along with an understanding of the state's clusters and its economic foundations. For example, we noted in the Economic Profile section of the report that the slowdown in revenues from the natural resources sectors, notably in oil and gas, has caused the real gross state product (GDP) since 1998-9 to stagnate when compared to the national economy, after leading the rest of the country up to the mid-1990s, only a relatively few years ago. More recently, since 2006 Alaska's GDP has slipped even further behind the comparable U.S. figures, and the forecast is for a widening gap between the state and the rest of the nation. As a result, per capita income, once far higher than the U.S. average, has also slipped alarmingly. Now equal to the rest of the country, the forecast is for Alaska to fall well below the national average.

To examine the state's economy from another perspective, in another section we looked at Alaska's industrial clusters (clusters are sets of private and public sector actors working together to achieve high levels of economic competitiveness in specific markets). Eleven were identified. Many of the largest we analyzed were categorized as "mature," important and still competitive but not likely to grow relative to the U.S. economy. Said to be "mature" are the state's important oil/gas, fishing, military, and federal government clusters. The other clusters identified, tourism, logistics, business services and the like, are forecast to grow only slightly faster than what is forecast for the same cluster in the rest of the country. The cluster report also made the point that Alaska may have a few "pre-clusters,' early signs of potentially competitive new industries on the horizon (e.g., cold weather products and services). But overall, one must conclude that Alaska's economic base for as far in the future as can be forecast is going to rest largely on its mature, natural resource-based sectors.

Our report on the comparative advantages/disadvantages of Alaska's economic foundations (e.g., human resources, technology, business climate and the like) concluded that while the state has a relatively well-educated (if aging) workforce and some other advantages, overall it has a comparatively weak secondary school education system (with associated high dropout rates), weak physical infrastructure, high energy costs, scant technology commercialization from its leading public university, negligible venture capital and other comparative disadvantages.

With regards to global economic opportunities, the external demand for many of the state's mature, resource-based clusters will be strong and will be an important source of inbound wealth for the state for the foreseeable future. Many of these clusters are, however, somewhat constrained from a supply per-

spective. But if these challenges can be addressed, markets for their products exist. It is also important to look at global opportunities from the perspective of identifying elements of the supply chain that are imported and to identify opportunities to displace imports. In particular, the more the state can develop a strong capability for providing advanced professional and business services linked to its strongest clusters, the less leakage of wealth will be seen as we see today due to heavy reliance on imported services. The resulting stronger, more cluster-focused services cluster would then have more opportunities for exporting their services to countries that have similar resource-based cluster structures.

Looking Forward

Looked at in a comprehensive way as above, we conclude that Alaska's economic future is, at best, cloudy with clearly defined risk factors (the price of oil and federal government spending). Commodity prices might work to the state's advantages and per-capita income rebound with much higher oil prices. However, betting on this outcome would be unwise. Our economic research is largely confirmed through our recent interviews and surveys. Informed leaders in Alaska know that the state is potentially facing serious economic challenges and that betting on very high oil prices is not a prudent economic development strategy.

Given this, it would seem that economic development efforts at the state, regional and local levels need to be stepped up. But this report also concludes that the basic organizational infrastructure and today's typical economic development objectives and strategies may be less than optimal. The state's institutional capacity to address fundamental economic problems, while well intentioned and at times successful with tactical interventions, may not have evolved a shared economic vision among key stakeholders. Stronger and higher-level leadership and coordination is needed in order to make the most of efforts expended.

The area where we see opportunity is largely at the statewide level. We believe that a different overarching approach to economic development is needed, perhaps one driven by a public-private leadership group, with the public sector providing the initial funding and the private sector providing its knowledge of how markets work, where the opportunities for diversification lie and what makes an economy competitive. The approach might be based on contemporary economic development models used in other states (such as Oregon's cluster-based economic development networks or the Puget Sound region's well coordinated Prosperity Partnership and industry working groups to define needed policy initiatives).

With a different policy framework, such as a statewide cluster development and leadership and coordination towards this end from the top, regional and local practitioners would have both an overarching policy framework and the flexibility to implement the policy as local needs dictate. A cluster policy strategy would not only outline the main implementation features and suggest tools for regional and local EDOs, but provide a way of coordinating most of the practices of regional and local economic development agencies. But it is important to point out that whatever economic development model Alaska's moves toward in the future be an "Alaska Model." The state is too atypical in too many ways for a textbook approach to have the desired outcomes.

Moving Forward: Toward What Kind of Economy?

If asked, most people in Alaska would say that the state, fundamentally, has a natural resource economy, and that it always will. Our analysis suggests that Alaskans begin looking at the state's economy in a broader way, as a "*natural resources, PLUS*" economy. Oil, gas, mining, and fishing, along with tourism, will be the most important engines of economic growth for as long as one can see into the future. Economic development policy and practice must continue to focus on making the most of these sectors. But the notion of "*natural resources, PLUS*" means that in the future, Alaska will look to its natural resources as the state's primary economic engines while simultaneously developing emerging sec-

tors (e.g., logistics and trade, advanced business services, specialized machinery) where the state has comparative advantages. Some attention must also be paid to the pre-clusters noted in IHS's Cluster Analysis Report, where much more research is needed to better define if these or other "faint signs on the radar" can, with the right policy support, be elevated from "radar blips" to real industrial capacity. To a great degree, economic development efforts should be shifted from the very difficult task of trying to get more job and revenue impact from the state's natural resources sectors to trying to make the most of the PLUS side of the envisioned new economy.

In the future, the federal government will still play a huge role in the state's future economy and state leaders will need to spend a correspondingly large amount of time working with federal agencies to keep the stage set for as much wealth generation and jobs as can come from federal policies and regulations. The country's security equation is changing and these changes are likely to affect both the missions of the state's military installations as they shift to respond to changing threats as well as the role and reach of DHS's Coast Guard. Keeping abreast of how agency missions are changing, and are likely to change in the future as well as how federal resources will be spent on military and national security priorities should be a high priority of the state's economic development leaders. Federal funding for national security is not likely to decrease in the near- to mid-term.

Developing the PLUS side of the new economy should be a high priority of APED's Phase 2, Strategy Development. But there is little doubt that new strategies will be needed to address the state's climate for business entrepreneurship. For example, young people in Alaska should learn about small business, the pros and the cons, throughout their years in school. They should have a working knowledge of markets and how investment flows to economic opportunity and how people as "kids" in college around the country have created companies like Dell Computer and FedEx (even how a college dropout created Microsoft). They should know that a couple of 20-something hobbyists created Apple, a name that will surely be meaningful.

New policies are most likely needed at University of Alaska to try to move basic research closer to commercialization and to support more applied research, paid for by private firms seeking to spur product and process innovation in their existing and in new businesses. New policies at the university should be considered that would encourage professors to seek patent rights from their government-funded research and enable the university to realize royalties and license income.

Putting in place other features in the state's economic environment should likewise be a priority. For example, Alaska doesn't need to lose its applied research investments, or its graduates to other states. Keeping both in-state might require implementing not only technology commercialization strategies but also complementary "technology capture" strategies that work to keep innovation in-state, within existing firms and in the hands of local entrepreneurs. Fledgling entrepreneurs will need help from the state's EDOs to secure financial resources and other pre-requisites for market success, suggesting in this light at least a review of small business programs and state financing programs designed to help launch small businesses. The range of potential new economic development strategies is wide and deep.

Three Strategic Thrusts

We envision three main strategic thrusts similar to the three-legged stool suggested by University of Alaska Institute of Social and Economic Research. The first would be to make the most of the natural resources that have made the state what it is today. Existing priorities will need to be reviewed in the context of economic forecasts and specific tactics will need to be developed to support the strategy of making the most of the state's resource advantages. An essential element of such a strategy would be continued refinement of approaches to natural resource preservation—in which Alaska is already a

leader in many respects—so that future generations also derive equitable benefits from those resources.

The second thrust would be to work with the federal government in strategic ways to maintain, if not grow, its presence in the state and generate all the public and private sector jobs associated with the government's priorities in Alaska that are possible. While this thrust has been a strategic priority for some time, opportunities noted earlier may exist for new or expanded military and homeland security initiatives as global security threats evolve. Even changes in polar region access can change the military and security calculus, potentially leading to new federal investment in preparedness. Again, specific program tactics will need to be developed to achieve this objective. Keeping track of these opportunities should be a heightened priority of Alaska's Congressional delegation. Put in the context of this initiative, *Alaska Forward: Towards a Next Generation Economy*, elected leaders and their staff should be encouraged to redouble efforts to get inside the decision-making processes of key Federal agencies and influence decisions with an aim at securing new jobs and new investment, consistent with broad government needs.

The third strategic thrust would be to create a more robust, pro-small business and pro-entrepreneur economic environment. The suggestion is to nurture those that take the risks to create small companies and who most likely live in Alaska because they love it. These business people and entrepreneurs, while present today, are not particularly well-supported with the necessary ingredients for growth-oriented, commercial success. This area is wide open for new, contemporary initiatives designed to achieve the goal of new firms in small population centers. Books have been written on the topic, one published just a few months age titled "Generating Local Wealth, Opportunity and Sustainability through Rural Clusters," by Stewart Rosenfeld of Regional Technology Strategies, Inc. The author is a thought leader on the topic because his work is empirical, years of study of what kinds of firms cluster in less populated regions, and why. Rosenfeld's conclusions regarding cluster development success factors in places with small populations point to the importance of certain community characteristics including social capital trust and connections to urban centers, all of which can be enhanced through policy interventions and new community and economic development practices.

Next Steps

Can Alaska make the necessary changes in policy and practice to build a more diversified and sustainable economy? This report has made the point that when faced with similar challenges, other regions have made difficult decisions and moved in new directions with new thinking, new economic development policies, and new practices.

This report concludes that Alaska's leaders need to begin to address the gathering economic storm by transitioning from today's approaches to economic development to new approaches, based in part on the best practices of other regions. Bridging from this Situational Assessment to the upcoming Phase 2 Strategy Development work should begin immediately. We recommend the process start as other regions have started their strategic planning efforts. Puget Sound's Prosperity Partnership, for example, moved quickly from its analysis of economic conditions and opportunities to form a new strategic planning-oriented "Alaska Forward Leadership Council." This group should be comprised of top-level leaders drawn from companies, institutions and organizations across the state. By virtue of their position and visibility, these leaders would command a degree of authority. Involving high level government leaders who have a strong incentive to address the state's economic challenges would bring resources to the effort. Having top level private sector leaders involved would help assure that market-based principles would guide new initiatives and help avoid undesirable focus on grand, "pie in the sky" efforts. Private sector leadership would also bring executive and managerial talent to the task, helping to keep the strategic planning process lean, mean, focused and "business-like."

From this starting point, the leadership group would prepare to launch Phase 2. If the strategy development process has a significant component which is cluster-based, as we suggest, the next step would be to select the specific clusters for priority attention (all clusters would eventually be given full attention, but the Leadership Council should not try to take on too much at once). Top-level leaders in each cluster would be identified and briefed on their role to help coordinate and lead from their cluster's perspective an 8-10 month-long cluster development strategy effort. The notion is that each cluster would generate a set of cluster-specific priorities aimed at addressing impediments to growth and development. Facilitated discussions would lead to a shared economic vision for each cluster as well as development of a number of policy initiatives, each designed to address an impediment to the cluster's growth. Each initiative would have its own business plan and an "implementation champion" (i.e., ownership) to help take the initiative forward. In addition, a limited number of cross-cutting initiatives and policy recommendations would also emerge from each cluster group, which would be integrated into the broader state-wide strategy.

With the overall plan to move from Phase 1 to Phase 2 laid out, the Leadership Council should consider launching the effort with a high visibility event, perhaps a statewide Economic Summit. Stakeholders from across the state would be invited to a day-long program, hosted by the Leadership Council who would be introduced to the assembled leaders by the Governor. Presentations of the Situation Analysis would be made with the objective of impacting how the audience hears the messages. Questions would be solicited and answers provided by knowledgeable leaders, economists, and other experts. An interesting option would be a segment where the audience uses handheld devices to "vote" on difficult development choices, with answers immediately displayed on large projection screens. Perhaps after lunch the cluster working group chairs would be introduced and presentations made about how the strategic planning process would unfold.

In this way, Alaska will have kick-started the needed transition from its current approaches to economic development to a more strategic approach, led by leaders from the private and public sector. Similar approaches have been used, in many cases repeatedly (see the Austin case) making collaborative strategic economic development planning the prevailing practice in many regions. There is no reason that Alaska's leaders can't move in similar ways, evolving a 21st century "Alaska Model" for economic development and start afresh to build a more diverse and more sustainable economy.

ANNEX: ECONOMIC DEVELOPMENT REPORTS

Statewide Reports

"Alaska State Economic Rejuvenation Program," 1988.

"Alaska's New Deal: An Economic Development Strategy for Alaska," University of Minnesota's Humphrey H. Institute of Public Affairs, 1997.

"Economic Development Projects: Regional Attributes and Opportunities" 1996

"Marketing Alaska Initiative, The Governor's Economic Development Initiative," 1996.

"Sustaining Alaska's Economy," 1993.

"The State of the Economy and Strategies for Sustaining Alaska's Economy," 1994.

Regional Reports

"2001 Situations and Prospects of the Kenai Peninsula Borough," Kenai Peninsula Borough Community Economic Development Division, 2002.

"2003 Comprehensive Economic Development Strategy Update," Kenai Peninsula Economic Development, Inc., 2003.

"Alaska Economic Trends: The Delta Region," Neal Fried and Brigitta Windisch-Cole, Alaska Department of Labor and Workforce Development, 2002.

"Bristol Bay Regional Economic Opportunity Plan," Bristol Bay Native Association, 2004.

"Bristol Bay, Alaska Comprehensive Economic Development Strategy," Bristol Bay Native Association, 2005.

"Comprehensive Economic Development Strategy—Vision, Goals, Objectives and Strategies," Fairbanks North Star Borough, 2005.

"Comprehensive Economic Development Strategy," Fairbanks North Star Borough Economic Development Division, 2003.

"Comprehensive Economic Development Strategy," Fairbanks North Star Borough Economic Development Division, 2005.

"Comprehensive Economic Development Strategy," Lake & Peninsula Borough, 2002.

"Copper Valley Regional Plan Comprehensive Economic Development Strategy," Copper Valley Economic Council, 2003.

"Fairbanks North Star Borough Comprehensive Economic Development Strategy," Fairbanks North Star Borough, 2008.

"Interior Rivers Resource Conservation & Development Area Plan," Interior Rivers Resource and Conservation District, 1997.

"Kenai Peninsula Comprehensive Economic Development Strategy 2003," Kenai Peninsula Economic Development District, Inc. (KPEDD), 2003.

"Kenai Peninsula Comprehensive Economic Development Strategy," Kenai Peninsula Economic Development District, Inc. (KPEDD), 2009.

"Kodiak Region Comprehensive Economic Development Strategy—Revised 2003," Kodiak Chamber of Commerce, 2003.

"Lake & Peninsula Overall Economic Development Plan," Lake & Peninsula Borough, 1999.

"Mat-Su Comprehensive Economic Development Strategy December 2008 Update," Mat-Su Resource Conservation & Development Council, 2008.

"Mat-Su Comprehensive Economic Development Strategy," Mat-Su Resource Conservation & Development Council, 2006.

"Mat-Su RC&D Council Comprehensive Economic Development Strategy," Mat-Su Resource Conservation & Development, Inc., 2000.

"Northwest Arctic Borough Comprehensive Economic Development Strategy," Northwest Arctic Borough Economic Development, 2004.

"Prince William Sound Comprehensive Economic Development Strategy 2003/2004," Prince William Sound Economic Development District, 2003.

"Prince William Sound Comprehensive Economic Development Strategy 2009," Prince William Sound Economic Development District, 2009.

"Prince William Sound Economic Development District Comprehensive Economic Development Strategy," Prince William Sound Economic Development District, 2006.

"Prince William Sound Overall Economic Development Strategy," Prince William Sound Economic Development District, 1998.

"Prince William Sound Overall Economic Development Strategy," Prince William Sound Economic Development District, 2001.

"Regional Economic Development 5-year Strategic Plan (2001-2006)," Arctic Development Council, 2002.

"Situations and Prospects Economic Trends for Period Ending December 2004," Kenai Peninsula Borough, 2005.

"Situations and Prospects Economic Trends for Period Ending December 31, 2006," Kenai Peninsula Borough, 2007.

"Southeast Alaska Comprehensive Economic Development Strategy 2006 - 2011 Strategy [Multiple Year Updates]," Southeast Conference and Central Council Tlingit and Haida, 2009.

"Southwest Alaska Comprehensive Economic Development Strategy 2003-2008 [Multiple Year Updates]," Southwest Alaska Municipal Conference, 2003.

"Strategies to Mitigate the Impact of Large Scale Military Deployments in the Fairbanks, Alaska Region," Basile Baumann Prost and Associates, Inc., 2006.

"Tanana Chiefs Conference Inc. Comprehensive Economic Development Strategy Draft 2002-2007," Tanana Chiefs Conference Inc., 2002.

"The Bering Strait Comprehensive Economic Development Strategy 2003 - 2008," Bering Strait Development Council/Kawerak Inc, 2003.

"The Bering Strait Comprehensive Economic Development Strategy FY05 Annual Report," Bering Strait Development Council/Kawerak Inc, 2005.

"The Bering Strait Overall Economic Development Plan," Bering Strait Development Council/Kawerak Inc, 1999.

"The Tanana Chiefs Conference, Inc. Overall Economic Development Plan," Tanana Chiefs Conference Inc., 1998.

"Two Year Strategic Plan 2003-2005, [Multiple Years]" Lower Kuskokwim Economic Development Council, 2003.

"Yukon Flats Revised Area Plan," Council of Athabascan Governments, 2001.

"Yukon Kuskokwim Delta Regional Strategic Plan," Association of Village Council Presidents, 2000.

Community Reports

"2002 Comprehensive Community Economic Development Plan for the City of Mountain Village, Alaska," Mountain Village City Council, 2002.

"2007 Sitka Visitor Industry Plan Version 2.0," City & Borough of Sitka, 2007.

"A Local Economic Development Plan for Diomede," Kawerak Inc., 2003.

"A Local Economic Development Plan for Golovin 2004 - 2009," Northwest Planning and Grants Development, 2007.

"A Local Economic Development Plan for Solomon," Kawerak, Inc. Community Services Division, 1998.

"A Local Economic Development Plan for Teller & Mary's Igloo," Kawerak, Inc. - Community Services Division, 1998.

"Anchorage Comprehensive Economic Development Strategy," Fison and Associates, 2009.

"Association of Village Council Presidents 5 Year Overall Economic Development Plan 1988-1993," Association of Village Council Presidents, 1988.

"AVCP Comprehensive Economic Development Strategy 2002-2007," AVC, Inc., 2002.

"AVCP Inc. Economic Development Plan 1993 Annual Report," Association of Village Council Presidents, 1993.

"Brevig Mission Local Economic Development Plan 2007-2012," Kawerak, Inc., 2007.

"Bristol Bay, Alaska Comprehensive Economic Development Strategy," Bristol Bay Native Association, 2003.

"Business Plan for Emmonak Equipment Leasing (EEL)," City of Emmonak, 2001.

"City of Anderson, Comprehensive Economic Development," ASCG Incorporated, 2003.

"City of Coffman Cove Economic Recovery Plan and Annual Plan of Work - Fiscal Year 2002," City of Coffman Cove, 2002.

"City of Cordova Economic Development Strategy 1997," Prince William Sound Economic Development Council, 1997.

"City of Haines Downtown Development Program," Haines Borough, 1984.

"Cold Bay Overall Economic Development Plan 1999," The Stadum Group, 1999.

"Community Action Plan Nikiski, Alaska," North Peninsula Community Council, 2001.

"Community Economic Development Plan for Hydaburg, Alaska 2005-2015," Northwest Planning and Grants Development, 2005.

"Community Economic Development Strategy Plan," ASCG Incorporated and the Community of Bethel, 2003.

"Community Impacts Economic Adjust Plan: Ft. Greely and Delta Junction," MDA, 2002.

"Community of Chenega Comprehensive Economic Development Strategies," Aurora Consulting, 2001.

"Community Plan for the Greater Kenny Lake Area," NRCS - Copper Valley RC&D, 2007.

"Community Research Quarterly—A Socio-Economic Review," Fairbanks North Star Borough Community Research Center, 2009.

"Community Strategic Development Plan for White Mountain 2004-2024," Northwest Planning and Grants Development, 2003.

"Comprehensive Economic Development Strategies," Aurora Consulting, 2008.

"Craig Community Economic Development Strategy (Comprehensive Economic Development Strategy)," Craig Economic Development Strategy Committee, 2005.

"Craig Community Economic Development Strategy (Comprehensive Economic Development Strategy)," Craig Economic Development Strategy Committee, 2007.

"Delta Junction (Alaska) Region Comprehensive Economic Development Strategy," Delta Regional Economic Development Council, 2004.

"Delta Junction (Alaska) Region Comprehensive Economic Development Strategy," Delta Regional Economic Development Council, 2004.

"Economic Analysis of Rail Link Port Mackenzie to Willow, Alaska," Paul A. Metz, Consulting Economic and Mining Geologist, 2007.

"Economic Importance of Sportfishing in the Matanuska-Susitna Borough," Institute of Social and Economic Research University of Alaska Anchorage, 2009.

"Fiscal and Economic Analysis of Homer Town Square Proposed Development Alternatives," University of Alaska - Anchorage ISER, 2003.

"Hooper Bay Comprehensive Economic Development Strategy Plan," ASCG Incorporated, 2004.

"Impact of the Realignment of Eielson AFB on the Fairbanks North Star Borough," Northern Economics Inc., 2006.

"Kotlik Comprehensive Economic Development Strategic Plan," Kotlik Tribal Council, 2004.

"Kwethluk Economic Development Plan 2000-2004," The Arcturus Group, 2000.

"Local Economic Development Plan 2004 - 2009," Kawerak, Inc., 2003.

"Local Economic Development Plan 2006 - 2011 Updated July 2007," Kawerak, Inc., 2007.

"Local Economic Development Plan for Elim 2005-2010," Kawerak, Inc., 2008.

"Local Economic Development Plan for King Island -1999," Kawerak, Inc., 1999.

"Local Economic Development Plan for Koyuk," Kawerak, Inc, 1998.

"Local Economic Development Plan for Shaktoolik 2004-2009," Northwest Planning and Grants Development, 2003.

"Local Economic Development Plan For Wales 2004-2009," Kawerak, Inc, 2004.

"Local Economic Development Plan Koyuk 2005-2010," Kawerak, Inc., 2004.

"Local Economic Development Plan Saint Michael 2005 - 2010," Kawerak, Inc., 2004.

"Local Economic Development Plan Stebbins 2005-2010," Kawerak, Inc., 2004.

"Nikolski Community and Economic Development Plan," Information Insights, 2006.

"Noorvik Community Comprehensive Development Plan, 2006-2016," Northwest Planning and Grants Development, 2006.

"Overall Economic Development Plan," The Stadum Group, 1999.

"Overall Economic Development Plan," The Stadum Group, 1999.

"Pauloff Harbor Tribe Tribal Economic Development Plan," Information Insights, 2006.

"SEDA Strategic Plan 2008-2012," Sitka Economic Development Association, 2008.

"Seniors and Future Seniors in the Fairbanks North Star Borough: A Quality of Life Assessment," Fairbanks North Star Borough Economic Development, 2008.

"Sitka Economic Profile 2004," McDowell Group, Inc., 2005.

"St. Mary's Community Economic Development Strategy," Kawerak, Inc., 2000.

"St. Paul Island 5-Year Economic Development Strategy," Tanadgusix Corporation, 1999.

"Teller Local Economic Development Plan 2006-2010," Kawerak, Inc, 2005.

"Thorne Bay Overall Economic Development Plan," City of Thorne Bay, 2004.

"Thorne Bay Overall Economic Development Plan," City of Thorne Bay, 2008.

"Unalaska Economic Development Plan," City of Unalaska, 2004.

"Vision Anchorage," Chabin Concepts Team, 2002.

"Whale Pass Community Action Plan," Whale Pass Community Association, 1997.

"Wrangell Downtown Revitalization Final Report," Jensen Yorba Lott, Inc., McDowell Group, Inc., Jones and Jones Architects and Landscape Architects, Ltd., 2006.

FOR MORE INFORMATION

Robert Hoffman
Senior Consultant
Consulting Services Group
robert.hoffman@ihsglobalinsight.com
416 682 7311