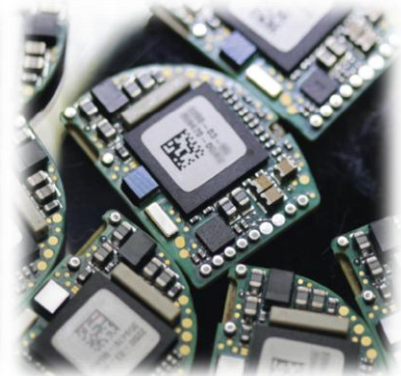
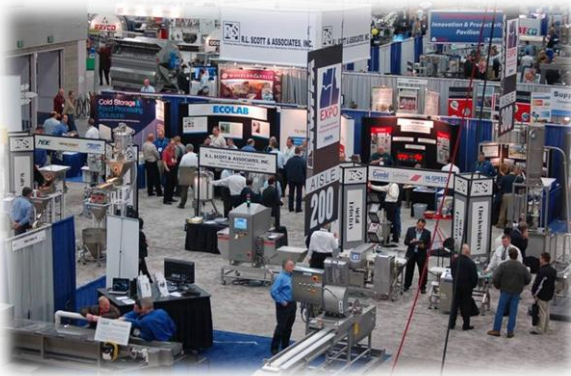




# Mobilizing Oregon Clusters

*Private and Public Sector Partnering for Economic Growth*

Fall 2012



## Acknowledgements:

In 2010, the U.S. Economic Development Administration selected the Institute for Strategy and Competitiveness at Harvard Business School, led by Prof. Michael E. Porter, to lead the Cluster Mapping Project for the United States. Harvard selected the Oregon Business Council (OBC) as one of its regional partners for the project. This report is one of the products of that collaboration. OBC would like to thank its many statewide partners for collaboration in the development of this report: Business Oregon, Portland Development Commission, Oregon Employment Department, Eugene Area Chamber of Commerce, Southern Oregon Regional Economic Development Inc., Mid Columbia Economic Development District, Oregon Forest Resources Institute, Northwest Food Processors Association, Pacific Northwest Defense Coalition, Oregon Bioscience Association, Northwest Education Cluster, Oregon Association of Nurseries, Technology Association of Oregon, Oregon Manufacturing Extension Partnership, Oregon Wave Energy Trust, Oregon Creative Industries, Oregon Department of Agriculture, Oregon Aviation Board, Oregon BEST, and Drive Oregon. OBC also thanks the Monitor Group for additional support.

*On the cover, starting from top left:* The Port of Portland—one of Oregon’s gateways to the rest of the world, © Port of Portland; Columbia Gorge wind turbines — a commitment to renewable energy, © Port of Portland; Oregon agriculture — one of the state’s oldest clusters, © Port of Portland; NW Food Processing EXPO 2012 — a cluster in action, © NWFPA; Biotronik pacemaker, designed and manufactured in Oregon — an example from Oregon’s medical device industry, © Biotronik.

# Mobilizing Oregon Clusters

*Private and Public Sector Partnering for Economic Growth*

Prepared for the Oregon Business Council by:

Elizabeth Redman, Cross Sector Strategies



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## Executive Summary

Globalization and its repercussions have been important drivers in mobilizing leaders to use innovative approaches to improve regional competitiveness. In many regions across the U.S., cluster development efforts have proven to be an effective way to encourage collaboration among companies in the same or related industries and between the public, private, and academic sectors.

Over the last few decades, cluster practitioners have gained significant experience in how to turn industry collaboration into better government policies and competitive advantages for firms. However, much of this experience resides with the individuals and organizations who have taken a cluster based approach to economic development. “Mobilizing Oregon Clusters,” the first in a series of four Policy and Impact Studies developed as part of the U.S. Cluster Mapping Project, financed by the U.S. Economic Development Administration, is designed to share the experiences and lessons learned by the Oregon Business Council (OBC) as an example for a larger audience of cluster practitioners and policymakers.

This study highlights the role that the Oregon Business Council has played in promoting cluster-based economic development, makes a contribution to the ongoing learning about best practices for translating industry cluster needs into actionable solutions, and shows how public-private sector collaboration can make a real difference to economic success.

### Oregon’s Key Challenges and Solutions

Although Oregon’s economy depends greatly on agriculture and natural resources, it has diversified by establishing positions in electronics, software, food processing, clean energy, green building, bioscience, tourism, creative services, and sports apparel. Recently, the productivity of Oregon’s economy has steadily improved to the point where the state now has a higher average real per capita GDP than the U.S. However, it was hit hard by recessions in the 1980s and 2000s and its per capita incomes are below the national average. Such economic complexity has made it essential for the state’s key decision-makers to understand the primary industries that drive the Oregon economy, as well as the challenges they face.

Beginning in the late 1980s, Oregon’s public and private leaders began to understand that across the state, businesses — even those in the same industry and geographic region — communicated infrequently. There was no shared vision for long-term competitiveness. Without a mutual agenda, individual companies’ messages to policymakers inevitably appeared as disparate, idiosyncratic needs. Consequently, state policymakers had little sense for how best to serve Oregon businesses. It became clear to a few of the state’s influential leaders that while addressing the various specific challenges to the state’s economy was essential,

improving communication between the public and private sectors would also be critical to identifying the key barriers to industry competitiveness and increasing stakeholders' ability to respond over time.

## **The Oregon Business Council**

Oregon needed a better structure to organize itself for increased economic competitiveness. The Oregon Business Council (OBC) took on that challenge and became a central platform for dialogue and joint action within and between the private and public sectors. At the beginning of the 21st century, the organization initiated specific activities to increase collaboration between the state's most influential employers and public sector leaders, including an annual Oregon Leadership Summit of statewide business and elected leaders, where the key priorities of both could be shared, and the Oregon Business Plan, an annual agenda for policies and actions that would support the state's economic growth. The Oregon Business Plan now represents one of the country's most well-known efforts to develop a statewide policy agenda for economic development and leverages the contributions of a coalition of statewide business leaders who represent diverse industries and associations, as well as the Governor's office, state legislature, non-profit organizations, and members of Oregon state government.

In addition to the Oregon Business Plan, the OBC formed the Oregon Industry Cluster Network ("Cluster Network"). The Cluster Network was created to coordinate and strengthen statewide traded sector industry clusters in order to grow the economy and create high-paying jobs. Through the Cluster Network, companies in a given cluster have been able to more efficiently collaborate and address issues such as workforce development, access to capital, marketing and branding, policy advocacy, research and development, and technology transfer. Federal, state, and local policymakers are regularly engaged in Cluster Network meetings, providing yet another opportunity for industry clusters and economic development champions to shed light on their key issues and opportunities.

By participating in the Cluster Network, public and private leaders make new connections, share best practices, and learn new tools for enhancing industry growth. In some cases, participating industry groups have become more sophisticated and strategic in their approach because individual company leaders have joined together with their competitors to develop cluster-level strategies. In other cases, trade associations have expanded beyond their role as lobbying organizations, and taken on the role of "cluster conveners," creating new initiatives related to workforce training, innovation, marketing, and buyer-supplier networks. In addition, statewide elected officials and economic development practitioners now have a much broader and deeper understanding of Oregon's industry clusters, their competitiveness challenges, and the ways the public sector can help support their growth.

## Lessons Learned

The following elements have been essential to the Oregon Business Council's ability to effectively play the role of cluster catalyst and convener:

- 1) **Private sector leadership** — The Oregon Business Council has always counted on a high level of involvement from Oregon's private sector leaders in order to effectively respond to Oregon's industry challenges.
- 2) **Openness of the cluster organizations** — All "self-identified" clusters can participate in improving industry competitiveness. The nature of cluster groups can also be variable, allowing for different existing organizations to serve as de facto cluster leaders to enable faster impact and the mobilization of all available resources.
- 3) **All clusters are good** — Rather than focus on targeted industry sectors, OBC has chosen to support cluster development for all traded-sector industries and encourage clusters at all stages of development to become more self-aware, better organized, and more strategic about defining their shared interests and opportunities for growth.
- 4) **A shared resource base for cluster efforts** — OBC is not a cluster organization itself, but enables cluster organizations to emerge and helps them to tap into a common knowledge and capability base. This structure enhances efficiency, creates more openness for new cluster efforts, and positions OBC to anchor the cluster activities in a broader economic development strategy for the state.
- 5) **Diversified funding sources and operational efficiency** — OBC's cluster and economic development work has been supported by a number of revenue sources, including companies, foundations, business associations, and federal/state/local governments. Staffing consists of a few dedicated positions, consultants, and many volunteers.
- 6) **Staff characteristics and responsibilities** — By employing staff and volunteers who see the value in networking, convening, and connecting, OBC has been able to serve as the connective tissue for Oregon's many organizations focused on industry competitiveness, economic development, and general business climate issues.

## Conclusions

This example from Oregon is an inspiration for what is possible, not a blueprint. Policymakers can learn from Oregon's adoption of "clusters" as an organizing principle, its focus on collaboration between the public and private sectors, and the integration of cluster priorities into a broader statewide economic development strategy. They can learn from OBC's experience in helping cluster efforts to emerge and operate, and in the choices it has made to support organizational structures that fit the realities of the state. What each location needs to do for itself, however, is to devise the right competitiveness strategy to leverage its unique mix of industry clusters and business environment conditions to increase business growth, productivity, and new business formation.

## Introduction

This Policy and Impact Study, the first in a series of four developed as part of the U.S. Cluster Mapping Project, an effort financed by the U.S. Economic Development Administration, looks at the role that cluster-based efforts supported by the Oregon Business Council (OBC) have played in strengthening the Oregon economy. For example, the study tracks the origins and activities of the Oregon Industry Cluster Network (“Cluster Network”), a forum convened by OBC through which private sector leaders from groups of related industries work together with leaders from government and academia to develop targeted action plans and strategies for economic competitiveness. The study goes on to show how OBC has integrated cluster priorities and initiatives into a broader statewide economic development strategy that combines cluster-specific recommendations with broader goals for enhancing the Oregon business environment.

“Mobilizing Oregon Clusters” provides real life examples of how cluster-based economic development works as part of modern economic policy at the regional level. In Oregon, as in many other regions across the U.S., cluster efforts have proven an effective way to encourage collaboration among companies and between the public and private sectors to improve regional competitiveness. The cluster perspective has helped to expand the dialogue on the broad range of issues that matter for companies in their particular regional economy. Global success is rooted in strong and competitive conditions, including intra-industry collaboration, at companies’ key locations.

Over the last decade, cluster practitioners have gained significant experience in how to turn industry collaboration into better government policies and competitive advantages for firms. However, much of this experience resides with the individuals and organizations who have taken a cluster based approach to economic development. At the federal level, discussions about cluster-driven policies have long been focused on misguided arguments as to whether cluster policies are tantamount to picking winners. This study clearly shows that real cluster development efforts are fundamentally opposed to such interventions. It shows how collaboration can make a real difference to economic success, and makes a contribution to the ongoing learning about best practices for cluster-driven economic development.

## Economic History



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For much of its history, from its days as a trapping and trading outpost in the late 1700s, to the gold rush years of the mid-1800s, to the surging domestic demand for food products, lumber, and ships during World War I, Oregon relied heavily on its plentiful stores of natural resources. The post-World War II era marks the transition to Oregon's modern economic history, centered around Portland, the economic engine of the state. The mid 1940s ushered in the conversion of the timber industry to a diversified forest products cluster, as well as the rise of the technology industry with some of the country's very early pioneer companies such as Tektronix and Electro Scientific Industries leading the way.<sup>1</sup> Shortly thereafter, these two companies moved to the western outskirts of Portland and developed sites designed to attract other high-tech companies.

The Oregon technology forefathers were successful in fulfilling their vision, giving birth to a nexus of companies that would come to include household names such as Intel, and forming what would soon become the "Silicon Forest," or Oregon's high tech cluster.<sup>2</sup>

Unfortunately, in the early 1980s, several decades of economic growth were halted by a nationwide recession and real estate downturn that severely impacted Oregon's wood products industry. The recession resulted in high unemployment, a large out-migration of Oregonians, and a drop in Oregon's per capita income to levels lower than the U.S. average.<sup>3</sup> It was not until several years later in the late 1980s and 90s that Oregon's strong growth in the high tech sector helped revive the state economy, which in terms of employment, outperformed the nation between 1983 and 2000, adding 670,000 jobs at a rate of more than 35,000 per year.<sup>4</sup> High-tech employment reached its peak of almost 73,000 jobs in 2001 and included electronics equipment manufacturers, tech industry service providers, software developers, and the creators of open source technology platforms.

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<sup>1</sup> Manaton, Michael E. (August 4, 1994). "Tektronix began 'Silicon Forest' boom". *The Oregonian* (MetroWest edition)

<sup>2</sup> Heike Mayer's 2003 dissertation on Oregon's high technology spin-offs led to a poster depicting the genealogy of 894 Silicon Forest companies. <http://www.pdx.edu/ims/silicon-forest-universe>

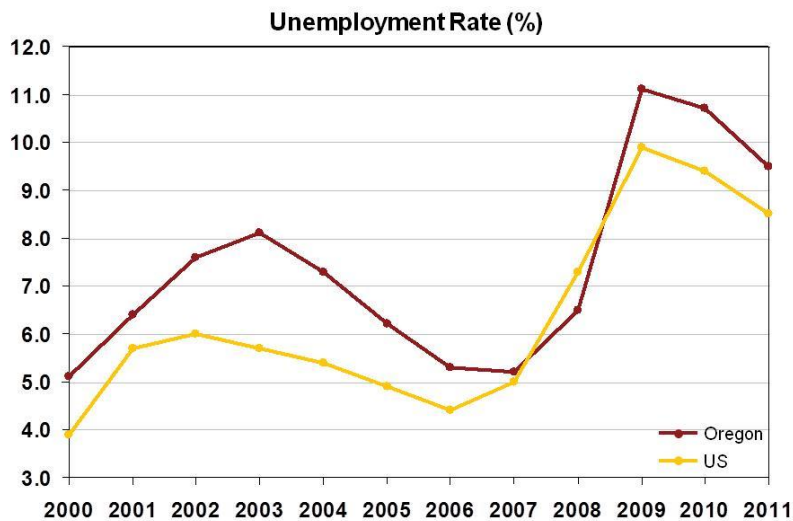
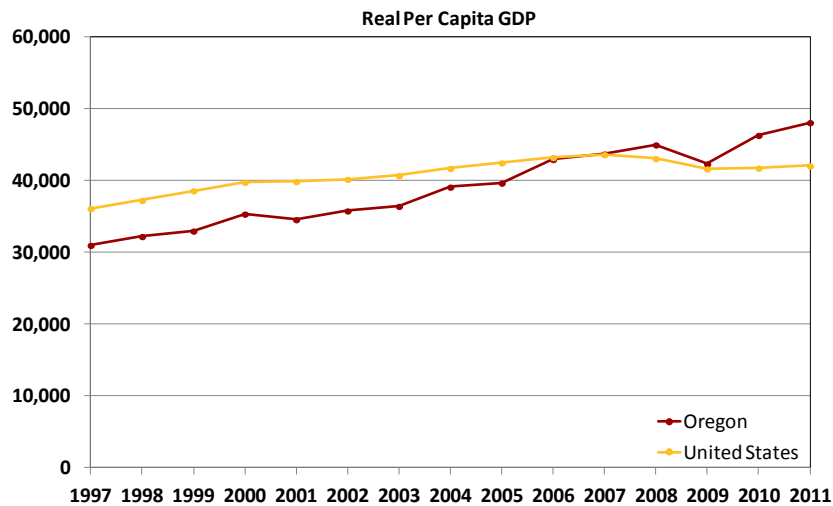
<sup>3</sup> Cortright, Joseph. *Losing Ground: The Growing Gap Between Oregon and National Income*. Staff Report to the Oregon Joint Legislative Committee on Trade and Economic Development. April 1986.

<sup>4</sup> "Stepping Up: A Plan for Growing Quality Jobs And Statewide Prosperity." Oregon Business Plan, January 2003. <http://www.oregonbusinessplan.org/About-the-Plan/Documents-and-Materials.aspx>



The turn of the millennium marked yet another era of transition for the Oregon economy, as external shocks left their mark on the local economy. Overall, the productivity of Oregon’s economy has steadily improved over the last decade and the state now has a higher average real per capita GDP than the U.S. (see Figure 1). Average compensation levels, however, remained almost flat ever since the tech bubble imploded in 2001/2002. Also, unemployment rose dramatically during the deep recession that hit in 2008 (see Figure 1), and remains above the national level.

**Figure 1: Real Per Capita GDP and Unemployment, Oregon and the United States**



\* Source: Bureau of Economic Analysis, Regional Economic Accounts; Bureau of Labor Statistics

## Oregon Today

Oregon provides a productive workforce, rich natural resources, sound infrastructure, and reasonable costs of doing business.<sup>5</sup> The state's nearly 3.9 million residents, who are concentrated primarily along the Interstate 5 corridor, enjoy access to the outdoors, a vibrant arts and culture scene, many parks and greenways, and an affordable cost of living, especially relative to those in the technology hubs of its neighbors to the North and South. Oregon ranked 17th nationally in the percentage of residents with at least a bachelor's degree in 2009 and more than 10% of the population has an advanced degree or higher.<sup>6</sup> Oregon businesses have access to multiple forms of transportation, from bustling ports, airports, and railways, to the Columbia River and the Pacific Ocean. A number of additional cost-of-business factors further enhance Oregon's competitiveness. For example, retail electricity prices are below the national average due to local hydropower generation and Oregon has no state sales tax.

Oregon's economy today continues to depend greatly on agriculture and the state's abundant natural resources. Oregon is one of the top producers of greenhouse and nursery products, cattle and calves, dairy products, hay, ryegrass, wheat, and onions. Oregon's pinot noir wine is nationally recognized and Oregon is the leading blackberry producer in the world.<sup>7</sup> However, since its early years, the state's economy has diversified greatly, with electronics, software, food processing, clean energy, biotechnology, tourism, creative services, and sports apparel all contributing to its economic base (see Figure 2).

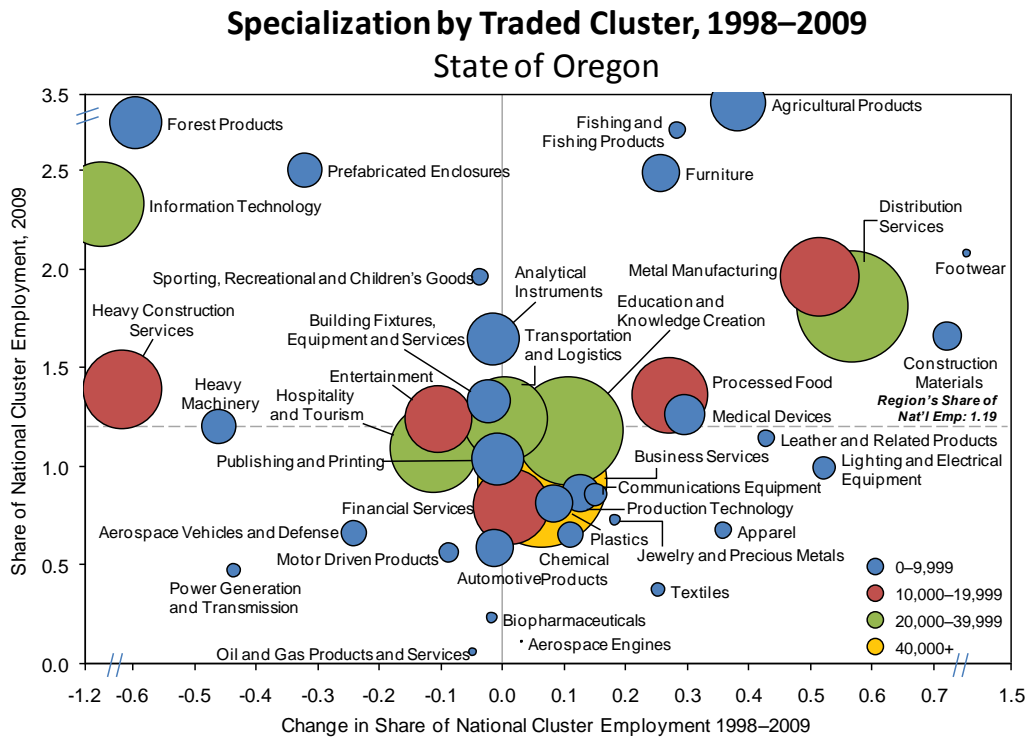
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<sup>5</sup> Oregon ranked 29th in the 2007 Milken Institute Cost of Doing Business Index.

<sup>6</sup> The 2012 Statistical Abstract. Educational Attainment by State. U.S. Census Bureau.

<sup>7</sup> "Blackberry Production in Oregon." Northwest Berry & Grape Information Network.  
<http://berrygrape.org/blackberry-production-in-oregon/>

Figure 2: Oregon Industry Clusters<sup>8</sup>



Source: Prof. Michael E. Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School; Richard Bryden, Project Director.  
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In 2008, more than 11% of Oregon’s workforce was employed in high technology.<sup>9</sup> 2007 data compiled by the Pew Charitable Trusts showed Oregon leading the nation in its share of clean energy jobs as a percentage of the overall economy and cited the state as one of three in the U.S. with a “large and fast growing” clean energy economy.<sup>10</sup> The state is also widely known to outdoor enthusiasts and athletes, who may recognize Portland for housing the headquarters of Nike, Adidas USA, Columbia Sportswear, and many other well-known brands for performance sporting goods and apparel. The top employers in Oregon are listed in Figure 3.

<sup>8</sup> This data on Oregon’s traded clusters is based on nationally comparable data developed by Harvard’s Institute for Strategy and Competitiveness for the Cluster Mapping Project and is designed for benchmarking purposes. The industry definitions do not always align with the definitions used by Oregon industry cluster organizations or other research groups.

<sup>9</sup> National Science Foundation, Science & Engineering Indicators, 2012.

<sup>10</sup> *The Clean Energy Economy: Repowering Jobs, Businesses and Investments across America*. Pew Charitable Trust, June 2009. p.28–30. [http://www.pewcenteronthestates.org/uploadedFiles/Clean\\_Economy\\_Report\\_Web.pdf](http://www.pewcenteronthestates.org/uploadedFiles/Clean_Economy_Report_Web.pdf)

**Figure 3: Top Employers in Oregon<sup>11</sup>**

Employer	Industry	Estimated Employment
Providence Health System	Healthcare Facilities	17,000
Intel	Semiconductors	16,300
Oregon Health & Science University	Education	13,636
Fred Meyer	Department Stores	9,858
Legacy Health System	Healthcare Facilities	9,732
University of Oregon	Education	9,600
Oregon State University	Education	9,210
Kaiser Foundation Health Plan of the Northwest	Managed Healthcare	9,039
City of Portland	Government	8,876
Nike	Footwear & Apparel	7,000

Oregon's unique combination of clusters has produced a state economy disproportionately dependent on export markets, in particular the Asian economies. Portland was one of the top twenty U.S. metropolitan areas in exporting strength and one of only four metropolitan areas in the country that doubled the real value of their exports between 2003 and 2008. The rise in value of exports was led by the computer and electronics sector, but includes both manufactured goods and, increasingly, service exports.<sup>12</sup>

## The Challenge

A number of structural factors contributed to how much Oregon was affected by the economic crises of the 1980s and the 2000s. The strong presence of the high tech and durable goods sectors exposed the state strongly to the global cyclical contractions in these sectors. Also, Oregon's tax structure, with its reliance on personal and corporate income taxes, fostered pro-cyclical public sector spending. During recessionary periods, Oregon's businesses not only suffered from weak national and global demand, but also from a decline in the quality and availability of state-level public services.

Furthermore, as with any regional business environment, Oregon's has several notable weaknesses. In addition to tax structure, other regulatory issues — such as limited availability of shovel-ready industrial land and federal control of most of the state's timber — tend to slow development. The state has also struggled to invest heavily in higher education and currently lacks a top tier research university. While early stage start-up activity is healthy, limited capital and managerial talent makes it difficult to scale-up entrepreneurial ventures. For established

<sup>11</sup> 2012 *Portland Business Journal* Book of Lists; various articles from *The Oregonian* as compiled by Business Oregon

<sup>12</sup> Portland Business Alliance, International Trade Study 2010

firms, the local market is relatively small and major markets (e.g., California, the Eastern U.S. population centers, and Asia) are long distances away.

For years, Oregon's business and political leaders have taken action to address many of these issues in the state's business environment. But, by the mid-1980s, policymakers began to understand that across the state, businesses — even in the same industry — communicated infrequently and lacked a shared vision for long-term competitiveness. The key to overcoming the challenges listed above was about more than addressing any one set of causal factors; something needed to be done about the inefficient communication between the public and private sectors. With no single agenda for desired stimulus or removal of barriers, the private sector's messaging to policymakers inevitably came in the form of disparate, idiosyncratic needs. Consequently, state policymakers had little sense for how best to serve Oregon's industries. It became clear to a few of the state's key leaders that in order to fix the economy, they would first have to help Oregon's businesses develop a common understanding about their shared priorities.

## Organizational Movement

Beginning in the early 1990s, Oregon policymakers and business leaders focused their attempt at more productive dialogue by implementing various initiatives targeted at strengthening industry associations across the state. In the early part of the 21st century, after years of fostering improved dialogue, and in response to yet another nation-wide recession, Oregon policymakers evolved their public-private efforts to employ numerous cluster-based initiatives which endure today.

### Early Efforts — Oregon Shines

The foundation for Oregon's current work promoting cluster-based economic development was built in the late 1980s under Governor Neil Goldschmidt. When Governor Goldschmidt took office in 1987, Oregon had a typical economic development strategy revolving around business retention and recruitment. Wishing to transform the state's economy to meet the challenges of the 21st century, Governor Goldschmidt spent more than a year engaging nearly 200 business, labor, education, and government leaders to help plan a strategy for Oregon's development. The result was *Oregon Shines: An Economic Strategy for the Pacific Century*, a visionary economic development plan to: (1) transform Oregon's population into a world-class, 21st-century workforce; (2) create an "international frame of mind" to position Oregon as the gateway to the Pacific Rim; and (3) emphasize the comparative economic advantage of Oregon's extraordinary environmental amenities. At the time, today's President of the Oregon Business Council, Duncan Wyse, helped implement the process as a newly hired Manager of

Policy and Strategic Planning in Oregon's statewide economic development agency, the Oregon Economic Development Department (OEDD).

A key component of Oregon Shines was the "Key Industries" initiative, approved by Oregon's legislature in 1991. This initiative provided funding to OEDD, which was charged with undertaking a program of key industry development activities, including, but not limited to "state technical and financial support for formation of industry associations, publication of association directories, and related efforts to create or expand the activities of industry associations."<sup>13</sup> Industry associations were to work in partnership with the state to enhance Oregon's competitiveness and find ways to improve the state's business climate.

Ten target industries were selected to receive special attention and funding allocated to economic development purposes from revenues from the state lottery system. The Key Industries program, later expanded to 14 industries, focused on helping each to create an industry association or strengthen one already in place, develop strategic plans, and then implement those plans to grow the industry. Key industries also qualified for workforce training grants. In many of the industries, such as agriculture, metals, and tourism, trade associations were already in existence. In other industries, such as aerospace, environment, and software, the OEDD created a new association by providing start-up funding and support to help the association become self-sufficient. According to Bill Scott, then Director of OEDD, "grants were awarded to budding associations based upon written proposals. Contracts contained clear deliverables including strategic plans and membership goals. In addition, a dollar-for-dollar match was required from the associations. Benchmarking was to take place, and a department staff person was assigned to each key industry association to help achieve industry goals."<sup>14</sup>

A January 1997 article in *Oregon Business* reported that creating new industry associations was one of the cheapest parts of the state's efforts and one of the most effective: "Those dollars have had a lot of leverage, and the approach allows the state to take off the training wheels and step aside once the association is up and running."<sup>15</sup> The Portland-based Software Association of Oregon (SAO), founded in 1989 with an OEDD grant for \$80,000, is one such example. The SAO, recently renamed the Technology Association of Oregon (TAO), became self-sufficient within two years of formation and today earns revenue from sponsors, dues, profits from programs, and annual events.<sup>16</sup> Comprised of over 350 companies in Oregon and

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<sup>13</sup> Oregon Revised Statutes. 1991

<sup>14</sup> Schweitzer, Carol. "Government and Industry Team Up." *Association Management*, September 1998. Accessed online June 2012. <http://www.thefreelibrary.com/Government+and+industry+team+up.-a021166711>

<sup>15</sup> Ibid.

<sup>16</sup> The Oregon chapter of Tech America and the Software Association of Oregon merged in 2012 to become the Technology Association of Oregon (TAO).

Southwest Washington, TAO has grown to become the largest professional technology association in the Northwest and helps improve the business climate for more than 50,000 people working in Oregon's software and high tech industries.

Through the process of getting industry leaders together and asking them what they needed to be successful, Duncan Wyse realized that Oregon's industry leaders rarely talked among themselves, and in many cases, didn't even know each other. Wyse's recognition at the time of the importance of reaching out to industry leaders and working strategically with business associations to craft government-industry partnerships would be critical to his subsequent work as the Executive Director of the Oregon Progress Board, a state agency created to implement the Oregon Shines plan, and as President of the Oregon Business Council.

### **Oregon Business Council**

Founded in 1985, the Oregon Business Council (OBC) was patterned after the national Business Roundtable and affiliate organizations in a number of other states. OBC's mission is to "mobilize business leaders to contribute to Oregon's quality of life and economic prosperity." The more than 40 business leaders who belong to OBC serve as directors of the organization and apply their energy, knowledge, leadership, and the resources of their companies, to accomplish the OBC mission. OBC members represent Oregon's largest employers, including nearly a third of the state's 100 largest companies, and the organization is nonpartisan and independent with a policy agenda that is broader than the interests of individual businesses or industries. Since it was founded, OBC has worked on issues as diverse as K-12 and higher education, salmon and watershed health, a drug-free workplace, transportation, fiscal reform, and economic development. The OBC often works closely with other business organizations, nonprofits, colleges and universities, government agencies, Oregon's U.S. Senators, the Governor, the state legislature, and leaders among city and county governments to promote its policy recommendations.

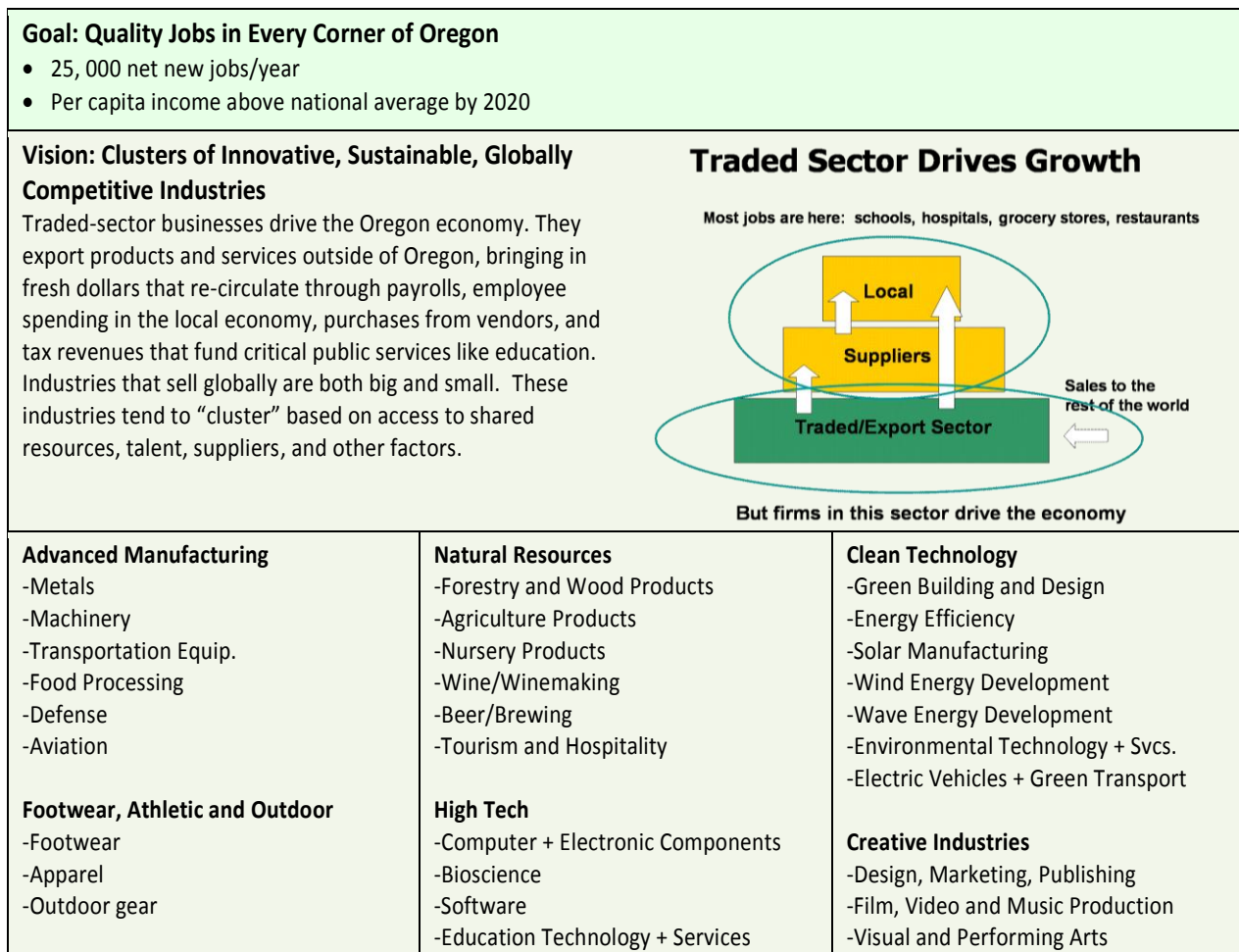
Duncan Wyse has been the President of the Oregon Business Council since 1995 and has a small team of 5 full-time employees, plus a network of consultants who assist on an as-needed project basis. Under Wyse's leadership, the organization launched the Oregon Business Plan, a forum for identifying Oregon's policy needs for economic success and for bringing business and elected leaders together to address those needs. Cluster development lies at the heart of the Oregon Business Plan strategy for economic development.

# Activities of the Oregon Business Council

## Oregon Business Plan

In 2002, against a recessionary background, Oregon U.S. Senator Ron Wyden and Duncan Wyse, President of the Oregon Business Council, collaborated to initiate a summit of statewide business and elected leaders to plan a strategy for economic recovery. OBC formed a steering committee of business associations to oversee the project. Planning and policy recommendations for the summit, held in December that year, resulted in the creation of the Oregon Business Plan as an annual forum for shaping state economic development policies and promoting specific initiatives to support those policies. Using the following framework in Figure 4, the Oregon Business Plan helps set the stage for the state’s leaders to pursue initiatives that create the right environment for Oregon’s traded sector clusters to succeed.

**Figure 4: The Oregon Business Plan Framework for Prosperity**





**Strategy: Conditions Critical for Success: 4Ps for Prosperity**

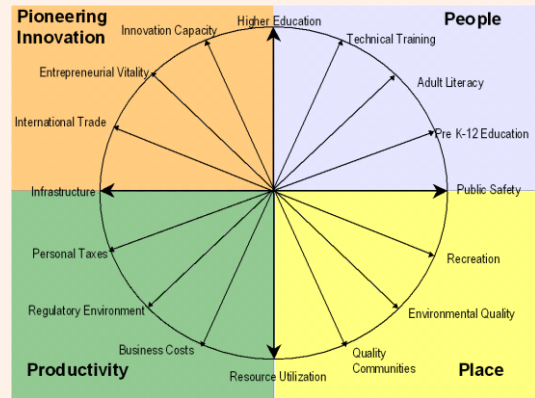
Representatives from key industry clusters report the following conditions are essential to promote high-wage job growth in Oregon:

**People:** A talented workforce.

**Productivity:** Quality infrastructure, resource utilization, competitive regulations and business costs.

**Place:** A high quality of life that attracts and retains talented people.

**Pioneering Innovation:** A culture of research, commercialization and innovation in product and process design.



The Oregon Business Plan has evolved every year since its inception and now represents a year-round effort led by the Oregon Business Plan Steering Committee — a coalition of business leaders representing diverse industries and associations from across the state — and the Business Plan Leadership Committee, consisting of Oregon’s Governor, U.S. Senators, the Oregon Senate President, and the Speaker of the Oregon House of Representatives. Initiatives are updated regularly through interviews, surveys, and focus groups with the leaders of Oregon’s traded sector industries.

As a product developed by the private sector with support from key elected officials, it has also become an “agenda setting” function for the Governor’s office. The Oregon Business Plan provides leaders statewide with a consolidated strategy to revitalize and sustain the Oregon economy, and positions the state as one that is unique in its passion and ability to nurture clusters of innovative industries.<sup>17</sup>

### Oregon Industry Cluster Network

In its journey to strengthen Oregon’s industry clusters, OBC quickly noted that not all of Oregon’s companies were aware of being in a “cluster” or represented by an industry organization. Rather, several of Oregon’s strong industry clusters weren’t organized and lacked the infrastructure and leadership to come up with a common set of industry priorities or a collaborative approach to economic growth. Meanwhile, several industry groups used a cluster approach — identifying shared interests and synergistic opportunities, strengthening relationships across companies in the same or related industry, improving supplier-buyer-customer connections, etc. — but weren’t obvious engines of the Oregon economy.

In the initial development of the Oregon Business Plan, Duncan Wyse traveled around the state conducting regional meetings and industry focus groups. Realizing that many policymakers and

<sup>17</sup> For more on the Oregon Business Plan, see [www.oregonbusinessplan.org](http://www.oregonbusinessplan.org).

business leaders didn't understand the role of different parts of the economy or the concept of "industry clusters," Wyse and others<sup>18</sup> began emphasizing the importance of identifying Oregon's traded sector clusters and listening to their needs. They gave presentations on the function of the economy, explaining the difference between traded sector and local firms, and published a series of cluster studies for specific industries, including nurseries, metals, and high tech.

Growing statewide interest in cluster development ultimately led the Oregon Business Council to hire a consultant to identify Oregon's mature, emerging, and potential industry clusters and assist cluster participants in their efforts to accelerate innovation and the growth of their industries. Rather than "pick" clusters, OBC adopted the philosophy that clusters should emerge organically, based not only on cluster data, but also on leaders demonstrating their interest in working together. In 2005, the OBC launched the Oregon Cluster Network (renamed the Oregon Industry Cluster Network in 2012) with the goals of:

- 1) Becoming a network catalyst and broker of information by assisting related industries in forming effective cluster working groups to identify and resolve business development issues; and
- 2) Being an advocate and facilitator for issues by informing and influencing state and local policies and programs, including the Oregon Business Plan and state legislation

Today, the Cluster Network, with an annual budget of \$40K–\$100K, is staffed by a consultant and support from Oregon Business Council staff. Cluster Network activities are guided by the Cluster Network Steering Committee, a smaller group of leaders representing clusters at all stages of development and statewide economic development organizations. The Network's focus is to: consciously connect industry leaders with university researchers, schools, media, venture capital, and other resources; help cluster facilitators across the state share best practices and develop regional collaborative advantages; and turn anecdotes from individual industries into specific recommendations that benefit multiple industries.

The Network meets four to six times per year to discuss progress on cluster-based economic development, focus on cross-cutting areas of interest for multiple clusters, and plan for upcoming events and opportunities, such as the Oregon Leadership Summit. Some of the specific questions addressed in these meetings include:

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<sup>18</sup> Economist and consultant Joe Cortright helped develop the concept for the Oregon Business Plan, and published a number of cluster studies that informed the activities of several cluster groups. Consultant Elizabeth Redman identified key existing and emerging clusters, and staffed ongoing efforts of the Cluster Network. Finally, the Oregon Business Plan's Project Manager, Jeremy Rogers, also staffed Cluster Network activities.

- What are the needs of each cluster in terms of economic infrastructure: workforce skills, technology, finance, and infrastructure?
- How well can those needs be met within Oregon?
- 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?

Past Cluster Network meetings have focused on topics selected by the Cluster Network Steering Committee, such as workforce development, access to capital, marketing and branding, policy advocacy, and research and technology transfer.<sup>19</sup> Federal, state, and local policymakers are regularly engaged in Cluster Network meetings, and in recent years, Governor Kitzhaber’s Jobs and Economy Advisor, Scott Nelson, and OBC’s President, Duncan Wyse, have served as a Co-Chairs, providing yet another opportunity for traded sector clusters and regional economic development champions to shed light on their key issues.

The Cluster Network is also used to gather information for the annual Oregon Business Plan policy agenda and prepare Oregon cluster leaders to showcase their industry at the Oregon Leadership Summit, the annual gathering of more than 1,000 of Oregon’s top decision-makers who influence the direction of Oregon’s economy.

For further detail on the structure of the Oregon Industry Cluster Network and Cluster Network meetings, see Appendix I.

### **Developing and Evolving Cluster Level Strategies**

Convinced that all cluster organizations could benefit from becoming more purposefully organized and strategic about their joint initiatives, the Oregon Business Council developed the Oregon Business Plan Cluster Submission Form in 2005. The form’s intent was not only to prompt industry leaders to work together to flesh out a shared cluster strategy, but also to identify cluster-specific initiatives for the 2006 Oregon Business Plan. Seeing the value from the clusters’ written submissions to the Oregon Business Plan, the Oregon Business Council took it a step further in 2007. That year, OBC facilitated roundtable discussions with 19 industry clusters, including the leaders of key private, public, and supporting organizations. The result was a comprehensive list of Oregon’s clusters’ top priorities, challenges, and initiatives for growth. The summaries from each of the facilitated sessions were compiled into a *Cluster Resource Guide*, which was distributed at the annual Oregon Leadership Summit and posted on the Oregon Business Plan website. Since then, Oregon’s clusters have been asked annually to

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<sup>19</sup> The members of the Cluster Network Steering Committee are listed in Appendix I.

update their priorities and initiatives, and the summaries are posted on [www.oregonclusters.com](http://www.oregonclusters.com), as well as integrated into the Oregon Business Plan agenda. Examples of cluster-specific priorities have ranged from policy recommendations at the federal, state, and local levels to more tactical opportunities such as running training programs to educate food industry leaders about innovation models or launching an “Oregon Wood First” campaign for the state’s public buildings. An example of the 2010 “cluster-specific priorities” from Oregon’s natural resource clusters is listed in Figure 5.<sup>20</sup>

**Figure 5: Cluster-specific Priorities**



## Oregon Clusters Website

In addition to the annual Leadership Summit, OBC recognized the need for more comprehensive information on Oregon’s regional cluster development efforts and a centralized location for interested parties to learn about industry cluster events, contacts, and best practices. Therefore, OBC launched [www.OregonClusters.org](http://www.OregonClusters.org)<sup>21</sup> in December 2004 to answer frequently asked questions about clusters, provide basic information about all cluster development efforts underway in Oregon, list upcoming industry cluster events, and provide contact information for Oregon cluster experts and practitioners. Maintained by Oregon Business Council staff and consultants, the site is now integrated into the Oregon Business Plan

<sup>20</sup> See Appendix IV for additional detail on cluster specific initiatives from the Forestry and Wood Products, Food Processing, and Defense clusters. For additional information about Oregon clusters’ specific priorities and initiatives, see [www.oregonclusters.com](http://www.oregonclusters.com).

<sup>21</sup> This site no longer works. The new website is [www.oregonclusters.com](http://www.oregonclusters.com).

website,<sup>22</sup> but is also accessible directly through [www.oregonclusters.com](http://www.oregonclusters.com). The website now serves as a central clearinghouse for information on Oregon's industry clusters, provides information on upcoming Cluster Network meetings, and has a page dedicated to each of Oregon's self-identified, traded-sector clusters. The site is updated regularly as additional pages are added with the emergence of new clusters, the Oregon Employment Department and Business Oregon regularly provide new economic data, and cluster leaders annually refresh their pages with their choice of industry facts and information.

### **Oregon Leadership Summit**

Since 2002, OBC has hosted an annual Oregon Leadership Summit to bring together public and private leaders to vet and validate the annually updated policy recommendations of the Oregon Business Plan.<sup>23</sup> The Summit addresses Oregon's toughest economic challenges, showcases Oregon's industry successes, and establishes a roadmap for economic growth in the year ahead. The Summit audience counts on participation from the Governor of Oregon, Oregon's two U.S. Senators, a number of state and local elected officials, many of Oregon's top business executives, and key decision-makers from the state's non-profit, education, research, and labor communities. Past Summit topics have included *Sustainability as an Oregon Competitive Advantage*, *Transportation Reform*, *Rethinking Public Budgeting and the Delivery of Services*, and *Global Competition*. While industry clusters have not always been the main focus of the Summit, the gathering has often been used to highlight the successes and challenges of Oregon's industry clusters and gives cluster leaders a chance to connect and brainstorm with other key leaders from around the state. Most recently, the December 2011 Oregon Leadership Summit featured breakout sessions developed by industry cluster leaders, in which business leaders from each cluster shared stories, opportunities, and industry trends with the broader audience of Oregon policymakers and community decision-makers.

### **Oregon's 21st Century Economic Strategy**

While cluster development lies at the heart of the Oregon Business Plan strategy for economic development, as mentioned earlier, OBC is one of several business organizations, nonprofits, and government agencies that support Oregon's traded sector clusters as a means to further the state's economic development.

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<sup>22</sup> <http://www.oregonbusinessplan.org/Industry-Clusters.aspx>

<sup>23</sup> The Oregon Leadership Summit has occurred every year since 2002, except 2010.

Today, many statewide partners share responsibility for supporting Oregon’s economic growth.<sup>24</sup> With a mission to “create, retain, expand and attract businesses that provide sustainable, living-wage jobs for Oregonians through public-private partnerships, leveraged funding, and support of economic opportunities for Oregon companies and entrepreneurs,” Business Oregon is the state’s primary economic development agency. Its staff use a number of tools to encourage success for Oregon companies, including forgivable loans, Industry Competiveness Fund grants, direct business assistance, tax credits and incentives for business attraction, support for research centers, and other tools to increase exports and access global markets. Business Oregon’s direct role supporting cluster development is limited by the amount of state funding approved by the legislature for the Oregon Innovation Council’s investment in innovation clusters (\$26M in 2007, \$16M in 2009 and \$15.6M in 2011). Thus, Business Oregon’s efforts are complemented by the work of many other regional groups, including the Portland Development Commission and Greater Portland Inc., Southern Oregon Regional Economic Development, Inc. (SOREDI), the Eugene Chamber, and many statewide trade associations and industry collaboratives. In turn, all of these organizations work closely with the Oregon Business Council and leverage its policy leadership, convening power, and connection to statewide private sector leaders. Thus, the responsibility for cluster development is a highly collaborative process, woven throughout all layers of commerce and government across the state.

Overall, for the Oregon Business Council, cluster development is about building a set of relationships and a cohesive economic development framework. OBC President Duncan Wyse is careful to emphasize, “Clusters are not *owned* by anyone, they’re a way of organizing and viewing the Oregon economy.” Oregon’s industry cluster approach to economic development allows policymakers 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 access to resources, and it helps the public and academic sectors better understand how they can best support Oregon’s leading industries, as well as the individual firms within these sectors.

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<sup>24</sup> Appendices II and III provide more details on the activities of Business Oregon, the Oregon Innovation Council, and the many regional economic development organizations that support cluster development in the state.

## Initial Outcomes

“The Pacific Northwest Defense Coalition (PNDC) has been participating in Cluster Network activities since 2006, and the results have been overwhelmingly positive. Through contacts developed at Cluster Network meetings, PNDC has made great strides in developing deeper contacts with state government and local leaders. Such cross-pollination has been vital to the success of PNDC and similar industry associations.”

– Brice Barrett, Former Executive Director of PNDC<sup>25</sup>

The Oregon Business Plan and Oregon Industry Cluster Network have benefited the state by bringing together the business community with the many organizations working on distinct economic development issues (i.e., workforce training, transportation planning, permit streamlining, land use, technology transfer, etc.). The cluster approach has provided direction to industry leaders and helped them to recognize the relationship they have to each other, to the economy, and to the institutions in government and academia that support them. Further, it has provided a framework to facilitate the integration of what would otherwise have been nothing more than a disconnected set of co-located firms and public, private, academic, and non-profit organizations. By focusing on the shared goals and joint priorities of the interconnected organizations that contribute to Oregon’s economic well-being, the cluster approach has given local firms and support organizations an opportunity to achieve results that they likely wouldn’t have achieved individually.

Looking back on the initial vision of the Cluster Network in 2005, it set out to be:

- A way to convene and connect cluster practitioners with needed expertise and resources
- A hub of information about cluster activity in Oregon
- An adaptable, organic network that focuses and aligns existing resources rather than creating new ones

Though the Great Recession has affected the economic performance of Oregon’s traded sector clusters, the Cluster Network has achieved its vision on all three counts. As of May 2012, the Cluster Network counted on the regular participation of more than 20 clusters, had 430 people on its mailing list, and maintained turnout of 40–85 participants at each of the Cluster Network meetings. The [www.oregonclusters.com](http://www.oregonclusters.com) website remains updated with relevant information on

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<sup>25</sup> For more information on the Pacific Northwest Defense Coalition and the approach it has taken to support the region’s defense industry, see Appendix IV.

each of Oregon’s current industry clusters and more than a dozen cluster practitioners from diverse Oregon industries and regions volunteer to participate in the Network’s leadership.

By participating in the Network, public and private leaders make new connections, share best practices, and learn new tools for enhancing industry growth. In some cases, participating clusters have become more sophisticated and strategic in their approach because individual company leaders have joined together with their competitors to develop cluster-level strategies. In other cases, trade associations have expanded beyond their role as lobbying organizations, and taken on the role of cluster conveners, creating new initiatives related to workforce development, innovation, marketing, and buyer-supplier networks. In addition, statewide elected officials and economic development practitioners now have a much broader and deeper understanding of Oregon’s industry clusters, their competitiveness challenges, and the ways the public sector can help support their growth.

One of the most impressive examples of Oregon cluster development has been the transition of the Northwest Food Processors Association (NWFPFA) from a tri-state industry association to a global innovation leader in seven years. Because of its aggressive cluster approach, the Association has enabled 44 member plants to improve energy efficiency by an average of 5%, saved \$13.1 million for member companies through operational efficiency initiatives, created or saved 560 jobs, and spawned many new product lines.<sup>26</sup> Terry Oftedal, the Director of Special Projects at YoCream, an Oregon manufacturer of frozen yogurt and frozen beverages, explains, “The [NWFPFA’s] Executive Forums, and particularly the factory tours, afforded us an invaluable glimpse into how other nearby food processors have dealt with functional challenges and set new higher levels of operational excellence. We came away with many new ideas relating to managing costs, hiring and retaining labor, factory efficiencies, sustainability programs, and innovative sales and business models. At the same time we made new friends who are excellent resources for future conferring.” Furthermore, Oregon Cherry Growers, a grower-owned cooperative, utilized NWFPFA’s innovation training to facilitate the launch of two new products, create a new online brand, and save an estimated 100 jobs through the last economic downturn. Using the cluster approach has resonated with NWFPFA’s members. The Vice President of Manufacturing for one of the cluster’s members explains, “What NWFPFA does really well is they get the key decision makers across the region that have a common interest to share best practices. That is the best outcome we get — strength in numbers.”

There are countless other examples of how the Cluster Network’s role as a connector and convener has benefitted companies, as well as how the Oregon Business Plan’s policy advocacy

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<sup>26</sup> For more information on the NWFPFA’s cluster development efforts to support the Food Processing industry, see Appendix IV.



has led to a better business climate. A few examples follow, all of which track closely with the Cluster Network's goal to become a network catalyst, broker of information, and way for industry leaders to access relevant expertise and share their views with statewide policymakers.

## New Connections

### *Floating Power Incorporated*

By fostering connections between clusters and the people within them, the Cluster Network was a catalyst for a new joint venture between a Danish technology company and Oregon-based BridgeWorks Capital. Rick Williams, BridgeWorks Capital's Chief Science and Technology Officer and founding board member of the Oregon Wave Energy Trust (OWET), explains, "Through connections made at an Oregon Cluster Network meeting on Access to Capital, I brought Mark Waller, President of BridgeWorks Capital, together with Oregon's Treasurer, Ted Wheeler, to OWET's Ocean Renewable Energy Conference in the summer of 2010. Two Danish executives in the audience from Floating Power Plant A/S were so impressed by the conference that they asked me for introductions, upon which lasting connections were built. We as a group also had the opportunity to tour the industrial facilities of another Cluster Network participant, the Pacific Northwest Defense Coalition (PNDC)." Over the next nine months, a joint venture was established between the Danish technology company and BridgeWorks Capital. The joint venture, Floating Power Incorporated, brought Danish technology to the U.S. and is working to scale-up a marine energy converter using an original equipment manufacturer (OEM) model and a stage-gate product development process. Because of the connections made among Cluster Network members, the test program will link the Danish Hydraulic Institute, the wave basin facility at Oregon State University, and Oregon's defense industrial base for fabrication of ocean renewable energy systems. While the venture is in start-up phase, it expects to create four full-time and five part-time jobs over the next five years, as well as employ many others on a contract basis for technology development, project development, and site development. Many of these additional jobs may be created by Oregon's other wave energy cluster participants, as was the case when Ocean Power Technology (OPT) fabricated a PowerBuoy 150 at Oregon Iron Works, creating 35 full-time, family-wage jobs at their manufacturing facility in Clackamas, as well as employment for many other subcontractors and vendors, such as those that assist with the assembly, moorings, and maintenance of the wave facility.<sup>27</sup>

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<sup>27</sup> "Oregon Iron Works to build OPT's first commercial wave energy buoy in North America in Oregon." Business Oregon website. Accessed May 17, 2012. <http://www.oregon4biz.com/story.php?id=49>

### *Oregon Association of Nurseries*

The Oregon Business Plan’s cluster roundtables with industry leaders in 2007 prompted initial discussions about sustainability with growers who were part of the Oregon Association of Nurseries (OAN). The roundtable discussion helped precipitate OAN’s interest in pursuing an industry-wide sustainability initiative that launched two years later and is now helping Oregon growers to apply sustainable business practices that reflect changing market conditions, mitigate unnecessary risk, and respond to cost volatility. Innovation now abounds among Oregon growers committed to delivering the ‘greenest’ trees on the market. J. Frank Schmidt and Sons use drip irrigation to deliver nutrients directly to plant roots where they are needed most, reducing water and chemical inputs. Eshraghi Nursery installed variable frequency drives to reduce water use and save the energy it takes to deliver water to the field. And at Bailey Nursery’s Oregon operations, a precise fertility management program has helped them cut fertilizer use by half. Even container recycling and composting helps cut energy and fossil fuel consumption, as Heritage Seedlings, Inc. can attest. Other nurseries, including Blooming Nursery Inc. and Northwoods Nursery, have made great strides in efficiency to meet OAN’s “25 percent in 10 years” energy reduction goal and some growers have even gone so far as to generate their own power with solar panels.<sup>28</sup>

### **New Policies & Public Sector Programs**

#### *Oregon Bioscience Association*

Dennis McNannay, Executive Director of the Oregon Bioscience Association, in the course of surveying and interviewing many of Oregon’s life sciences companies, noted that access to capital was a problem that many members shared. Unlike software companies that could be catalyzed with relatively small investments, Oregon’s bioscience companies struggled to finance their large capital investments and stay afloat during the long time horizons between product invention and FDA approval. Recognizing this common problem shared among Oregon’s bioscience cluster members, McNannay worked with the Cluster Network to hold a meeting on “Access to Capital — Investing in Oregon” in May 2011. During this meeting, three Oregon bioscience companies shared their stories about the difficulty they’d had accessing capital in the state and the temptations they’d had to move to other states with their own local business investment programs. Many elected officials and policymakers attended the meeting and the discussion prompted the Oregon Treasurer’s Office and Governor’s Office to consider a range of

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<sup>28</sup> The OAN has captured the innovations made by their members and is sharing them with the industry. For more, see [www.oan.org/sustainability](http://www.oan.org/sustainability).

options for improving access to capital for Oregon’s companies. The result was the legislature’s passage of the Oregon Investment Act in 2012 (HB 4040), which established the Oregon Growth Fund and Oregon Growth Board to encourage investment in and availability of capital to Oregon businesses. While it is too soon to tell how this legislation will impact early stage Oregon companies, McNannay believes it’s a step in the right direction and at least shows that Oregon’s leaders are listening to in-state growth companies.

While the Oregon Industry Cluster Network recognizes that its impact is often hard to track and quantify, Paul Barnum, the Executive Director of the Oregon Forest Resource Institute and one of the 2011 Industry Cluster Network Co-Chairs, explains, “The value of the Network is 100 little things that happen every week, not four big things you can easily point to.”

## Indicators of Success

For numerous reasons, the economic impact of cluster development has been a difficult question to tackle quantitatively. In 2006, the Oregon Economic and Community Development Department (now Business Oregon) attempted to do so through the publishing of the report, *Oregon’s Statewide Traded Clusters: Major Industries and Trends*, which built off of existing studies about Oregon’s economy and its traded sector clusters.<sup>29</sup> This study evaluated employment, payroll, and average wages for 12 clusters identified using North American Industry Classification System (NAICS) codes and Bureau of Labor Statistics (BLS) and Oregon Employment Department data. The report was updated again in 2007, but has not been updated since.

A large reason for Oregon’s lack of a comprehensive and annual process for updating indicators of cluster health has been the difficulty of defining Oregon’s clusters and disaggregating the effects of clustering from a number of other factors that affect the success of Oregon’s companies. While quantitative data on jobs, employment growth, and industry wages are available annually, standardized, rigidly-defined data does not tell the whole story. Rather, clusters cut across multiple industry sectors making it difficult to align the available data with the NAICS codes, the predominant statistical method used by federal agencies in classifying business establishments and tracking jobs. Without broadly accepted and consistent cluster definitions, it is hard to distinguish the economic impact of a particular cluster. Further complicating the analysis is the fact that, in many cases, multiple clusters involve the same support industries, such as legal, financial, or design services. For example, it would be hard to

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<sup>29</sup> Michael Porter’s 2001 “Profile of the Oregon Economy” and Impresa Consulting’s 2004 report on “Oregon’s Traded Industry Clusters” provided broad industry classifications for Oregon’s clusters.

determine whether a sports marketing firm belongs to the Athletic and Outdoor cluster being organized by the Portland Development Commission or the creative services cluster led by the Oregon Creative Industries trade group.

To the extent that economic data are available, the Oregon Business Plan cluster website attempts to capture it: each cluster page presents a snapshot of the cluster's economic impact with information on the number of firms, direct employment, employment growth, average wages, and annual revenue or output. The figures are updated annually.

Further, several individual clusters have gathered more detailed statistics and published studies of their own. Examples include:

- The Oregon Forest Resources Institute began publishing *Oregon Forest Facts and Figures* in 2009. The pocket-sized booklet, also available online, includes statistics about Oregon forestland area, forest product uses, timber harvest ownership, direct employment, average pay, and other relevant information about the forest and wood products cluster's contributions to the Oregon economy.<sup>30</sup>
- The "Tourism and Hospitality Cluster," staffed by Travel Oregon, publishes an annual *State and County Travel Impacts* study, with the purpose to document the economic significance of the travel industry in Oregon. The report describes the economic impacts of travel to and through the state for multiple years, and includes detailed estimates of travel spending, the employment and earnings generated by this spending, and travel-generated tax receipts.<sup>31</sup>
- The bioscience cluster, led by the Oregon Bioscience Association, commissioned a study to measure the economic contributions of the bioscience industry in Oregon. The report, *The Dimensions and Contributions of the Bioscience Industry in Oregon in 2009*, includes information on bioscience industry employment and employment growth in Oregon, total payroll, and average wages.<sup>32</sup>
- The Oregon chapter of the national high tech trade association, Tech America, draws on information for the state's high tech industry health from annual industry publications such as *Trade in the Cyberstates 2010*.<sup>33</sup>
- Even the informally organized North West Education Cluster commissioned a *Social Impact Study* employing a graduate student from the Keller Graduate School at DeVry University.

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<sup>30</sup> See <http://oregonforests.org/news/available-now-ofri-oregon-forest-facts-and-figures-2011> to download Oregon Forest Facts and Figures 2011.

<sup>31</sup> See <http://www.deanrunyan.com/index.php?fuseaction=Main.TravelStatsDetail&page=Oregon>.

<sup>32</sup> See <https://www.oregonbio.org/bio-in-oregon/industry-reports>.

<sup>33</sup> See <http://www.techamerica.org/trade>.

Through interviews and company research, the study details the profile of cluster members, including the number of education companies in Oregon, their average size, revenue, age and location. The report also includes information on the cluster’s goals, values, and objectives.

In 2011, the Oregon Cluster Network began further prompting a discussion about ways to measure cluster success with a meeting on “Measuring Cluster Competitiveness.” The session prompted so many questions from cluster leaders that the Cluster Network hosted a second meeting on this topic in January 2012. During that meeting, Cluster Network participants learned further details about the methodology used for measuring cluster competitiveness — as opposed to economic impact — received tips from the media, and heard Oregon State Senator Betsy Johnson’s perspective that “legislators are less influenced by studies and much more interested in anecdotal stories, visuals, and legislative office visits from CEOs or business executives.”<sup>34</sup>

Specific cluster studies and the examples of their success using a cluster approach can be found in Appendix IV.

## Oregon Competitive Index

In addition to these measures, the Oregon Business Council has published the Oregon Competitive Index four times since the Oregon Business Plan was launched in 2002.<sup>35</sup> An important mechanism for tracking Oregon’s economic progress, the Competitive Index shows how the state compares to its peers on factors affecting the business climate. Organized in seven sections, it begins with indicators of Oregon’s general economic well-being, suggests the health of Oregon’s traded sector industries, and covers the Oregon Business Plan’s Four Ps for Prosperity (People, Place, Productivity, and Pioneering Innovation) and a “5th P,” public finance. In addition to Manufacturing Gross State Product (GSP) in billions and as a percentage of GSP, Traded Sector Income per Worker, Exports as Percentage of GSP, and Percent Change in Total Dollar Value of State Exports, the section on Traded Sector Industry Health includes the following indicators for 13 Oregon traded sector industries:

- Jobs
- Number of firms
- Annual net job growth in Oregon and the U.S.

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<sup>34</sup> Meeting agendas and materials from both the September 2011 and January 2012 meetings on Measuring Cluster Competitiveness are available at [www.oregonclusters.com](http://www.oregonclusters.com) under “The Industry Cluster Network, Past Meeting Materials.”

<sup>35</sup> See <http://www.oregonbusinessplan.org/Measuring-Progress/Economic-Progress.aspx>.

- Average annual pay per worker
- Annual pay as percent of national average
- Hourly wages
- Industry concentration index (location quotient)<sup>36</sup>
- One-, three-, and ten-year non-agricultural employment growth

The last edition of the Competitive Index published was in 2007.

In addition to the Index, Oregon has utilized various other tools for measuring economic competitiveness and its climate for innovation. For a full list of these efforts, see Appendix V. In addition to the many different methods that Oregon has employed for quantifying cluster health and innovation, the real indicators of success have come from the level of participation of all sectors in wishing to promote the overall health of Oregon’s economy, as well as numerous anecdotal accomplishments represented by the various clusters themselves.

## Lessons Learned

“Clusters enable us to mobilize the business community. Clusters are not a program. They are a way of understanding and thinking about the regional economy. It’s all about a set of relationships.”

– *Duncan Wyse, President, Oregon Business Council*

While the Oregon Business Plan and Cluster Network maintain the same basic structure and goals today as they did at their inception, many small changes have been made along the way to improve their effectiveness and respond to the needs of involved industry leaders. These improvements have included a greater emphasis on electronic communications, website restructuring, and changes in Cluster Network staffing, participating cluster leaders, and meeting agenda formats.<sup>37</sup> The following elements have been essential to the Oregon Business Council’s ability to effectively play the role of cluster catalyst and convener:

- 1) **Private sector leadership** — As a membership organization with a private sector board of directors, the Oregon Business Council has always counted on a high level of involvement from Oregon’s private sector leaders. Both the Oregon Business Plan and Oregon Cluster Network have Steering Committees comprised of business leaders and industry

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<sup>36</sup> A location quotient (LQ) is an economic indicator comparing a specific’s industry’s share of regional employment to that industry’s share of employment in the nation as a whole. When  $LQ > 1$ , the industry is more concentrated in that region than is the norm nationally.

<sup>37</sup> See Appendix I for a sample Cluster Network meeting agenda and typical seating arrangements.

membership groups. OBC's connectivity to the business community has helped build the private sector buy-in necessary to form a true public-private partnership with industry leadership and direction. Without this close tie to Oregon's business leaders and the organizations that represent them, it would have been difficult to create an appropriate vision for economic development or offer programming that accurately responds to Oregon's industry challenges.

- 2) ***Openness of the cluster organizations*** — No specific criteria are used to limit participation in the Oregon Cluster Network, though the Network focuses on traded-sector clusters. Oregon's clusters are linked for a number of reasons, including geography, sector, and commonalities in their workforce, inputs, management processes, suppliers, and customer base. The Oregon Business Plan and Cluster Network allow all "self-identified" clusters to participate in the process of discovering shared value and improving industry competitiveness. In addition, the nature of cluster groups can vary as evidenced by government-led industry working groups and trade associations serving as de facto cluster leaders in some cases. Building cluster efforts around these existing structures enables faster impact and the mobilization of all available resources.
- 3) ***All clusters are good*** — Rather than focus on targeted industry sectors, OBC has chosen to support cluster development for all traded-sector industries and encourage clusters at all stages of development to become more self-aware, better organized, and more strategic about defining their shared interests and opportunities for growth. By providing information, strategic frameworks, networking, and marketing opportunities for a variety of statewide and regional industry clusters, the Cluster Network has assisted both established and emerging industry clusters. In the case of the former, the Oregon Business Plan and Cluster Network have provided an opportunity for the self-identified clusters to share best practices, demonstrate leadership, increase their visibility, make new connections, and influence policy. The Network also provides an opportunity for emerging, less-established or under-recognized clusters to learn by example from established clusters and choose from among many models for cluster development. In select cases, the Oregon Business Council has also provided extra assistance to a particular cluster wishing to more fully develop its cluster strategy and action initiatives, such as convening the cluster's key leaders for a focused conversation about opportunities and next steps or reviewing their federal grant proposals.
- 4) ***A shared resource base for cluster efforts*** — The Oregon Business Council works with leaders from existing cluster development initiatives or trade associations to help them

mobilize resources or share best practices for such activities.<sup>38</sup> OBC is not a cluster organization itself, but enables such cluster organizations to emerge and helps them to tap into a common knowledge and capability base. This structure enhances efficiency, creates more openness for new cluster efforts, and naturally positions OBC to anchor cluster activities in a broader economic development strategy for the state.

- 5) ***Diversified funding sources and operational efficiency*** — OBC’s cluster and economic development work has been supported by a number of revenue sources, including individual company sponsorships; grants from philanthropic foundations and federal agencies; and contributions from business associations, state agencies, and local governments. Cluster Network meeting spaces have almost always been donated by OBC’s partners, and beginning in late 2010, individual clusters began offering to host meetings on a rotating basis. With an annual operating budget of under \$100,000, the Cluster Network has remained lean and relied primarily on a team consisting of one consultant, OBC’s administrative support staff, the Oregon Business Plan Project Manager, and many volunteers.
- 6) ***Staff characteristics and responsibilities*** — A significant contributor to the success of the Oregon Business Council has been its reliance on staff and volunteers who see the value in networking, convening, and connecting. By employing “salespeople” or “networkers” who are naturally good communicators and connectors, OBC has been able to serve as the connective tissue for Oregon’s many organizations focused on industry competitiveness, economic development, and general business climate issues. OBC has maintained its belief that staff bring value to Oregon’s business community by fostering networking and information sharing, despite the fact that the value is harder to quantify.

The Oregon Business Plan and Oregon Cluster Network’s economic development partners also have lessons about how to support cluster development at the state and regional levels. See Appendix VI for these organizations’ perspective on best practices for cluster development.

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<sup>38</sup> Examples of some of Oregon’s exemplary clusters are included in Appendix IV.



## Conclusion

As a business membership organization comprised of the state's largest and most established businesses, the Oregon Business Council contributed significantly to statewide economic development. By connecting business leaders with each other and with key Oregon decision-makers (including elected officials, academic leaders, and non-profit directors), the Oregon Business Council has influenced many statewide policies, programs, and initiatives that contribute to Oregon's economic trajectory. The Oregon Industry Cluster Network has played a central role in making industry clusters a central organizing principal for Oregon's economic policy. The Oregon Business Plan has provided an overall framework that connects these cluster-based efforts into an overall strategy to enhance the broader business environment. Industry cluster leaders attest to the value of these efforts that have yielded new commercial partnerships, more business friendly approaches to public service delivery, and programs and policies that are better crafted to benefit Oregon's existing and emerging industries.

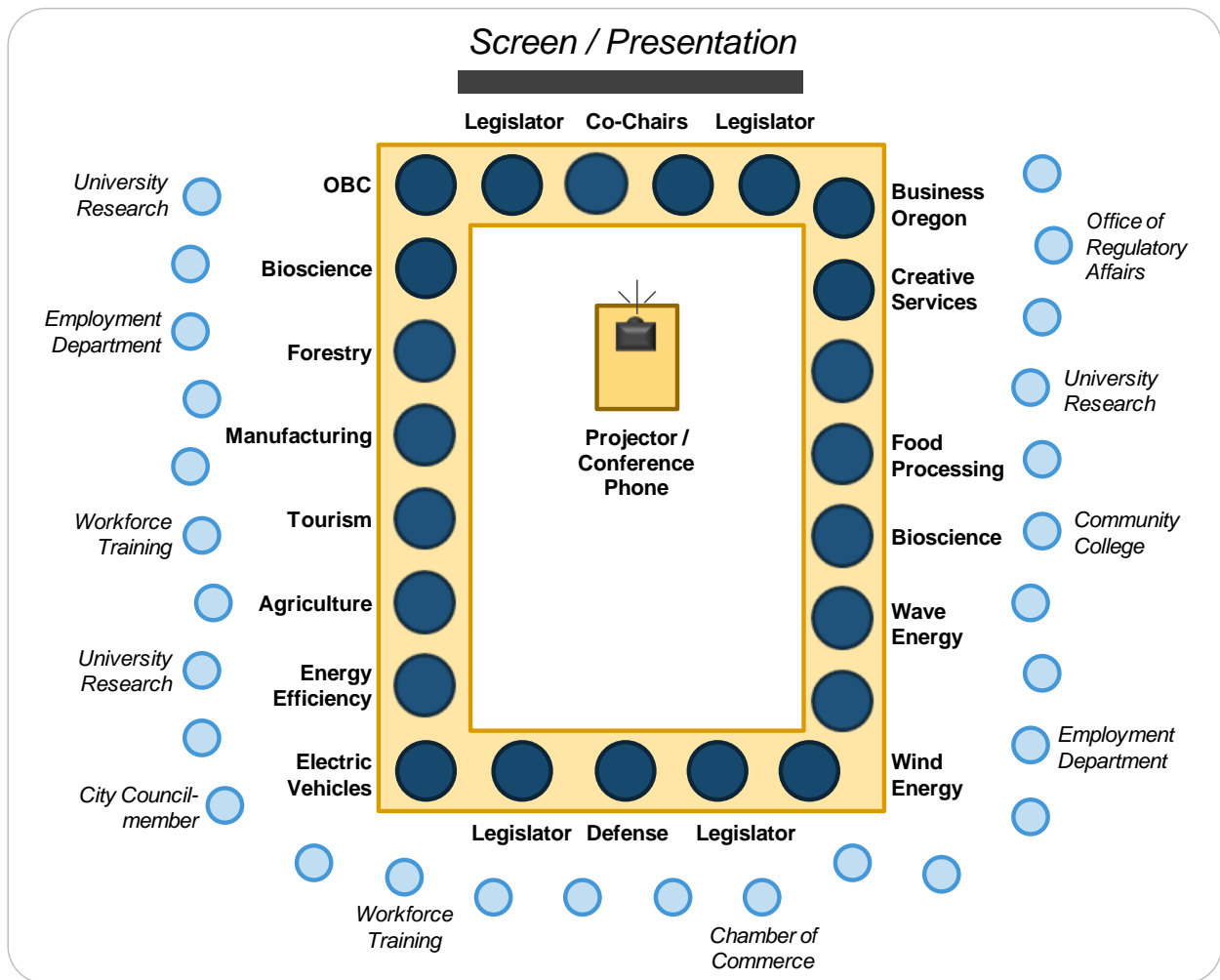
The example from Oregon is an inspiration of what is possible, not a blueprint. The adoption of the cluster perspective as an organizing principle, the focus on private-sector led collaboration between a broad range of public and private leaders, and the integration of cluster efforts into a broader economic strategy for a region are approaches that others may wish to emulate. What can be learned are the specific lessons that OBC itself has drawn from its experience in helping cluster efforts to emerge and operate as well as the choices it has made in creating organizational structures that fit the realities of the state. What each location needs to do for itself, however, is then to devise the right competitiveness strategy to leverage its unique mix of clusters and business environment conditions that can help local companies succeed.

# Appendices

## Appendix I: Cluster Network Composition & Structure

Cluster Network participants include the leaders of each of Oregon’s organized industries, and representatives from all other “supporting institutions” (workforce training providers, community colleges, universities, state agencies, economic development organizations, research centers, etc.) who wish to connect with industry cluster leaders and support cluster based economic development. All self-identified clusters are invited to participate and are guaranteed a seat at the table. The representatives of the supporting institutions are also welcome to attend Cluster Network meetings at no charge, but are often asked to participate as “observers,” sitting around the outside of the room, and participating in conversation as appropriate. Clusters are generally represented by the Executive Director of the corresponding industry association or a private sector driven group of similar or like-minded companies.

**Figure 6: Cluster Network Meeting Structure**



An example of a past Cluster Network meeting agenda is below:

**OREGON CLUSTER NETWORK MEETING**  
 Nurturing a Culture of Innovation  
**Monday, March 26, 2012**  
**2:00 pm–5:00 pm**

<b>2:00 pm</b>	<b><i>Introductions &amp; Opening Remarks</i></b> <ul style="list-style-type: none"> <li>• Chris Scherer, Executive Director, Oregon Manufacturing Extension Partnership</li> <li>• Duncan Wyse, President, Oregon Business Council</li> <li>• Scott Nelson, Jobs &amp; Economy Policy Advisor, Office of Governor Kitzhaber</li> </ul>
<b>2:30 pm</b>	<b><i>How Companies are Driving Innovation</i></b> <ul style="list-style-type: none"> <li>• Early Stage Start-Ups — Rick Turoczy, Co-Founder, PIE</li> <li>• Growth Company — Lance Hopman, Director of R&amp;D, SAM Medical</li> <li>• Large Company — Mark Lawler, CTO, Cambia Health Solutions (Regence)</li> </ul>
<b>3:15 pm</b>	<b><i>How Industry Clusters Support Innovation</i></b> <ul style="list-style-type: none"> <li>• Chris Scherer, Oregon Manufacturing Extension Partnership</li> <li>• Jon Marshall, Northwest Food Processors Association</li> <li>• Skip Newberry, Software Association of Oregon</li> </ul>
<b>3:45 pm</b>	<b><i>Moderated Group Discussion</i></b> <ul style="list-style-type: none"> <li>• Q&amp;A for Panelists</li> <li>• Moderated by Shane Sasnow, Forward Motion</li> </ul>
<b>4:45 pm</b>	<b><i>Industry Cluster Updates &amp; Closing Remarks</i></b>
<b>5:00 pm</b>	<b><i>Meeting Adjourns</i></b>

Cluster Network activities are guided by the Cluster Network Steering Committee, a smaller group of industry cluster leaders and public agency representatives who meet to guide the Network 4–6 times per year. The Steering Committee selects the topics for discussion at each meeting and makes sure the Network is providing value to its members. The Cluster Network is guided by a public and private sector co-chair, with an “Industry Cluster Co-Chair” that rotates on a regular basis and provides Steering Committee members with an opportunity to host the meetings and focus on a topic of particular interest or expertise. The Steering Committee is currently comprised of the following people:

- Private Sector Co-Chair: Duncan Wyse, President, Oregon Business Council
- Government Co-Chair: Scott Nelson, Jobs & Economy Policy Advisor, Office of the Governor
- Paul Barnum, Executive Director, Oregon Forest Resources Institute
- Dennis McNannay, Oregon Bioscience Association
- Jon Marshall & Dave Klick, Northwest Food Processors Association
- Jim Snyder, NorthWest Education Cluster Leader

- Skip Newberry, Software Association of Oregon
- Allen Alley, Tech America Board
- Amanda Lowthian, Business Oregon
- Ben Sappington, Eugene Chamber of Commerce
- Colleen Padilla, Southern Oregon Regional Economic Development, Inc. (SORED)
- Chris Harder, Portland Development Commission
- Ron Adams, Oregon State University

The network is staffed by Elizabeth Redman, the Oregon Business Council’s Cluster Strategy Consultant and Jeremy Rogers, the Project Manager of the Oregon Business Plan.

## Appendix II: Statewide Partners

### Business Oregon

Oregon’s statewide economic development agency, today called Business Oregon, began articulating its focus on industry clusters at the beginning of the 21st Century, with a gradual incorporation of the cluster development concept into the agency’s strategy. Beginning in 2001, the agency outlined a vision for focusing on traded sector industry clusters and applying the industry cluster concept to their business recruitment work. By 2004, the agency had identified 11 industry clusters ranging from food processing to metals manufacturing to bioscience and expanded their focus to include “identifying, developing, and promoting industry clusters.”<sup>39</sup> This broadened cluster focus translated to agency staff mapping clusters’ inter-industry and institutional relationships and holding roundtables with business representatives to discuss unique challenges and opportunities in each traded cluster. By 2005 and 2006, the Business and Trade Development Division aligned itself with the *Oregon Business Plan’s* strategy to concentrate on key industry clusters and began focusing on clusters with international business potential. At this time, not only did the Trade Development Division begin offering a range of programs and services designed to help the state’s small- and medium-sized (non-agricultural) firms successfully compete in a global marketplace, but the agency began working with clusters to link workforce and economic development policy, provide coordination mechanisms for training, and streamline regulatory and product development efforts.<sup>40</sup> At various times, the department has also allocated staff time to convene and support specific cluster development

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<sup>39</sup> 2004 OECD Annual Report

<sup>40</sup> 2005 and 2006 OECD Annual Report

efforts, such as the Display Technology or Green Development Clusters, though only rarely has it done so independent of other economic development partners.

By 2009, the Oregon Business Development Commission, which oversees the department, recognized five key clusters (Advanced Manufacturing, Clean Technology, Forestry and Wood Products, High Technology, and Outdoor Gear and Apparel) within the state as having distinct global competitive advantages, thereby providing a more narrow focus for the department's cluster approach.<sup>41</sup>

In addition, Business Oregon partners with the Oregon Business Council to support and promote the Cluster Network. Oregon Business Development Commissioners and Business Oregon staff also partner with local and regional economic development entities on an ongoing basis to coordinate initiatives that support industry cluster development and growth. Because Oregon is a small state and investments in economic development at the state and local levels are comparatively low, coordination among public, non-profit and private entities is critical to the viability and chances of long-term success for any industry development initiative. The Oregon Innovation Council represents the state's largest single investment in cluster-based economic development.

### **Oregon Innovation Council**

The Oregon Innovation Council (Oregon InC) began in 2005, when then Governor Ted Kulongoski and the Legislature brought together more than 50 leaders from the private sector, the state's four research universities and government to create a new way to do business.

The need to radically change how the state recognized, supported and funded technology-based economic development was obvious:

- Oregon is a small state, with a population and economy dwarfed by its high-tech neighbors to the north and south. The state couldn't spend its way to prosperity, but it could be competitive by clustering key resources in areas where it already held unique advantages and for which there would be significant global markets.

#### **ONAMI (Oregon Nanoscience and Microtechnologies Institute)**

Oregon's first Signature Research Center is now a nationally recognized collection of laboratories — including the Lorry I. Lokey Nanotechnology Laboratories, one of only two such facilities in the U.S. - and researchers helping create a new generation of companies like Zaps Technologies, which uses nano-materials to test polluted waters for multiple contaminants at once rather than the current one-at-a-time method — saving time and money. ONAMI has helped incubate 18 companies, creating 84 jobs and raising more than \$70 million in private capital.

<sup>41</sup> <http://www.oregon4biz.com/The-Oregon-Advantage/Industry/>

- While Oregon’s research universities are respected, they cannot individually compete with national institutions or regional research clusters. But, by building one-of-a-kind shared labs open to all researchers from every Oregon university, and requiring collaboration between multiple campuses and faculties as a condition of funding research with commercial potential, Oregon could become a national leader in select fields and better compete for national research dollars.
- With the days of relying on its once abundant natural resources ending, Oregon needed a practical, business-led roadmap to building an innovation-based economy.

**Oregon BEST (Oregon Built Environment and Sustainable Technologies Center)**

Oregon BEST’s seven shared labs are helping Oregon become a national leader in developing green building research that is leading to new technologies, new products and new jobs in the construction industry. Oregon BEST’s 180 faculty researchers are testing solar simulators to determine the most efficient sunlight trajectories for gathering energy. They’re measuring the insulating capacity of high-tech paints and using recycled Styrofoam as building insulation. The labs are open to the private sector, providing R&D capabilities to companies such as Hewlett Packard and SolarWorld. And Oregon BEST commercialization grants are helping green building innovators get their ideas to market.

Over the next 10 months — and more than 1,200 hours of volunteer time — the Council pressed the lessons of the private sector onto an open, highly competitive process that each biennium identifies individual initiatives capable of carrying out the Council’s core mission of:

- Incubating new ideas into growing businesses;
- Retaining family-wage jobs by helping established industries become more competitive, sustainable and profitable;
- Helping start-ups access capital;
- Providing access to the R&D power Oregon businesses need to compete in the 21st Century marketplace.

In only two biennia of funding, Oregon InC initiatives have helped create 18 companies and leveraged more than \$250 million in federal, private and foundation grants. Through Oregon InC, the state has established three Signature Research Centers, which bring together more than 450 university researchers from different campuses to work collaboratively in shared lab facilities that give Oregon the ability to compete and win against states with much larger populations and research budgets. Focused in the areas of nano- and micro-technology, green and sustainable building research and infectious diseases, these Centers keep valuable research dollars and talent inside Oregon, giving local businesses the chance to grow here instead of looking outside the state for critical R&D resources and help raising early-stage capital.

Oregon InC saved hundreds of jobs for Oregonians by helping established Oregon industries survive a tough economy by learning how to become more sustainable and efficient — and thus more profitable.

Oregon InC-funded programs teach energy efficiencies and productivity improvements that have saved 350 jobs in the state’s \$6.1 billion food industry, and 350 jobs in the coastal communities reliant on fishing.

Oregon InC is also helping create a next generation industry focused on wave energy by funding research into environmental and economic issues in order to create a regulatory roadmap for developers that streamlines an arduous permitting process; providing matching industry grants to attract developers from around the world, and facilitating citizen involvement in affected communities. A commercial-scale, 150-foot buoy — the first of its type in North America — is scheduled to be launched in the summer of 2012 off the central Oregon coast.

This comprehensive approach to creating an innovation-based economy is recognized nationally. For instance, a December 2009 evaluation of Arizona’s technology-based economic development efforts by the Milken Institute, an independent economic think tank, specifically cites the role of Oregon InC in Oregon’s economic progress: “Although many states have developed plans for technology transfer and technology-based development, Oregon is one of the

**OTRADI (Oregon Translational Research & Development Institute)**

OTRADI is a Signature Research Center that promotes bioscience research and development, industry growth and job creation in Oregon. OTRADI collaborates with private and public sector entities to discover, develop, and commercialize therapeutics, vaccines, diagnostics and other life sciences products. OTRADI has a state of art robotics lab with a team of scientists and bioscience business experts that have affiliated researchers across Oregon, including 25 start-up companies and 130 university researchers, generating more than \$60 million in grants and other revenue since 2009. OTRADI’s next stage of growth includes establishing the OTRADI Bioscience Accelerator which will co-locate resources to give emerging bioscience start-ups the greatest likelihood of success.

only states to create such a fully comprehensive strategy covering multiple aspects of the issue,” the report states. “It also made provisions to ensure that the plan would continue to be updated to address changing goals and circumstances.”

## **Appendix III: Regional Partners**

### **Portland Development Commission**

#### ***History and Overview of Economic Development Strategy***

Created by Portland voters in 1958, the Portland Development Commission (PDC) is the City of Portland’s economic development and urban renewal agency. PDC’s mission is to bring together resources to achieve Portland’s vision of a diverse, sustainable community with healthy neighborhoods, a vibrant central city, a strong regional economy and quality jobs for all. In July 2009, Portland City Council adopted the *Portland Economic Development Strategy: A Five-Year Plan for Promoting Job Creation*, the City’s first official economic plan in more than 15 years.

Job growth requires explicit investments in the fundamentals of economic development: retaining and growing existing firms, recruiting firms to the region and attracting new investment, training workers, funding innovation and developing catalytic projects. While Portland’s legacy investments in lifestyle will pay economic dividends, the emphasis has shifted to investment in job creation to realize those benefits. As the lead economic development agency, PDC’s job growth efforts are focused on:

- Enhancing the competitiveness of five target clusters — Advanced Manufacturing , Athletic & Outdoor, Clean Technology, Research & Commercialization, and Software;
- Producing an innovative urban environment that fosters creativity and entrepreneurship; and
- Stimulating business activity in neighborhoods and equalizing economic opportunity throughout the Portland.

#### ***Target Cluster Strategy***

Achieving sustained job growth depends on maximizing the competitive environment for local businesses. A cluster strategy is the logical organizing principle for growing traded sector industries because disparate efforts at retention, expansion, innovation, international trade, land assembly and workforce development can be coordinated in a manner that makes more efficient use of resources and captures synergies in otherwise unrelated activities. In addition, in-depth knowledge of particular sectors fuels catalytic initiatives that move business development efforts beyond traditional assistance. A cluster strategy is especially critical for a



market like Portland, where limited resources require selective investments in the groups of firms that demonstrate the most promise of growth.

PDC researched best practices of supporting successful clusters and adopted a six-step framework (see Figure ) to guide the implementation of individual cluster strategies and action plans. The first three cluster framework steps — Investigate, Inventory and Convene — are designed to identify and engage key stakeholders and confirm cluster focus and scope. The goals of the final three stages — Diagnose, Act and Evaluate — are to develop an action plan with cluster participants so they can take the lead in implementing growth initiatives and finding a way for the cluster to sustain itself.

**Figure 7: PDC Cluster Development Framework: Stages & Key Activities**

1. Investigate	2. Inventory	3. Convene
<ul style="list-style-type: none"> <li>• Establish criteria for selection               <ul style="list-style-type: none"> <li>– More concentrated</li> <li>– Faster growing</li> <li>– Higher pay</li> <li>– Traded sector</li> </ul> </li> <li>• Define geographic area for analysis</li> <li>• Analyze local &amp; national trend data</li> <li>• Perform initial outreach and verify data conclusions</li> <li>• Select clusters w/ most growth potential</li> </ul>	<ul style="list-style-type: none"> <li>• Define cluster</li> <li>• Inventory firms, organizations &amp; institutions</li> <li>• Identify leaders, innovators and trendsetters</li> <li>• Identify key policies and practices impacting cluster</li> <li>• Create informal map of cluster ecosystem</li> </ul>	<ul style="list-style-type: none"> <li>• Identify incentive for convening</li> <li>• Conduct interviews with industry representatives</li> <li>• Collect industry sector data, cluster connections and relationships, drivers and challenges</li> <li>• Review and confirm cluster focus/scope, definition, and participants</li> <li>• Characterize cluster status, conditions and identify needs</li> </ul>
4. Diagnose	5. Act	6. Evaluate
<ul style="list-style-type: none"> <li>• Synthesize findings into a market analysis</li> <li>• Identify appropriate strategies informed by industry and based on industry needs</li> <li>• Develop action plan with stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• Establish clear expectations and accountability for partners including resources, staffing, performance measures</li> <li>• Allow for cluster leadership to emerge</li> <li>• Implement action plan w/specific industry interventions or development strategies</li> </ul>	<ul style="list-style-type: none"> <li>• Does the intervention support its intended goals?</li> <li>• Does the intervention support job growth?</li> <li>• Is the cluster self supporting/sustaining?</li> <li>• Are higher level interventions possible?</li> </ul>

**Cluster Snapshots**

Portland currently focuses its economic development resources on enhancing the competitiveness of businesses in five target clusters. Clean Technology, Athletic & Outdoor Industry, Software, and Advanced Manufacturing were identified as part of the initial strategy roll-out. These four clusters were selected based on existing competitive advantages, such as employment and output concentration and projected growth, but also because they are part of the traded sector, offering Portland the most direct path to family wage jobs and the benefit of

economic multiplier impacts. The fifth cluster, Research & Commercialization, was recently added as a target to better coordinate and support research and development activities, technology commercialization and entrepreneurship.

*Clean Technology* — Portland's Clean Technology Cluster focuses on economic and business development activity related to wind and solar energy, electric vehicles and energy storage, and green development. The region is recognized as a leader in clean technology due to: 1) a strong manufacturing and professional & technical services workforce; 2) city and state policies and incentive network; and 3) engagement of utilities. Portland leads the nation in green buildings per capita, is an early test market for electric vehicles and energy storage technologies, and is gaining a reputation on the energy side through the recruitment of companies such as SolarWorld, Vestas and Iberdrola. In addition, PDC is sponsor to several catalytic initiatives such as the Oregon Sustainability Center, the first urban high-rise in the world to meet the Living Building Challenge, Eco-Districts, and a Green Innovation Park.

*Athletic & Outdoor (A&O)* — Portland is recognized as global hub for the A&O industry through its international reputation as a design and innovation center and the fact that it is anchored by industry pioneers Nike, Columbia Sportswear and Adidas USA. Cluster companies and entrepreneurs have global ties that provide pathways for exporting local expertise, recruiting skilled workers, sourcing and nurturing innovation domestically and globally. In 2010, the cluster introduced an industry-led action plan and company genealogy map for the region and PDC continues to focus on business retention, recruiting A&O firms to establish design centers in the city and the establishment of catalytic projects in Portland such as Design Forum/PDX, a new materials resource library, and the OSU Apparel Research Center.

*Software* — Portland boasts considerable Open Source and Web 2.0 technology talent and is recognized for its active start-up culture. Intel and other established technology companies have helped to create a deep, highly technical talent pool. Major technology conventions and trade shows such as the Open Source Convention (OSCON) and Open Source Bridge Convention, Innotech, the Government Open Source Conference (GOSCON), and the Super Computer Conference have helped solidify Portland's leadership. In 2010, PDC engaged the local software community through a series of facilitated discussions and web-based surveys, concluding with a Software Summit and the roll-out of an industry action plan. As part of the action plan, the software community launched, PDX11, a website designed to promote industry collaboration. As part of the action plan three working groups were created to emphasize formal networks for connecting mentors and mentees, establish more direct channels to access financing and user groups to support technology development.

*Advanced Manufacturing* — Portland’s Advanced Manufacturing Cluster is driven primarily by businesses involved with metals and transportation equipment that utilize high technology tools for the purpose of producing a finished product or part, or for enhancing manufacturing capabilities. Many of the cluster’s companies sell a high percentage of products outside of the region, bringing revenues from those sales back to the regional economy. Notable regional advanced manufacturing companies include: Precision Castparts, Daimler Trucks, ESCO Corporation, Oregon Iron Works and Gunderson Rail Services. PDC is in the process of meeting with small, medium and large manufacturers to develop an industry led cluster action plan and continues to work closely with public and private stakeholders to transition underutilized industrial land back into productive use. The cluster has also been instrumental in enhancing the regional supply chain through the sponsorship of the Northwest Connector, a buyer-supplier database maintained by The Pacific Northwest Defense Coalition. The Connector is designed to build local industry knowledge of regional suppliers, as well as help large firms and government agencies such as wind power firms and the Department of Defense identify suppliers in the region.

*Research & Commercialization* — PDC and the City recently announced a new target cluster — Research and Commercialization (R&C). This cluster acknowledges the increasingly important role of innovation to local economic growth and job creation. The R&C cluster explicitly seeks to improve the commercial relevance of local academic research and optimize technology transfer activity through university-industry-government collaboration. Portland’s long-term economic competitiveness also depends on its ability to expand and diversify exported industry sectors through innovation and the introduction new products and technologies. To support the growth of the R&C cluster PDC and academic and industry stakeholders will focus on 1) developing the physical infrastructure to support research and technology commercialization, 2) attracting innovative firms, researchers and entrepreneurs to the region, 3) capitalizing new ventures, and 4) linking private-sector research and development needs with institutional resources.

## Mid-Columbia Economic Development District

### **Background**

Mid-Columbia Economic Development District (MCEDD) is composed of five counties bordering the Columbia River: Hood River, Wasco, and Sherman counties in Oregon and Skamania and Klickitat counties in Washington. These five counties established MCEDD in 1969. The founding members



realized that the sharing of a common workforce, a common geography and common demographics bound together their economic fates. They believed that joining together would benefit them through better access to economic development loans and grants, pooled technical assistance, marketing, and administrative resources. Most importantly, by joining forces they would bring a regional approach to their economic development efforts.

As the regional economic development entity representing this bi-state region, MCEDD created community asset maps and facilitated a series of public meetings in 2003-2005 to develop cluster strategies. Through these sessions, five target clusters were identified and associated work plans were developed for each cluster. Initially the process was facilitated by MCEDD, but cluster leader teams were quickly formed with a mix of private and public members to move the work plans forward.

### ***Rural Cluster Development Approach***

Five year work plans for industry clusters in the Mid-Columbia region focus on initiatives each group believes are imperative to improving their industry in the region. They all include elements that support expansion of industry networks, improvement of business skills and understanding markets. MCEDD provides technical assistance in the following manners for each cluster:

### ***Gorge Technology Alliance***



The Gorge Technology Alliance (GTA) contracts with MCEDD to provide project management assistance for the organization. In 2009, the GTA Board initiated development of an organizational Sustainability Plan to improve its ability to promote the Gorge's technology business sector. Original research on the growth of the regional tech sector has been compiled into a White

Paper and was followed by development of a financial plan, work plan and marketing materials. MCEDD staff assists the GTA in hosting monthly educational and networking meetings, a quarterly Leading Edge of Technology series, and monthly "geek lunches." MCEDD also provides assistance promoting members and providing research on the tech cluster. MCEDD staff further assists the GTA in supporting a Technology Education Program. The youth portion, developed in partnership with the Columbia Gorge Robotics Club, focuses on providing loaner robotics kits and supported the development of a Gorge robotics program.

### ***Columbia Gorge Bi-State Renewable Energy Zone***



MCEDD worked with its members to establish the Columbia Gorge Bi-State Renewable Energy Zone (CGBREZ). This self-declared zone was created to reduce the region’s dependency on federal subsidies, bring economic vitality to the region, establish a national model for energy self-sufficiency, and provide a model of self-reliance for other rural economies in the 21st Century.

### ***Columbia Gorge Winegrowers Association***



MCEDD provided support to establish the Winegrower’s Association, initially providing marketing and staffing support along with original research to support the industry’s development. With a “World of Wine in 40 miles” this is a growing area for the Mid-Columbia region.

MCEDD supported the Winegrowers Association in achieving its own nonprofit status and they now support their own independent staff.

### ***Columbia Gorge Arts and Culture Alliance***

Arts and Culture was defined as a cluster to support the increasing number of artists and arts and culture organizations located in the Gorge. Through various community and MCEDD supported initiatives, the cluster developed a work plan to focus on education for artists and art-related businesses, networking and joint marketing. The Gorge Artist Open Studios provided much of that engagement and was followed in 2011 with the creation of the Columbia Gorge Arts and Culture Alliance. The Alliance supports joint marketing and networking.

### ***Alternative Healthcare***

This cluster has not formalized or come to fruition in relation to the initial five year work plan defined by industry partners. However, through other community activities, the Gorge Health Connects was formed to support connections between health care providers and the use of electronic records. MCEDD provides staffing services to the organization.

### ***Outcomes and Success***

To date, MCEDD’s work to carry out the five-year cluster work plans have led to a: Tenfold increase in supplier relationships, new spin-off businesses, increased employment and wage levels in cluster businesses, and an increase in the number of businesses located in the region. In several of the clusters, Boards of Directors or another form of defined industry leadership has been established and new members have joined the cluster organization.

## Eugene Regional Prosperity Initiative

### **Background**

With unemployment rates in the double digits and the loss of thousands of jobs in 2009–10 in Eugene / Springfield, the Eugene Area Chamber of Commerce decided to place more emphasis on economic development and job creation efforts. While drafting the Chamber’s 2020 Strategic Plan, the Eugene Chamber leadership established a goal of becoming a more active player in the economic development community. Recognizing a gap that wasn’t being filled by other local economic development organizations or the “Regional Prosperity Economic Development Plan” created by the elected officials of Eugene, Springfield and Lane County, the Chamber decided to launch the Regional Prosperity Initiative (RPI) with a focus on *providing assistance to local, existing companies*. The RPI has three pillars: 1) a professionally lead Business Retention and Expansion (BRE) program, 2) support for 3-5 regional clusters, and 3) programs to develop early stage, entrepreneurial companies and link them with angel investors.

Generous financial support from the Chambers Family Foundation has made this initiative possible. Over the next three years The Chamber intends to allocate nearly \$400,000 to create an additional focus on Chamber-led economic development and job creation efforts that successfully build off regional strengths.

### **Cluster Development Strategy**

The Regional Prosperity Initiative is based on building upon the community’s existing strengths, such as organically grown clusters of companies within the existing business community. The Initiative will identify trends within those clusters and develop action plans for each that are focused on specific solutions to help the industry remain in the area and continue to grow. All of the strategies will be geared toward a focus on job creation and retention.

As the RPI is still in its early stages, the Eugene Chamber is currently working to identify which clusters have the greatest likelihood of working collaboratively to improve Eugene’s economic vitality. One industry that has already been selected is the software production and technology cluster. A forthcoming study of the regional economy and cluster analysis will help determine other priority industries.

As regional challenges differ from industry to industry, the cluster based economic development approach will help the Chamber identify the specific challenges or limitations to growth for each cluster and create the respective action plans to begin addressing these barriers to growth. Through this process the Chamber hopes to be able to tackle issues such as the lack of industrial land supply within the City of Eugene’s Urban Growth Boundary, the lack

of access to commercial financing, the lack of a skilled workforce, and the lack of public awareness about Eugene’s economic engines.

### ***Indicators of Success***

The Eugene Chamber’s 18-month cluster development goals (ending Sept 2012) include:

- Maintaining 3–5 active industry cluster groups;
- Staying involved and deepening the Eugene Area Chamber’s participation in statewide cluster discussions;
- Creating a charter for each of the selected clusters and having an action plan with targeted initiatives for each.

## **Southern Oregon Regional Economic Development, Inc.**

### ***Background***

Southern Oregon Regional Economic Development, Inc. (SOREDI) has been operating as a regional economic development, non-profit agency for 24 years. Born out of collaboration between two counties (Jackson and Josephine), numerous cities, and other agencies, SOREDI has included the ongoing development of strong partnerships in its mission statement. With a strong belief that two or more minds are always better than one, SOREDI looks for collaborative cords in all its business endeavors and nurtures clusters where appropriate.

### ***Cluster Priorities***

In May 2006, SOREDI was part of a multi-agency effort to address workforce development needs within a cluster of heavy-lift helicopter companies based not only in Southern Oregon, but throughout the state. While the original effort around identifying workforce skills and gaps has ebbed and flowed over the past 2–3 years, the heavy lift helicopter cluster members continue to meet quarterly under the facilitation of SOREDI. The facilitation of the Heavy Lift Helicopter Consortium is supported by grants from Business Oregon.

In November 2008, SOREDI also hosted a “Contagious Collaboration Forum”, alongside the Rogue Valley Workforce Development Council, Rogue Community College, Southern Oregon University, and the Job Council, to explore opportunities for a cluster focus in international business, productivity improvement, Internet marketing, and freight logistics. Private sector partners led roundtable discussions in each respective focus area.

The Sustainable Valley Initiative, another SOREDI offshoot, will launch its business accelerator in April 2011 with five high tech start-up companies already committed to be the Accelerator's first clients. SOREDI's award-winning<sup>42</sup> Jefferson Grapevine currently provides a venue for entrepreneurs to network, learn, and attract investors. This effort recently led to the first annual Southern Oregon Angel Conference at which \$150,000 in angel investment funding was awarded. The Jefferson Grapevine and Southern Oregon Angel Conference have focused on investment attraction while the Sustainable Valley Initiative has focused on technology transfer and business mentoring. Another successful cluster approach in workforce development has been demonstrated in the PowerUp Academy, which has addressed the workforce needs of local businesses by provided aggregated training resources at low cost.

One additional strategy, as directed by SOREDI's Business Recruitment and Retention (BRR) Committee is to support and recruit electronic commerce businesses (Jackson County has 22 times the national average of Internet-based companies). Additional clusters under consideration for further development include food manufacturing and software development.

### ***Key Challenges***

SOREDI's greatest challenge is staffing / facilitating the region's existing and emerging clusters due to time constraints and limited funding for such work. With a staff of only six, SOREDI is tasked with accomplishing many other business development concerns, including: managing a business development loan fund, marketing the region, recruiting new companies, and maintaining consistent and effective outreach to the existing traded sector base of companies. In addition, SOREDI serves a territory that is mostly rural which creates difficulties in reaching effective and critical mass in cluster endeavors.

### ***Results***

The Heavy Lift Helicopter Consortium has been highly effective in its effort to join forces with Oregon Emergency Management, the Oregon National Guard, the Oregon Department of Transportation, and the Oregon Department of Forestry to develop emergency response tactics utilizing the State's private assets. Further, the Consortium continues to pursue aggregated training resources for its incumbent workforce, promote helicopter aviation careers jointly through its website portal and high school / community college presentations, and collectively address other concerns that may threaten the economic vitality of this critical Oregon industry. Though the heavy lift helicopter cluster was launched to focus on worker training, the group has evolved to focus on cluster-wide business opportunities and SOREDI's facilitation has

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<sup>42</sup> SOREDI is the recipient of the 2010 NADO Innovation Award for its successful work in creating the Jefferson Grapevine venue for entrepreneurs to network, learn, and attract investors.



fostered the collective sharing of market opportunities. Despite the fact that a few of the heavy lift companies have been engaged in various lawsuits with one another, the cluster businesses seem to realize that by working together they can achieve greater success for their individual companies.

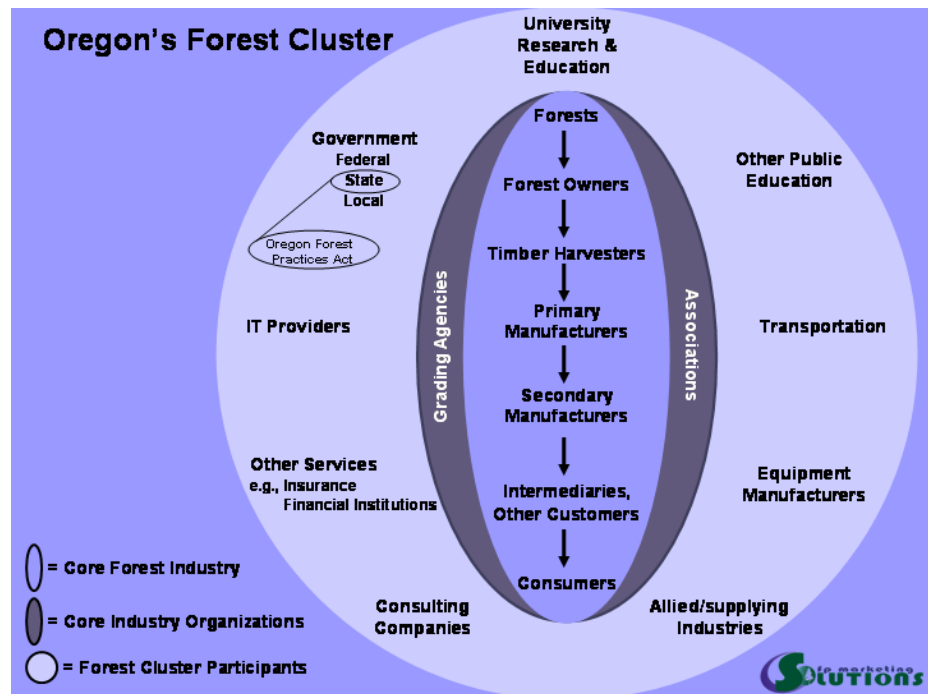
## Appendix IV: Cluster Examples

### Forestry and Wood Products

#### *History and Importance of the Forest Cluster*

The Forestry and Wood Products Cluster is the state’s oldest business cluster. It traces its roots to the territory’s first sawmill at Willamette Falls in 1832, established by Dr. John McLoughlin, named by the Oregon Legislature as the “Father of Oregon.” The cluster’s important institutions have evolved over time as the industry matured. Forestry has been taught at Oregon State University since 1906. The Oregon Department of Forestry was formed in 1911; the Oregon Small Woodlands Association in 1960; the Oregon Forest Industries Council in the 1970s; and the Oregon Forest Resources Institute in 1991.

The forest products value chain includes forests, forest owners, timber harvesters, primary manufacturers, secondary manufacturers, intermediaries and consumers. The relationships between the various participants in the core forest industry value chain create a natural grouping, with each link



in the value chain dependent on the preceding and following links. The forest industry core is supported directly by industry associations, grading agencies, and forest certification organizations, and indirectly by other forest cluster participants, such as state agencies and universities.

The nation's second-most forested state, Oregon is a national and international leader in softwood lumber production, plywood production, forest productivity, timber harvest, logging, forestry research, forestry education and wildland firefighting. In 2009, more than 2,200 firms directly employed an estimated 57,000 people who earned average annual salaries of \$44,000 — about eight percent higher than the statewide average of \$40,700. The forest cluster makes up about 8.5 percent of Oregon's total payroll, including both direct and indirect jobs. Major companies include: Boise Cascade, Campbell Group, Forest Capital Partners, Georgia Pacific, Hampton Affiliates, Hancock Forest Management, International Paper, Longview Timber, Rosboro, Roseburg Forest Products, Plum Creek Timber, Seneca Sawmills, Stimson Lumber, Swanson Group and Weyerhaeuser. Further, the cluster counts on the active participations of many industry associations, nonprofit organizations, and academic partners such as the Built Environment & Sustainable Technologies Center, Institute for Natural Resources, Oregon Wood Innovation Center, OSU College of Forestry, Defenders of Wildlife, Sustainable Northwest, Society of American Foresters and The Nature Conservancy.

In 2005, the Oregon Forest Resources Institute commissioned a study that resulted in the *Oregon Forest Cluster Analysis*. This study broadened the traditionally-held view of the forest sector beyond businesses that directly support the forest products industry and identified eight new focus areas including forest products innovation and biomass energy.

Later that year, the Oregon Legislature passed Senate Bill 1072, which led to the formation of the Board of Forestry's Federal Forestlands Advisory Committee and the Forest Biomass Working Group. These two groups identified policy initiatives that should be pursued at the local, state and federal levels to improve forest health, revive rural economies and meet social needs. A number of plans developed by the core cluster partners have since followed to promote economic development focused on three key areas: federal forest restoration, forest cluster vitality and forestry workforce.

### ***Key Initiatives and Strategies***

By working together as a cluster, the cluster was able to identify the following key priorities:

- Restore Oregon federal forests to historic standards of forest health by encouraging active management of federal forests, especially by thinning forests and reducing fuels on dry-side forests located in eastern and southern Oregon.
- Encourage and support local collaborative efforts. Fully use Healthy Forest Restoration Act authority to fund federal forest restoration work and provide wood fiber to local mills.
- Promote laws and policies that support the use of woody biomass for energy.

- Promote market opportunities such as an "Oregon Wood First" initiative for public buildings.
- Seek increased funding for integrated research programs in technologies and higher value wood products.
- Strengthen the relationship between Oregon's forestry and wood products cluster and the green building cluster.
- Expand outreach programs to teachers, students and parents that promote career opportunities and offer forestry education programs and skills training.

### ***Progress to Date***

Preliminary recommendations of the Forest Cluster Working Group encouraged the Governor and his staff to take the lead in funding and implementing the recommendations of the Federal Forestlands Advisory Committee. In addition, local community groups, environmental organizations and forest companies are working directly with the Forest Service to plan restoration treatments, and share their local knowledge and expertise. The Federal Forestlands Advisory Committee Implementation Working Group, comprising public agencies, conservation groups and private industry, is supporting these efforts.

The 2011 Oregon legislature introduced 34 bills dealing with biomass, and Governor Kitzhaber paid it special attention, focusing on the benefits of woody biomass for creating jobs, managing forests and investing in renewable energy.

The Oregon Congressional delegation is leading a number of federal legislative initiatives to increase active management of Oregon's federal forestlands and produce needed raw materials for the at-risk logging and manufacturing infrastructure.

OFRI's Careers in Forestry program and the cluster's efforts for National Engineers Month program annually reaches about 4,250 students through classroom careers presentations.

The Oregon Wood First legislation received a hearing by the 2011 Oregon Legislature, but the bill did not make it out of committee.

A Governor's Strategic Training Fund grant was used to support a conference titled: *Structure Oregon 2011*, held June 1 in Portland, Oregon, with the goal of educating the forest products and green building communities about each other's needs.

A Wood Solutions Fair was held in Portland in March 2012 to acquaint architects, design engineers and builders with the potential of using wood-framed construction for low to mid-rise commercial and multi-family residential buildings. The all-day event featured a variety of classes and exhibits and was attended by more than 400 participants.

The Oregon Forest Resources Institute is conducting a Forestry and Wood Products Manufacturing Sector — Economic Assessment to provide a quantitative and qualitative assessment of the current contributions of Oregon’s forest sector. The assessment, due in Summer 2012, will update the 2005 Oregon Forest Cluster Analysis, refine strategies to strengthen the forest sector and identify policies and actions that can leverage successful implementation of the recommended strategies.

The Federal Forest Advisory Committee Implementation Working Group, acting through the Oregon Department of Energy, is commissioning a National Forest Health Restoration Economic Assessment to identify the economic benefits of significantly increasing the acres of dry side national forests being treated for forest health and fire resiliency each year. The results of the study will be used to develop funding streams to accelerate restoration of federal forests.

### ***Success Story — The Oregon Wood Innovation Center***

One of the success stories of Oregon’s forestry and wood products cluster is the formation of the Oregon Wood Innovation Center in 2006, based at the Oregon State University College of Forestry in Corvallis. OWIC is a center for research, technology transfer and information about the forestry and wood products cluster. Two recent accomplishments highlight the Center’s important work.

- With a grant from the Oregon Forest Resources Institute, the Center developed the web-based Oregon Forest Industry Directory (OFID) to connect buyers and sellers of Oregon forest products and services. OFID has become a comprehensive directory and virtual marketplace containing hundreds of entries. Web-based hits to OFIC doubled between 2008 and 2009, from 2.5 million to over 5 million per year. Feedback from users has been excellent, with sellers recording increases in both orders and volume, e.g., “I’ve been listed in the directory for quite some time now and have experienced at least a 15 percent increase in business due to the directory.”
- In 2009–10, Dr. Chris Knowles and colleagues from the University of Oregon and Portland State University joined forces to conduct research and outreach related to green building. With funding from [Oregon BEST](#) (the Built Environment and Sustainable Technologies signature research center) and the Oregon Forest Resources Institute, the team identified informational and material gaps that may present barriers to constructing greener structural systems and incorporated these findings into the development of a green building materials curriculum for graduate and continuing professional education.
- The Green Building Materials Gap Analysis project will be continued in 2012–13 with funding from the Oregon Forest Resources Institute by interviewing mainstream building

designers in Oregon who are using wood-framed construction for low to mid-rise commercial and multi-family residential buildings.

### ***Tracking***

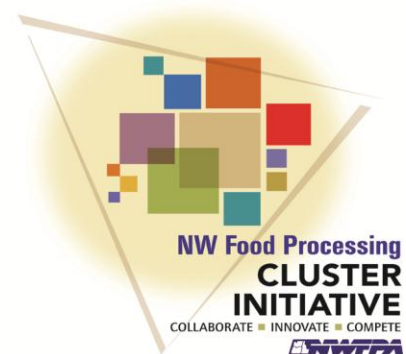
The Forest Cluster Economic Development Core Team is tracking progress in jobs, income, timber harvest, lumber production and other metrics. In addition, state agency staff will use Oregon Progress Board benchmarks and Oregon Indicators of Sustainable Forest Management to measure cluster progress. The Oregon Forest Cluster is an important mainstay of Oregon's economy. It has been through a tough time during the recent recession, but is expected to recover as the housing market starts to normalize.

### **Food Processing**

The food processing industry has been a cornerstone of the Northwest regional economy for over 100 years. It is the third largest manufacturing sector and employs directly and indirectly more than 280,000 people, has a regional impact of \$42.5 billion and a payroll of \$2.4 billion. Established in 1914, Northwest Food Processors Association (NWFPA) is a trade association representing about 80 food processors in Idaho, Oregon and Washington and about 350 products and services suppliers to the food processing industry. NWFPA's mission is to serve as an advocate for the common interests of its members and a resource to enhance the industry's competitive capabilities. NWFPA is comprised of 14 "local clusters" in 250,000 square miles that are "bundled" into a single Northwest Food Processing Cluster.

### ***History of the Food Processing Cluster Initiative***

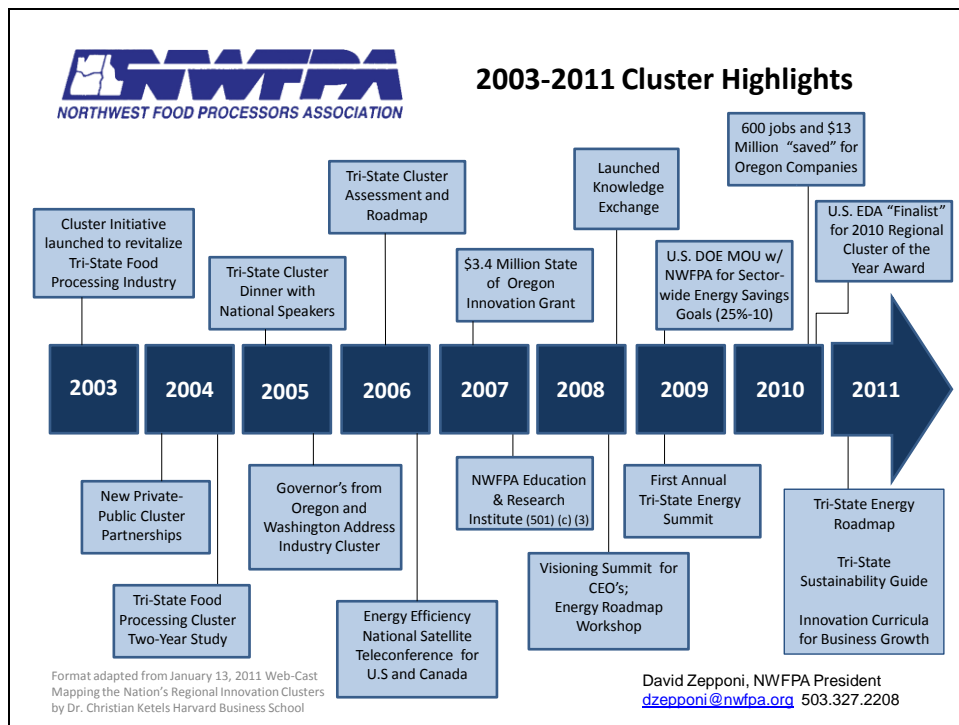
Early in the last decade, food processors faced external challenges such as a global marketplace, changes in trade practices, increasing costs of energy, commodities, transportation, labor and regulatory compliance. Several food processors closed, some were acquired, and others left the region. The NWFPA President was convinced that the food processing sector could be repositioned to compete globally if it embraced the concept of local competitors working collectively along with cluster partners toward this end. A few industry leaders were persuaded and a Northwest Competitiveness Task Force of food processors was created to develop a cluster initiative and a strategic plan to reposition the food processing industry. In 2003, the NWFPA Board of Directors authorized the launch of the NWFPA Cluster Initiative.



## Staffing & Funding

As a starting point, NWFPA needed an assessment of the cluster's strengths and weaknesses from which it could derive a prioritized set of actions and initiatives to build on existing assets and improve the industry's competitive position. In 2004, NWFPA staff embarked on a year-long search for funding for the cluster assessment. In 2005, NWFPA formed an unprecedented partnership with the federal government, the three Northwest states and regional and local agencies to participate in the preparation of the cluster assessment and strategic plan. Each partner contributed funding and staff time and committed to playing a role in the implementation of the plan.

To begin the necessary dialogue about the industry's future, what it should look like and how it should get there, in 2006, NWFPA organized a special cluster initiative forum of NWFPA members and cluster partners. NWFPA's cluster assessment consultant presented the preliminary research findings to more than 200 food processors, federal, state and regional agencies, educational institutions, and industry suppliers. All attendees participated in the forum discussion and many provided written comments and suggestions. The cluster initiative forum was a significant event in that it engaged the cluster and solidified support around NWFPA's effort and implementation of a strategic plan: the existing cluster was firmly established.



### **Key Initiatives and Strategies**

To build on the interest and dialogue generated at the forum, the Competitiveness Task Force formed the Cluster Assessment Strategy Team (CAST) comprised of private and public sector representatives to work with the cluster consultant to define the priority strategic issues and develop a roadmap focused on these issues to guide future actions. These priorities were developed to complement ongoing NWFPA activities in government affairs, energy, environment, food safety and human resources.

The five strategic issues selected by CAST were:

- Increase the Capacity of the Northwest’s Innovation Infrastructure
- Improve Transportation Infrastructure and Services
- Develop a Robust Pipeline of Qualified Workers
- Form Strategic Alliances to Improve Food Processing Industry’s Competitiveness
- Increase the Industry’s Operational Productivity

In October 2006, the 500-page *Northwest Food Processing Cluster Assessment and Roadmap* was published. All participants in the NWFPA Cluster Initiative received copies of the document. The Cluster Assessment document includes assessments and recommendations for each of the states of Idaho, Oregon and Washington as well as a Portland Food Processing Cluster assessment prepared in partnership with the Portland Development Commission.



As an outgrowth of the Cluster Initiative, NWFPA set its “Big Hairy Audacious Goal”: *To position the Northwest food processing industry to compete globally through increased innovation and productivity.* An Innovation Productivity Center was established to continue to engage the cluster to leverage and share knowledge and resources to enhance innovation and productivity.

In 2005, Oregon’s Governor and its legislature created the Oregon Innovation Council to develop an innovation-based strategy to enhance Oregon’s global competitiveness. NWFPA supported this effort as its goals clearly aligned with NWFPA’s strategic issues and goal. In 2007 and 2009, NWFPA received funding to launch the Innovation Productivity Center (IPC) and conduct outreach, research, innovation framework development, and knowledge sharing and trainings. IPC work to date has resulted in \$15 million in operational savings for Oregon food

processors, education and training for thousands of cluster member employees, creation of a replicable model innovation program for the cluster as well as for individual companies, an assessment of the economic and environmental benefits of collaborative transportation planning, and work with Pacific Northwest National Lab to develop a rapid test for Listeria detection in food. Strategic alliances with cluster partners brought additional projects: a food traceability pilot in collaboration with OSU's Food Innovation Center, launch of a sustainability initiative with funding from the agriculture departments of Idaho and Oregon, collaboration with Oregon Manufacturing Extension Partnership to bring lean training to an Oregon plant, and development of a program called Heart of the Workforce with De Paul Industries to train and place under-served workers.

### ***Success Story: NWFPA Energy Efficiency Initiative***

The NWFPA Energy Efficiency Initiative provides one successful and nationally-recognized example of how the cluster model has been applied to benefit both the industry and the environment.

NWFPA and its key Cluster Partner, the Northwest Energy Efficiency Alliance (NEEA), have developed and are implementing an innovative process and program to achieve high levels of energy efficiency throughout the regional food processing industry. NWFPA will be used as a model for other Northwest industries and are currently working with NEEA to assist the Oregon Association of Nurseries in their energy efficiency efforts.

NWFPA's energy initiative developed in parallel with the NWFPA Cluster Initiative. One of the keys to the food processing industry's ability to remain competitive will be its ability to use energy efficiently. NWFPA and its initial partners, NEEA and the U.S. Department of Energy, recognized that improving industrial energy efficiency was one of the most effective ways to manage energy costs, reduce greenhouse gas emissions, and at the same time increase productivity and economic growth. NWFPA also realized that a goal and roadmap were needed to catalyze the entire industry's movement in this direction. With energy as a "proxy" for competitive advantage and industry health and viability, NWFPA member executives gathered at the NWFPA Energy Vision Workshop. This first step helped to gain ownership and support for this effort from NWFPA leadership. The outcome was a vision for a sustainable energy strategy and a goal to reduce the industry's energy intensity by 25% in 10 years and by 50% in 20 years. The vision and goal were formally adopted by the NWFPA board in January 2009. NWFPA became the first industry group in the U.S. to voluntarily commit to such an aggressive energy intensity reduction goal.

The next step was to gain member-wide ownership and support and participation by Cluster Partners. An Energy Roadmap Workshop was held, which included NWFPA members as well as



the Cluster's Partners — NEEA, Energy Trust of Oregon, Bonneville Power Administration, energy utilities, the state energy offices of Oregon, Washington and Idaho, U.S. Department of Energy, energy service providers, consultants and trade allies. Over 500 energy efficiency ideas surfaced at the Workshop that contributed to an Energy Roadmap to guide activities to achieve the energy intensity goal.

The third step was a public and formal recognition of the importance of the Cluster in this effort. At the first Northwest Industrial Energy Efficiency Summit in February 2009, NWFPA, U.S. Department of Energy, Bonneville Power Administration, Pacific Northwest National Lab and Idaho National Lab signed a Memorandum of Understanding pledging their support and commitment to help NWFPA achieve its goal.

The Goal and Roadmap are important because they unite NWFPA members and focus NWFPA efforts, but they also provide a framework for Cluster Partner participation in these efforts, enhance funding opportunities, bring recognition to the industry, influence public policy, as well as reduce energy use, reduce greenhouse gas emissions and enhance members' competitiveness. Recent NWFPA analysis shows that since adopting the member-wide goal in 2009 to reduce energy intensity by 25% in 10 years, NWFPA members have reduced member-wide energy intensity by 5% (based on a consistent sample size of 44 food processing plants). This means NWFPA is right on track to achieve the 25% goal. Looking back to 2006, NWFPA members have reduced member-wide energy intensity by 15% (based on a consistent sample of 36 food processing plants). Now with 102 food processing facilities actively participating in the NWFPA Energy Baseline Project, member-wide energy intensity reduction ranges between 9 and 13% (based on a non-uniform sample of 85 food processing facilities). Observations of high performing individual companies' energy intensity have shown improvements ranging from 7% to 32% since 2006.

NWFPA and its partners are collaborating to implement the Roadmap and achieve the Goal. NEEA and the U.S. Department of Energy have provided funding for this effort. In addition, the region's electric utilities, Energy Trust of Oregon, Bonneville Power Administration, WSU Extension Energy Program and a host of other organizations are providing resources for food processors to achieve energy savings at their plants.

The recent Innovations in Cooling Efficiency Symposium demonstrated how NWFPA's Innovation Program and Energy Program could intersect. At this symposium, participants brainstormed on innovations in refrigeration technology and how to commercialize emerging technologies. Resulting near-term activities will include collaborations to demonstrate several new technologies in Northwest food processing facilities.

The food processing industry cluster has also reached out to assist other industries in the Pacific Northwest. In collaboration with NEEA, Bonneville Power Administration, Energy Trust of Oregon and WSU Extension Energy Program, NWFPA produces an annual Northwest Industrial Energy Efficiency Summit. This Summit brings all industries together to foster networking, knowledge transfer, support and assistance to promote industrial energy efficiency and enhance the competitiveness of all Northwest industries. The NWFPA also shared their learnings from using a cluster approach with all the cluster leaders who participate in the Oregon Cluster Network on March 31, 2011.

### ***Key Lessons***

The following elements are required for success:

- A champion and/or leadership team that recognizes and is passionate about the value of working within the cluster.
- Buy-in from the industry leaders in the cluster to support the effort.
- An understanding of the strengths and weaknesses of the cluster.
- A goal around which to unite the cluster and a collaborative strategy (roadmap) to continue cluster efforts to achieve the goal.
- Infrastructure for supporting ongoing cluster activities (i.e., staff )
- Funding to implement the strategy and roadmap actions.
- Continuous outreach and communications with cluster partners.

### **Defense**

#### ***Background***

The Pacific Northwest Defense Coalition (PNDC) was founded in Portland, Oregon, in 2005 on the premise that the region's small technology and manufacturing businesses had the innovation, the drive, and vision required to succeed and grow in the Federal procurement system — more specifically, the defense industry.

Initially PNDC's focus was to assist Oregon and Southwest Washington firms in understanding the Federal procurement process. Wading through paperwork, correctly interpreting federal regulations, and comprehending various other solicitation requirements often deterred small businesses from aggressively pursuing government opportunities. By offering assistance in the form of informational seminars and personal instruction, PNDC set the foundation for its initial members to start winning government contracts, and their success didn't go unnoticed.

### ***Dynamics of Collaboration and Competition***

Teaming businesses to compete for government contracts is a PNDC core strategy. PNDC uniquely understands the complexities involved when working on all levels of federal procurement and has successfully helped multitudes of small business to team up in pursuit and award of federal contracts.

An example of such a solution comes in the form of the PNDC's web-based business-to-business development tool known as the Northwest Connectory ([www.nwconnectory.com](http://www.nwconnectory.com)). PNDC members can add their company profile, including their unique capabilities, products, and services to this online network. The Northwest Network serves three key functions for PNDC members:

- It links PNDC members to opportunities around the region via a robust, searchable, online “buyer-supplier” database that contains detailed, verified profiles of more than 2,500 Pacific Northwest companies across all industries.
- It can identify potential partners for teaming opportunities; once aligned, these businesses increase their effectiveness in meeting government needs
- The Northwest Network is integrated into the broader Connectory database ([www.connectory.com](http://www.connectory.com)), a proven business development tool that has been successfully deployed in Southern California to promote companies and foster business-to-business interaction.

PNDC recognizes that its regional workforce differs from others around the country. Maximizing the relationship with Connectory.com leverages PNDC member's distinctive attributes and creates functional relationships that make and retain government customers.

### ***Involvement of Cluster Participants***

The main goal of PNDC is to improve the defense and security contracting environment in the Pacific Northwest. In order to accomplish these goals, PNDC focuses on three main activities designed to get cluster participants engaged:

*Networking:* PNDC facilitates a wide range of meetings throughout the year for members to get engaged. These include quarterly happy hours at local breweries designed for marketing and sales professionals. Several times a year, PNDC hosts member meetings at a member company. These meetings always include a briefing by the executive team and a tour of the company facilities. Finally, PNDC hosts a number of specialized networking events throughout the year, including the Annual Meeting, a Defense Symposium, and several events directed at senior executives from member companies.

*Training:* Training and education are an important component of any trade association. As a horizontally oriented cluster, PNDC's members all make very different products, but are selling to a customer that has similar requirements across all product categories. In an average year, PNDC will host 10–12 workshops on a wide variety of topics, and will train between 300 and 500 members annually. In addition to workshops, PNDC also delivers in-house training to paid members in the area of Export Control compliance. This is a very hot topic in contracting circles, and obtaining training for small businesses can be extremely difficult. By working together, many PNDC members find a benefit in this training at a fraction of the market cost.

*Advocacy:* While PNDC does not engage in any direct lobbying, the members are provided with a number of opportunities throughout the year to engage with federal, state and local officials at PNDC meetings. In addition, PNDC is actively involved on Capitol Hill, and participates in a number of major trade shows throughout the year.

### ***Growth of Cluster Membership***

In 2005, PNDC had 15 members. In the five years that have followed PNDC's membership has grown to more than 160 companies, has crossed four state lines and has created the need for a second PNDC office to open in Seattle, Washington.

In addition to its extraordinary growth in membership, PNDC can also statistically demonstrate its role in influencing the influx of Federal dollars into the Pacific Northwest economy. In the 10 years prior to the establishment of PNDC, Oregon ranked 49th in federal procurement dollars per capita. In the six years since its conception, Oregon has moved to 41 in the rankings. This is no small task for any State. And for those businesses making the difference in this statistic, it's undeniable that PNDC has played a vital role in moving Oregon forward in federal procurement.

PNDC continues to develop solutions that meet and exceed the challenges set forth by the federal procurement system. These programs are designed and implemented in a way that is reflective of the innovative technologies based in the Pacific Northwest.

## **Appendix V: Metrics for Evaluating Oregon's Economic Performance**

### **Oregon Benchmarks**

Until its funding was cut in 2009 due to severe budget reductions in Oregon state government, the Oregon Progress Board collected a set of indicators to measure the state's economic & social performance year over year. Known as the Oregon Benchmarks, the set of indicators tracked closely with the Oregon Shines goals of "Quality Jobs for all Oregonians," "Engaged, Caring, and Safe Communities," and "Healthy, Sustainable Surroundings." Broken down into the seven benchmark categories of Economy, Education, Civic Engagement, Social Support, Public

Safety, Built Environment, and Natural Environment, the Benchmarks included indicators such as GDP per capita, cost of doing business, educational attainment, poverty and homelessness, etc. Today, these indicators are updated by the Secretary of State and the Department of Administrative Services hosts the Progress Board's web content.<sup>43</sup>

### **Oregon Innovation Index**

The annual Oregon Innovation Index was created to measure the state's innovation economy and identify opportunities for enhancing competitiveness. It is a key yardstick used by the Oregon Business Development Department ("Business Oregon") to track the state's success in building an innovation-based economy.

Business Oregon and the Oregon Innovation Council (Oregon InC) identified key factors necessary for a healthy innovation economy, including: public-private partnerships for research and development; ready access to capital; statewide entrepreneurial networks, and targeted investments in emerging industries where Oregon has a global competitive advantage.

The first Innovation Index, published in 2004, evaluated nine indicators to track Oregon's progress. It was updated and expanded in 2007 to include 20 indicators to ensure that each stage of the innovation process, the expected outcomes and the environment that leads to innovation were being measured.<sup>44</sup> The Index tracks Oregon's performance over time on key measures of innovation including invention, translation, commercialization, economic prosperity and innovative business climate.

### **Business Oregon's Internal Metrics of Success**

Organizations supporting cluster development also have internal metrics to evaluate success.

For example, each year the Oregon Business Development Department (Business Oregon) reports its results to the legislature in an annual report. When reporting to the Legislative Assembly, Business Oregon measures the performance and success of its programs by ten key performance measures (KPMs). Though they are not specifically geared toward evaluating the results of the cluster-based approach to economic development, the KPMs cover the work of the Business, Innovation and Trade Division to create and retain jobs for Oregonians, as well as the work of the Infrastructure Finance Authority to create healthy communities where jobs can be located. Among the KPMs tracked are jobs created, jobs retained, state income tax revenue, export sales, small business survival rate, industrial site certification, customer satisfaction, and

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<sup>43</sup> <http://benchmarks.oregon.gov/>

<sup>44</sup> See <http://www.oregon4biz.com/Oregon-by-the-numbers/2009-Oregon-Innovation-Index/>.

infrastructure planning and construction.<sup>45</sup> Through these indicators, Business Oregon demonstrates the return on investment of public funds for economic development.

Additionally, Oregon InC created an Audit & Accountability Committee comprised of private sector leaders to track the progress of its six cluster initiatives, provide technical assistance and make changes if necessary — or stop funding altogether if it was determined an initiative was not making satisfactory progress toward its biennial goals. Four Oregon legislators are also members of the committee, which meets every quarter to review the results of an audit conducted by Business Oregon staff.

Ultimately, like any private sector business, initiatives continue only as long as they can show they are operating at a “profit” for the state and are meeting contractual goals for jobs creation, company formation and federal and private grants. As initiatives aimed at making Oregon industries more competitive and sustainable mature they are expected to “graduate” to economic independence; Oregon InC’s research centers are expected to reduce the role of state funding needed as they mature.

## Appendix VI: Best Practices for Cluster Development

### ***Identification & Selection of Clusters***

- 1) Define clusters through an asset-based approach, built on strong industries, local growth goals, and organizational capacity.
  - There is no such thing as a one-size-fits-all approach to job creation and scaling whole new industries. Regional strengths vary, as do regional opportunities. Build the region’s economic development strategy based on its native strengths and opportunities, incorporating the region’s natural resource base, local governments’ technical capacity, existing industry/workforce base, level of private sector engagement, and nearby university program or research strengths.
- 2) Provide tools and incentives to help regions identify and leverage regional assets that are *existing, unique and ripe* — and should at all costs avoid the “trend du jour” approach to cluster development.
  - Generate some quick wins in order to build the case for cluster development both publicly and politically. Identify places where there is already momentum and leadership around a scalable model and invest in those as “proof of concept.” Don’t create incentives to start from scratch.

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<sup>45</sup> Annual Report Fiscal Year 2010. Business Oregon.

- 3) Use cluster development as a tool for economic development in both rural and urban areas.
  - Help diversify a region’s economic base, regardless of the region’s geographic setting.
- 4) Establish criteria that will surface “ripe” efforts and keep cluster development project outcomes in line with goals.
  - Suggested criteria include: number of high wage jobs that will be created or retained, location of new jobs (i.e., in a disadvantaged area), size of businesses that will be affected, influence on local companies or supply chain materials based in the region (local content sourcing), ability to link cluster development to local on-the-job training, skill development, community college, labor training, or higher education programs, link between economic development and energy or environmental goals, likelihood of promoting significant innovation in processes, products, models, or partnerships.

### ***Communications***

- 1) Communicate early with stakeholders.
  - Identify stakeholders (Citizens, companies, communities and regional elected officials, etc.) and help them engage with and “own” the narrative.
- 2) Communicate clearly and regularly.
  - Use terms that all people understand and can relate to, such as “collaboration,” “competitiveness” and “living-wage jobs.”
  - Make sure to define new or complex terms (i.e., “Clusters,” “innovation”)
- 3) Develop a simple story to convey a sophisticated strategy: It’s all about competitiveness and jobs that provide living wages.
  - Develop and communicate an effective narrative about what it will take to create a robust economy, and the role of the government in encouraging locally-led innovation and network development.

### ***Facilitation of Cluster Development***

- 1) Develop a clear value proposition and add value for participants.
  - Think about what participants might be thinking when they ask themselves, “What’s in it for me?”
- 2) Use third-party facilitation.
  - Third-party facilitation with a proven record of trustworthiness and integrity can help highly competitive companies feel more comfortable with their participation.

- Public partners can offer a neutral convener for competing businesses cooperating through the cluster.
- 3) Identify and cultivate private leadership to lead self-sustaining cluster activity.
    - Government cannot lead alone; it must be a key partner and catalyst with the private sector. Deep private sector engagement is critical to sustained success, as well as to strengthen public perception and support for these efforts.
    - Strong industry leaders are necessary for strong clusters — The glue that holds clusters together is active private sector leadership and initiative. Even clusters with common interests require entrepreneurial leadership. This leadership does not necessarily have to come from large companies, but must command the respect of the industry.
    - While public sector participation is important to bringing needed services to bear, successful cluster efforts involve highly motivated private sector players.
  - 4) Encourage competition and collaboration.
    - Don't settle for any kind of collaboration; encourage world-class collaboration. Base participation on competitive merit.
    - Don't predetermine the opportunities for collaboration or end goals. Let the process of convening the cluster determine the joint agenda of the cluster.
    - Don't assume that competing companies can't find common ground for the good of their industry.
  - 5) Identify catalytic initiatives that rally industry representatives.
    - Industry-defined initiatives should bring together firms that would not otherwise be connected. Initiatives should be public-private collaborative efforts that focus on increasing the competitiveness of local firms and further the region's ability to innovate.
    - Identify motivated champions — the right leadership is critical.
  - 6) Look for synergies that create opportunities in a holistic way.
    - For instance, a program that helps the construction industry transition to using on-site technologies for renewable energy generation, such as solar panels, can also impact workforce development programs at community colleges. Such a shift would require also teaching the local workforce the new skills required to service the solar panels, as well as new types of investment programs, policies, etc.

### ***Cluster Initiative Development***

- 1) Develop initiatives that provide access to markets of scale.



- Established firms are likely to see little value in meetings without a direct connection to new revenues. Engage existing or established firms in cluster efforts by demonstrating that the cluster working group can provide them with access to revenue opportunities with customers or markets of sufficient size to justify investments in new processes or equipment.
  - Emerging firms view participation in cluster activities as a potential opportunity to receive support and establish connections that will help their business –Expect greater participation from young firms and entrepreneurs who are seeking new connections and market opportunities, as they are far more willing to engage in cluster activities than established firms.
- 2) Consider opportunities to use the region as a test bed and demonstration of new products and technology.
- Companies introducing new products seek test markets with willing and discriminating customers and a history of receptivity to new technologies. In addition, companies seek to introduce new products in markets that will provide exposure to the product introduction. For example, Portland has developed this reputation in the field of clean energy and sustainability.
- 3) Maximize the promotional value of cluster activity.
- Cluster organizing has significant value in raising the profile of local industries. Use the opportunity to broadcast industry challenges or successes.
  - Leverage the cluster in recruitment efforts: Companies considering relocation or expansion often view cluster activity as evidence of a critical mass of activity within an industry.

### ***Sustaining Cluster Initiatives***

- 1) Consider the cluster’s sustainability and support infrastructure from the beginning.
- Be patient: clusters can take many years to form and demonstrate the value of industry-wide collaboration and strategic thinking.
  - Long-term support is necessary for a strong industry cluster. Think about the life of the cluster beyond the first few meetings and which organizations will be best equipped to convene and manage the cluster as individual initiatives evolve.
- 2) Collaborate with industry associations.
- Establish public-private partnerships by working with existing industry groups. Industry associations that focus on networking, mentoring and identifying revenue opportunities for members serve as effective shortcuts in the cluster organizing process.

3) Obtain diversified capital and flexible funding.

- No single source of capital is enough to achieve economic transformation. In an era of persistent government deficits, public funding will need to be limited to serve such functions as early stage funding and to support critical infrastructure, such as workforce development, R&D and technology transfer.
- Flexible funding is needed to cut across program silos and catalyze regions to identify and build on their unique competitive advantages.

***Tracking & Measurement***

1) Set specific, measurable targets — begin with the end in mind.

2) Build in ongoing transparency and accountability and make meaningful course corrections as necessary to achieve tangible results.

- Develop a line-of-sight to industry — both “backbone” industries as well as high-tech/emerging industries.
- Include an ongoing audit process to provide accountability and allow for adjustments as initiatives progress — opportunities to make meaningful midstream corrections rather than just an upfront solicitation, static progress reports, and evaluation at the end.
- Engage the private sector at all stages of the project (planning, implementation, evaluation). Aim to cultivate a venture capital model of leadership engagement — recruit the right management team or oversight committee and keep them engaged by allowing them to oversee progress and make meaningful course corrections.

