

OREGON BUSINESS PLAN ECONOMIC INNOVATION INITIATIVE

For Discussion at the 7th Annual Leadership Summit

RECOMMENDATIONS

In order to facilitate the commercialization of innovative research, create new businesses, help retain existing jobs, ensure opportunities for both rural and urban communities, and plant the seeds that grow into the next generation of family wage jobs for our state, Oregon should:

1. Invest in established and emerging industries
 - Further Oregon's national leadership in developing clean energy from ocean waves through the Oregon Wave Energy Trust
 - Create millions in annual savings for food processors by streamlining production and reducing costs
2. Invest in three Signature Research Centers that increase researchers' access to vital funding, help spin off new companies and build critical research infrastructure statewide
 - ONAMI - expanding "green" nanoscience and renewable energy opportunities
 - OTRADI - commercializing new methods to fight infectious diseases
 - BEST - growing sustainable and bio-based businesses and recruiting clean tech firms to Oregon
3. Enhance Oregon's ability to innovate
 - Streamline statewide university-commercial tech transfer
 - Leverage capital to increase business formation
 - Support the University Venture Development Fund

The Vision We Are Trying To Accomplish

This is the vision the Oregon Innovation Council (Oregon InC) has embraced since it was created by the Governor and Legislature in 2005:

- Increase wages for Oregon workers
- Create new, high-quality jobs for Oregon communities
- Cultivate a stronger research base capable of enabling innovation
- Increase the availability of venture, seed, and private and public capital for Oregon entrepreneurs
- Increase high-value exports
- Grow and sustain high-wage jobs in the state's rural areas, linked to key sectors
- Enhance Oregon's reputation as a global leader in emerging industries including nanoscience, renewable energy, and bio-based products and sustainable technologies
- Make innovation the job of every Oregonian

While the state's first responsibility must be to look after the basic needs of every citizen, the Oregon Business Plan believes that it also must create the future opportunities that will allow Oregon to emerge from this downturn stronger, more diversified, and in a strong position to remain a national leader in the innovation economy. Even in tough times, we can't risk Oregon falling behind.

Where We Stand Today

The results of Oregon InC's inaugural 2007 Oregon Innovation Plan show how those ambitious goals can be reached.

The Plan represented hundreds of hours donated by over 50 senior executives, university leaders, venture capitalists, and legislators, who sought to create a sort of innovation ecosystem. With support from the Oregon Economic and Community Development Department (OECDD), Oregon InC tackled the key roadblocks to building an innovation economy: difficulty identifying and agreeing upon innovation opportunities; a lack of capital investment; inadequate funding of university research, and an incomplete understanding among Oregonians about the role and importance of innovation to growing our economy.

The Plan, with strong support from Governor Ted Kulongoski and a \$28.2 million appropriation from the Legislature, supported seven initiatives to make existing industries more competitive globally; support innovative research into clean energy, and create three Signature Research Centers (SRC) that would leverage research dollars, help commercialize new discoveries and spin-off new companies that create and keep living wage jobs.

In the short time since the Plan was launched, the synergy it created has:

- Attracted \$23.7 million in new federal grants and contributions to the state
- Leveraged \$36.7 million in industry resources (cash, staff, equipment, facilities and other support)
- Launched 10 new companies – all spun out of research, development and commercialization efforts
- Provided direct product and market development support to 27 seafood businesses employing nearly 200 Oregonians.
- Brought Finavera Renewables Ocean Energy headquarters to Portland, creating five new jobs and investing over \$2 million in research and technology
- Located Ocean Power Technologies' first commercial scale projects in Oregon, with plans for a \$50 million investment in research and project development in Reedsport and in Coos Bay
- Helped researchers identify over 50 novel chemicals for possible use in fighting infectious diseases, including malaria, staph bacteria, fungal infections, and food poisoning caused by E.coli bacteria

In October, an independent study of the Oregon Nanoscience and Microtechnologies Institute (ONAMI), the pioneering SRC that is a national leader in the collaboration between private industry and the state's universities in "green" nanotechnology and energy generation, concluded that ONAMI would create as many as 608 new jobs in the next two years, and as many as 1,363 by 2013.

And that was a conservative estimate.

According to the report:

- Oregon's \$2.5 million investment in matching funds for competitively awarded grants alone has generated a six to one return, bringing in \$15.2 million in federal grants since 2006
- 10 spin-off companies have been launched or critically enabled by ONAMI funding
- \$77 million in cash inflows to the state likely would not have occurred had ONAMI not been created
- ONAMI's "shared facilities" model, which allows the state's research universities and industry to avoid duplicating costly infrastructure resources, permitted Oregon's businesses to keep research activity in the state that otherwise would have been contracted out of state

Lessons Learned

These successes have come with important lessons that are informing the Innovation Plan that Oregon InC is submitting to the 2009-11 Legislature.

First, true innovation takes time. Most innovations are the result of many small discoveries over time, rather than a single “Eureka!” moment. HemCon Medical Technologies, for example, was founded in 2001 – with funding from the US Army – as it launched the HemCon© Bandage, a breakthrough life-saving technology that employs chitosan to promote blood-clotting in cases of severe arterial bleeding common in combat situations. (Chitosan is a derivative of a *chitin*, a polymer found on the exoskeletons of shellfish.)

The firm’s products have penetrated accident, trauma and first-responder units, medical and dental offices, and even over-the-counter markets. Today, HemCon Technologies is a world leader in chitosan research and development, and has won numerous industry awards and accolades. But even this “meteoric” rise took seven years, a great deal of hard work - and patience.

Second, as with any investment strategy, diversification is critical to a balanced portfolio. The initiatives that Oregon InC has chosen are:

- *Balanced across different time horizons.* Investments focused on improving how existing firms in key industries work are likely to result in a steady stream of jobs created or retained, and incremental industry growth today, and occasional high-value breakthroughs in the future. Investments focused on Signature Research Centers are likely to generate matched funds and patent applications in the short-term, with new technologies, new firms, and new jobs created over a longer period of time as new research is commercialized.
- *Balanced between existing industries and new ideas.* That means investing in ideas that help Oregon’s current industries (e.g., manufacturing) as well as those likely to seed new industries with the potential to make the state more competitive in the future (e.g., sustainable technologies).
- *Balanced across the state’s diverse communities.* While Oregon’s population is concentrated along the I-5 corridor, its economic and environmental assets are not. Success means investing in innovation that connects all Oregonians to prosperity.

Third, making the community a key partner is crucial. Oregon InC’s job isn’t to control how Oregon innovates, but to raise community awareness of innovation efforts, invest in ways that connect more industries, firms, individuals and communities to these efforts, and accelerate the benefits for everyone – helping more firms and communities capitalize on the value of innovation wherever it comes from. Effective communication is at the heart of those efforts.

ACCOMPLISHMENTS TO DATE

- The Seafood Initiative provided direct product and market development support to 27 seafood businesses employing nearly 200 Oregonians
- OWET was instrumental in recruiting Finavera Renewables Ocean Energy headquarters to Portland, creating 5 new jobs and investing over \$2 million in research and technology
- The Food Processing Initiative retained or created a projected 300 jobs with estimated annual wages and benefits of \$11.8 million
- ONAMI helped launch 10 new start-up companies by commercializing technology or providing technical assistance and research support; an independent report’s conservative estimate is that ONAMI would create as many as 608 new jobs in two years and as many as 1,363 within four
- OTRADI identified over 50 new chemicals for possible use in fighting infectious diseases, including Malaria, Staph bacteria, fungal infections, and food poisoning caused by E.coli bacteria
- BEST provided seed funding to 10 projects, two of which have already attracted \$150,000 from the U.S. Green Building Council for green roof research at PSU, and \$10,000 from Oregon Forest Resources Institute for economic development and training related to green building materials
- In the last two years alone, the Governor’s office and the Oregon Economic and Community Development Department has worked to attract seven solar manufacturing projects to Oregon totaling approximately \$1.5

Last, the most important lesson is that innovative leadership makes innovation possible – leadership that uses convening, conversation and collaboration as its tools. Oregon’s new innovation partnerships – comprising government, universities, and industry – reflect this new understanding of leadership:

- Universities serving as research engines, developing new ideas and technologies and preparing the talent to deploy them in Oregon industry.
- Industry developing and deploying new technologies by launching new products and services for the global market, or by building entirely new firms and industries –increasing exports and creating new Oregon jobs.
- Government – The Governor’s office, OECDD and the Legislature - as an enabler, developing supportive tax, regulatory, and incentive policies, as well as a convener and connector

Agenda for 2009

The proposed 2009 Innovation Plan proposes six initiatives in a \$26 million request that includes:

- Community Seafood Initiative proposes to assist seafood businesses add or retain jobs and leverage new capital investments
- Oregon Wave Energy Trust proposes to develop a comprehensive environmental monitoring program to study the social, environmental and economic impact of pilot technologies, and work closely with coastal communities Innovation Productivity Center proposes millions in annualized savings for food processing firms that complete IPC improvement audits, and leverage funds from public and private institutions
- ONAMI proposes to attract \$60 million in federal and private research dollars to Oregon; leverage \$15 million in philanthropic contributions; raise \$20 million in private capital in gap funding for new companies and help launch up to 6 new firms.
- Oregon Translational Research & Drug Development Institute (OTRADI) will add to the Oregon Collection of unique chemical compounds and attract new federal research fund to Oregon universities and firms
- Oregon Built Environment & Sustainable Technologies Institute (BEST), using ONAMI as a model, will help attract private capital to firms with sustainable products, services and technologies, accelerating the commercialization process.

Sustainability As A Core Value

Although the initiatives span a wide variety of industries, they each share an important theme: sustainability as a core Oregon advantage. Our state is a recognized leader in creating new industries, products, policies and companies that see sustainability as their market advantage. It is more than expertise – it also reflects part of many Oregonian’s DNA. That’s why sustainability is woven directly and indirectly through every initiative and the entire Innovation Plan package.

While Oregon InC focuses on growing the sustainable economy of the future, Governor Kulongoski and the Oregon Economic & Community Development Department (OECDD) are working hard to create today’s renewable energy sector jobs.

In the last two years alone, seven solar manufacturers have announced projects in Oregon totaling approximately \$1.5 billion in capital investments and more than 2,000 new high-wage jobs across the state. Together, the Governor's office, OECDD, and the Oregon Department of Energy have crafted a photovoltaic industry marketing plan to recruit more solar companies operating at all points of the production cycle.

This is the first of more targeted recruitment plans for renewable energy industry clusters. Oregon has planted its flag as the ideal location for companies in all facets of the innovative renewable energy industry - ocean wave energy, solar energy and wind energy.

The 2009 Innovation Plan also promotes sustainability in another way: The proposed funding request is 9 percent smaller than the 2007 Plan. The long-term success of the Innovation Plan initiatives rests on its initiatives' ability ultimately to be self-sustaining. Oregon InC's model is for the state to provide seed funding to help initiatives get off the ground. This seed funding carries with it the expectation that the initiatives will leverage this initial state investment with other sources of funding and develop business models that diminish and ultimately eliminate the need for continued state funding.

Indeed, Oregon InC's evaluation criteria for each of the initiatives includes the ability of the initiative to leverage federal, private, and foundation funding and the ability to become self-sustaining over time. To make sure that happens, Oregon InC established an Audit and Accountability Committee that evaluates the progress of each of the initiatives on a quarterly basis, and can halt or terminate funding for those that fall short. This high level of transparency and accountability ensures the ability of the initiatives to stand on their own, allowing the state to move on and invest in other promising, innovative ideas.

Improving Oregon's Innovation Climate

Beyond its initiatives, Oregon InC is recommending two ideas that can make our state even more innovative – and competitive:

First, the Council supports the Oregon University System's recommendations of removing barriers and eliminating unnecessary processes for technology transfer agreements. Currently, the Oregon Attorney General (or authorized representative) must approve all inter-governmental agreements, including technology transfer agreements over \$100,000 – and those agreements must comply with all Oregon Department of Justice requirements. This slows the technology transfer agreements the state is otherwise working to accelerate; more significantly, firms may not even enter into such agreements because of the review requirement.

Typically, a technology transfer agreement is negotiated after a partnership between a university lab (and its researchers) and a firm or firms (and its researchers) is long established. Sending an agreement that's near completion to the Attorney General (who has not been involved in the project) undermines the relationship between negotiating parties. Further, when private sector partners learn this step is required, they may shy away from the very resources the state has developed to support their growth and expansion. Finally, this is a very unusual requirement – there is no such parallel in most other states, and none in states with exemplary technology-transfer practices.

Second, improving Oregon companies' access to federal research and business development grants. Oregon InC supports OECD's proposed investment of \$500,000 to increase the level of support the state can offer Oregon businesses seeking federal grants.

This investment would support staff, a coordinated marketing and outreach effort, and a small matching grant "bridge" program to help companies transition from Phase I to Phase II funding under the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs.

How You Can Help

The participants at the Oregon Leadership Summit can help by spreading the message about Oregon InC. The investments that the state has made are already beginning to reap rewards for the economy and the audience can help to send this message to legislators, community groups, business associations, and the media. If you are interested in learning more about Oregon InC or becoming an official spokesperson for the Council, please contact our office and get involved: www.oregoninc.org.

Economic Innovation Initiative Leaders

David Chen, Equilibrium Capital; Chair, Oregon InC

Background Resources

Documents

2009 Oregon Innovation Plan. <http://www.oregoninc.org/09InnoPlanW.pdf>

2007 Oregon Innovation Plan. <http://www.oregoninc.org/InnoPlan.pdf>

Renewing Oregon's Economy: Growing Jobs and Industries Through Innovation – Oregon Council For Knowledge & Economic Development (December 2002) www.ous.edu/cpa/OCKED

Core Research Competencies in Oregon – OCKED (February 2004) www.econ.state.or.us/OCKED.pdf

"Expanding Our Capacity for Innovation" (PDF) -- Oregon Business Plan White Paper (January 2003)

"*Refocus Economic Development on Industry Clusters*" (PDF) -- Oregon Business Plan Summit 2003 Discussion Paper (December 2003)

Websites

Oregon Economic and Community Development Department (OECD) <http://econ.oregon.gov/>

Oregon Innovation Council <http://www.oregoninc.org/>

Oregon Nanoscience and Microtechnologies Institute (ONAMI) <http://www.onami.us/>

Oregon Translational Research and Drug Development Institute (OTRADI) <http://www.otradi.org/>

Oregon Built Environment and Sustainable Technologies (BEST)

<http://www.oregonbest.org>

Oregon Wave Energy Trust

<http://www.oregonwave.org>

The Community Seafood Initiative <http://www.seafoodschoo.org/partners.cfm>

The Food Processing Initiative <http://www.foodipc.org/>

Manufacturing & Materials Science <http://www.me.pdx.edu/>

Oregon Cluster Network: A tool for learning and networking Oregon clusters. www.oregonclusters.orgT.