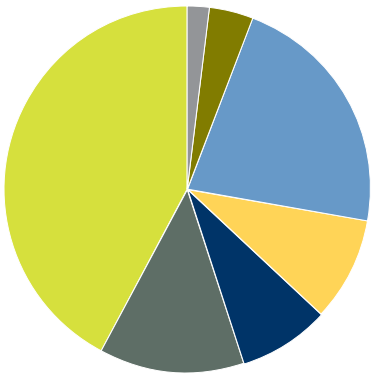


2006 Idaho Patent Report

Prepared by the regional business law firm Stoel Rives LLP

For more information, contact

John R. Thompson

Stoel Rives LLP

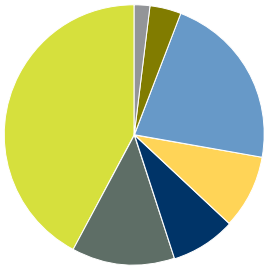
101 S Capitol Boulevard, Suite 1900

Boise, ID 83702

(208) 389-9000

jrthompson@stoel.com

www.stoel.com



2006 Idaho Patent Report

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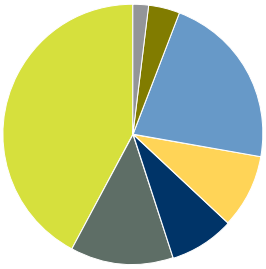


2006 Idaho Patent Report

Introduction

The 2006 Idaho Patent Report includes an overview and analysis of the patents issued to Idaho companies and inventors in the past year.

To produce this report, Stoel Rives LLP gathered raw patent statistics from the U.S. Patent and Trademark Office. The data were then analyzed, categorized, and ranked to reveal important information about Idaho's recent patent activity and its relationship to economic trends.

The first half of this report identifies the top patent awardees and discusses Idaho innovation in the context of recent decades. The second half provides charts illustrating the rankings of patent awardees (by category).

Special thanks go to Julie Howard, Director of Marketing and of Business and Capital Development in the Idaho Commerce & Labor Office of Science & Technology, whose insight and news articles provided details about Idaho business and innovation.

Summary of Data

Idaho companies and inventors were awarded a total of 1,528 patents in 2006, 117 fewer than the 1,645 patents awarded in 2005. Patents were awarded to Idaho inventors in multiple fields of invention. For the purposes of this report, Stoel Rives has clustered them into the following seven categories:

- Agriculture
- Chemicals/Materials Science
- Computer Hardware/Electrical Devices
- Computer Software/Web Services
- Imaging/Optical Technologies
- Mechanical Devices
- Semiconductor Manufacturing

The top five patent awardees overall for 2006 are listed in the following table, with the number of patents each was awarded. (These numbers reflect patents awarded in multiple categories.)

Top Five Idaho Patent Awardees in 2006	
Company or Organization	**Number of Patents**
Micron Technology, Inc.	927
Hewlett-Packard Development Company, L.P.	256
Battelle Energy Alliance, LLC	46
Bechtel BWXT Idaho, LLC	14
Softspikes, LLC	10
AMI Semiconductor, Inc.	9

The top patent awardees in recent years, including 2006, provide products or services in several of Idaho's technology-related business sectors. Battelle, another top awardee in 2006, is a patent assignee under Idaho National Laboratory (INL), funded by the U.S. Department of Energy. Battelle represents primarily the Chemicals/Materials Science and Mechanical Devices sectors.

Patents are issued to individuals rather than to companies. Where company names are listed in this report, the patents were awarded to Idaho inventors with those companies. Most companies listed in this report are either headquartered in Idaho or have significant Idaho operations. Patent totals for companies that have large research facilities in other states include only those patents issued to Idaho inventors.

Summary of Analysis

The number of patents issued to Idaho inventors has increased steadily over the past 20 years, from 73 in 1985 to 1,528 in 2006. An exception is the last few years, notably the period from 2004 to 2005, when patent awards nationwide decreased by 12 percent. During the same period, Idaho patent awards decreased by 15.4 percent overall, a 3.4-percent larger dip than the national average. This may be due to Idaho's heavier investment in large, high-tech companies and the high-tech correction that occurred in the early part of the millennium.

Although the 2006 patent total of 1,528 is down 117 patents from the 2005 figure of 1,645, a look at the number of patent awards exclusive of the top awardees (for both years) tells a more encouraging story. Several factors account for the slowing. In the 2005 Idaho Patent Report, we pointed out that patent pendency, the post-9/11 economic downturn, and the bursting of the high-tech bubble most likely accounted for the decline in awards nationwide.

However, a closer look reveals a compelling fact: Eliminating the patent leaders (mega businesses) from the equation for both 2005 and 2006, we see that Idaho innovation seems to be increasing rather than decreasing:

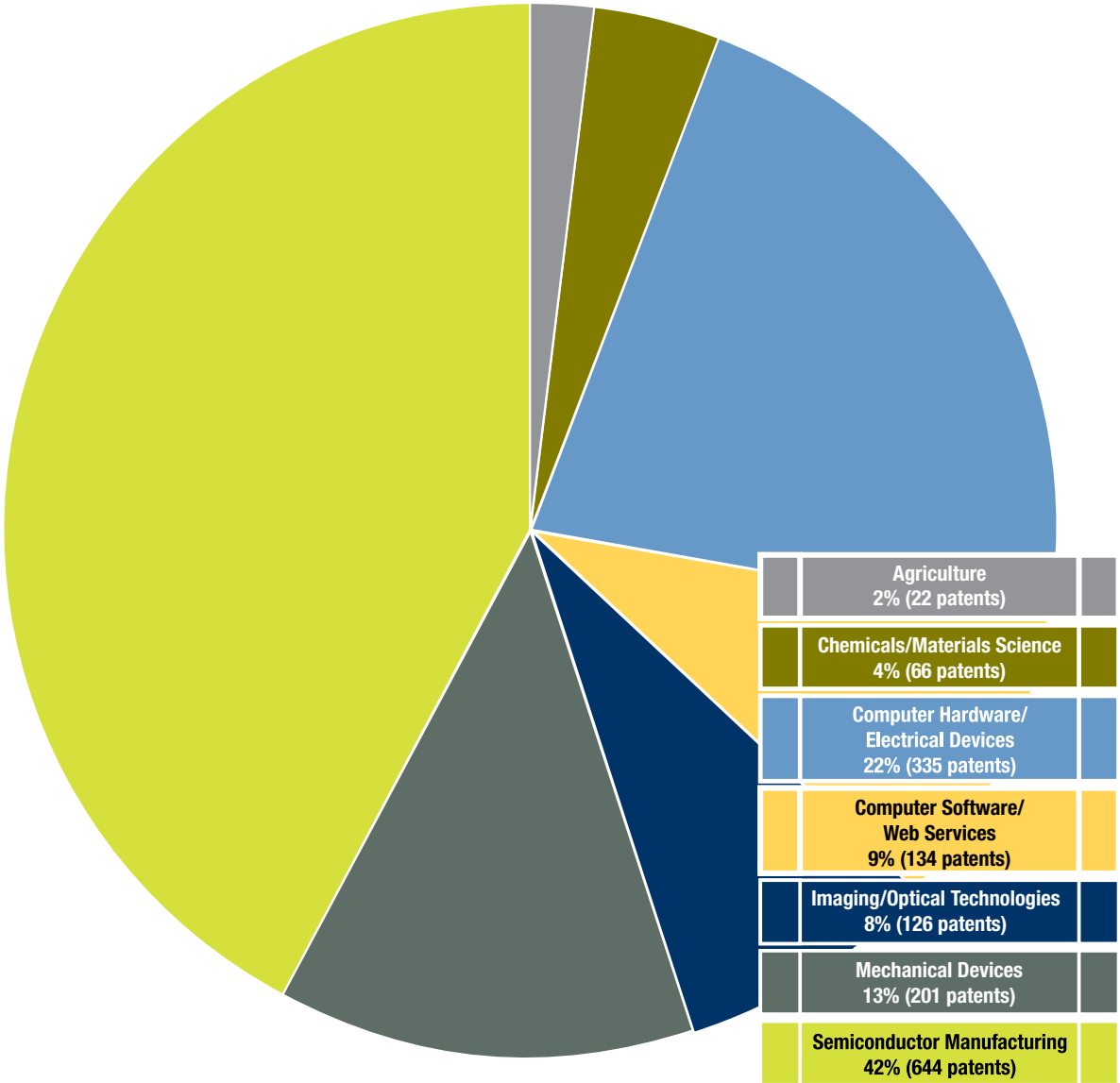
- In 2005, Idaho inventors were awarded a total of 1,645 patents. Of those, 1,428 were awarded to the patent-award titans: Micron Technology, Inc.; Hewlett-Packard Development Company, L.P.; Battelle Energy Alliance, LLC; and Bechtel BWXT Idaho, LLC. The remaining 217 were awarded to smaller Idaho companies.
- In 2006, 1,229 of the 1,528 patent awards were assigned to the patent giants (Micron, HP, and Battelle). The other 299 were awarded to smaller Idaho companies.

The result? Looking at the figures excluding the top awardees, 82 more patents were awarded in 2006 than in 2005. That reveals a remarkable 38-percent increase in patent awards over the 217 awarded in 2005. It appears that Idaho's continual growth in patent awards is based on a combination of factors:

- Idaho has a uniquely innovative population, motivated in part by the necessity of making a living in a rural state.
- Accessibility of business capital and sources of capital have increased considerably in the past five years.
- Idaho is a hotbed of business activity, ranking fifth in the nation for the number of new businesses added in recent years, and the state is becoming increasingly well known as a great place to do business.[1]

Idaho innovation continues to thrive, benefiting from a steady stream of new funding sources and highly qualified people to launch, lead, and staff ventures, and a fast-maturing business climate.

The following chart shows how the 1,528 patents awarded to Idaho inventors in 2006 were distributed among the seven award categories.



1 Corporation for Enterprise Development Innovation Capacity Index, cited at http://technology.idaho.gov/Facts/tabid/582/Default.aspx.

The following chart compares the number of patent awards for both years.

Patent Category	2006 Patents	2005 Patents
Agriculture	22	16
Chemicals/Materials Science	66	28
Computer Hardware/Electrical Devices	335	349
Computer Software/Web Services	134	79
Imaging/Optical Technology	126	108
Mechanical Devices	201	160
Semiconductor Manufacturing	644	905
TOTALS	**1,528**	**1,645**

Agriculture, Chemicals/Materials Science, Computer Software/Web Services, Imaging/Optical Technologies, and Mechanical Devices all show gains over 2005, with a small decrease in Computer Hardware/Electrical Devices and a much larger decrease in Semiconductor Manufacturing.

Looking at the patent totals, excluding the major patent players, shows something a little different. As in the patent totals, all but two categories showed gains. Computer Hardware/Electrical Devices showed a gain of 21 patents when looking at this subset, and the only category that showed a decrease was Imaging/Optical Technologies, which decreased by five patents in 2006. In Semiconductor Manufacturing, the number of patent awards is unchanged when considering this subset.

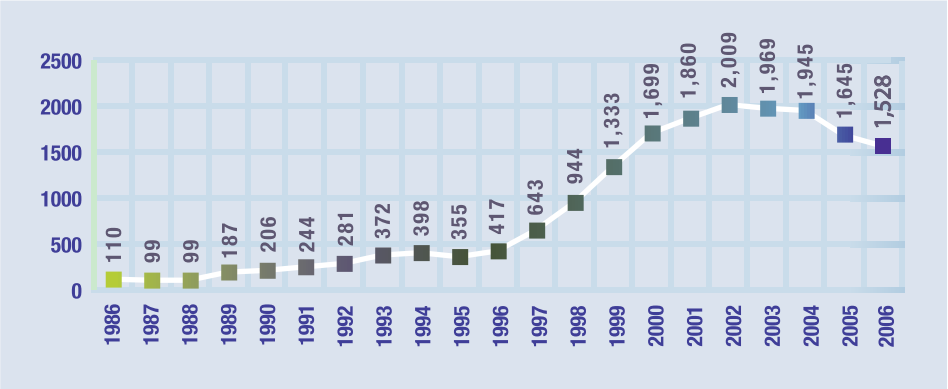
Patent Totals				
Patent Category	**Change from 2005 to 2006**	**Percent of 299 for 2006**	**2006 Patents Excluding Top Awardees**	**2005 Patents Excluding Top Awardees**
Agriculture	+6	7%	22	16
Chemicals/ Materials Science	+21	11%	32	11
Computer Hardware/ Electrical Devices	+21	17%	51	30
Computer Software/ Web Services	+14	6%	18	4
Imaging/ Optical Technologies	-5	3%	8	13
Mechanical Devices	+25	48%	144	119
Semiconductor Manufacturing	no change	8%	24	24
TOTALS	**+82**	**100%**	**299**	**217**

The view of the 2006 Idaho patent numbers on page 7 reveals that about half of Idaho patents (48 percent) are for Mechanical Devices, which is typical of a state economy that is beginning its move toward high-technology enterprises. Note that 45 percent of patents were awarded in technology-related categories, including high technology: Chemicals/Materials Science (11 percent); Computer Hardware/ Electrical Devices (17 percent); Semiconductor Manufacturing (8 percent); Computer Software/Web Services (6 percent); and Imaging/ Optical Technologies (3 percent). Agriculture, another significant Idaho industry, accounts for 7 percent of patent awards.

Although some of the percentages in high-tech categories, with the top awardees excluded, are lower than they are with the top awardees included, these figures may still indicate growth because of the huge share of patents accounted for by the top awardees.

It is difficult in a young technology market to pinpoint reasons for growth, even when it is narrowed down by categories such as those shown above. However, this preliminary finding may indicate that at least half of Idaho's technology businesses are moving ahead with innovation, even with total patent awards showing a decline from one year to the next.

The 20-year graph below illustrates the overall trend, with its peaks and valleys. The high of 2,009 in 2002 is about 24 percent above the 2006 patent awards. However, comparing the patent awards from 2002 with those of 2006, leaving out the top awardees, a pattern may emerge that is similar to the more recent pattern (2005–2006) that we are finding as data are collected and analyzed. Time and further analysis may illustrate more clearly Idaho's true nature as an innovation leader.



What Drives Idaho?

The preceding summary information, which shows the growth in Idaho patents from 110 in 1985 to 1,528 in 2006, clearly shows the remarkable growth in patents in the state over the past two decades. What leads to such innovative activity in a land-locked, Western state with a relatively small population?

It is partly an innovative, entrepreneurial spirit. But ideas alone cannot drive an economy. A willingness to take risks, business capital and business sense, infrastructure, and collaboration among experts all come into play. This report organizes the analysis of these factors into three broad topics:

- Idaho Innovators
- Expanding Sources of Funding
- The Right Mix of Business-Friendly Forces

Idaho Innovators

In today's Digital Age, innovation in products, services, business methods and models, and delivery and fulfillment are essential to the success of both existing and new companies. Smaller, more rural states such as Idaho may illustrate the old adage, "Necessity is the mother of invention." Without easy access to multiple metro areas and a wide variety of jobs, people in rural areas often create their own jobs.

According to the 2007 State New Economy Index, published by the Ewing Marion Kauffman Foundation and the Information Technology & Innovation Foundation, Idaho ranks 24th in the nation overall, with a composite score of 62.8 on a 100-point scale. The report assesses how far along each state is in approaching the New Economy, referring to today's dynamic, global markets featuring innovation and taking advantage of computers to do business as cost-effectively as possible. Ideas and innovation drive the invention, production, and distribution of products and services in the New Economy. Whereas machines and gadgets were the currency of the Industrial Age, bits and bytes are the currency of the Digital Age.[2]

The Kauffman report measures 26 factors clustered into five main categories: knowledge jobs, globalization, economic dynamism, transformation to a digital economy, and technological innovation capacity. Idaho is particularly strong in the third and fifth categories:

- For **Economic Dynamism**, Idaho ranked 10th in the nation, ranking ***fifth for Entrepreneurial Activity***, ***12th for IPOs***, ***11th for Inventor Patents***, and ***20th for Fastest-Growing Firms***. Idaho's score for Entrepreneurial Activity is 0.41 percent (the number of entrepreneurs as a percentage of the population, compared with a national average of 0.30 percent).

- Idaho ranked sixth in the nation for **Innovation Capacity**. The report ranks innovation capacity based on measures of "five aspects of innovation capacity: 1) share of jobs in high-tech industries; 2) scientists and engineers as a share of the workforce; 3) the number of patents relative to the size of the workforce; 4) industry R&D as a share of worker earnings; and 5) venture capital invested as a share of worker earnings." Specifically, Idaho ranks ***first for Patents (per 1,000 workers)***, ***11th for High-Tech Jobs***, and ***23rd for Scientists and Engineers***. [3]

RANKING	STATE
2	California
6	Idaho
7	Colorado
9	Washington
13	Oregon
18	Utah
23	Arizona
39	Nevada

Comparing Idaho with other Western states in terms of innovation capacity, Idaho is second only to California.

An excellent example of the New Economy at work in rural Idaho is Bully Dog Technologies, run by the Klassen brothers, all farm boys. They refined an aftermarket power upgrade technology for diesel engines and located their company headquarters in Aberdeen, a small farming community where Bully Dog was developed. Low taxes, affordable real estate, and the pleasure of living in a rural setting offset the difficulty of finding qualified employees for a technology company in a town with fewer than 2,000 residents. Bully Dog provides evidence that technology can merge with agriculture, or any number of other economic sectors in Idaho, to produce innovation and simultaneously cultivate the state's economic health.[4]

Whether you're the Klassen brothers of Bully Dog, a $7 million company in Aberdeen, or Micron, mega-maker of semiconductor chips in Boise, the digital explosion has irreversibly altered the way we do business.

Patent activity is closely related to entrepreneurial inventors. Companies that can patent products and processes can also attract new talent, which in turn leads to more patents and more talent. Idaho has held the top position for number of patents per thousand workers for several years now, due in part to a small number of high-patent-generating firms.[5]

2 http://www.kauffman.org/pdf/2007_State_Index.pdf.
3 *Id.*
4 http://technology.idaho.gov/Portals/33/documents/magazine/April2006.pdf.
5 http://www.kauffman.org/pdf/2007_State_Index.pdf.

However, a closer look at the Idaho patent figures for 2005 and 2006 shows that the number of patents being awarded to smaller companies is rising, which may well indicate that a powerful cycle has begun.

Not surprisingly, Idaho's new license plate bears the motto **Ideas—Innovation—Idaho**.

In an article of the same title, Julie Howard, of the Office of Science & Technology, describes Idaho as a uniquely innovative place. Karl Tueller, recently retired executive director of the Office of Science & Technology, points to the pioneering spirit in Idaho as the impetus for people "seeking their own solutions, taking risks, and being independent. That fosters innovation and ultimately translates into more businesses and a stronger economy."[6]

Another important measure of innovation is the Kauffman Index of Entrepreneurial Activity 1996-2006, which tracks new businesses in the United States. "Capturing new business owners in their first month of significant business activity, this measure provides the earliest documentation of new business development across the country." Idaho entrepreneurial activity was measured at 0.37 percent (as a measure of entrepreneurs per 100,000 people) for 2006, just ahead of California and just behind Oregon, showing that Idaho is keeping pace with some of its most prolific neighbor states.[7]

A significant addition to the Idaho innovation community was the inaugural Idaho Innovation Awards program in September 2006. The Idaho Innovation Awards program spotlights some of Idaho's most promising high-tech innovations and will continue to bring attention to Idaho innovations that expand Idaho's technology base. That Idaho has sufficient innovative activity to warrant an awards competition and sufficient tech-savvy business leaders to evaluate and select awardees points to the Idaho economy approaching a quantum leap ahead in high-technology businesses.

Expanding Sources of Funding

Entrepreneurs face considerable funding challenges, regardless of how friendly the infrastructure may be. They start with "friends and family" money, followed by seed capital, angel investments, venture capital (VC), and finally institutional funding.

The Idaho Small Business Development Center (SBDC) is an important link in the chain, offering business counseling to help entrepreneurs focus their efforts and begin the funding process. Idaho also sponsors a major VC event for inventors: the Northwest Venture Championship.[8]

As recently as five years ago, VC was hard to come by in Idaho. Howard reports that "[t]he success of entrepreneurs in Idaho has drawn the notice of several out-of-state investors, including Frazier Technology Ventures, which opened a part-time office in Boise." James Grunke, director of the Sun Valley/Boise chapter of Keiretsu Forum, states that as recently as 2000 the funding path for entrepreneurs was incomplete. Many worked to bring capital to Idaho, first in the form of Highway 12 Ventures and UV Partners (from Salt Lake City). Now Idaho appears to be following a funding pattern similar to that seen in the Silicon Valley, Boston, Seattle, and Research Triangle Park, with a growing number of VC firms investing in Idaho technology companies.[9]

Since about 2003, the Boise Angel Alliance has been a primary source of angel funds and is a "classic angel club of accredited investors," according to Kevin Learned, a member of the Alliance. The risk associated with such an association may have prevented the Alliance from taking off more quickly. So Learned approached colleagues about pooling investment capital into a fund to minimize risk, and in April 2007 the Boise Angel Fund was born. It is a completely new model of angel funding in Idaho and is associated with RAIN Source Capital in St. Paul, Minnesota, a nonprofit organization. Members of the Boise Angel Fund are successful businesspeople looking to invest in seed-stage companies, in the range of $100,000 to $300,000, and anticipate two to four deals per year.

Learned, a founding member of the Boise Angel Fund, sees Idaho today as being much the way the Utah market was 20 years ago. A handful of highly successful technology companies provided a jumping-off place. An innovative, energetic, well-educated population led to a multitude of spin-off companies and new ventures born of crossover between industries.

6 http://technology.idaho.gov/Portals/33/documents/magazine/June.pdf.
7 http://www.nasvf.org/nasvf/web.nsf/pages/KauffmanIndex99606.html.
8 http://technology.idaho.gov/Capital/tabid/578/Default.aspx.
9 http://technology.idaho.gov/Portals/33/documents/magazine/Dec2005.pdf.

Companies reorganized, went under, and took off, and employees took their knowledge with them from place to place. Government joined in, and the region was off and running. "Knowledge and capital find a way of recycling," Learned observes. "We're interested in making money, but we really want to see these businesses take off." He sees Idaho as poised on the brink of spectacular success, having in place three major forces: (1) entrepreneurship, (2) capital, and (3) a "critical mass." Learned identifies critical mass for economic growth as comprising several related factors:

- Boise State University (BSU) has a growing engineering program, and the Technology and Entrepreneurial Center, loosely affiliated with BSU, is associated with the SBDC.
- Technology transfer is occurring through Idaho TechConnect.
- Kickstand, a member organization that supports entrepreneurship, is expanding beyond Boise.
- Bright young people are moving to Idaho for its quality-of-life offerings and find work here.
- Law firms are taking an interest in the Idaho technology industry and support development in various ways.
- Government infrastructure is very good, with a constant stream of people going through the SBDC offices with ideas to develop.

Learned notes, "The perfect storm is forming: bright minds coming to Idaho at a time when they have a lot of support and the necessary infrastructure to succeed." This perspective supports the prediction that smaller and midsize Idaho companies may be making better progress in the patent arena than the annual patent totals can illustrate.

Even with additional angel funding, there was a funding gap for young Idaho companies. Angel investors fund 40 to 50 percent of the opportunities presented, whereas VCs fund only about 2 to 3 percent. Clearly, a huge number of funding sources and opportunities were missing. A major step forward on Idaho's capital continuum occurred in January 2007 when Keiretsu Forum, one of the largest private-investor groups in the United States, opened a Sun Valley/Boise chapter. With only 11 chapters in the world, what brought the Forum to Idaho? Chapter Director Grunke points to Idaho's huge investor base—people with money looking to put it into something that will grow. Investor demand led to the opening of this chapter.

Keiretsu Forum has begun playing a vital role—funding companies in the gap that existed between angel and VC funding, primarily in the $500,000 to $3 million range. Keiretsu Forum is the only organization of its kind in the United States. Grunke explains, "We not only facilitate the investment, but we provide an entire range of resources to help entrepreneurs make the leap from having a great idea and energy to becoming a viable market presence." It can be thought of as a "matchmaker," bringing investors together with ventures that present the right business opportunity.

Investors are attracted to Idaho because it has "the recipe for creating innovation: a major university, a climate of entrepreneurship, funding, and a good business climate." Although the software industry shows strong growth in Boise, Idaho as a whole needs more software companies and in-migration of additional talent. "There has to be somewhere for people to move laterally if one company doesn't take off," Grunke points out. The technology base in Idaho is thin enough that the Forum has found only about 12 deals to fund, compared to its goal of 48. "However," he adds, "when we help Idaho investors fund companies in surrounding states, the deal flow is syndicated and begins to grow in unexpected ways." An example of this occurred when a Boise company reached a funding plateau, approached Keiretsu Forum for help in finding the next round of funding, and by networking with Keiretsu contacts secured another $4 million from surrounding states.

Since January 2007 Keiretsu Forum has facilitated $12 million in funding of Idaho companies from sources outside Idaho and has also connected Idaho investors with $6 million in funding opportunities outside the state. According to a July 11 Keiretsu Forum press release, Idaho-based PakSense raised $4.16 million in Series A angel funding, staked with $1.27 million by Forum members in seven Western chapters. Grunke sees all this movement as essential to increasing the flow of capital into Idaho: funding leads to exposure, which leads to more funding, and so on.

In the Sun Valley/Boise market, Keiretsu Forum recognized an opportunity to increase deal flow. Grunke continues: "An amazing amount of innovation is going on in Idaho. One month we narrow down the applicants to four unbelievable companies, and the next month it happens all over again with a new batch of remarkable people doing amazing things." Connections and

mentoring, like those now available via Keiretsu Forum, are key to taking a great idea to market successfully. "Our goal in all this is to build a better business community," asserts Grunke. "We're one part of the solution."

Given the tremendous opportunity Keiretsu Forum brings to Idaho companies, Stoel Rives Boise Office Managing Partner Kris Ormseth says the firm was very pleased to be the Sun Valley/Boise chapter's official law firm sponsor. "Stoel Rives has been supporting the Keiretsu Forum in Seattle for a number of years. So, when the opportunity came for us to support Keiretsu in Boise, we jumped at the chance, recognizing the incredible value that this organization brings to Idaho's emerging business sector, including a number of emerging companies that we represent and many other very deserving companies in need of funding."

Both Grunke and Learned see their organizations as complementary, each filling a gap that may have slowed Idaho's technology growth—until now.

Another factor that may affect the growth of technology funding in Idaho is the recent appointment of James Ellick as the new director of the Idaho Department of Commerce, which was split off from the Department of Labor effective July 1, 2007. A Silicon Valley mover in the 1990s, Ellick has a broad range of technology-industry experience and successfully took public a software company (now listed on NASDAQ).[10]

The combination of new business ventures, access to funding at all levels of business development, and seasoned leaders in each area is a potent brew that could indeed lead to an increasing pace of commercialization of emerging technologies and push the Idaho economy ahead by leaps and bounds in the foreseeable future.

The Right Mix of Business-Friendly Forces

Several related factors contribute to the growth of Idaho's technology community and to industry overall. Each is described in more detail in this section. Idaho (and Boise as a major metro area) appears in an excellent position on several third-party rankings related to economic performance.

As explained in the 2005 Idaho Patent Report, **collaboration** is key to innovation across complex disciplines. Research is the basis for such collaboration in technology fields, where the research findings of one study provide the ideas and impetus for further research. Ideas are the stuff of innovation, and great minds produce great ideas.

- A good example is Blue Water Technologies, Inc. In 2005, Blue Water was among the top 100 Technology Transfer Companies and was named a top 25 "Innovator Changing the World" by the Association of University Technology Managers. The company created a solution to a major, and previously costly to solve, problem with phosphorous levels in wastewater. Tom Daugherty, the company's president, noted that government, local vendors, and Idaho's research institutions were helpful and easy to collaborate with.[11]

- Another example of successful collaboration with local minds is Optimal Solutions Software, LLC, based in Idaho Falls. Optimal Solutions developed the Sculptor computational fluid dynamics software, described as a "shape deformation and design optimization tool" that "uses computers to analyze liquid or gas fluid dynamics, enabling engineers to more quickly and precisely design and/or analyze devices that interact with fluids." Company president Mark Landon believes that access to scientists at INL is essential.[12]

The Office of Science & Technology has identified four core competencies, which can help emerging companies locate themselves in a niche within which they can collaborate with like-minded organizations:

- Imaging: Leaders include HP, Micron, INL, GeoEngineers, NorthWind, Dedicated Devices, Inc., and the University of Idaho (UI).

- Power/Energy: Leaders include INL, Intrepid Technology and Resources, Inc., Idaho Power, and UI.

10 http://www.matr.net/article-23848.html.
11 http://technology.idaho.gov/Default.aspx?tabid=603.
12 *Id.*

- Agriculture/Biosciences: Leaders include Monsanto Company, J.R. Simplot Company, UI, and INL.
- New Materials/Nanotechnology: Leaders include Micron, HP, the NanoSteel Company, Positron Systems, Inc., BSU, Idaho State University, and UI.[13]

Availability of **business resources** is another essential factor, as mentioned in the Funding section. Not everyone who has a great idea has a great way of commercializing the idea. This is where technology transfer and government can play a crucial role. Idaho's Office of Science & Technology offers guidance and portals to information, funding, and government leaders in bringing new ideas to market. The Information Technology Resource Management Council and Battelle's research center provide information resources. INL also provides resources in the form of knowledge experts.[14]

The potent mix of business-friendly forces now coming together in Idaho makes it **a top-ranked state on third-party indexes** and has made Boise a top-ranked metro area for several years in a row. Some of the most impressive rankings are:

- First in patents per capita
- First in manufacturing investment
- Fifth in the creation of new companies (ahead of neighboring states Utah, Nevada, and Oregon, among others)[15]

Forbes

A look at the past performance of Boise, Idaho on the *Forbes* ranking of "Best Places for Business and Careers" shows the positive business climate of Boise among 200 major U.S. metro areas, as Boise advanced from sixth in 2002 to third in 2007. Compare Boise's position in 2007 with similar metro areas in surrounding states ranking in the top 50:[16]

RANKING	METRO AREA
2	Provo, UT
3	Boise, ID
10	Olympia, WA
11	Ogden, UT
20	Spokane, WA
28	Fort Collins, CO
39	Eugene, OR
45	Portland, OR
50	Bremerton, WA

The *Forbes* index is based on cost of labor, energy, taxes, and office space. Job growth is based on "5-year annualized figures," and "education attainment" refers to the share of the "population over age 25 with a bachelor's degree or higher." Kurt Badenhausen, reporting on the *Forbes* rankings, states that "[w]hile most economies in the West have also outperformed their peers in the Northeast and Midwest over the past four years, living costs in those regions have risen dramatically. Housing prices in Phoenix, spurred in part by easy lending, are up 57% in the past two years, knocking it off our Top 10. There are a few bright spots out West that have managed to keep costs under control—***namely*** *Provo, Utah, and* ***Boise, Idaho***, which came in second and third in our rankings. Business costs in Provo are 7% below the national average, while Boise's costs are 14% lower—music to the ears of local employers Hewlett-Packard and Micron Technology." The *Forbes* index is based on information at both *Economy.com* and *Sperling's Best Places.*[17]

On the 2006 *Forbes* list of "Best States for Business," Idaho ranked sixth in the nation. Of the surrounding states, only Utah (fourth) and Colorado (fifth) ranked higher. Washington (12th) and Arizona (15th) followed, trailed by Nevada (26th), Oregon (31st), and California (36th). Factors that were ranked include the following, with Idaho's rankings shown in parentheses: Business Costs (13th), Labor (16th), Regulatory Environment (34th), **Economic Climate (second)**, Growth Prospects (22nd), and Quality of Life (20th).[18]

13 http://technology.idaho.gov/Expertise/tabid/577/Default.aspx.
14 http://business.idaho.gov/Default.aspx?tabid=486.
15 Corporation for Enterprise Development Innovation Capacity Index, cited at http://technology.idaho.gov/Facts/tabid/582/Default.aspx.
16 http://www.forbes.com/lists.
17 http://www.forbes.com/2007/04/05/best-cities-business-biz-07bestplaces-cz_kb_0405bestplacesintro_print.html.
18 http://www.forbes.com/lists/2006/9/06beststates_The-Best-States-For-Business_Rank.html.

Ewing Marion Kauffman Foundation

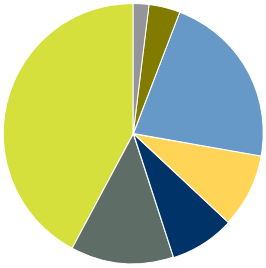
Another third-party source, co-publishers the Ewing Marion Kauffman Foundation and the Information Technology & Innovation Foundation, ranks Idaho 24th in the nation on its 2007 State New Economy Index. The chart shown at right lists Idaho's most significant placements, in terms of business-friendly forces, in the breakdown of ranked indicators.

RANKING	INDICATOR
1	Patents per Capita
5	Entrepreneurial Activity
6	Job Churn
7	Online Agriculture
11	Inventor Patents
11	High-Tech Jobs
12	IPOs
12	Industry Investment in R&D
20	Fast-Growing Firms
22	Online Population
23	Scientists and Engineers

The Kauffman report identifies Idaho's high "churn" rate. A state's "job churn" rate is an important indicator of a state's economic health, because employment growth doesn't always tell the full story. According to the report, job churn is the process of companies becoming more efficient or going out of business and new companies taking the place of defunct companies. Referred to as "dynamic equilibrium," job churn in a state "helps drive economic innovation and growth." Fast-growing states experience job churn partly because some start-ups fail and others take their place. Job churn can also reflect "a dynamism that leads to the death of old, outmoded firms and the creation of innovative new companies that sell beyond the state's borders."[19] This activity is a positive indicator of Idaho's current economic growth.

The convergence of the right business forces at the right time predict a bright economic future for Idaho, including strong patent activity. The next several pages list the top patent awardees for 2006.

19 http://www.kauffman.org/pdf/2007_State_Index.pdf.



2006 Idaho Patent Report

Top Patent Awardees by Category

The following charts, organized by category, list Idaho companies whose inventors received two or more patents in 2006. They also show the rank order of the top awardees.

Agriculture

Rank	Company or Organization	Number of Patents
1	Syngenta Participations AG	3
	Zinpro Corporation	3
2	Basic American, Inc.	2

Chemicals/Materials Science

Rank	Company or Organization	Number of Patents
1	Micron Technology, Inc.	19
2	Battelle Energy Alliance, LLC	15
3	Idaho Research Foundations, Inc.	3
4	Kimberly-Clark Worldwide, Inc.	2
	Melaleuca, Inc.	2

Computer Hardware/ Electrical Devices

Rank	Company or Organization	Number of Patents
1	Micron Technology, Inc.	216
2	Hewlett-Packard Development Company, L.P.	59
3	Battelle Energy Alliance, LLC	9
4	AMI Semiconductor, Inc.	6
5	American Semiconductor, Inc.	4
	Avago Technologies General IP	4
6	Cypress Semiconductor Corp.	3
	Idaho Research Foundation, Inc.	3
7	Seagate Technology LLC	2

Mechanical Devices

Rank	Company or Organization	Number of Patents
1	Hewlett-Packard Development Company, L.P.	20
2	Micron Technology, Inc.	19
3	Battelle Energy Alliance, LLC	18
4	Softspikes, LLC	10
5	A Company Incorporated	2
	Adalis Corporation	2
	Electronic Controls Company	2
	Kimberly-Clark Worldwide, Inc.	2
	Kukuk, Craig	2
	Multiquip Inc.	2
	Novelis Inc.	2
	Peet Shoe Dryer Inc.	2
	Smith Sport Optics, Inc.	2
	Smoke Guard Corporation	2
	The Boeing Company	2
	Vemco, Inc.	2

Computer Software/Web Services

Rank	Company or Organization	Number of Patents
1	Hewlett-Packard Development Company, L.P.	90
2	Micron Technology, Inc.	26
3	Denali Software, Inc.	2

Imaging/Optical Technologies

Rank	Company or Organization	Number of Patents
1	Hewlett-Packard Development Company, L.P.	78
2	Micron Display Technology, Inc.	37
3	Battelle Energy Alliance, LLC	3
	Canon Kabushiki Kaisha	3

Semiconductor Manufacturing

Rank	Company or Organization	Number of Patents
1	Micron Technology, Inc.	611
2	Hewlett-Packard Development Company, L.P.	9
3	AMI Semiconductor, Inc.	3
	Unity Semiconductor Corporation	3
4	Cypress Semiconductor Corp.	2

Conclusion

In 2001, Joel Kotkin and Ross C. DeVol of the Milken Institute identified Boise as an entrepreneurial hub, notwithstanding a lack of federal aid in the late 1990s. Their report, titled "Knowledge-Value Cities in the Digital Age," states that "from 1981 to 1998, the contribution of the high-tech sector to the local economy jumped from 12 to 43 percent and high-tech manufacturing jobs increased from 1,900 in 1987 to 3,500 in 1998" (statistics cited from another source). It goes on to say that "Boise, once a rather mundane agriculturally based city, epitomizes the power of entrepreneurship – and the importance of appealing to technologists – for cities in the digital age."[20]

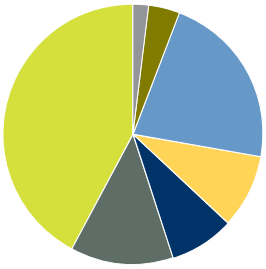
Attracting and cultivating the success of corporations and local entrepreneurs alike was the key to Idaho's early success. Perhaps the rural setting that some might see as a drawback worked in Idaho's favor, attracting businesses that were seeking affordable real estate and a high quality of life for employees. The Milken report also states that "Boise is well positioned to make it in the New Economy. Venture capital investment in Boise is growing, buffeted by local successes. Communication services, engineering and electronics all experienced double-digit employment growth from 1997 to 1999." Looking at the years since 1999, the Institute's projections seem to be on target.[21]

Idaho enjoys high national rankings in addition to being "on the map" because it's the world headquarters of the only U.S.-based memory chip firm, Micron, and the center of HP's Imaging and Printing Group, birthplace of HP's LaserJet printer.

Leading companies are a vital part of Idaho's story, but now there's more. Innovation is alive and well in Idaho, with new companies being formed at an increasingly rapid rate. Major funding gaps have been filled, and funds are flowing more freely into, out of, and around Idaho businesses. Seasoned leaders in academia, business, and government are working together more and more closely to lead promising ventures to commercialization.

High technology is growing, blending with rural and agricultural forces to create innovative companies that will surely change the face of business in their sectors just as historic companies like HP and Micron have done in theirs.

20 http://www.milkeninstitute.org/pdf/kvdc.pdf.
21 *Id.*



2006 Idaho Patent Report

Appendix: Complete List of Awardees by Category

Agriculture		
Rank	Company or Organization	Number of Patents
1	Syngenta Participations AG	3
	Zinpro Corporation	3
2	Basic American, Inc.	2
3	Idaho Potato Commission	1
	Idaho Research Foundation, Inc.	1
	Miles Willard Technologies, LLP	1
	Monfort, Inc.	1
	O3 Zone Co., Inc.	1
	Redox Chemicals, Inc.	1
	Swift Beef Company	1
	TD Moser Farms, LLC	1
	Zelfiwu, Inc.	1

Chemicals/Materials Science		
Rank	Company or Organization	Number of Patents
1	Micron Technology, Inc.	19
2	Battelle Energy Alliance, LLC	15
3	Idaho Research Foundation, Inc.	3
4	Kimberly-Clark Worldwide, Inc.	2
	Melaleuca, Inc.	2
5	Alliant Techsystems Inc.	1
	CH2M HILL, Inc.	1
	Environmental Technologies Capital Partners LLC	1
	Frontier Scientific, Inc.	1
	Microbial-Vac Systems, Inc.	1
	Ohio Aerospace Institute	1
	Perdue Research Foundation	1
	Semitool, Inc.	1
	SRP Technologies, Inc.	1
	The Boeing Company	1
	United States of America	1
	Unity Semiconductor Corporation	1
	Water Solutions, Inc.	1

Computer Hardware/ Electrical Devices

Rank	Company or Organization	Number of Patents
1	Micron Technology, Inc.	216
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5	American Semiconductor, Inc.	4
	Avago Technologies General IP	4
6	Cypress Semiconductor Inc.	3
	Idaho Research Foundation, Inc.	3
7	Seagate Technology LLC	2
8	Denali Software, Inc.	1
	Electronic Controls Company	1
	Energenx, Inc.	1
	Integrated Ideas & Technologies, Inc.	1
8	Lam Research Corporation	1
	Liu, Bo	1
	NetLogic Microsystems, Inc	1
	Ovonyx, Inc.	1
	PakSense	1
	Red Fox & Company LLC	1
	Spatial Dynamics, Inc.	1
	Technical Development Consultants, Inc.	1
	Texas Instruments Incorporated	1
	Translation Technologies, Inc.	1
	Unity Semiconductor Corporation	1
	ZiLOG, Inc.	1

Computer Software/Web Services

Rank	Company or Organization	Number of Patents
1	Hewlett-Packard Development Company, L.P.	90
2	Micron Technology, Inc.	26
3	Denali Software, Inc.	2
4	Canberra Industries	1
	Code Corporation	1
	Comtech Telecommunications Corp.	1
	ConocoPhillips Company	1
	Cylant, Inc.	1
	Cypress Semiconductor Corp.	1
	Dashmart Investments LLC	1
	Idaho State University	1
	Infineon Technologies Richmond LLP	1
	Itron Inc.	1
	Jarbridge, Inc.	1
	Microsoft Corporation	1
	ProClarity, Inc.	1
	Triant Technologies Inc.	1
	Virtual Supply Chain Engineering, Inc.	1

Imaging/Optical Technologies

Rank	Company or Organization	Number of Patents
1	Hewlett-Packard Development Company, L.P.	78
2	Micron Display Technology, Inc.	37
3	Battelle Energy Alliance, LLC	3
	Canon Kabushiki Kaisha	3
4	JDS Uniphase Corporation	1
	Johnson, David A.	1
	Optical Communications Products, Inc.	1
	Safe View, Inc.	1

Mechanical Devices

Rank	Company or Organization	Number of Patents
1	Hewlett-Packard Development Company, L.P.	20
2	Micron Technology, Inc.	19
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	Multiquip Inc.	2
	Novelis Inc.	2
	Peet Shoe Dryer, Inc.	2
	Smith Sport Optics, Inc.	2
5	Smoke Guard Corporation	2
	The Boeing Company	2
	Vemco, Inc.	2
6	Aegis Industries, Inc.	1
	Agilent Technologies, Inc.	1
	Altek Power Corporation	1
	Amalgamated Research Inc.	1
	Big River Innovation, Inc.	1

Rank	Company or Organization	Number of Patents
6	Blackhawk Industries Product Group Unlimited LLC	1
	Blankenship, Charles H.	1
	Bon-Aire Industries, Inc.	1
	Brigham Young University	1
	Brown, Deborah	1
	Carrier Commercial Refrigeration, Inc.	1
	COE Newnes/ McGehee Inc.	1
	Diamond Z Manufacturing	1
	Diaperoos, LLC	1
	Eissinger, Che	1
	Heater Craft Marine Products	1
	J & L Development, Inc.	1
	J.R. Simplot Corporation	1
	Johnsonian Designs	1
	Leep, Inc.	1
	Lucky Bums, Inc.	1
	Mark VII Equipment LLC	1
	Michaels of Oregon Co.	1
	NITEC-Nielsen Idaho Tool and Engineering Corp.	1
	Palouse Holdings, LLC	1

Mechanical Devices		
Rank	Company or Organization	Number of Patents
6	Performance Design, Inc.	1
	Preco Electronics, Inc.	1
	ProMark Brands, Inc.	1
	ProTeam, Inc.	1
	R-Kind Water Systems, Inc.	1
	Silpro, LLC	1
	Ski Skoot, Inc.	1
	SmartPlugs Corporation	1
	Stamped Fittings, Inc.	1
	Starting Line Products, Inc.	1
	Tactical Design Labs	1
	The BOC Group, Inc.	1
	Torque-Traction Technologies, Inc.	1
	Tremblay, Richard B.	1
	Trenchcraft, Inc.	1
	Trojan Technologies Inc.	1
	United States of America	1
	Wolverine World Wide, Inc.	1

Semiconductor Manufacturing		
Rank	Company or Organization	Number of Patents
1	Micron Technology, Inc.	611
2	Hewlett-Packard Development Company, L.P.	9
3	AMI Semiconductor, Inc.	3
	Unity Semiconductor Corp.	3
4	Cypress Semiconductor Corp.	2
5	Battelle Energy Alliance, LLC	1
	CancEr2 Inc.	1
	Credence Systems Corporation	1
	Ferro Corporation	1
	Honeywell International Inc.	1
	Intel Corporation	1
	The Boeing Company	1
	ZiLOG, Inc.	1

For additional copies of the 2006 Idaho Patent Report, contact

John R. Thompson

Stoel Rives LLP

101 S Capitol Boulevard, Suite 1900

Boise, ID 83702

(208) 389-9000

jrthompson@stoel.com

www.stoel.com

To further support the growth of Idaho's high-tech community,
Stoel Rives LLP also organizes and sponsors the Stoel Rives IDAHO INNOVATION AWARDS program.

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