

# LEARNING FROM SEATTLE'S ENTREPRENEURIAL HISTORY<sup>1</sup>

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**Our goal and motivation:** interpreting Seattle's long run of successful, externally oriented entrepreneurship

**Our outline,** in question format:

1. What causes growth in local economies?
2. What roles does entrepreneurship play?
3. What causes entrepreneurship in a local economy?
4. How did some of Seattle's most successful organizations get started?
5. What do those organizational histories suggest about entrepreneurship, and how does that compare to the dominant thinking?
6. What next steps do we propose?

## **What causes growth or decline in local economies?**

Let me define those terms. For our purposes, "growth" or "decline" means an increase or decrease in economic activity *per capita*. "Local economies" are geographic areas that are small enough to allow daily commuting between households and workplaces, and are open to external trade without barriers: essentially, metropolitan areas.

Some growth is totally *internal*. If the same people do the same tasks but do them more efficiently, you could have more *output* per capita. If more people do more things in the market economy than before – if all adults in a household begin working for pay, and paying *others* for childcare and takeout cooking – *economically measured* activity goes up per capita. However in our very open regional economies, most growth (decline) results from increased (or decreased) *external* demand for the output of the region: airplanes, software, seaport services, biomedical research, headquarters services for worldwide retailing companies. Those are *direct exports*. Most of us are or were employed in *indirect exports* – legal or financial services for local firms which export *their* products out of the region – or in *locally-oriented activities* like retailing, ministry, and education.

What causes an increase in export activity? There are many ways to categorize – I want to distinguish three causes:

1. *Increased external demand* for the types of goods or services produced in the region;
2. *Increased geographic concentration* of the goods or services produced in the region – in other words, an increase in the region's share of world output of those goods or services;
3. Development of *new goods or services* produced in the region, for sale outside the region.

Growth or decline of the first type – *external demand* – is often attributed to the business cycle. Regions whose export base is in civilian capital-goods production (like aircraft and automobiles) have cyclical economies, while regions whose export base is non-cyclical or anti-cyclical (like Federal Government services or national defense) have less cyclical

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economies. However, there are also longer-term trends at work: some sectors are facing a general increase in national or world demand, and others are “sunset” or “senescent” sectors. At some point, the demand for internal-combustion engines, the passenger cars that use them, and the approaches to engineering that design them, will all stagnate and decline. Regions that are focused on that complex of related activities will suffer over the long haul.

Growth or decline of the second type, based on changes in the *geographic concentration* of a sector, receives a lot of attention. This attention often gets framed as “regional competitiveness.” So let’s think for a minute: why might an externally oriented industry become more or less concentrated in a specific region?

The most straightforward possibility is that the economies of scale could increase over time, so that the world *needs* fewer facilities, likely owned by fewer companies, even if demand is growing. Activities that require massive capital equipment, and/or a great deal of research or development, face economies of scale, and often end up in tight oligopolies, like large aircraft, aircraft engines, or mainframe computers. As military and civilian aircraft and engines have become larger and more complex, their economies of scale have increased. These sectors began in many regions and have converged in a few regions.

A less straightforward explanation of geographic concentration over time is that a few regional economies may *evolve* to become more efficient for an activity. “Economic clusters” has been an over-used buzzword in economic-development circles for about 20 years now. A cluster is a set of firms and facilities in the same or related sectors in one metropolitan area.<sup>1</sup> The hope is that they interact sufficiently to supply each others’ needs quickly; that they benefit from a shared pool of labor with similar, high expertise; and that they purchase specialized services that don’t exist in all regions.<sup>2</sup>

A countervailing regularity is geographic *deconcentration* of a type of activity, as its production technology becomes standardized, its labor requirements become less specific, the number of potential competitors grows, and competitive pressures become ever greater. Production *disperses* from high-cost regions to low-cost locations. Capital coming from, or secured by firms in wealthy countries or regions is invested in capital-intensive production using low-wage workers in more peripheral countries or regions. This is usually referred to as the international or interregional product life cycle, and we’ve seen it in textiles, clothing, consumer electronics, semiconductors, and on and on.

I’ve gone through cyclical and long-term changes in external demand for the kinds of things a region exports, and concentration or deconcentration of world production in or from a region. The third and final cause for an increase in external demand for a region’s products is the development and growth of *new activity* in the region. This can reflect the movement of investment from one region to another – but this is a zero-sum game that too many regions attempt. We can’t discount the empirical relevance of this, but I want to focus on the development of new activities through entrepreneurship or “intrapreneurship,” which is major product innovation by existing companies.

So, in answer to our second question, **“What roles does entrepreneurship play in regional growth?”** I’ll focus on innovative entrepreneurship that establishes a new activity or sector in a region. Of course, entrepreneurship comes in many flavors. Most entrepreneurs start new ventures in established sectors, hoping that their contacts, energy, training, or

specific skills will provide enough of a competitive advantage to allow them to stay in business. But if their success comes at the expense of existing firms in the region, that's not going to drive regional growth.

### **What causes entrepreneurship in a local economy?**

Studies of entrepreneurship suggest at least four possible reasons for the geographic concentration of new ventures over time: manager or employee *spinout* from existing establishments,<sup>3</sup> which usually happens in the same region;<sup>4</sup> *intergenerational familiarity* with entrepreneurship;<sup>5</sup> localized *social norms* leading to acceptance of and support for self-employment, growth of small organizations, and even failure;<sup>6</sup> and early *awareness of new technologies* and their possible applications.<sup>7</sup> *Intergenerational transfers of wealth* have not been found to significantly affect individuals' proclivity to start new businesses.<sup>8</sup>

The academic literature is even more abuzz<sup>9</sup> about the location of successful innovative activity than it is about clusters. *Successful* innovations may be expensive and rare, but the market pays a premium to the one or two firms that are first-movers. These super-profits can be large enough to change the economic face of a region, as steel did in Pittsburgh, semiconductors did in Palo Alto, and airplanes and software have in Seattle.<sup>10</sup> But I get ahead of myself.

Since the stakes are high, everyone asks "What determines *where* breakthrough innovations occur?" You recall how in the 1980s every settlement with a population over 1000 declared itself "Silicon Acres" or "Silicon Sunrise" or Silicon something. That was chasing the wrong dream – the silicon breakthrough had already happened. Savvier companies and places started chasing the super-profits from THE NEXT BIG THING. In the late '90s, it was anything internet, but that actually didn't require any specific regional skills – anybody could claim to have an internet business plan. In the late 'oughts, we didn't need to chase innovation: real estate was making every region rich. Nowadays, it's "green energy," but someone in this room probably knows what the *real* next big thing is – and isn't about to tell the rest of us!

Economic geographers and economic development scholars have developed yet another phrase to describe what makes a place into fertile ground for successful innovation through entrepreneurship or intrapreneurship: "innovative regional milieu."<sup>11</sup> These are regions with networks of researchers, existing innovative companies, potential suppliers, angel investors, and top-notch educational institutions that have enough interlocking contacts to allow innovative researchers to identify commercial potentials, convince a company to take up these ideas or techniques, or spinoff new ventures while remaining employed or in contact with their existing employers. That's a long sentence, and I could provide references to theoretical, qualitative, and quantitative studies of each of those processes and connections: the characteristics of research and researchers that are more likely to attempt commercialization, the ways in which existing companies in an area support and inhibit innovative entrepreneurship,<sup>12</sup> the specializations and internal rules that make universities more likely to spawn entrepreneurial activity.<sup>13</sup> What this capacious literature shares is an assumption that innovative entrepreneurship requires a fairly rare combination of actors and relationships specific to a type of technology. That helps explain why successful, innovative regions are so rare.

Charles and I have our doubts, however. We gained those doubts about the salience of innovative regional milieu from something more fun – compiling stories from Seattle’s entrepreneurial history.

### **How did some of Seattle’s most successful organizations get started?**

Alaska Airlines, Amazon.com, Boeing, Costco, Microsoft, Nordstrom, Starbucks, the University of Washington, Weyerhaeuser – the names of many of the Seattle area’s largest employers (Table 1) are known worldwide, reflecting their brands’ strength and consumer presence. (Boeing, of course, does not sell to consumers, but manages to enter the popular consciousness via its duopolistic position in producing commercial jetliners). These *companies* trace their origins to twentieth-century Seattle. They have retained their corporate independence and continue to grow. The University of Washington, founded in Seattle in 1861, is by far the largest academic institution in the state.

Just seven years after the 1853 establishment of the Washington Territory, its Legislature mandated that a territorial university be founded in Seattle (an exercise in political geography, given that the territorial capital was established in Olympia and the state prison in Walla Walla). Local landowners donated ten acres immediately east of and above the then-current city, and the Territorial University of Washington opened in 1861. With statehood in 1889, the institution was renamed the **University of Washington**, and moved to its present location in 1895. That campus received a construction boost as the site of the Alaska-Yukon-Pacific Exposition in 1909, for which John Olmsted established much of the current landscape of the Seattle campus.<sup>14</sup>

The university served primarily as a teaching institution until World War II, during which the university took advantage of increased Federal funding for research, and after which the university’s enrollments expanded rapidly because of the GI Bill and the establishment of a medical school and a strong medical and health research complex. The university now wins more Federal research funding than any other public university in the US.

Emigrating from Germany in 1852, Frederick Weyerhaeuser soon discovered a talent for entrepreneurship and the economic potential of North American forests. After a few years on the east coast, he found work at an Illinois sawmill. Hired as a night watchman, Weyerhaeuser used one of the industry’s downturns as an opportunity to purchase the mill. Following the trail of timber to its source eventually led Weyerhaeuser to the Pacific Northwest, where in 1900 he acquired 900,000 acres of timberland from the Northern Pacific Railway and founded the **Weyerhaeuser Company**.<sup>15</sup> Washington’s abundance of timber resources and the availability of a diverse network of transportation methods made the region a perfect center for the timber industry.

Following Frederick’s death in 1914, his son F.E Weyerhaeuser took control of the company, and led successful intrapreneurship. F.E and his son J.P were able to make the Weyerhaeuser Company responsive to changing market conditions. The 1930’s marked the beginnings of tree-planting to replace natural reforestation, and the advent of the Pres-to-log to utilize scrap wood. The construction of the world’s first pulp mill in 1931 kept Weyerhaeuser

a float during the Great Depression through the production of paper, while most operations sustained major losses.

Acquisitions such as MacMillan Bloedel of Vancouver, and Willamette Industries of Portland, Oregon have given Weyerhaeuser a strong presence throughout the region as well as a diverse offering of products and services. The proximity of deepwater ports enabled trade with developing markets in South East Asia and South America, allowing Weyerhaeuser to become the dominant world provider of lumber.<sup>16</sup>

Emigrating from Sweden in 1886, John W. Nordstrom arrived in New York with five dollars. A series of laborious jobs carried John westward to Seattle where he first learned about the Klondike gold fields in Alaska. He used his hard-earned savings to buy a one-way ticket to Skagway where he staked claim to a productive field that he was able to sell for \$30,000. In 1900 he returned to Seattle, whose distance from Alaska allowed for a milder climate with good water access to the gold fields. While looking for a way to invest his fortune, John encountered a friend he had made in Alaska, Carl Wallin. Wallin and Nordstrom decided to partner and together they opened a small shoe-repair shop. The company's expansion was slow: **Nordstrom's** second shop wasn't opened until two decades later in 1923.

John Nordstrom retired in 1928; his two children bought out Wallin's stake in the company. Intergenerational transfers of ownership kept the company in the family and brought new approaches to the business. New product lines were added through acquisition of clothing retailers, and Nordstrom became a department store. With the third generation leading the company, Nordstrom went public in 1971 and subsequently began its expansion across the United States.<sup>17</sup> In 1985, Nordstrom became the largest specialty store chain in the country, and now operates over 150 stores in 28 states.<sup>18</sup>

The son of a German immigrant who gained wealth from trading land, timber, and iron ore, William Boeing benefitted from a wealthy childhood. He studied engineering at Yale, leaving at age 21 to seek his own fortune in the burgeoning timber industry of Washington State. He began two timber companies, and moved from the Pacific coast to Seattle, where he bought a shipyard in 1910.<sup>19</sup> He developed an interest in flying machines, and traveled widely to view them. In 1915 he purchased and assembled an airplane, grew dissatisfied with the way it flew, and worked with naval engineer Conrad Westervelt to design a better plane. The next year the two men started Pacific Aero Products Company, which soon became **Boeing** Airplane Company. Boeing relied on his boat craftsmen to build the wood-framed planes,<sup>20</sup> benefiting from the word-working expertise of this lumber-rich region.

Boeing's fortunes have often relied on the US Government, for good or ill: from its 1917 sale of Model C training planes to the US Navy,<sup>21</sup> the 1925 Contract Mail Act that allowed the founding of Boeing Air Transport to carry airmail on Boeing Model 40A planes, the 1934 Air Mail Act that *banned* corporate connections between airlines and aircraft manufacturers, to Boeing's spectacular growth during World War II and the Cold War, to the 1971 Congressional cancellation of support for development of a US-made supersonic transport.<sup>22</sup>

Boeing's commercial aircraft design and production have been focused in the Seattle region for all of its history, while its military production has been dispersed – in part reflecting the location of its corporate acquisitions, and in part from the preference of the US

Government to have some military aircraft production away from the West Coast. However, the company has threatened to relocate production of new models throughout its history, thereby receiving major public infrastructure and tax benefits from the State of Washington and local municipalities.<sup>23</sup> The stakes and the requests in these “locational tournaments”<sup>24</sup> have increased massively in recent decades. Three recent actions have increased the threats that the company is able to make: the relocation of corporate headquarters to Chicago in 2001; its unprecedented reliance on external contractors to design, build, and finance major components of the two-year-delayed 787; and its purchase of its fuselage-manufacturer’s facilities in South Carolina in 2009 to allow its first commercial-aircraft assembly outside its home region. Boeing has made clear its strategy to become a global engineering corporation rather than a Seattle airplane manufacturer, with implications for its local linkages and potential for local entrepreneurship.

With its headquarters in Seattle and market focus in California and Mexico, the name **Alaska Airlines** evokes a sense of geographic irony. Mac McGee purchased his first plane in 1932 from a Boeing subsidiary and formed McGee Airways to provide air transport services in Alaska. The company received a contract to deliver air mail, but Anchorage's harsh winter climate prevented the delivery of large packages during the winter. The airline established a storage facility in Seattle to house packages until they could be delivered – again, Seattle’s climate and relative location proved favorable. After mergers, the company was renamed Alaska Airlines in 1944.<sup>25</sup> The Civil Aeronautics Authority limited the airline’s market area primarily to Alaska until airline deregulation in 1978. Then the Alaska Air Group was founded in Seattle, where its headquarters and operations hub remain.<sup>26</sup>

The company known for keeping the world awake and alert, **Starbucks**, also got its beginnings in Seattle. In 1971 a team of sleep-deprived professors opened the first Starbucks inside Pike Place Market, the oldest continuous public market in the United States. The company roasted and sold coffee products for home preparation. In 1981 a salesman for a Swedish housewares manufacturer called on the Seattle coffee shop. After trying Starbucks' dark roasted coffee, Howard Schultz fell in love with the company and convinced the owners to take him on as a business partner. “God, what a great company, what a great city. I'd love to be a part of that.”<sup>27</sup>

Visiting Italy in 1982, Schultz was struck by the small espresso bars on nearly every street corner, offering freshly prepared drinks and a quaint atmosphere to relax and unwind. Could Starbucks coffee be prepared on premises, in many locations? The Seattle business partners refused to change the company’s business model, so Schultz created a new company, Il Gironale, modeled on the Italian espresso bar. The following year, Il Gironale purchased Starbucks’s four existing stores and was rebranded as Starbucks.<sup>28</sup> With its headquarters remaining in Seattle, the company underwent immense expansion – for several years opening a new store nearly every weekday.<sup>29</sup> Today the company operates 16,120 stores in 50 countries.

William Henry Gates III was born into a legacy of entrepreneurship, law, and education. Bill's father, William Henry Gates Jr., earned a bachelor’s degree from the University of Washington in 1949, and a law degree the year after. In 1964 he joined the law firm Shidler & King (later

Preston, Gates, & Ellis). The firm's success allowed such privileges as the ability to send their children to the Lakeside School, one of the few places where young Bill could have become acquainted with basic computers and a rich network of relational capital.<sup>30</sup> Then, using University of Washington computers, Bill and his classmate Paul Allen developed a program to analyze traffic data. As word of the traffic application spread, the Bonneville Power Administration requested Bill and Paul's assistance to computerize the Northwest Power Grid.

After graduating from Lakeside, Paul Allen went to Washington State University while Bill enrolled at Harvard in 1973. Paul Allen dropped out of Washington State University as a sophomore to take a programming job with Honeywell in Boston. Allen convinced Gates to drop out of Harvard and help him program a computer language for the new, relatively affordable Altair 8800. Together they founded Micro-soft in 1975, near Altair's manufacturing plant in Albuquerque, New Mexico.<sup>31</sup> In 1978, **Microsoft** left Albuquerque for Bellevue, Washington.

The small company benefitted from another company's development of a new type of product and a new organizational model. IBM decided to develop a stand-alone computer for individual workstations—the “personal computer.” IBM decided to change its business model of internal production of proprietary computers and operating systems. This allowed some company the chance to develop the operating system for a new type of machine that any manufacturer could produce, and IBM selected Microsoft. By 1982 Microsoft had licensed its M-DOS operating system to over 50 personal computer manufacturers. After many generations of new operating systems and end-user software, Microsoft software is presently on 90 percent of Personal Computers worldwide.

In 1972 a Seattle surgeon (William Hutchinson) founded the **Fred Hutchinson Cancer Research Center** to house promising new cancer treatments and research. The new center was led by E. Donnall Thomas, who had been the founding director of the University of Washington's Division of Oncology. The “Hutch's” first major development was the use of bone-marrow transplants in cancer patients.<sup>32</sup> However, because it sought out highly innovative prospects, its researchers have consulted with or founded many ventures in an entirely new techno-economic paradigm that has changed the nature of innovation in several sectors: biotechnology. This technology is based “on the application of recombinant DNA”<sup>33</sup> and has applications in pharmaceuticals, agriculture, environmental remediation, among other sectors. Though the technology grew out of patents developed in 1973 at Stanford and UC-San Francisco, and California remains a center for the sector,<sup>34</sup> Seattle's biotechnology sector has a better claim to forming an “innovative regional milieu” than any of the other sectors or clusters we'll mention. Significantly for the character of this particular milieu, none of the firms involved appear on the list of the region's largest employers.

Steven Gillis and Christopher Henney, two “Hutch” scientists who were internationally recognized for their studies in immunology, began thinking about marketing their expertise after a patent attorney in Seattle convinced them of the value of new patent protections. At the time they lacked the entrepreneurship and financial capital to run a commercial research enterprise. They would gain these later, in spades. They connected with Steve Duzan, a Seattle entrepreneur from an entirely different sector (Steve Duzan), and founded **Immunex** in 1981.

The company's first product was a protein named Leukine that stimulated the production of white blood cells in the body.

*Ten years later*, Leukine received therapeutic approval. The company's employment rose as it sought new products, and its stock price rose in anticipation of them. In 1993, Immunex was purchased by American Cyanamid, which was purchased by American Home Products a year later. Soon after, Immunex developed Enbrel, the first FDA approved treatment for rheumatoid arthritis which appeared on the market in 1997. The company was purchased by Amgen, a larger, California-based biotech firm. Rebranded as Amgen, the Seattle operation continues research and product development.<sup>35</sup>

Also in 1981, two UW scientists (Earl Davie and Benjamin Hall) joined a University of British Columbia scientist to start a biotech company in Seattle, named **ZymoGenetics**. Their entrepreneurship was based on research from these two universities and capital from the Danish company Novo Nordisk, which then acquired the company in 1988.<sup>36</sup>

Novo Nordisk underwent major restructuring in the late 1990s and ZymoGenetics no longer complemented the conglomerate's portfolio. By November 2000 ZymoGenetics was once again an independent company. However, the company hasn't developed many promising proteins and has burned through large cash reserves. The company has reduced and refocused its research in the face of operating deficits and only a few protein products on the market.<sup>37</sup>

Transfers of entrepreneurial skills have also played a key role in the founding of the leading wholesaler in the United States. Jeff Brotman was the son of Bernie Brotman, who created 18 stores throughout the northwest. Jeff Brotman began his career by partnering with his brother to form a specialty jeans retailer in the late 1970's. He continued investing in and opening retail establishments in the northwest, but it wasn't until 1982 that he and James Sinegal opened the first **Costco**.<sup>38</sup> The Costco concept, a no-frills membership club reliant on customer loyalty, was the brainchild of Bernie Brotman. While Costco *began* selling products to small businesses, new levels of club membership made the company popular among families. Costco operates its recession resilient business model through 520 stores and online.<sup>39</sup>

Finally we present a company that was founded in Seattle, but was based on ideas and wealth from an entirely different sector in an entirely different place. Jeff Bezos came from a family of scientists. He earned degrees in Electrical Engineering and Computer Science from Princeton in 1986. While working as a senior vice president for Bankers Trust in New York, Bezos developed a highly sophisticated hedge fund through which he discovered the economic potential of the Internet. His entrepreneurial breakthrough was to combine his awareness of computer science, the internet, and finance. In 1993 he and his wife left New York and drove across the country to Seattle where they found **Amazon.com** a year later, drawn to Seattle's proximity to two major book wholesalers and the city's pool of software talent.<sup>40</sup> The company's early-adopter status and aggressive growth provided a trade-name, customer base, software, data, and systems infrastructure to allow it to survive the "internet bust" of the early 21<sup>st</sup> century.



### **What do those organizational histories suggest about entrepreneurship, and how does that compare to the dominant thinking?**

Though we've presented too few and too short organizational histories to draw generalizations, we can draw some observations about localized entrepreneurship in this region. First and foremost, the geographic requirements vary according to economic sector. Absolute geography matters for resource-based activity: Weyerhaeuser's success required huge timber resources. Relative geography, in the form of Seattle's relationship between US population centers and Alaska, created the opportunity for Nordstrom to get its start serving gold prospectors and Alaska Airlines to serve travel and transport in Alaska. However physical geography had little to do with the founding and success of most of the other companies we have surveyed here.

Contrary to generalizations about the role of intergenerational wealth in spawning entrepreneurship, intergenerational wealth did have a direct role in Bill Boeing's ability to become enthralled with flying and his ability to begin an aircraft company; that wealth was based in his and his father's exploitation of natural resources. Intergenerational wealth had an indirect role in Bill Gates's early education in one of the best private schools in the region, where he gained access to computers in the early 1970s. Intergenerational entrepreneurship played a role in the founding of Costco, given Jeff Brotman's early exposure to retailing.

Prior exposure to technology and the consequent recognition of new uses for a specific technology were key to Bill Gates' decision to develop and sell operating systems for microcomputers, and to the ability of biomedical researchers to establish commercial ventures focused on biotechnology. Technological exposure and awareness of financing possibilities underlay Jeff Bezos's founding of Amazon and Howard Schultz's purchase of Starbucks. Retailing and coffee making were centuries-old activities, but the application of new technologies and creative financing were the bases for entrepreneurial success. The Seattle economy was the lucky beneficiary of these quite-flexible location decisions.

### **What next steps do we propose?**

Pulling together these corporate histories has led Charles and me to explore and develop three theoretical frameworks, which we suggest are complementary – different frameworks make sense for entrepreneurship in different sectors at different points in time. I will merely note them here, with thanks for this presentation as a motivation to develop them more for subsequent, more academic papers.

Earlier I introduced the concept of the *innovative regional milieu*, which dominates the literature on innovation in regions. Of the companies surveyed here, only the biotech companies exist in a mutually dependent network of researchers and suppliers, a network that includes the Fred Hutchinson Cancer Research center, the UW and several other companies, not-for-profit organizations, and research groups. In contrast to such a dense network of separate organizations, Boeing has internalized most of its linkages, or has contracted them out across the globe. Microsoft has acquired most of its innovation linkages, moving most to Redmond but maintaining some around the world.

These case studies have led us to develop the concept of *"loosely coupled entrepreneurship,"* in recognition of the sometimes serendipitous linkages among entrepreneurs, sometimes across generations. This concept is specifically distinct from the

more familiar concepts of entrepreneurial spinoffs and spinouts<sup>41</sup> from established companies or research centers – those concepts denote more direct relationships among entities.

Finally, we feel that these case studies provide support for what some researchers<sup>42</sup> have termed “*open windows of locational opportunity*.” In a nutshell, radical innovations often result from or in the founding of new firms without prior investment in existing technological or organizational paradigms. If successful, these firms and their activities may require entirely new supporting industries, downstream industries, work skills, labor-force expectations, and regulatory practices. Again if successful, the super-profits derived from these operations create new economic regimes and new economic regions, in the image of the new activities. After this process gets underway, it’s tough to stop or imitate it. Most Silicon Valley wannabes are unsuccessful. But before the process gets started, any place is as good as any other, as long as that place is not totally dominated by a single sector or way of doing business. Pittsburgh did it – Pittsburgh is a totally different economy now than 50 years ago. But the old economy rusted into oblivion before a new economy could take its place.

We’re more leery of generalizing *suggestions* for regional economies. Despite the distinction we’ve drawn between locally oriented entrepreneurship and the innovative entrepreneurship that brings resources into a regional economy, the fact that entrepreneurship is “contagious” across generations and sectors suggests that measures to encourage *any* entrepreneurship are good in the long run. We can ask ourselves “What are the barriers to employees becoming entrepreneurs?” and go after those barriers, at city, state, and national levels.

Successful entrepreneurship through sector-specific innovative regional milieux *and* through inter-sectoral, loosely coupled linkages require networks of acquaintances and information flow among individuals and institutions throughout the region. Corporate and research-institute cultures that encourage employee mobility across organizations help build those networks.

All three of the complementary frameworks we propose for understanding local entrepreneurship rely on attracting, creating, and maintaining highly skilled labor forces. Innovative regional milieux require dense networks of specialized researchers and workers; loosely coupled entrepreneurship or open windows of locational opportunity benefit from a wide variety of skills in a region. It all comes down to people – in the 21<sup>st</sup> century, not only men, as *this* paper might suggest: people prepared by training, temperament, and networks to recognize both technological and market opportunities.

Table 1

**Largest Employers in Washington State, 2008**  
(Puget Sound Business Journal, 2009 Book of Lists, December 29, 2008)<sup>43</sup>

**Boldfaced** entities are headquartered in the Seattle-Everett-Tacoma-Bremerton CMSA

<i>Entity</i>	<i>Washington State employment</i>	<i>Year established in Washington</i>
The Boeing Company	74,100	1916
<b>US Army Fort Lewis</b>	<b>40,091</b>	<b>1917</b>
<b>Microsoft Corporation</b>	<b>36,405</b>	<b>1979</b>
<b>Navy Region Northwest</b>	<b>23,961</b>	<b>1891</b>
<b>University of Washington</b>	<b>20,605</b>	<b>1861</b>
Wal-Mart Stores, Inc.	17,389	1993
<b>Providence Health &amp; Services Washington</b>	<b>14,000</b>	<b>1856</b>
Fred Meyer Stores	12,788	1972
<b>King County Government</b>	<b>12,586</b>	<b>1852</b>
<b>City of Seattle</b>	<b>9,946</b>	<b>1869</b>
<b>Group Health Cooperative</b>	<b>9,185</b>	<b>1947</b>
<b>MultiCare Health System</b>	<b>8,552</b>	<b>1882</b>
<b>Costco Wholesale Corp.</b>	<b>7,475</b>	<b>1983</b>
<b>Weyerhaeuser Corporation</b>	<b>6,770</b>	<b>1900</b>
<b>Alaska Air Group, Inc.</b>	<b>6,565</b>	<b>1951</b>
Washington Mutual Inc. (no longer independent)	6,200	1889
Washington State University	5,725	1890
<b>Starbucks Corporation</b>	<b>4,884</b>	<b>1971</b>
<b>Amazon.com<sup>a</sup></b>	<b>4,800<sup>a</sup></b>	<b>1984</b>
Safeway Inc.	4,673	1923
Lowe's Companies, Inc.	4,600	1990
<b>Nordstrom Inc.</b>	<b>4,421</b>	<b>1901</b>
<b>Swedish Medical Center</b>	<b>3,860</b>	<b>1910</b>
Fairchild Air Force Base	3,723	1942
Qwest	3,639	1890s
Battelle-Pacific Northwest National Laboratory	3,388	1965

<sup>a</sup>Amazon.com does not disclose employment totals by location or region. However, a 1997 news article announcing the company's planned headquarters move noted that "city planners estimated this fall that Amazon could bring 6,000 employees to South Lake Union over the next five years."<sup>44</sup> This table reduces that estimate by 20 percent, to allow for that estimate's assumption of employment growth.

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## ENDNOTES

<sup>1</sup> M.E. Porter (1998), "Clusters and the new economics of competition." *Harvard Business Review* vol.76 (Nov.-Dec.), pp.77-90.

<sup>2</sup> J.R. Bryson (1997), "Business service firms, service space and the management of change." *Entrepreneurship and Regional Development* vol.9, pp.93-111.

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