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Ghostwritten chapter from *Washington: The Nature of Innovation*

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Hardwired for Software:

Information Technology, Media, and Telecommunications

Given Washington's freedom from personal and corporate income taxes and that William H. "Bill" Gates III is a native Washingtonian, it was perhaps inevitable that he would build his information technology (IT) empire in the Pacific Northwest. The riches that he and his executives have gathered to themselves are legendary, but even the frontline troops have done well. The average earnings of software writers and IT workers in Washington topped \$99,000 in 2006, according to the most recent figures from the Software & Information Industry Association. For information workers in general, of which the state has about 103,000 (a number that rises to 200,000 to 250,000 for the technology sector overall, depending on how it's counted), the Bureau of Labor Statistics' Quarterly Census of Employment and Wages puts the average salary at a still very respectable \$86,000. Most of those workers are employed in the Seattle-Tacoma-Bellevue bailiwick, but the industry has strong outposts across the state. Bridging the software and IT sectors is an innovative infrastructure of media and telecommunications, from historic newspapers to the latest in wireless telephony.

Information Technology

Microsoft didn't invent personal computers, and it doesn't make them, either. And, although it is forever associated with Seattle, it didn't launch in Washington but in Albuquerque, New Mexico, where ex-Harvard man Gates and high school friend Paul Allen wrote the BASIC programming language for the Altair microcomputer, a synergy that is credited with sparking the personal computing revolution in the 1970s. In 1979 Gates and Allen replanted their rapidly growing colossus in Seattle; in 1981 IBM introduced its personal computer with Microsoft's 16-bit MS-DOS 1.0 aboard; and in 1983 Microsoft trotted out Windows, its graphical user interface. The company went public in 1986.

Microsoft continues to enjoy an unrivaled business share—it's still the world's top software company, despite repeated efforts to curtail its reach with antitrust allegations and lawsuits—and earned \$60.4 billion in sales in fiscal 2008. Net income in that year was \$17.7 billion, and its total assets added up to \$72.8 billion. Bill Gates remains as company chairman, though he spends a good deal of his time on philanthropy through the Bill and Melinda Gates Foundation, while Paul Allen is chairman of Charter Communications, among many other business pursuits. No longer solely a software company, Microsoft has expanded into video game consoles, digital media players, and computer peripherals, as well as technology services, and is working with mobile device manufacturers to develop handheld computers and cell phones using Microsoft systems. It also has begun deploying its Surface tabletop device that users operate through gestures

as well as touch. Microsoft employed some 91,000 people in 2008, keeping 28,000 of them busy at its main facility in the Seattle suburb of Redmond. In October 2008 it confirmed Windows 7 as the official name of the new version of its operating system, with the program scheduled for release beginning in 2009.

In addition to enriching itself, Microsoft has had a profound effect on the economic well-being of the entire state. The company spent \$8.2 billion on R&D alone in 2008, and over the years a forest of IT companies has grown up in the ground it prepared. In the early 1980s there were approximately 100 software companies in the state; 20 years later there were more than 4,200. Here's a small sampling: UIEvolution, in Bellevue, founded by former Microsoft designer Satoshi Nakajima in 2000, is a privately held company that develops cross-platform technology for delivering premium content to mobile phones, digital televisions, and other devices. Redmond-based Concur Technologies provides programs to manage employee spending, and announced a strategic partnership with American Express in 2008. Attachmate, headquartered in Seattle but with offices around the world, provides more than 65,000 customers with host connectivity, legacy integration, secure communications, and other information management solutions. Pentad Systems in Spokane provides hardware and network integration services as well, though on a smaller scale. IT consultant Avanade, based in Seattle and with offices from Austria to Australia, is a joint venture between Microsoft and global consulting firm Accenture. Seattle is also home to F5 Networks, whose programs to manage network traffic earned it gross profits of \$501.2 million in 2007. Meanwhile, to keep the baddies at bay, hunter-killer firms such as Internet Identity of

Tacoma search out and destroy online fraudsters (or fill in their phishing holes, anyway). Internet Identity's strategic partners include Microsoft and NCR Corporation.

The prevalence of so many IT firms has led to the formation of advocacy groups and entrepreneurial facilitators who stand by to keep the pipes open and the information flowing. They include the Washington Technology Industry Association, a statewide trade alliance with more than 1,000 member companies; the Washington Technology Center, which directs private, state, and federal funds toward entrepreneurs and young companies; Sirti, located in downtown Spokane and promoting the growth of the technology industry in the Inland Northwest; and the Northwest Entrepreneur Network, a venture community with more than 700 members.

Media

Washington is a well-read state, eager for up-to-the-minute news from traditional as well as modern electronic media. In the former camp are historic dailies such as the *Seattle Times*, the *Seattle Post-Intelligencer*, the *Tacoma News Tribune*, and the *Spokane Spokesman-Review*. The *Seattle Times*, founded in 1896, has won seven Pulitzer Prizes and publishes the *Post-Intelligencer* under a joint operating agreement. It owns a family of affiliated newspapers in Washington and Maine. The *Tacoma News Tribune* traces its history back to the weekly *Tacoma Ledger* in 1880 and became a McClatchy paper in 1986. Serving the reaches east of the Cascades, the *Spokane Spokesman-Review* is descended from the *Spokane Falls Review*, founded in 1883; its online version has won top awards from the Newspaper Association of America in recent years for its news and

entertainment sites. The state's smaller presses include the Pacific Publishing Company, whose papers offer neighborhood news and niche advertising to affluent communities around Seattle; the alternative newsweekly *Pacific Northwest Inlander* in Spokane; the *Peninsula Gateway*, a McClatchy weekly in Gig Harbor; and a pair of papers, the *Seattle Medium* and *The Facts*, that focus on the African-American communities in the Puget Sound region.

Supplementing and transcending the online versions of the dailies and weeklies are the purely digital media such as Newsvine and MSNBC.com. Newsvine, which carries newswire stories as well as content produced and posted by its users, went public in 2006 and was acquired by Msnbc.com in 2007. Msnbc.com, which gets more than 29 million hits a month, is operated by MSNBC Interactive News, a private joint venture of Microsoft (through its MSN division) and NBC Universal Cable. MSNBC.com is based in Redmond, while Newsvine's offices are in downtown Seattle.

Producers of electronic media applications such as RealNetworks and Windows Media Player have also found a virtual home along the shores of Puget Sound. RealNetworks, headquartered in Seattle, was launched in 1995 by former Microsoft man Rob Glaser and earned \$567.6 million in 2007. The company's RealPlayer application has become ubiquitous for streaming and downloading music, games, and video from the Internet, while its Helix cross-platform streamer is giving Apple's iTunes and other digital media applications a serious run for the money. Microsoft's Windows Media Player allows users to play Windows Media Audio (.wma) and Windows Media Video (.wmv) files, transfer content from computers to MP3 players and other mobile devices, and rip and burn CDs—even on a Mac.

Despite being on the forefront of modern media, Washington is no stranger to academic letters. The University of Washington Press, for instance, has published some 4,400 distinguished scholarly works since 1915, and recent works published by the Washington State University Press include titles on nuclear waste, the history of central Oregon, and the intellectual history of Africa. However—and this is the sort of thing that happens when super-smart engineers and dot-com millionaires are put together in one place—the state is also home to an imaginative comics and games publishing industry.

Fantagraphics Books and Wizards of the Coast are among the state's most famous imprints. Seattle's Fantagraphics, which has been doing its part to legitimize comic books as art and literature since the mid 1970s, publishes original works by formerly underground artists like R. Crumb as well as scary tales of the disaffected by the likes of Peter Bagge and Daniel Clowes. It also issues comprehensive reprints of such classics as *Krazy Kat*, *Peanuts*, and the often bizarre *Thimble Theater*—whose star, Popeye the sailor man, bears little resemblance to the white-suited swab he played on TV in the 1950s. Wizards of the Coast (WotC), a division of Hasbro since 1999, is a major publisher of card, paper and pencil, and computer role-playing games such as *Magic: The Gathering*, *Dungeons & Dragons*, and *Neverwinter Nights*. It also publishes speculative fiction, most notably R. A. Salvatore's apparently never-ending take on the Forgotten Realms fantasy world. The Renton company earned an estimated \$124.3 million in 2007. Other Washington publishers of games and related reading include Privateer Press (*Warmachine*), Green Ronin Publishing (*Mutants & Masterminds*), and Paizo Publishing, which also issues board games. Wading happily upstream against violence and sexual stereotyping, meanwhile, is Her Interactive of Bellevue. *Ghost Dogs of Moon Lake* and

other titles featuring teen sleuth Nancy Drew earned the private company about \$5.5 million in 2007. Like WotC, meanwhile, Seattle's Cranium Inc. was picked up by Hasbro, which paid a reported \$77 million for the brain-tickling party game in 2008.

The aforementioned super-smart people make sure that Washington makes the console connection as well. Bellevue Community College includes a digital gaming program among its scholarly pursuits, and the DigiPen Institute of Technology, which shares facilities with Nintendo of America in Redmond, offers a bachelor of science and a bachelor of arts in video game design, among other degrees. Games that DigiPen alumni have worked on include the *Orange Box* compilation for Valve and the *Halo* series for Bungie. The privately held Valve Corporation, whose games portfolio contains the first-person shooter *Half-Life*, is based in Bellevue. Bungie, which Microsoft spun off in 2007 after acquiring it in 2000, maintains its ultrasecret laboratories in Kirkland. Also in Kirkland are the Warner Bros. Interactive Entertainment subsidiary Monolith Productions, which has projects in development for various platforms, and RAD Game Tools, designers of the nearly universal Bink Video codec.

Telecommunications

Wireless phone and Internet services providers such as T-Mobile USA, MSN, Clearwire, and Speakeasy keep corporations, small businesses, and consumers connected to the people and data that matter most to them. T-Mobile USA is the U.S. subdivision of T-Mobile International, the wireless communications arm of Deutsche Telekom AG, a

German telecommunications company with some 125 million customers around the world. Headquartered in Bellevue,

T-Mobile USA reported having 31.5 million mobile telephone and wireless Internet (Wi-Fi) customers and 36,000 employees across the country in 2008. T-Mobile International released its Android-powered G1 smartphone in the United States in October 2008, simultaneously going up against Apple's iPhone and Microsoft's Windows Mobile compact operating system. MSN, meanwhile, working under the umbrella of Microsoft's Online Services Group in Redmond, provides news and entertainment as well as Internet services, including Hotmail, instant messaging, and search services. While Microsoft doesn't report the earnings of its divisions separately, sales at MSN were estimated at \$2.3 billion in 2006. Speakeasy, which provides broadband and voice over Internet protocol (VoIP) services, first saw the light of evening as a cybercafé in downtown Seattle's Belltown neighborhood in 1994. Electronics retailer Best Buy bought Speakeasy in 2007 for about \$97 million. Clearwire, based in Kirkland, provides wireless broadband services via radio waves in about 50 markets in Europe and North America. In 2008 the company announced a venture with Sprint Nextel to join the two companies at the wireless broadband hip.