

## Seattle: innovation hotspot or nightmare?

Seattle has been a hotspot in the technology scene for several years. Amazon, Boeing and Microsoft have their location here. The booming city is a guest in Alpbach. The city is described differentiatedly by Austrian researchers working there.

No question: the numbers are impressive. At least half of Seattle's population has at least a bachelor's degree, and Washington has the highest concentration of MINT (math, computing, science, technology) students in the US. According to "Forbes", Seattle is one of the top 15 most inventive cities in the world, with 4.25 patents per 10,000 inhabitants in 2017. And in 2016, Washington was at the top of the league in terms of economic growth in the booming US economy.

The roots of this development are often attributed to the so-called "Boeing Bust" in the early 1970s. At that time, the aircraft manufacturer terminated more than half of its approximately 80,000 jobs within a few months. Subsequently, diversification was sought in the region, which should keep the well-educated workers in the region. The University of Washington provided the right talent, followed by companies such as Microsoft and Amazon. Meanwhile, critical voices are increasing - for example, against Amazon's influence on urban politics, rapidly rising real estate prices and the associated gentrification and homelessness.

Open society and a lot of nature

For the biochemist Gustav Oberdorfer (University of Graz), Seattle's classification as an innovation center is "absolutely justified". Oberdorfer worked as a postdoc from 2012 to 2017 as part of a research project at the University of Washington and was recently awarded a highly endowed "Starting Grant" by the European Research Council. "As a hotspot for start-ups in the IT sector, it is certainly comparable to Silicon Valley," says the researcher to the Austrian Press Agency (APA). "Of course this has something to do with Amazon. In addition, Google has the second largest location there, Microsoft is practically around the corner in Redmond. 90 percent of the people I met over there were IT professionals."

In addition to the big companies, Oberdorfer makes out also another factor for the innovative power of Seattle: "There is certainly the most open society in which I have ever lived – it is a brightly mixed potpourri of different people, also definitely many ageing hippies which live in their own neighborhoods. This helps to attract young people who want to work creatively and freely. The society is much less conservative than in Austria. Especially young women come here because they do not expect them to become housewives at some point." Add to that the "incredibly beautiful area": "In the Pacific Northwest there is a lot of untouched nature – therefore one often sees a wild mixture of outdoor clothing instead of business suits in the city." Oberdorfer sees the increasing housing prices as the downside of the boom: "The rents are skyrocketing: in 2012, we paid \$ \1,580 per month for 50 square meters – now it costs the double. Gentrification is progressing much faster in Seattle, affecting all parts of downtown."

### High standard of living

Even Andreas Pedroß-Engel sees Seattle ambiguous: The quality of life is indeed relatively high in the US comparison, but “significantly lower than in Austria.” The graduate of the Graz University of Technology has been researching at the University of Washington since November 2014, especially on the subject of millimeter-wave imaging, i.e. the production of high-resolution three-dimensional images of objects, even if they are obstructed by (optically) opaque obstacles such as cardboard, plastic or entire walls. In 2017, together with colleagues, he founded the company ThruWave, which applies this technology for example in logistics and e-commerce, e.g. to ensure that the right number of potentially mixed items are in a package or warehouse.

Seattle has a relatively large and active startup scene clustered in the many startup incubators. Proximity to hi-tech companies like Amazon, Microsoft, T-Mobile US, Fluke, Boeing, SpaceX or Blue Origin is certainly helpful. Many start-up founders and employees used to work for the software giants and wanted to leave the corporate culture behind. In addition, the University of Washington is one of the leading research universities in the world.

### Food and living expensive

Similar to Oberdorfer, he also defines the social environment as an important factor in the appeal of Seattle: From a political point of view, the city is very progressive and liberal. Social issues such as the immigration policy of the current US government, Black Lives Matter, #MeToo, homelessness, etc. would dominate the public discourse, the population was ethnically mixed.

As one of the fastest growing cities, Seattle faces numerous problems: The city is overwhelmed by the increase in personnel traffic, the progress in construction of the light rail is slow. In addition, the high cost of living would result in twice as high prices for products such as milk as in Austria and rapidly rising real estate prices – compared to the previous year alone, there was an increase of twelve percent. In the county to which Seattle belongs, more than 12,500 people are homeless – the third largest quota after New York and L.A.

### Various sources of funding

Both private and public funding agencies are important for funding research. For Pedroß-Engel, regional university research funding plays only a minor role in his own research focus. However, there is a Joint Center for Aerospace Technology Innovation, a Washington State-sponsored program to support aerospace industry research. The main sources of research funding, in addition to the National Science Foundation, are above all various federal agencies of the US Ministries of Energy, Defense and Homeland Security. In addition, there are also various research projects supported by the industry.

For start-ups there is, in addition to a center for knowledge and technology transfer at the University of Washington, also public funding. The most important of these, according to Pedroß-Engel, are the Small Business Innovation Research (SBIR) Awards, which are awarded by various federal agencies such as the National Science Foundation, the National Institute of Health, the Defense Advanced

Research Projects Agency or NASA following a rigorous competitive selection process. In the early phase, however, the financing of start-ups works primarily by angel investors, then by venture capital.

“There are countless venture capital firms that have pitching days once a week,” explained Oberdorfer. “People come together with money and people with ideas.” In the university sector, there is also “enormous amount of philanthropy.” His former laboratory alone has received several tens of millions of euros from Amazon, Google or the Gates Foundation in recent years. In addition, there would be families who regularly sponsor buildings.