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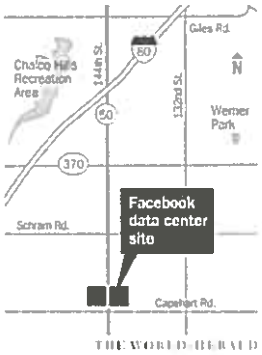
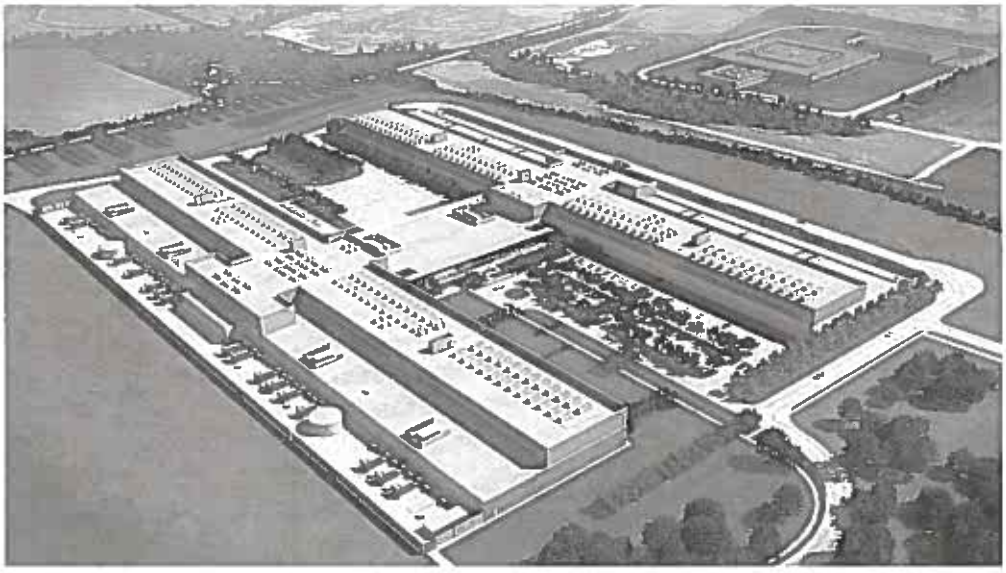
'We want to move fast': Facebook's new data center near Papillion should be online by 2020

By Hailey Konnath / World-Herald staff writer Apr 6, 2017





A rendering of Facebook's planned data center south of Papillion.
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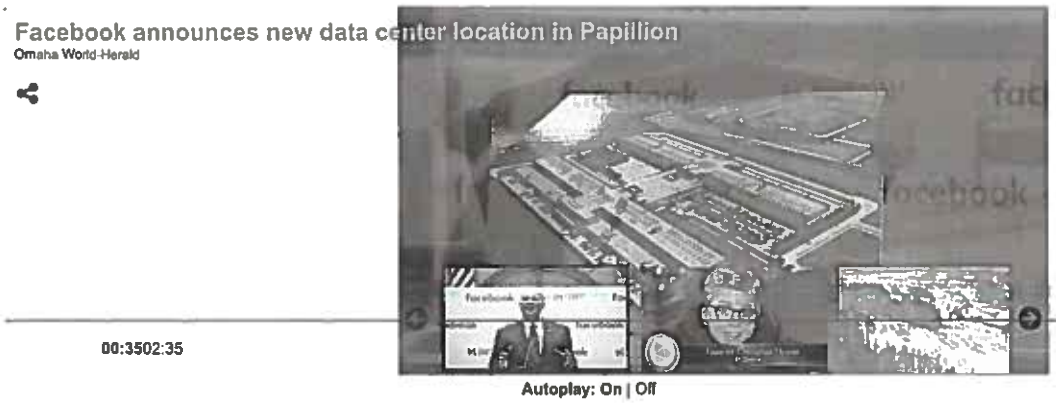

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As state and city leaders shared congratulatory handshakes and posed for photos with shiny blue Facebook shovels Tuesday morning, construction was already beginning on the social media giant's new data center south of Papillion.

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"We want to move fast," said Tom Furlong, vice president of infrastructure for Facebook.

Timing is key for Facebook when it comes to site selection, Furlong said after the announcement at Papillion's City Hall. He was joined by Gov. Pete Ricketts, Papillion Mayor David Black and other state and county leaders, who took turns standing in front of a backdrop featuring Facebook's logo intermingled with the Greater Omaha Chamber's "We Don't Coast" slogan.

Nebraska leaders say the deal was years in the making.

It's been a "big team effort," Ricketts said during the press conference Tuesday morning.

The planned data center — Facebook's ninth data center worldwide — is "massive," Furlong said. It will be Facebook's sixth data center in the United States and one of the most advanced and energy-efficient data centers in the world, he said.

The 146-acre campus will boast two 450,000-square-foot buildings at Nebraska Highway 50 and Capehart Road. The two buildings will be accompanied by a 70,000-square-foot administrative building. Construction will take about 18 months, Furlong said, and the data center is expected to be online in 2020.

"We're terribly excited about the opportunity to have Facebook here and help us be able to grow our burgeoning data center industry here in Nebraska," Ricketts said.

Ricketts said in a press release that landing Facebook will be vital in expanding the burgeoning Silicon Prairie, which has been a priority for his administration.

Last year, Ricketts visited with executives at Facebook's headquarters in Menlo Park, California, in an effort to entice the social media giant.

Furlong said Sarpy County's existing network of data centers helped catch Facebook's attention. Yahoo, Fidelity, Cabela's and Travelers already operate data centers in the county. Locating near other data centers creates an ideal ecosystem for tech companies to thrive, he said.

A deal with the Omaha Public Power District that will allow Facebook to power the facility solely through wind-generated electricity was also key, he said. Facebook has a goal of using 50 percent clean and renewable energy in its electricity supply mix for data centers in 2018.

Facebook data centers of this size usually bring about 1,000 temporary construction jobs and about 100 permanent jobs, said Lindsay Amos, a Facebook spokeswoman. Although Facebook does use some of its own contractors, construction labor will be mostly local. The company declined to discuss salaries for its permanent employees.

Once it's online, the data center will operate 24 hours a day, 365 days a year.

Papillion Mayor David Black said the Facebook campus, which is outside city limits but in Papillion's zoning jurisdiction, would lead to infrastructure improvements that he believes will spur economic growth in the rural area of the county.

Capehart Road will be paved for the project, which will improve accessibility to the area, Black said.

The data center will also get its own sewage lift station. Facebook's connection fee will help pay for it to be installed.

Using the codename Project Raven, Facebook has already gone through multiple layers of approval from Papillion as well as finalized land negotiations. Property owners weren't told in advance who was buying their land.

The Sarpy County Economic Development Corporation, which is part of the Greater Omaha Economic Development Partnership, represented Facebook in the approvals process. Andrew Rainbolt, executive director of the economic development corporation, said he's been working on the project since January 2016.

The Papillion site will be Facebook's first location in Nebraska. Organizers are not seeking tax-increment financing for the project.

Facebook currently has data centers in Prineville, Oregon; Forest City, North Carolina; Lulea, Sweden; and Altoona, Iowa. Construction on additional data centers is underway in Fort Worth, Texas; Clonee, Ireland; Los Lunas, New Mexico; and Odense, Denmark.

The Omaha Public Power District proved to be an innovative energy partner, playing a key role in helping to bring Facebook's massive data center to Papillion, Nebraska, and enabling the company to power its new center with 100% renewable energy through its Rate 261M.

To qualify for this rate, a customer must be large enough to meet certain criteria, such as requiring a minimum of 20 MW of demand for 161 Kv service and 200 MW of demand for 345-kV service. A customer also needs to own or acquire its own substation.

"We're on a mission to connect the world, and we're committed to powering this connectivity with the smallest footprint possible," Peter Freed, renewable energy manager at Facebook, was quoted as saying in a press release on OPPD's website. "Our goal is to reach 50 percent clean and renewable energy in our electricity supply mix for our data centers in 2018, and our work with OPPD brings us one step closer."

Facebook will get its renewable energy from the resurrected Rattlesnake Creek Wind Project. The project is located in Dixon County, Nebraska — about 100 miles from the data center — and will create up to 300 additional construction jobs.

The original development generated a buzz in 2013 when Kansas-based Tradewind Energy made its plans for the development public. But the company mothballed the project when it couldn't find a buyer in time to take advantage of federal tax credits, according to the Omaha World-Herald.

The new Rattlesnake Creek project at 320 megawatts is significantly larger than the original iteration of 200 megawatts.

Facebook will purchase 200 megawatts of the Rattlesnake Creek's output and the remaining 120 megawatts will be sold to other buyers.

Construction is expected to start by the end of this year. Once completed, it will be the second-largest wind farm in Nebraska.

https://www.renewableenergymagazine.com/wind/facebooka-s-nebraska-data-center-will-be-20171020

DATA C TERS

Why data centers fail to bring new jobs to small towns

Appl, Amazon, Google, and Microsoft continue building large data centers in rural areas, but most do not create jobs for local residents. Here's what you need to know.

By Alison DeNisco Rayome | September 19, 2016, 4:00 AM PST

Image: iStockphoto/cybrain

The data center industry is booming, due in part to massive growth of cloud computing (https://www.techrepublic.com/article/the-cloud-age-is-finally-upon-us-report-says/) and its associated vendors. But while these data centers may bring the tech industry to more rural towns, they fail to provide many jobs or greatly enhance the local economy, experts say.

Data centers are a multi-billion dollar industry worldwide, driven by data growth for individuals and businesses, said Mehdi Paryavi, chairman of the International Data Center Authority (https://www.idc-a.org/) (IDCA).

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"The data center industry is at the very beginning of really defining its future," Paryavi said. "It's still not recognized as a standalone industry by itself, though it's probably one of the most lucrative industries in the world today."

Tech giants such as Microsoft, Apple, Google, and Amazon lead the industry in terms of the quantity, quality, and size of the facilities and clouds they operate, Paryavi said.

SEE: Download: IT Data Center Green Energy Policy (http://www.techproresearch.com/downloads/it-data-center-green-energy-policy/) (Tech Pro Research)

(https://www.techrepublic.c ı/pictu
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Computer hardware depreciation calculator (Tech Pro Research) (http://www.techproresearch.com/do hardware-depreciation-calculator/)

In Boydton, VA, recently profiled in the New York Times (http://www.nytimes.com/2016/08/27/technology/cloud-computing-brings-sprawling-centers-but-few-jobs-to-small-towns.html?_r=1), Microsoft recently built a large data center housing thousands of computer servers.

"People thought when Microsoft came in it would create jobs, but that's just not the case," said E.W. Gregory, the head of the local International Brotherhood of Electrical Workers union. Instead, they brought in outside technicians to do most of the work, he added. About 25 local residents got jobs, primarily as administrative assistants or janitorial staff, Gregory said.

Hundreds of Boydton residents lost jobs in recent years, as several factories and a prison closed. Gregory said he believes Microsoft chose the town for a data center primarily because "land was cheap."

"It helps the community to a point, because restaurants, gas stations, and hotels are getting more business," Gregory said. "The people are nice and hard working, but there is no industry for them to work in."

Local incentives

While typical company headquarters can have between 200 and 1,000 jobs on site, the number of jobs at an average data center is usually capped at 30, according to a 2014 report (http://www.areadevelopment.com/data-centers/Data-Centers-Q1-2015/impact-of-data-center-development-locally-2262766.shtml) from CBRE.

Large companies often select data center locations based on how much geographic area they can cover with the right kind of low latency. Recently (http://www.nytimes.com/2016/08/27/technology/cloud-computing-brings-sprawling-centers-but-few-jobs-to-small-towns.html?_r=1), Amazon built large data centers in Columbus, OH, and Dulles, VA, while Microsoft has centers in Wyoming and Iowa. Google began building in Oregon, near the inexpensive hydroelectric power of the Columbia River. And Apple built a 500,000 square foot data center in Maiden, NC, in 2010, with plans to invest more than $1

billion (http://www.macrumors.com/2010/10/25/new-evidence-of-apples-plans-for-a-second-data-center-building-at-nc-site/) over 10 years in the data center campus.

"The data centers have been a natural fit in the foothills of North Carolina," said Todd L. Cherry, director of the Center for Economic Research and Policy Analysis at Appalachian State University. "As the textile and furniture industries left, there was considerable electricity capacity to serve the data centers."

The underlying issue is that the state and local governments provide incentives such as tax breaks, land, infrastructure, and services, usually in a competitive bidding process with other governments trying to land the data center, Cherry said.

"The incentive packages can be quite outlandish—far exceeding any reasonable economic justification," Cherry said. "This is a form of what we call 'the winner's curse.' When governments engage in a competitive bidding process over an uncertain benefit, the one that wins is the one that overestimates the benefit."

This kind of competitive bidding to attract companies often becomes more of a political game than an economic development strategy, Cherry said. Instead of spending resources to fight for an existing company, a better economic development approach is to create new economic activity by investing in things like education, infrastructure, and research and development, Cherry said.

Paryavi said he agreed that data centers often do not generate much economic growth for residents of rural towns where they are built. "But it does provide a cleaner environment, and a more quality job profile for those qualified to take it," he said. One data center can also be an anchor for others to join. "The aggregate of those could turn your town into a digital hub," Paryavi added.

It makes financial sense for large companies to recruit local tech workers when possible, instead of paying their own staff to visit the area, Paryavi said. But, if there is a lack of local tech talent, they will have to search elsewhere, he said.

Supporting schools

With the motto "good land, good living, good people," Shelby County, KY is home to data centers owned by Eaton Corporation, EON Energy, and Humana Insurance.

The county attracts data centers due to its proximity to major metro areas, the low cost of utilities, and the mild climate that is not prone to flooding, earthquakes, or storms, according to Shelby

County Judge Executive Rob Rothenburger. In the event of a storm, the companies have several backup systems to keep data safe.

In 2011, Eaton Corporation spent $80 million to build a 55,000 square foot data center in Shelby County's town of Simpsonville, KY. An additional $80 million went toward an identical data center in Louisville, KY.

Shelby County offered Eaton Corporation several incentives, including an industrial revenue bond, to build in the area. The company also receives tax benefits (http://www.thinkkentucky.com/newsroom/NewsPage.aspx?x=06232011_Eaton.html) through the Kentucky Enterprise Initiative Act, which allows it to recover state sales and use tax on construction costs, building fixtures, and research and development materials.

While Eaton's Simpsonville data center has only created about 15 jobs for local residents, these jobs are high paying, Rothenburger said. "They want to attract the brightest individuals from the local community, but they also brought in some internal personnel, especially at the start," Rothenburger said. As people are trained, and the internal people cycle to other areas, more jobs will open up, he added.

The average data processing, hosting, and related services salary was $38.21 per hour as of July 2016, according to the Bureau of Labor Statistics (http://www.bls.gov/iag/tgs/iag518.htm), or about $76,100 per year.

Despite the lack of new jobs, Eaton Corporation does make payments to local schools as part of its local assessment. In some ways, this is more beneficial, because the schools have more funds to improve without the student population growth that would occur if more jobs were offered in the area, Rothenburger said. The company also partnered with the city of Simpsonville to rebuild a community park and baseball field.

"Their contribution to schools has been a tremendous asset to our community," Rothenburger said. "If we could attract more data centers, we would at this point."

Industry growth

Data center growth shows no signs of slowing down: The industry is expected to double by 2021, due to massive acceleration of enterprise cloud adoption, according to a recent JLL report (http://www.us.jll.com/united-states/en-us/research/data-centers/trends). And data center providers continue to spread locations geographically for greater reliability and speed, the report stated.

To remain competitive, cloud providers will have to account for coming changes to the industry. A July Gartner report (http://www.gartner.com/smarterwithgartner/four-megatrends-impacting-the-data-center/) predicted that "by 2021, more than 90% of large data centers will revise their strategies due to major global socioeconomic and environmental trends." Digitalization, demographic and social change, urbanization, climate change, and resource scarcity are the trends driving the change, the report found. IT leaders must develop a data center strategy that takes these trends into account, or risk (https://www.gartner.com/doc/3255520/top-global-megatrends-impacting-data) a weak infrastructure or a failed business.

"America is no longer leading the world in manufacturing," Paryavi said. "But we are leading with our ideas, patents, designs, and data. Nowadays our clouds are making a bigger impact than our manufacturing could ever do."

The 3 big takeaways for Te

1. The data center industry is ng Apple, Amazon, Google, and Microsoft building larg it years to keep up with cloud computing demand.
2. Large companies often bu inexpensive land and utilities, but do not usually bring lai me residents expect they will.
3. Data centers are expected to double in number by 2021, due to more and more individuals and businesses moving operations to the cloud.

Keep up to date on the data center industry. Click here to subscribe to the TechRepublic Data Center Trends newsletter.

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Also see

- Global SDDC market to hit $139B by 2022, says new report (https://www.techrepublic.com/article/global-sddc-market-to-hit-139b-by-2022-says-new-report/) (TechRepublic)
- How a loud noise brought a data center to its knees (http://www.zdnet.com/article/how-a-loud-noise-brought-a-data-center-to-its-knees/) (ZDNet)
- New IBM Linux servers could boost AI and big data efforts (https://www.techrepublic.com/article/new-ibm-linux-servers-could-boost-ai-and-big-data-efforts/) (TechRepublic)
- 7 essentials of well-connected hybrid clouds (http://www.zdnet.com/article/7-essentials-of-effective-hybrid-clouds/) (ZDNet)

DataCenter Knowledge

DATA CENTER JOBS

The Economics of Data Center Staffing

How many employees are required to staff a data center? The numbers matter to economic development officials.

Rich Miller | Jan 18, 2008

How many employees does it take to run a data center? The Green Data Center blog explored the issue last week when it looked at hiring for new data centers in central Washington and found that Yahoo (YHOO), Ask.com, Intuit (INTU) and Microsoft (MSFT) have hired a total of 180 workers for their facilities. Microsoft, Yahoo and Intuit will each have 50 workers at their data centers in Grant County, while Ask.com is adding 30.

Blogger Dave Ohara contrasted those numbers with Google's standard figure of 200 new jobs for each data center project, and wondered about the discrepancy. "Something seems strange that four big data centers in the Columbia Basin have less employees than one Google data center," he writes. "What are those 200 people doing? Are they maintaining and building Google's custom servers?"

Data center employment often comes up in discussions of economic development. Many communities are eager to attract data center projects, but struggle to define the economic benefits of these facilities. Jobs have always been the primary benchmark by which economic development projects are measured. Incentive

packages offered by state and local governments are often based on the number of full-time jobs created by a new business.

This model doesn't work out well for data centers, which are typically highly automated, allowing a small number of workers to operate a large facility. A new data center can bring a large capital investment into a town, but create a much smaller number of jobs than a factory or office property of a similar size.

Some local officials like this scenario, since data center projects can attract a large ratable without adding significant traffic or large numbers of children to the local school system - two areas where large new businesses can create costs and headaches for municipalities. Others are less comfortable offering incentives to companies for buildings that will house electronics rather than people. This debate recently played out in a city council debate about a data center campus in Old Bridge, New Jersey.

As we've noted many times, comparing data centers is a tricky business, as facilities differ in ways that make apples-to-apples analyses difficult. That's definitely true with job creation, as data center projects generate large numbers of temporary jobs during the construction phase. As an example, Microsoft's data center in Quincy, Washington had as many as 500 workers on-site at a time during the construction process, but now employs 50 full-time staff to man the center.

As for Google (GOOG), they don't talk about their data center operations (see the Fight Club Rule of Data Center Secrecy), so it's hard to know precisely what those 200 jobs represent, and why they employ four times as many workers per facility as Yahoo or Microsoft. Perhaps we need a new data center efficiency metric: employees per square foot.