The Dice 2020 Tech Salary Report

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Average annual pay in the technology industry hit $94,000 in 2019—just a 1.3% increase from 2018. While that might not seem like a significant change, it's also not the whole story: In emerging technology hubs across the country, technology-related salaries have jumped considerably, suggesting localized demand for technologists who specialize in a variety of specific platforms.

With the tech industry's unemployment rate at historic lows, and many technologists expressing satisfaction with their current job, employers today will need to take a holistic approach to recruiting. In addition to compensation and "traditional" benefits such as healthcare and 401(k) match, employers should also consider that technologists are increasingly interested in emerging benefits such as college tuition reimbursement. With all that in mind, 2020 is the year for businesses to meet their recruiting goals by understanding and acting on the salaries and benefits that technologists value.

Tech Salaries

Salaries are flat nationally, but growing for emerging hubs, roles and skills.

As you might expect, salaries in some of the nation's largest technology hubs increased over the past year. For example, Silicon Valley (including San Francisco) saw average salaries increase 4.7% year-over-year, to $123,826. In New York City, salaries crept up 1.7% to $102,359 – no surprise, considering these hubs host companies of all types and sizes; there's always localized demand for technologists, and that translates into salaries that seem to drift ever-upward, year after year.

The real story, however, is in emerging tech hubs, where employers big and small are hiring technologists to work on every aspect of the business, from sysadmins who keep infrastructure running to iOS/Android developers who build mobile apps. This demand, in turn, translates into higher salaries. In many cases, these metro areas benefit from a confluence of factors that pull in talent and companies, including access to venture capital, universities and colleges, and an overall lower cost of living.

Salaries by Location

Average Tech Salaries by Metro Area

1 Silicon Valley
$123,826
Up 4.7% since 2018

2 Seattle
$109,628
Up 4.3% since 2018

3 San Diego
$109,428
Up 5.4% since 2018

4 Boston
$108,438
Up 5.2% since 2018

5 Baltimore/D.C.
$103,816
Up 2.5% since 2018

	METRO AREA	2019	YEAR/YEAR CHANGE
6	Portland, OR	$102,703	▲ 1.7%
7	Denver, CO	$102,557	▲ 6.5%
8	New York, NY	$102,359	▲ 1.7%
9	St. Louis, MO	$97,892	▲ 13.6%
10	Los Angeles, CA	$97,872	▲ 1.7%
11	Raleigh, NC	$95,810	▲ 5.2%
12	Austin, TX	$95,118	▲ 4.1%
13	Dallas-Ft. Worth, TX	$95,002	▲ 5.8%

	METRO AREA	2019	YEAR/YEAR CHANGE
14	Chicago, IL	$94,651	▲ 2.5%
15	Atlanta, GA	$94,084	▲ 9.5%
16	Houston, TX	$93,129	▲ 1.7%
17	Columbus, OH*	$92,017	▲14.2%
18	Kansas City, MO*	$90,092	▲ 8.1%
19	Philadelphia, PA	$89,095	▼ 4.5%
20	Tampa, FL	$88,753	▼ 8.3%

* Sample size less than 100 respondents, therefore, not statistically valid, but presented for continuity purposes only.

The real story is in emerging tech hubs, where employers big and small are hiring technologists to work on every aspect of the business.

A Deep Dive into Emerging Tech Hubs

COLUMBUS

Average Salary: $92,017
Growth: 14.2%
Key Employers: Accenture, JPMorgan Chase, Huntington National Bank, CareWorks, IBM

With a salary increase of 14.2% between 2018 and 2019, as well as rising tech demand in both private and public sectors, Columbus is growing into a full-fledged Midwestern tech hub. Local tech salaries average $92,017, bringing Columbus comfortably within range of cities like Austin (average salary: $95,118) long renowned for their tech scene, which suggests it's becoming ever more attractive to technologists. The 38% year-over-year growth in tech job postings (according to Dice's partner Burning Glass Technologies) suggests that businesses in the city, including IBM and JPMorgan Chase (Central Ohio's fourth-largest employer), are looking to increase their technology ranks.

ST. LOUIS

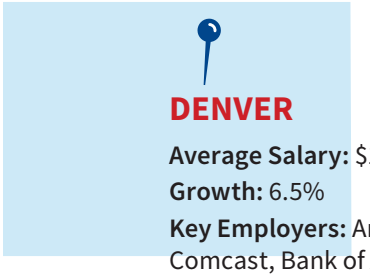
Average Salary: $97,892
Growth: 13.6%
Key Employers: Boeing, IBM, Wells Fargo, Edward Jones, Enterprise Rent-A-Car

Technology salaries in St. Louis have risen 13.6% over the past two years to an average of $97,892 in 2019, even as job postings dropped by 6%. What's behind this rise in pay? Large-scale businesses such as Boeing, IBM, Wells Fargo and Enterprise Rent-A-Car are all looking to hire at high volumes. In addition, the federal National Geospatial Intelligence Agency (NGA) announced that they plan to build a new campus in North St. Louis where some 3,100 employers will work.

ATLANTA

Average Salary: $94,084
Growth: 9.5%
Key Employers: Home Depot, IBM, Cox Communications, Capgemini, Georgia Tech

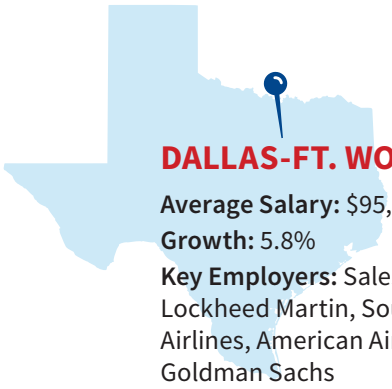
In recent years, Atlanta has positioned itself as one of the country's prominent tech hubs, and with a 9.5% year-over-year salary increase (and average salary of $94,084), it's hard to disagree. In 2019, Atlanta also had the fourth-most tech job postings in of any U.S. city (narrowly behind Chicago), which suggests that, while salaries are growing, the demand for tech professionals is as well. Atlanta has not only taken care to incubate and grow its startup community (for example, a 120-year-old skyscraper downtown, dubbed "FlatironCity," hosts startups, flexible co-working spaces, and an "innovation center"), but large businesses such as IBM, Capgemini, Cox Communications and Home Depot (which is headquartered in Atlanta) have local offices and are looking to hire at a significant volume.



DENVER

Average Salary: $102,557
Growth: 6.5%
Key Employers: Amazon, Comcast, Bank of America, KPMG, Transamerica,

Over the past decade, Denver has increasingly positioned itself as a growing tech hub. The average salary hit $102,557 (with year-over-year growth of 6.5%), placing Denver within reach (salary-wise) of well-established tech centers such as Seattle ($109,628). In fact, the data shows that Denver had the seventh-highest salary of any city in 2019. Some of the primary businesses responsible for Denver's growth include Amazon and KPMG. Part of Denver's growth can also be linked to available space: While larger tech hubs such as San Francisco and New York are increasingly restricted by their location, Denver has ample available room for companies and people to spread out.



DALLAS-FT. WORTH

Average Salary: $95,002
Growth: 5.8%
Key Employers: Salesforce, Lockheed Martin, Southwest Airlines, American Airlines, Goldman Sachs

While Austin is typically thought of as the prominent technology hub in Texas, Dallas-Fort Worth showed more significant salary growth (with salaries reaching $95,002 in 2019). In the same year, Dallas' tech job postings rose by 5%, driven by businesses including Lockheed Martin, Southwest Airlines and American Airlines. It's also interesting to note that local employers are on the hunt for technologists with a range of skills; for example, IBM has been on the hunt for software development, network engineer and project management roles, while Deloitte is in the market to fill cybersecurity and solutions architect positions.

SAN DIEGO

Average Salary: $109,428
Growth: 5.4%
Key Employers: Intuit, Qualcomm, Booz Allen Hamilton, Northrop Grumman, General Atomics

While San Diego has a lower average salary ($109,428) compared to Silicon Valley ($123,826), it showed more significant year-over-year growth. The 37% growth in local job postings exceeded that of any other California city—a notable accomplishment, given how Silicon Valley and Los Angeles are mature tech hubs with a desperate need for many kinds of specialized talent. The growth in San Diego stems at least partially from businesses that are hiring at high volumes, including Northrop Grumman, Qualcomm and Booz Allen Hamilton; on the technologist side of the equation, the lower cost of living (relative to San Francisco and Silicon Valley), as well as a high quality of life, make the city particularly attractive. But given that spectacular rate of growth, how long will it be until San Diego encounters some of the structural issues facing its California neighbors?

Average Tech Salaries by State

STATE	2019	YEAR/YEAR CHANGE
Alabama*	$84,071	▼ 2.3%
Alaska*	$94,385	▼ 41.2%
Arizona	$90,548	▼ 0.2%
Arkansas*	$73,694	▼ 6.1%
California	$109,173	▲ 3.0%
Colorado	$100,161	▲ 4.8%
Connecticut	$94,841	▲ 5.6%
Delaware*	$87,861	▲ 1.2%
District of Columbia	$112,764	▲ 10.1%
Florida	$82,039	▼ 4.8%
Georgia	$90,109	▲ 6.7%
Hawaii*	$95,061	▲ 23.8%
Idaho*	$74,224	▼ 19.8%
Illinois	$93,844	▲ 1.5%
Indiana	$79,251	▼ 5.4%
Iowa*	$83,392	▲ 6.3%
Kansas*	$86,515	▲ 7.9%
Kentucky*	$76,011	▼ 1.9%
Louisiana*	$69,486	▼ 15.5%
Maine*	$75,224	▲ 10.8%
Maryland	$97,159	▲ 3.3%
Massachusetts	$107,966	▲ 4.6%
Michigan	$82,662	▼ 2.3%
Minnesota	$94,146	▼ 5.1%
Mississippi*	$63,658	▼ 5.9%
Missouri	$89,073	▲ 9.9%

STATE	2019	YEAR/YEAR CHANGE
Montana*	$78,773	▲ 13.2%
Nebraska*	$88,867	▲ 8.0%
Nevada*	$91,376	▼ 5.0%
New Hampshire*	$92,402	▼ 13.1%
New Jersey	$102,305	▲ 0.8%
New Mexico*	$85,927	▼ 7.5%
New York	$101,451	▲ 3.3%
North Carolina	$89,286	▼ 0.3%
North Dakota*	$81,250	▼ 4.3%
Ohio	$87,019	▲ 7.8%
Oklahoma*	$68,475	▼ 9.2%
Oregon	$97,869	▲ 1.0%
Pennsylvania	$86,187	▼ 3.9%
Rhode Island*	$110,444	▲ 41.1%
South Carolina	$83,963	▼ 1.6%
South Dakota*	$58,952	▼ 5.7%
Tennessee	$81,254	▼ 9.4%
Texas	$92,053	▲ 3.1%
Utah	$93,224	▲ 13.2%
Vermont*	$82,488	▼ 0.2%
Virginia	$99,804	▼ 2.1%
Washington	$108,688	▲ 6.9%
West Virginia*	$80,843	▲ 30.7%
Wisconsin	$88,823	▲ 8.3%
Wyoming*	$68,762	▼ 39.5%

* Sample size less than 100 respondents, therefore, not statistically valid, but presented for continuity purposes only.

Salaries by Occupation

Which occupations saw the biggest increases in salary and job postings between 2018 and 2019? The short answer: Those that allowed businesses to wrangle and analyze data, build applications, and make sure those applications went into the world relatively bug-free.

Average Tech Salaries by Occupation

OCCUPATION	2019	YEAR/YEAR CHANGE
Systems Architect	$138,277	▲ 7.7%
Data Architect*	$128,890	▼ 0.5%
Cloud Engineer	$128,347	▲ 5.6%
Product Manager	$121,316	▲ 6.3%
Security Engineer	$121,228	▲ 9.5%
DevOps Engineer	$117,478	▲ 5.2%
Project Manager	$116,012	▲ 4.6%
Software Developer	$114,336	▲ 4.7%
Data Engineer	$113,249	▲ 9.3%
Sales Engineer	$110,030	▲ 21.8%
Data Scientist	$106,298	▲ 11.4%
MIS Manager	$106,080	▲ 1.1%
UI / UX Designer*	$105,226	▲ 7.5%
Database Administrator	$104,127	▲ 0.6%
Mainframe Systems Programmer	$102,879	▲ 2.2%
Other Info Technology	$97,396	▲ 1.7%
Business Analyst	$92,760	▼ 2.3%
Quality Assurance Engineer	$91,098	▲ 5.0%
Network Engineer	$89,596	▲ 3.9%
Systems Administrator	$82,961	▲ 0.4%
Technical Writer	$78,046	▼ 8.9%
Web Developer	$77,615	▼ 4.5%
Technical Recruiter	$75,862	▲ 12.0%
Hardware Engineer	$70,841	▲ 2.5%
Help Desk Support	$50,009	▲ 0.1%

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A Deep Dive into Key Occupations

Security Engineer

Average salary: $121,228
Growth: 9.5%
Defining skills*: Information Security, Network Security, Vulnerability Assessment, Intrusion Detection, Security Operations
Distinguishing skills**
NIST, Threat Analysis, Nessus, Vulnerability Analysis, McAfee

In the wake of several high-profile data breaches over the past few years—including Equifax, Facebook, Marriott International, and others—companies are more cognizant than ever that a security breach can cost corporate reputations and lots of money. No CEO wants to be dragged before Congress to explain how their company accidentally let a hacker steal personal information from 50 million customers.

At the same time, the increasing complexity of corporate IT infrastructure makes it harder to secure than ever. That's why companies really want highly specialized security engineers who can recognize (and patch) the vulnerabilities that inevitably pop up in the system. Those engineers are very hirable if they possess certifications such as CompTIA Security+, Certified Information Systems Security Professional (CISSP), and GIAC Certified Incident Handler (GCIH).

Employers really want security engineers who can conduct a vulnerability analysis, model threats, and figure out how to prevent data loss. As a result, salaries (on average) have risen from $110,716 in 2018 to $121,228 in 2019 (representing 9.5% year over year growth). Businesses that are hiring security engineers include Target, U.S. Bancorp and Northrop Grumman. Employers that are looking to hire security engineers can expect an average of 40 days to fill a vacancy.

Project Manager

Average salary: $116,012
Growth: 4.6%
Defining skills*: Budgeting, Scrum, Microsoft Project, Stakeholder Management, SDLC (Systems Development Life Cycle)
Distinguishing skills**
Business Analysis, ITIL (Information Technology Infrastructure Library), Lifecycle Management, Systems Development, Agile Development

Project managers are some of the most vital technologists within a company, which is one reason why they pull down an average salary of $116,012 (with a 4.6% growth between 2018 and 2019). As the job title suggests, they guide projects from initiation through planning and execution, which demands high levels of organization, adaptability, and ability to recognize and solve multi-variable problems. With software development becoming exponentially more complicated, the need to manage projects at an exacting, granular level is increasingly important, powering project managers' growth as a job category. As a result, the average time to fill project manager roles is roughly 38 days.

In addition to technical proficiency in Agile and various methodologies, project managers must display considerable soft skills; they must communicate progress regularly to senior management, negotiate among team members, and convey plans to external stakeholders. Employers are hiring this occupation at significant volume include Fiserv, IBM, Deloitte and Target.

* Burning Glass Technologies' Defining skills represent the day-to-day tasks and responsibilities of the job. An employee needs these skills to qualify for and perform successfully in this occupation.

** Burning Glass Technologies' Distinguishing skills are the advanced skills that are called for occasionally. An employee with these skills is likely more specialized and able to differentiate themselves from others in the same role.

Software Developer

Average salary: $114,336
Growth: 4.7%
Defining skills*: Java, SQL, JavaScript, Python, Object-Oriented Analysis and Design
Distinguishing skills**
Continuous Integration, HTML5, JavaScript Object Notation (JSON), React, PostgreSQL

The ubiquitous need to build software is why software developers accounted for 12% of all tech job postings in 2019; in addition, such roles take an average of 39 days to fill, which hints at the aggressive fight among employers for candidates with the right mix of skills and experience.

The top employers for software developer positions include tech titans such as IBM, Amazon and Accenture, but even the smallest startups need developers skilled at front-end and back-end tasks. The most common software-development skills include Java, SQL, JavaScript, Python and C++, and software developers are always interested in expanding their skillsets. For example, mobile developers who have spent the past decade building iOS and Android apps using Objective-C and Java are no doubt very interested in Swift (Apple's new-ish language for iOS) and Kotlin (which Google recently named a "first class" development language for Android). Those developers who specialize will often ask for higher starting salaries and additional benefits.

Data Engineer

Average salary: $113,249
Growth: 9.3%
Defining skills*: Python, SQL, Big Data, Apache Hadoop, Extraction Transformation and Loading (ETL)
Distinguishing skills**
Data Warehouse Processing, Relational DataBase Management System (RDBMS), ElasticSearch, Apache Impala, Apache Oozie

The challenges facing data engineers will only become more complex in coming years. Everything from IoT devices and wearables to POS dashboards are feeding unimaginable amounts of structured and unstructured data to companies. Data engineers, in turn, must figure out how to store, move, and clean that data so that data scientists and other professionals can analyze it for valuable insights.

That complexity means that experienced data engineers have a plethora of skills, from Python and SQL programming to working with Apache Hadoop and Scala. That makes them sought-after and highly valuable: Data engineering salaries have increased by more than 9% year-over-year, along with a 50% increase in job postings. Employers such as Amazon, Accenture and Capital One are all hiring this occupation at a large scale, and, as a result, the average time to fill for data engineers is 46 days. The hunger for these technologists seems unlikely to abate anytime soon, given how badly companies want as much data as possible for their operations.

Data Scientist

Average salary: $106,298
Growth: 11.4%
Defining skills*: Python, Machine Learning, SQL, Big Data, Apache Hadoop
Distinguishing skills**
Scikit-learn, Keras, Pandas, Classification Algorithms, NumPy

It's one thing to collect massive amounts of data from clients, customers, and other sources; it's quite another to successfully analyze that data in ways that executives and employees can utilize to make the business grow. Because data science is often as much an art as a science, it requires quite some time to master; and because of that, data scientists with the right mix of skills and experience can command sizable average salaries. Between 2018 and 2019, average salaries for data scientists grew from $95,404 to $106,298, representing more than 11% growth, along with a 7% growth in job postings. The average time to fill data scientist roles is 46 days. That growth and demand is directly attributable to companies collecting more data, as well as recognizing the value of analyzing it in order to enhance corporate strategy. Specifically, businesses looking to hire data scientists in high volumes in 2019 included Bayer, Capital One, Facebook and Amazon.

Python, machine learning, and Big Data topped the most-requested skills. As datasets grow larger, and the tools to analyze them more advanced, data scientists will also have to consider how artificial intelligence (A.I.), will impact their jobs in future years. On the most straightforward level, A.I. and ML tools will automate many data-science functions, giving more employees the ability to mine data for insight. That means flesh-and-blood data scientists will primarily focus on the thorniest, most nuanced challenges involving their companies' datasets.

Quality Assurance (QA) Engineer

Average salary: $91,098
Growth: 5.0%
Defining skills*: Selenium, Atlassian JIRA, Automated Testing, Performance Testing, Regression Testing
Distinguishing skills**
Scenario Testing, Apache Jmeter, Unit testing, JUnit, TestNG

Quality assurance engineers ensure that company standards are met at each step, no matter how fast and complicated the project. QA is so central to software-building that those technologists who specialize in it can command a generous salary: $91,098 on average in 2019, representing an increase of 5% from 2018. The salary for these professionals is also matched by the time to fill: 39 days on average. Some of the top skills requested for QA engineers include Selenium, Java, SQL and Python—which is unsurprising, considering that Java and Python are two of the programming languages that a vast majority of apps are built in, and SQL is a vital part of most database work (Selenium is an open-source framework for testing web applications). Top employers in the market for QA engineers include Apple and Amazon.

* Burning Glass Technologies' Defining skills represent the day-to-day tasks and responsibilities of the job. An employee needs these skills to qualify for and perform successfully in this occupation.

** Burning Glass Technologies' Distinguishing skills are the advanced skills that are called for occasionally. An employee with these skills is likely more specialized and able to differentiate themselves from others in the same role.

Salaries by Skill

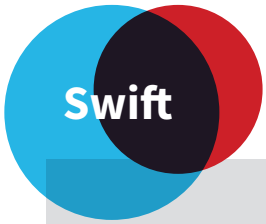
When it comes to skills and pay, it all comes down to that most basic of laws: supply and demand. With some older skills, the number of proficient technologists is relatively low, so employers end up paying a lot more to secure their services (this is a key reason why people who know their way around an ancient mainframe, for example, can earn very significant amounts of money; there's only a small number of active professionals with a grasp of decades-old hardware and operating systems).

With "hot" skills such as deep learning (a key method for machine learning), the same theme applies: A small but growing number of technologists have mastered these new technologies, and can extract high salaries from hungry employers. And sometimes, there are situations where a large number of technologists have mastered a particular skill, but the market for that skill is still so-white hot that salaries have kept rising; just look at how compensation for Swift, which is used to build apps for Apple's software ecosystem, has continued to rise despite a healthy pipeline of technologists who've mastered it.

Highest Average Tech Salaries by Skill

SKILL	2019	YEAR/YEAR CHANGE
Apache Kafka	$134,557	▲ 5.5%
HANA	$134,462	▲ 9.4%
Cloudera	$133,695	▲ 8.9%
MapReduce	$132,708	▲ 7.9%
Cassandra	$132,497	▲ 6.7%
Chef	$132,136	▲ 19.5%
Mokito	$131,772	▲ 11.5%
Service Oriented Architecture (SOA)	$131,556	▲ 7.6%
Amazon Redshift	$130,723	▲ 4.5%
PAAS	$130,669	▲ 6.3%
Deep Learning	$129,978	— N/A
Elasticsearch	$129,938	▲ 4.8%
Zookeeper	$129,833	▲ 8.2%
Amazon Route 53	$129,295	▲ 7.7%
Dynamo DB	$129,255	▲ 2.9%
Jetty	$128,751	▲ 14.4%
NoSQL	$127,741	▲ 4.3%
Redis	$127,441	▲ 4.0%
Spring Framework	$127,286	▲ 16.0%
Containers	$127,110	▲ 5.7%

A Deep Dive into Hot Skills



Average salary: $116,949
Growth: 15.1%
Roles that demand Swift*: Mobile Application Developer, Web Developer, Software Developer, QA Engineer, Computer Programmer

Launched in 2014 (and updated continuously ever since), Swift is a general-purpose, multi-paradigm, compiled programming language developed by Apple for iOS and its other operating systems. More and more, businesses need technologists to create apps that run on iOS. As a result, the demand and salary associated with Swift rose by more than 15%, hitting $116,949. Those developers who've mastered Swift should also know Objective-C, Apple's much-older programming language, which is nonetheless fully featured and used to maintain legacy code.

Average salary: $134,462
Growth: 9.4%
Roles that demand HANA*: Business Intelligence Analyst, Technology Consultant, Business Intelligence Architect, Security Management Specialist, Database Administrator

HANA, an in-memory relational database-management system built by SAP, showed an average salary of $134,462 (9.4% growth year-over-year) for positions it's associated with. The platform's selling point is speed; in addition, HANA is offered as an Infrastructure-as-a-Service (IaaS) through Amazon Web Services (AWS) and other cloud vendors. HANA is often associated with positions such as business Intelligence analysts and tech consultants, both of which must rapidly process databases for insights.

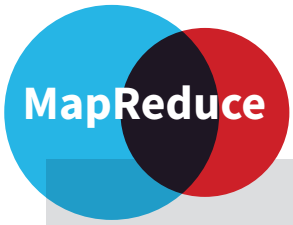
When it comes to databases, ERP, and CRM, both SAP and Oracle are locked in a tough battle with cloud vendors such as Salesforce and Microsoft, and the market could change radically in coming years, along with the enterprise-software skills that pay the most.

Although many companies have other database-management systems in place, HANA is still used by shops that bought heavily into SAP products, and it's integrated tightly into those companies' data infrastructures. In other words, like many enterprise-software products, it's quite "sticky," even if the install base (and the number of professionals who are skilled in its use) is relatively low vis-a-vis the overall tech industry. That stickiness, and the high specialization of the technologists who work with it, help drive demand and salaries upward.

Average salary: $133,695
Growth: 8.9%
Roles that demand Cloudera*: Statistician, Software Developer, Business Intelligence Architect, Cyber Security Engineer, Market Research Analyst

Cloudera includes various data-management and analytics tools (either on-premises or via the cloud). Thanks to partnerships with Oracle, Intel, and other companies, these tools have a rather significant enterprise footprint, which is why employers are interested in technologists who know their way around the various Cloudera packages. In 2019, salaries associated with Cloudera grew by nearly 9% to $133,695. Both data-related occupations and a variety of others, including sales engineers, request Cloudera at significant levels.

* Source: Labor Insight Jobs (Burning Glass Technologies)



Average salary: $132,708
Growth: 7.9%
Roles that demand MapReduce*:
Data Engineer, Data Scientist, Database Architect, Data Warehousing Specialist, Sales Engineer

Many companies utilize the MapReduce framework when crunching through enormous datasets on sprawling hardware clusters and grids. Working with MapReduce is a highly specialized skill; technologists want a setup that will reliably process data at an acceptable rate, with a trade-off between computation and network-communication costs (which is why it's often better to go with another method when dealing with datasets on a single machine or a tiny cluster).

Given how MapReduce is utilized in everything from machine learning to document clustering, it's considered invaluable at many organizations. Thanks to that, salaries associated with MapReduce rose by nearly 8% in 2019, to $132,708. MapReduce is frequently associated with data-related roles, from engineers and scientists to architects and warehousing specialists.

Average salary: $134,557
Growth: 5.5%
Roles that demand Apache Kafka*:
Data Engineer, Database Architect, Software Developer, Data Scientist, Validation Engineer

Apache Kafka is an open-source stream-processing framework that allows companies to more effectively manage real-time data feeds; it's great for real-time analytics and managing data across dispersed systems.

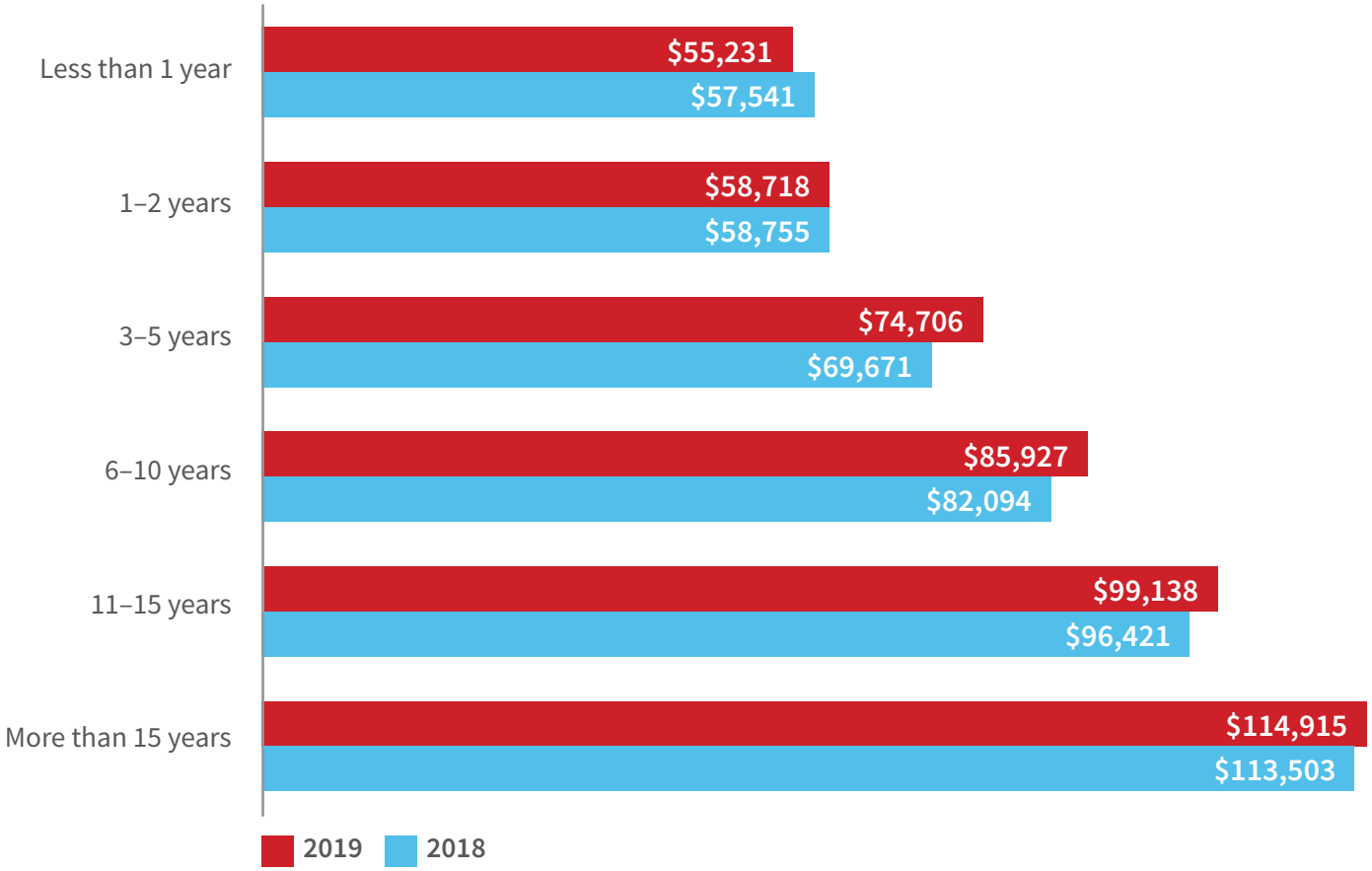
It's a valuable and highly specialized tool, which is why salaries associated with it were the highest of any skillset in 2019 ($134,557); in addition, year-over-year growth hit 5.5%. This rise in salary for Kafka is closely linked to the 38% growth in the number of job postings requesting the skill in 2019. Moreover, more than 30% of software engineer job postings and 11% of data engineer job postings requested the skill. With this platform trending upwards, large businesses in need of its practitioners include Deloitte, JPMorgan Chase and Capital One.

Salaries by Experience

Employers are rewarding technologists who are early in their career with greater salary growth. Specifically, those with 3–5 years of experience saw salaries increase by 7.2% in 2019, compared to 4.7% for those with 6–10 years of experience, 2.8% for those with 11–15 years of experience and 1.2% for those with more than 15 years of experience. This is also consistent with the demand for professionals with 3–5 years of experience: In 2019, the number of job postings targeted at this demographic rose by nearly 2%.

At the same time, salaries decreased by 4% for technologists with less than one year of experience. In the past, desperate employers were willing to pay higher salaries to those with even minimal experience; today, however, the market has corrected itself and closed the salary gap between those with less than a year of experience and those with 1–2 years of experience.

Average Salaries Based on Experience

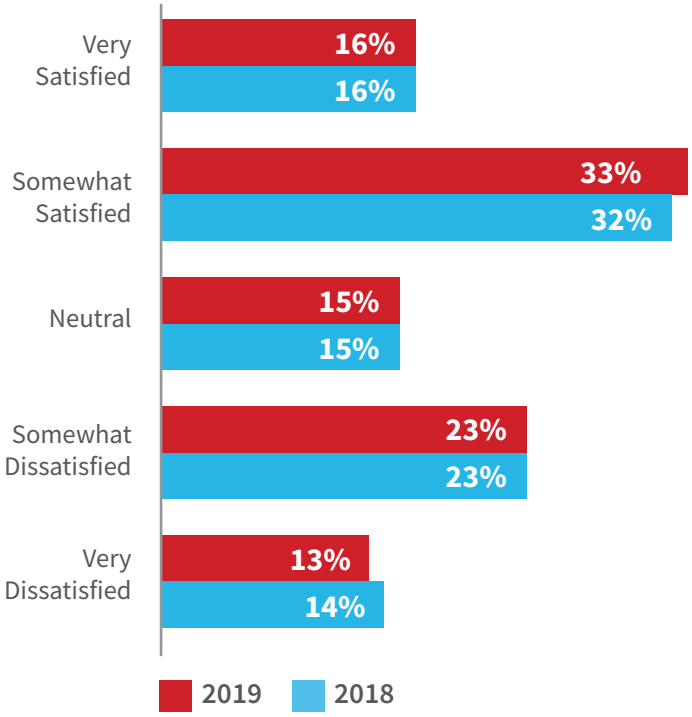


Job Satisfaction

Job and salary satisfaction is stable, though employers shouldn't get complacent; there's room for improvement.

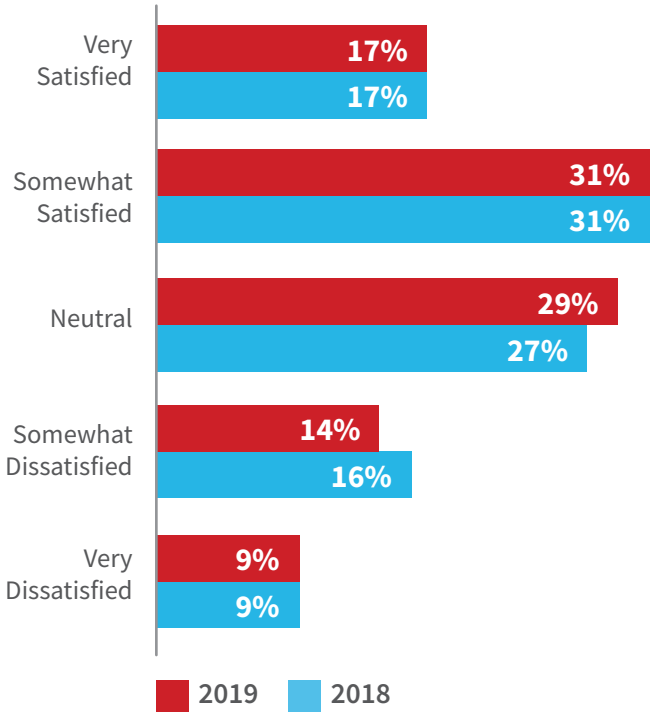
Compensation Satisfaction

How satisfied are you with the compensation in your current or most recent position?



Job Satisfaction

How would you rate your satisfaction with your current or most recent job?

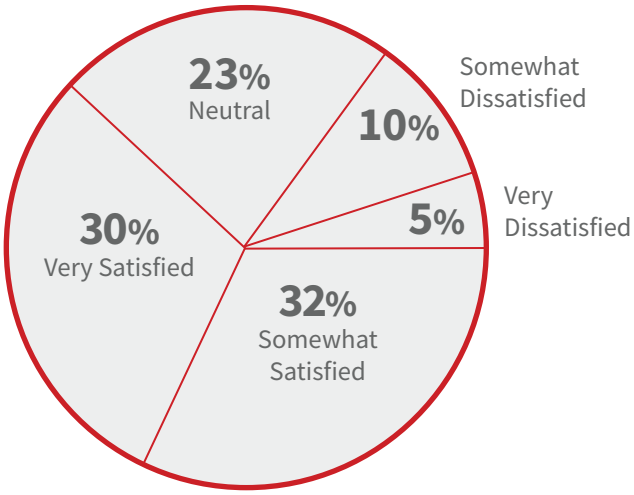


Nearly half of respondents said they were satisfied (or very satisfied) with their current or most recent job in 2019, and 49% were satisfied with their compensation.

As you might expect, there is a strong link between satisfaction and compensation (as well as other factors). For example, a technologist satisfied with their current job had an average salary of $102,478, while the average salary of a dissatisfied technologist was $82,470—more than a $20,000 difference.

Satisfaction with Team

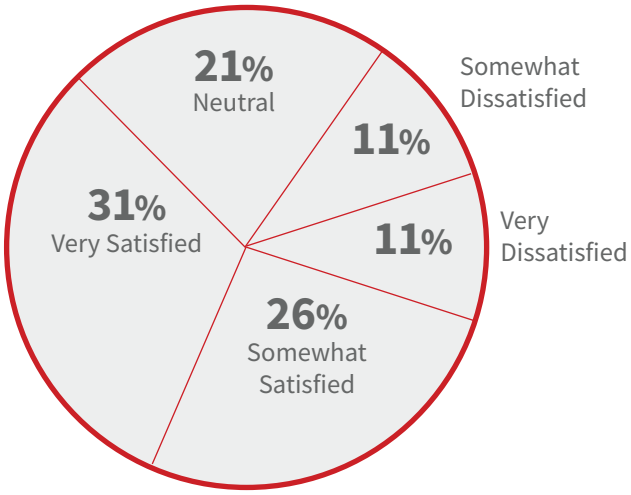
How would you rate your satisfaction with the team you work with?



Technologists are generally content with their teams: more than 62% of respondents said that they're either satisfied or very satisfied in that regard. Some 57% of respondents stated they're either satisfied or very satisfied with their managers.

Satisfaction with Manager

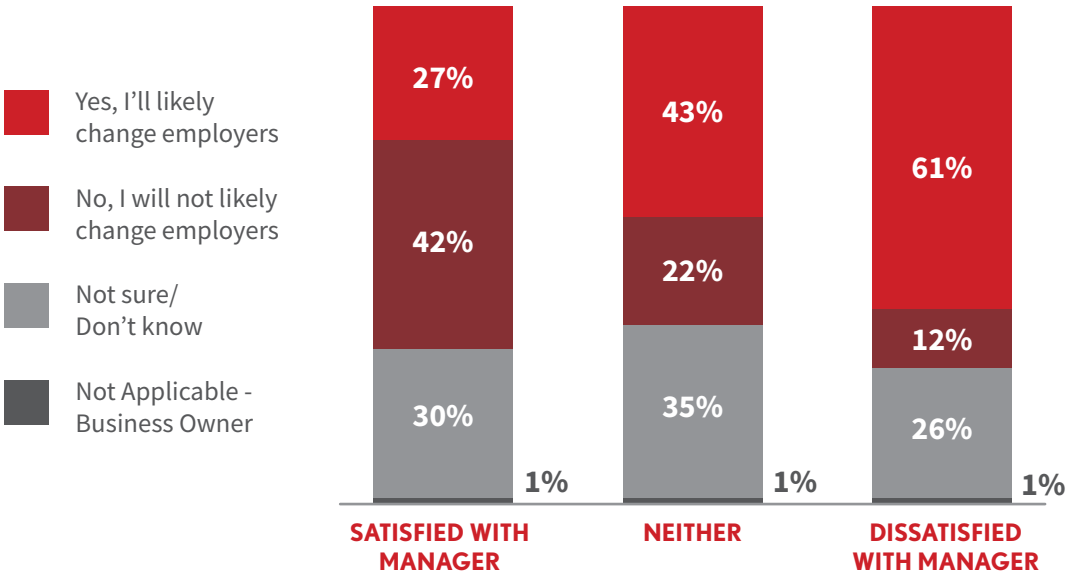
How would you rate your satisfaction with your manager?



Of those expressing dissatisfaction with their manager, 20% cited the need for more recognition, while 19% said knowing their opinion matters were factors that could contribute to greater happiness at work. This suggests that, while managers generally have the approval of their direct reports, the remaining 22% should adjust their management style (and communicate more) in order to retain their employees.

Manager Satisfaction + Changing Employers

Within the next year, do you anticipate changing employers versus staying where you are?



Managers who don't improve in the upcoming year put themselves at risk of losing team members. In fact, while only 27% of technologists who are satisfied with their manager plan to change employers in the upcoming year, 61% of those who are dissatisfied with their manager plan to change employers. In a market with low unemployment and a generally satisfied tech workforce, employers can't afford this risk.

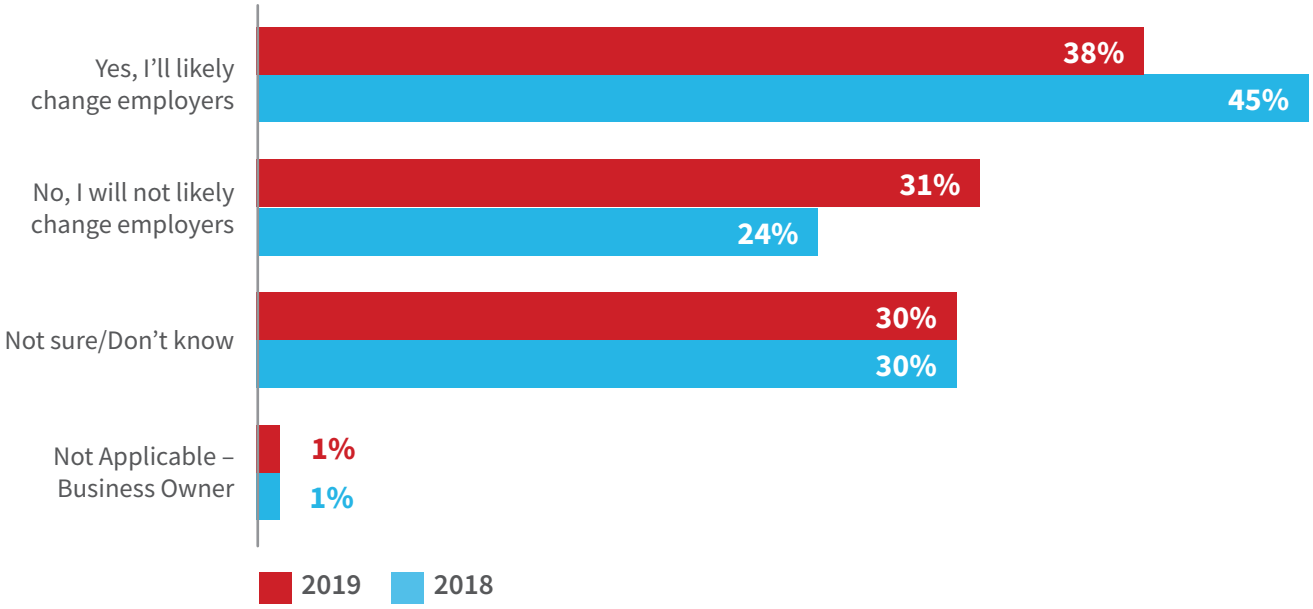
Changing Employers

Technologists are more likely to stay in their role, which means employers need to focus on the details.

Changing Employers

Within the next year, do you anticipate changing employers versus staying where you are?

As a whole, 38% of technologists said they would change employers in 2020, which is down from 45% in 2019. External factors—like a potential recession and an election year—also may contribute to more technologists wanting to stay with their current employer for fear of a tighter job market.



Biggest 2020 Career Concerns

For 2020, what is the biggest concern you have about your career?

Technologists also have some key concerns about their careers: Some 17% said they are worried about position/contract elimination, while 12% are concerned about finding a new position that actually matches their skill set. Another 11% express worry about keeping their skills up to date.

17%
Position/contract elimination

12%
Finding a new job that matches my skill set

11%
Keeping skills up-to-date/ Being valuable to employer

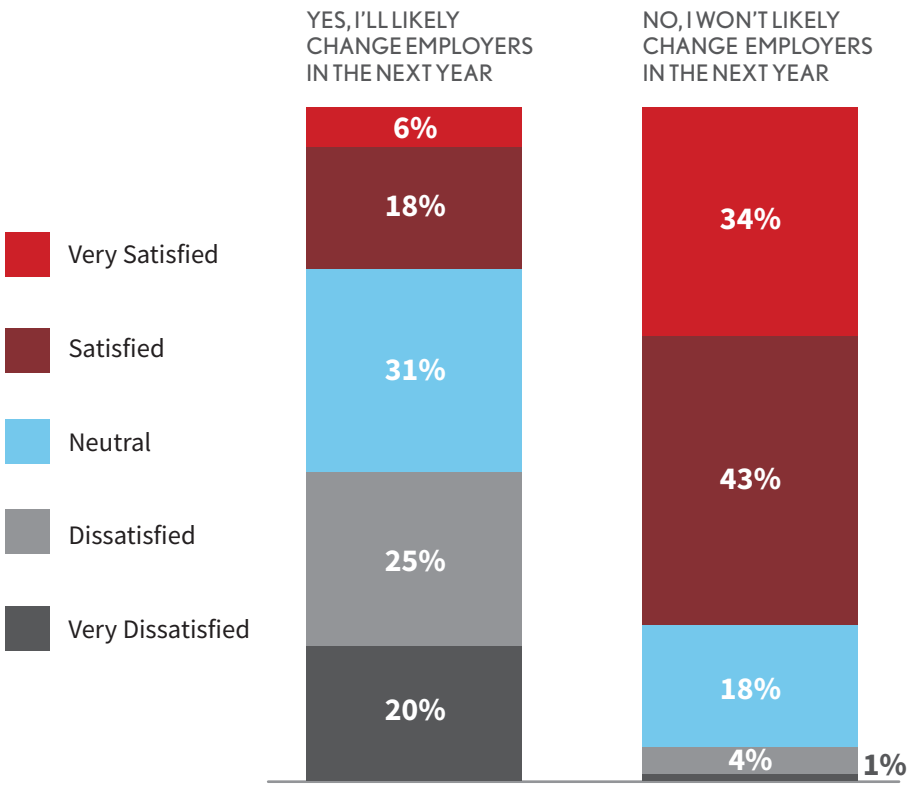
No concerns at this time	10%
Not getting promoted	8%
Increased workload	7%
Lower salary increases / Lower billing rates	7%
Company stability / performance	7%
Canceled projects / Fewer projects	4%
Low office morale	4%
Increased outsourcing	3%
Discrimination (based on age, gender, race, etc.)	3%
Remote work privileges revoked	2%
Other	2%
Position relocation	1%

DISSATISFIED TECHNOLOGISTS WILL ACTIVELY LOOK FOR NEW ROLES

As you would expect, there is a connection between satisfaction and the desire to change employers. While technologists are generally content with their jobs, and show less likelihood to change employers, those that are dissatisfied are far more likely to seek new employment. In fact, 45% of technologists that are likely to change employers are dissatisfied with their job. Meanwhile, 77% of technologists that are likely to stay with their employer are satisfied. As a result, employers should take note of the factors that cause frustration amongst technologists—as well as the factors that lead to higher satisfaction.

Career Satisfaction + Changing Employers

Within the next year, do you anticipate changing employers versus staying where you are?

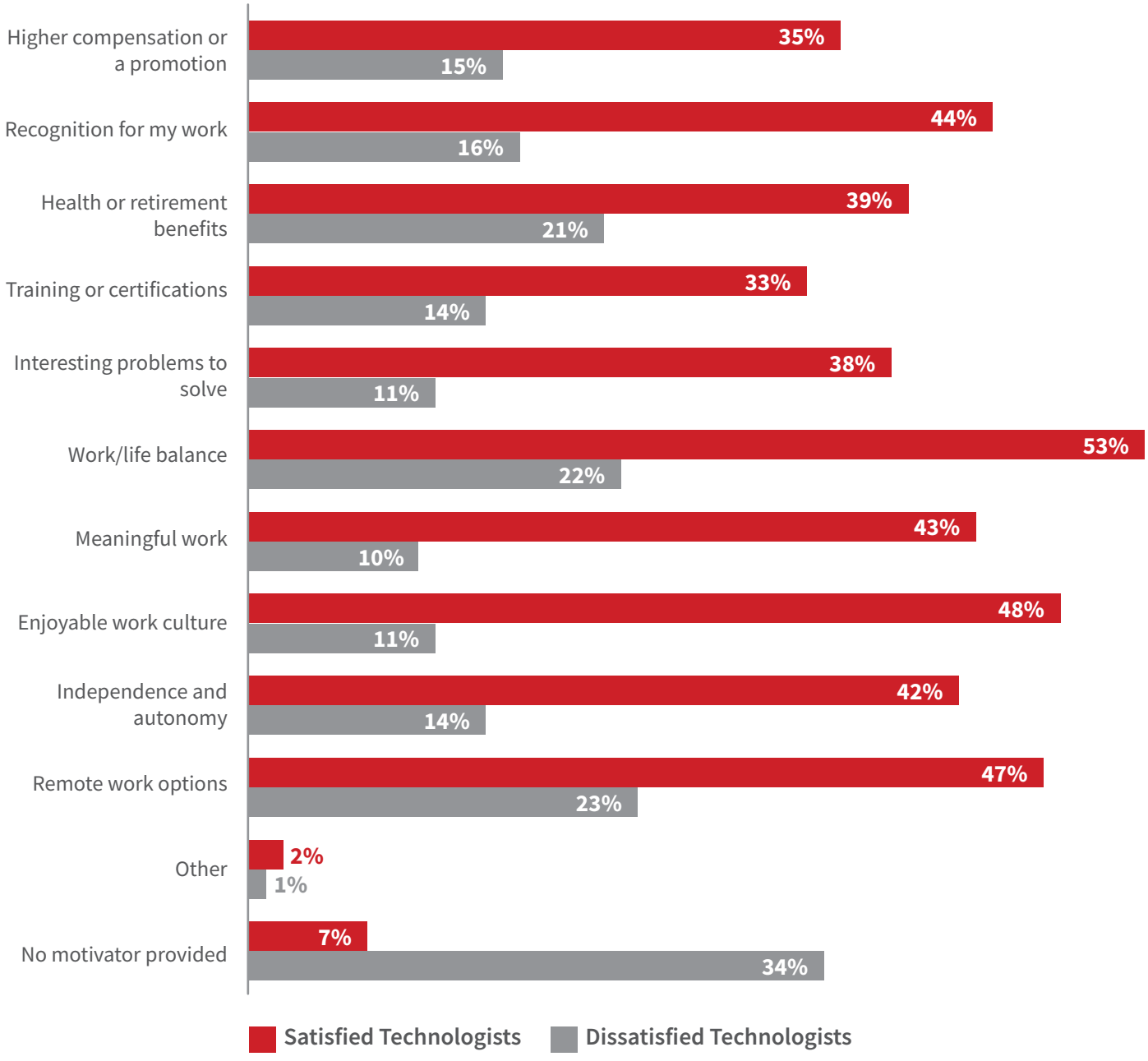


Employers need to assess their current employee satisfaction and make improvements where needed. Dissatisfied technologists are mobile technologists.

Looking at the motivators between satisfied and dissatisfied employee, there are a few key disparities: While 53% of satisfied technologists say they have work-life balance, only 22% of dissatisfied technologists said the same. Sure, the tech industry has been known to have the occasional 80- to 90- hour workweek, though employers should recognize the effects on morale. Additionally, while 44% of satisfied technologists say they feel recognized for their work, only 16% of those that are dissatisfied feel the same way, suggesting that managers who acknowledge their employees can see a significant effect.

Motivators that Employers Provide

Did your employer provide you with any of the following motivators in 2019?

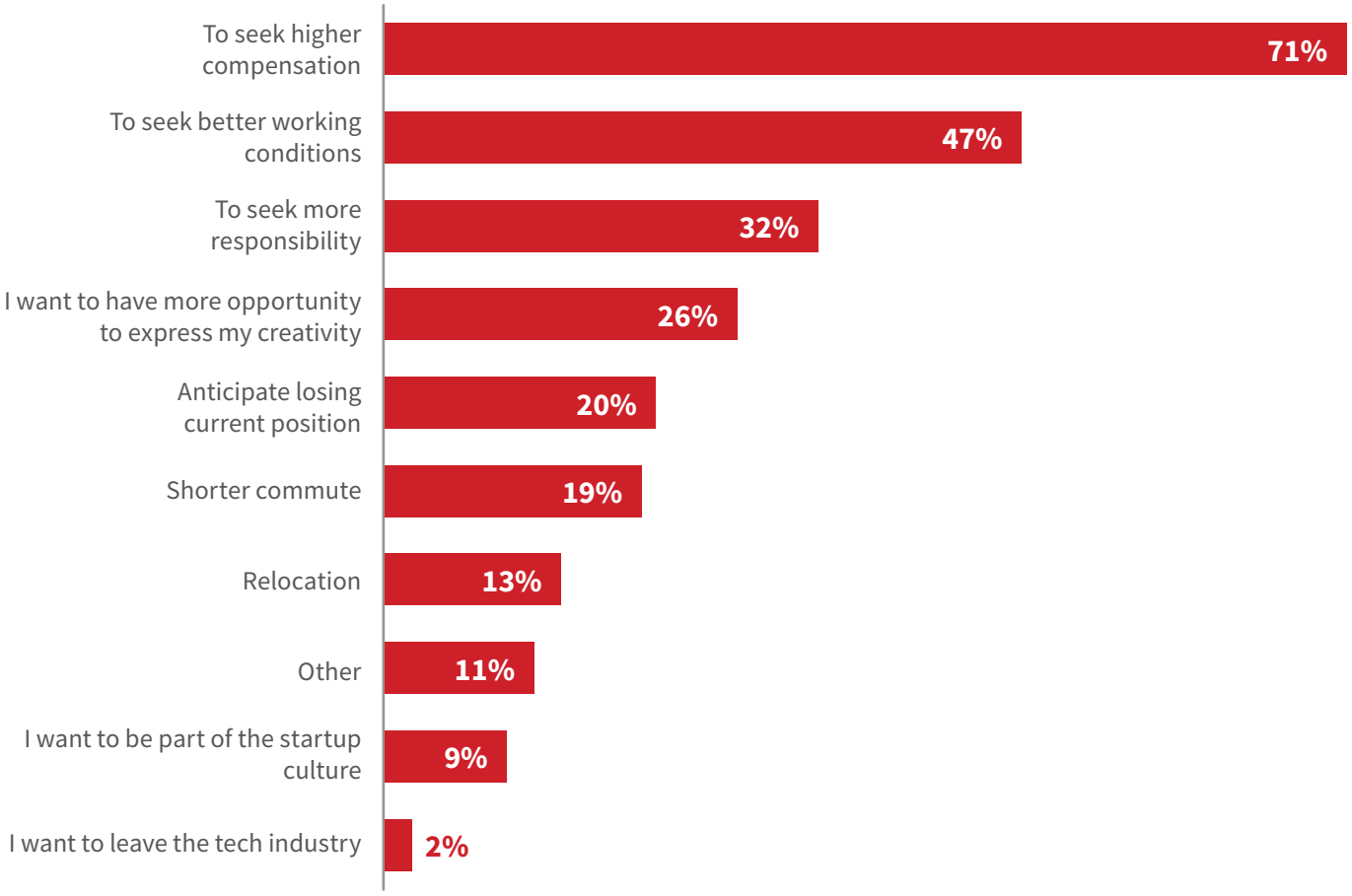


TECHNOLOGISTS' REASONS FOR CHANGING EMPLOYERS

Technologists that do want to change employers have clear reasons for doing so. Unsurprisingly, some 71% say they'd switch employers for higher compensation. But what is worth noting, is that 47% of technologists indicated they'd do it for better working conditions, and 32% wanted more responsibility in their roles. Another 26% would take a bet on a new employer in order to better express their creativity. This all suggests that while compensation plays a primary role for job seekers, there are a number of additional factors that can influence their decision making.

Reasons for Changing Employers

Why do you anticipate changing employers? (check all that apply)



For employers, the solution is clear: Those looking to hire in 2020 will need to focus their strategies on passive candidates (that is, those candidates that aren't necessarily looking to change employers), as well as those that are dissatisfied with their current job. At the same time, employers also need to assess their current employee satisfaction and make improvements where needed. As the data shows, dissatisfied technologists are mobile technologists.

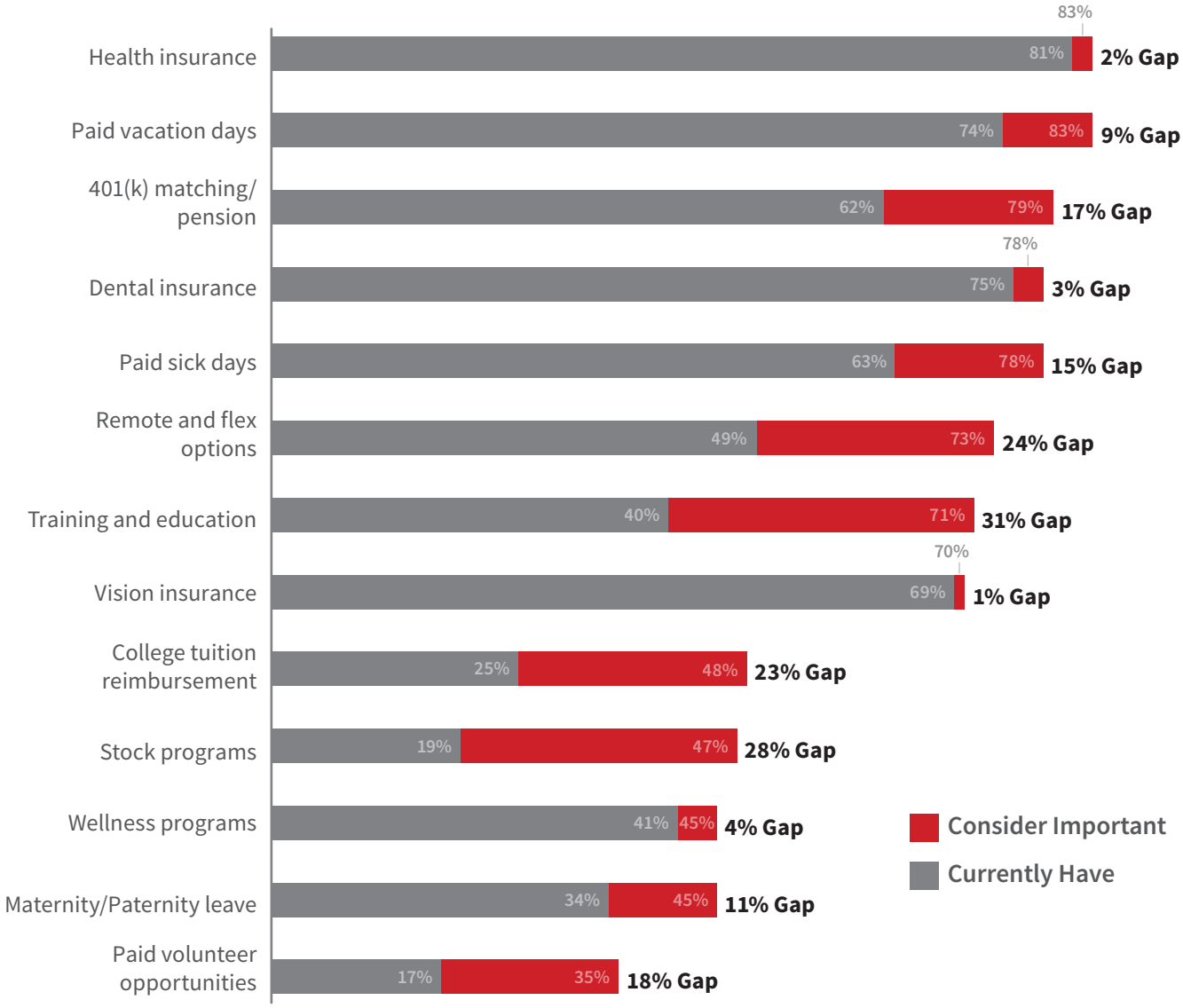
2020 Strategy

How should employers navigate 2020?

It makes sense why technologists might prove reluctant to leave their current position, especially if they live in an up-and-coming technology hub such as Atlanta or Denver. After all, salaries are generally up, especially for in-demand roles such as data science, and many employers seem inclined to provide the benefits and motivators that many technologists want.

However, just because technologists say they're satisfied with their current job, it doesn't mean that they won't change employers if the right criteria are met. Though at the same time, dissatisfied technologists don't want to leave one dissatisfactory employer for another. There are always opportunities to attract both active and passive candidates, and while it requires more attention to detail, if recruiters understand which perks and incentives actually resonate with technologists (and which they don't currently have), they have an opportunity to significantly reduce time to hire.

The Benefits Employees Have vs. Those They Find Important



Does not include respondents who answered “None of the above”.

THE BENEFITS GAP

This year's Tech Salary Report shows that technologists are interested in "emerging" benefits such as college tuition reimbursement (which 48% of technologists expressed interest in, even if only 25% receive it as a benefit), wellness programs (45% expressed interest, up 6% from last year), maternity/paternity leave (45%, up 11% from last year), and paid volunteer opportunities (35%, up 7% from last year).

For employers used to offering only the "usual" benefits—such as healthcare, PTO, and matching 401(k)—benefits such as tuition reimbursement might come off as strange. However, if your business is hiring significantly (or in a particularly competitive city), developing programs that include these benefits—and communicating that you offer them—can be a significant advantage to hiring faster.

2018 vs. 2019: Benefits that Employees Consider to be Important

	2018	2019	YEAR/YEAR CHANGE
Health insurance	87%	83%	-4%
Paid vacation days	87%	83%	-4%
401(k) matching/pension	82%	79%	-3%
Dental insurance	79%	78%	-1%
Paid sick days	79%	78%	-1%
Remote and flex options	73%	73%	0%
Training and education	71%	71%	0%
Vision insurance	70%	70%	0%
College tuition reimbursement	41%	48%	7%
Stock programs	43%	47%	4%
Wellness programs	39%	45%	6%
Maternity/Paternity leave	34%	45%	11%
Paid volunteer opportunities	28%	35%	7%
None of the above	2%	4%	2%

REMOTE WORK

Some employers are reluctant to extend certain benefits – which can have significant impacts and opportunities for those looking to hire. This may be the clearest for remote work: While technologists desire to work remotely, their demands largely aren't being met by employers. For example, 61% of survey respondents said that they wanted to work remotely at least half the time, but only 24% of them had the opportunity to do so. Even more, 16% of respondents said remote work isn't even allowed at their company for their specific role.

Despite studies showing that remote work opportunities can translate into happier, more productive employees, it seems that a subset of employers are unwilling to offer more offsite flexibility due to the difficulties associated with communication, management and fostering an innovative workspace. Clearly, there is a disparity between what technologists want and what employers are willing to offer, however, there isn't a strong link between job satisfaction and remote work.

How Often Employees Would Prefer to Work Remotely

How often would you prefer to work remotely vs. how often do you currently work remotely?	**PREFER**	**CURRENTLY**
Always	22%	12%
More than half the time, but not always	19%	7%
Half the time	20%	5%
One day a week	18%	12%
A few days a month	14%	24%
Not sure	4%	-
Never	3%	24%
It's not allowed at my company for my role	-	16%

Employee Satisfaction + Working Remotely

How often do you currently work remotely?	**SATISFIED EMPLOYEES**	**NEITHER SATISFIED NOR DISSATISFIED**	**DISSATISFIED EMPLOYEES**
It's not allowed at my company for my role	12%	17%	23%
Never	21%	25%	28%
A few days a month	27%	23%	19%
One day a week	13%	12%	9%
Half the time	6%	5%	4%
More than half the time, but not always	8%	6%	6%
Always	13%	11%	10%

How to Hire Remote Workers

The first step to developing a remote workforce strategy for tech talent is laying the groundwork for how your business will connect with candidates seeking remote jobs. After all, a key goal of any remote work initiative is to make your business a magnet for in-demand tech professionals who may not live in close proximity to your office location, or who simply prefer not to work often, or at all, in a traditional office. Follow a few key principles when hiring full- or part-time remote professionals:

- **Integrate Remote Hiring with Your Employer Brand:** Whether it's in your online presence or something recruiters bring up during interviews, make sure remote work is a clear part of your employer brand
- **Personalize Outreach:** If your business is hiring technologists that will primarily or entirely work remotely, make sure that your communications address their specific questions and needs.
- **Assess Technical & Nontechnical Skills:** Since remote work requires a higher level of communication and independent work, make sure that you can get a sense of your candidate's work ethic and approach to teamwork and collaboration.

WORK-LIFE BALANCE

Benefits are just one part of a much broader discussion of work-life balance, of course. Some 40% of those surveyed said that work-life balance was a motivator provided by their employer in 2019. That was the top-rated response, which was great—but it also hinted that many technologists are somehow unsatisfied with their current work-life balance. Indeed, many of those technologists dissatisfied with their current job (and/or manager) also said they were burned out (53%).

Strategies to Improve Employee Work-Life Balance

Work-life balance doesn't just make more satisfied employees, it's shown to make more productive employees as well. In 2020, here are some straightforward strategies your business can adopt:

- **Schedule Downtime:** Encourage employees to actively build some downtime into their workday calendar. That time can be used to take a quick walk around the block, for example, or socialize with colleagues.
- **Encourage Delegation:** While it's often hard for technologists to give up certain tasks, their mental balance can be improved if they delegate and outsource less-essential duties to others.
- **Be Flexible:** Increasingly the 9-to-5 model is becoming a thing of the past. From the hours worked, to when employees take lunch, emphasize the flexibility your business offers employees.

Top Motivators Provided to Employees in 2019

40%
Work/life balance

37%
Remote work options

33%
Recognition for my work

Enjoyable work culture	32%
Health or retirement benefits	31%
Independence and autonomy	30%
Meaningful work	28%
Higher compensation or a promotion	26%
Interesting problems to solve	26%
Training or certifications	25%
No motivator provided	16%
Not Applicable	9%
Other	2%

BURNOUT

However, even technologists who strive for better work-life balance often find they're burned out. The data suggests that burnout only slightly decreased from 2018, meaning that employers still have work to do. Looking at burnout's connection to job satisfaction reveals significant numbers that employers should pay attention to: While only 16% of technologists satisfied with their job say they are burned out, 60% of those dissatisfied with their job say they're burned out.

Among all surveyed technologists, some 38% said they were burned out due to workload, while 31% tied it to hours worked. Almost as many (29%) believed that lack of recognition for their work was burnout-inducing, followed closely by a lack of work-life balance (26%) and lack of challenges/boredom (25%). Friction with boss, lack of time off, and "other" were also cited (note: the percentages add up to over 100% because respondents could choose two reasons they felt burned out).

How to Reduce Burnout

Burnout is clearly a problem that plagues many of today's employers. The root causes for burnout can vary, but whatever the cause may be, employers can increase employee morale with a few key principles:

- **Recognize Success:** Encourage employees and team members to recognize each other's accomplishments and contributions.
- **Show the Big Picture:** Make sure that each employee is aware of the business' goals, and how their role contributes to reaching each milestone.
- **Trust Your Employees:** Rather than creating a culture of micromanagement and where employees must be in the office at exact hours, trust your employees to reach their goals with a degree of independence.

Overall Burnout

Generally speaking, how burned out do you feel as it relates to your job?

	2018	2019	YEAR/YEAR CHANGE
5 – Very burned out	15%	12%	-3%
4	20%	19%	-1%
3	29%	30%	1%
2	17%	18%	1%
1 – Not burned out	19%	21%	2%

Top Three Reasons for Feeling Burned Out

38%
Workload

31%
Hours worked

29%
Lack of recognition for my work

Burnout + Satisfaction

Generally speaking, how burned out do you feel as it relates to your job?

16%

of satisfied employees say they are burned out

60%

of dissatisfied employees say they are burned out

	SATISFIED EMPLOYEES	NEITHER SATISFIED NOR DISSATISFIED	DISSATISFIED EMPLOYEES
5 – Very burned out	4%	8%	33%
4	12%	24%	27%
3	29%	40%	20%
2	25%	15%	9%
1 – Not burned out	30%	12%	11%

CREATIVITY

Technologists want the opportunity to be more creative in their jobs; boosted creativity, in turn, leads to a more satisfying job experience. Specifically, 26% of technologists want the opportunity to be more creative in their jobs. At the same time, those less satisfied with their career and/or job tend to desire more creative opportunities.

How to Foster Creativity

Most businesses benefit from creative solutions. That kind of "out of the box" thinking is how innovation becomes possible. In 2020, consider a few initiatives to enable creativity for your employees:

- **Encourage Special Projects:** Similar to Google's famous "20 percent time," in which Google employees are allowed to use a fifth of their workweek to pursue interesting projects that might not immediately benefit the business. Consider allowing technologists to carve out some time for innovative pursuits.
- **Hackathons**: Over the past few years, companies have turned to hackathons as both a morale-boosting and a recruiting tool. If you truly want to unleash your team's creativity, propose a hackathon around a subject.
- **Meetups and Talks:** Provide tickets and information for local meetups with other technologists; chances are good that discussions will eventually veer into creative topics. In addition, your company can invite creative people into the office to give lectures or talks; in turn, that might prove inspiring.
- **Tackle Projects in an Independent Way:** Empower technologists to tackle projects in different, more creative ways. Just because your company always follows the same procedures and workflows doesn't mean they can't innovate on how things are done.

2020: MEET YOUR HIRING GOALS

In order to maintain their workforce, employers need to recognize and act on the benefits, motivators and causes of burnout for technologists today. Our survey suggests that while technologists are generally satisfied, there are significant gaps in some of the benefits they'd like and what they actually have. At the same time, poor management and burnout drive drastically more technologists to seek out new employment in which they can find more meaningful work, more opportunities to express creativity and a better work/life balance. While compensation is, and always will be, a factor, there are a variety of additional factors that you can build into your employer value proposition to attract talent.

ABOUT DICE

Dice is a leading tech career hub connecting employers with skilled technology professionals and providing tech professionals with career opportunities, data, insights and advice. Established in 1990, Dice began as one of the first career sites and today provides a comprehensive suite of recruiting solutions, empowering companies and recruiters to make informed hiring decisions. Dice serves multiple markets throughout North America.

Dice is a DHI Group, Inc. (NYSE:DHX) service.

Methods

The 2019 Dice Salary Survey was administered online by Dice.com among its registered Dice job seekers and site visitors between October 14, 2019 and December 17, 2019. Respondents were invited to participate in the survey in two ways: 1) via an email invitation to Dice.com's registered database members and 2) through a notification on the Dice.com home page and/or via "pop-up" (i.e., site intercept).

A total of 25,449 survey participants entered the survey. After 'cleaning' the data (e.g., removing unemployed respondents, incomplete responses, those who work outside of the U.S., etc.), there remained 12,837 usable responses. Students (n=307) were also removed from the analysis. A cookie methodology was used to ensure that there was no duplication of responses between or within the various sample groups, and duplicate responses from a single email address were removed.

Job posting data was gathered by Dice's partner, Burning Glass Technologies, which has a database of more than 1 billion current and historical job postings worldwide. For the purpose of identifying growth, job postings between 2018 and 2019 were compared. Key employers, roles, and skills were identified by analyzing job post data for 2019 only.

INDEX

SKILL	2019	YR/YR CHANGE
.net	$101,388	4.3%
Access	$92,156	2.6%
Active Directory	$95,520	5.4%
Agile Testing	$112,229	2.6%
Ajax	$111,900	9.1%
Alcatel Lucent	$91,570	-2.5%
All Microsoft OS	$93,771	3.1%
Altiris	$92,669	4.2%
Amazon CloudFront	$118,296	4.3%
Amazon Redshift	$130,723	4.5%
Amazon Route 53	$129,295	7.7%
Amazon S3/Amazon AWS	$115,580	2.9%
Android	$88,495	3.5%
Angular	$115,831	4.8%
Ansible	$125,032	9.3%
Apache Kafka	$134,557	5.5%
Apache Web Server	$108,816	4.8%
Apple iOS	$94,251	6.0%
Application Delivery	$111,146	15.5%
Arc GIS	$90,545	-5.3%
Artificial Intelligence	$123,024	1.9%
ASP.net	$106,057	7.0%
Assembler/Assembly	$107,716	20.7%
Augmented Reality	$103,856	0.3%
Axure	$106,717	19.4%
Azure	$107,190	2.7%
Backbone	$104,957	7.9%
Balsamiq	$116,129	4.7%
BASH	$115,180	6.6%
Big Data	$118,038	1.7%
Blockchain	$116,095	11.0%
BMC Remedy	$101,342	-1.0%
Box	$106,847	6.1%
BugZilla	$108,816	5.5%
Business Intelligence	$111,300	1.0%
C	$116,564	11.8%
C#	$106,743	5.1%
C++	$107,292	9.8%
Cachet	$95,745	9.1%
Camtasia	$99,540	5.3%
Cassandra	$132,497	6.7%

SKILL	2019	YR/YR CHANGE
Chef	$132,136	19.5%
Cisco	$96,168	5.2%
Cisco IOS	$98,677	7.4%
Citrix	$96,772	4.6%
Cloud Computing	$111,440	2.8%
Cloud Foundry	$123,620	5.5%
Cloudera	$133,695	8.9%
COBOL	$106,194	10.2%
Confluence	$117,893	2.4%
Connectwise	$87,019	1.1%
Containers	$127,110	5.7%
CRM	$102,031	1.7%
CSS	$99,488	7.5%
Cucumber	$114,339	5.1%
Cyber Security	$101,238	1.5%
Data Architect (Data Analysis starting 2016)	$103,422	1.4%
Data Scientist (Data Science starting 2016)	$112,184	5.8%
Data Warehouse	$113,030	4.4%
Database Testing	$104,691	2.6%
DB2	$110,759	3.9%
Deep Learning	$129,978	n/a
DHCP	$96,947	7.4%
Digital Ocean	$106,873	11.6%
Django	$109,078	11.0%
DNS	$99,688	8.6%
Docker	$124,599	5.0%
Dropbox	$91,281	4.9%
Drupal	$106,230	11.2%
Dynamo DB	$129,255	2.9%
EDI	$114,760	9.9%
Elasticsearch	$129,938	4.8%
EMC	$116,142	6.1%
EMC Documentum	$125,458	9.0%
ERP	$112,813	3.6%
ETL Testing	$116,599	3.4%
ETL	$121,461	7.2%
FCoE	$117,725	4.6%
Fibre Channel	$114,432	5.6%
Figma	$102,296	n/a
Firewalls	$98,891	5.4%

SKILL	2019	YR/YR CHANGE
Fortran	$105,438	1.0%
Frame Relay	$101,585	6.3%
FreeBSD	$107,338	7.7%
GIT	$115,209	5.2%
Glassfish	$107,922	6.3%
Google Cloud Platform	$93,059	3.0%
Google Drive	$92,068	6.3%
Gradle	$124,560	4.8%
Groovy	$116,050	2.7%
Hadoop	$123,945	3.4%
HANA	$134,462	9.4%
Hbase	$123,887	2.5%
Heroku	$113,442	11.9%
Hibernate	$118,682	8.0%
Hitachi	$110,283	3.6%
Hive	$120,897	3.0%
HTML	$96,000	5.9%
HTML5	$101,338	7.1%
HyperV	$97,887	5.2%
IaaS	$122,151	6.3%
IBM Mainframe	$101,527	2.1%
iCloud	$84,806	2.0%
IDS/IPS	$103,890	8.4%
IIS	$107,225	3.1%
Informatica	$117,559	0.1%
Informix	$114,469	10.2%
Invision	$107,648	12.4%
iPad	$94,494	5.3%
iPhone	$94,315	4.3%
IPV6	$98,800	7.1%
iSCSI	$107,351	8.8%
Java Script	$100,816	4.1%
Java/J2EE	$114,422	8.8%
JAX-RS	$120,338	8.0%
JBoss	$119,064	4.1%
JDBC	$123,845	4.3%
JDE/JD Edwards	$114,105	0.1%
Jenkins	$122,409	4.5%
Jetty	$128,751	14.4%
JIRA	$114,828	2.7%
Jmeter	$122,539	8.7%

SKILL	2019	YR/YR CHANGE
jQuery	$106,647	7.5%
JSON	$113,436	4.7%
JSP	$121,984	12.6%
Juniper	$107,946	7.2%
Junit	$122,716	3.2%
Korn Shell	$126,405	10.2%
KVM	$102,554	2.9%
Lawson	$101,055	3.7%
Linux	$108,759	3.0%
Load Balancers	$118,044	6.9%
LoadRunner Tutorial	$122,545	9.0%
Lucidchart	$113,955	5.9%
Mac OS	$98,498	5.8%
Machine Learning	$121,419	7.4%
Manual Testing	$106,077	2.9%
MapReduce	$132,708	7.9%
MariaDB	$115,485	5.3%
Matlab	$105,587	3.3%
Metro Ethernet	$102,794	3.1%
Microsoft Dynamics	$97,322	4.7%
Microsoft Office	$93,124	1.0%
Microsoft One (Microsoft OneDrive starting 2016)	$90,440	0.7%
Microsoft Team Foundation Server	$106,426	-0.8%
Microsoft Windows Server	$94,435	4.1%
MicroStrategy	$113,414	1.6%
Mobile Testing	$101,734	2.2%
MobileIron	$101,166	3.6%
Mokito	$131,772	11.5%
Mongo DB	$119,256	5.9%
MPLS	$109,933	3.8%
MS Dynamics	$99,742	4.2%
MS SQL	$104,670	3.0%
MySQL	$102,296	2.3%
NAS	$105,045	4.4%
NetApp	$113,591	5.8%
NetSuite	$105,040	12.1%
Network/Information Security	$97,238	4.5%
Nginx	$119,643	8.0%
Nimble	$109,075	10.9%

SKILL	2019	YR/YR CHANGE
Node.js	$115,414	9.5%
NoSQL	$127,741	4.3%
Novell	$99,338	12.3%
NumPy	$114,190	1.8%
Nunit	$121,611	8.2%
Objective C	$122,280	21.4%
Omnigraffle	$118,661	10.8%
OneDrive	$93,421	7.6%
OpenStack	$118,651	6.7%
Optical	$102,925	8.0%
Oracle Application Server	$95,758	1.6%
Oracle DB	$109,839	3.9%
Oracle eBusiness	$105,267	-3.4%
OS400, i5 OS, AS 400 0 - IBM i	$98,447	6.5%
PAAS	$130,669	6.3%
Parallels	$101,519	5.3%
PBX	$96,787	4.0%
Peoplesoft	$98,506	2.6%
Perl	$117,963	6.6%
PHP	$101,658	10.4%
PL/SQL	$109,570	10.6%
Postgres	$119,958	3.8%
Powerbuilder	$106,246	15.0%
Powershell	$96,293	7.0%
Puppet	$124,392	5.7%
Pure Storage	$119,080	7.1%
Python	$112,076	8.2%
QTP	$112,039	11.3%
Quality Center (ALM)	$110,983	5.5%
R	$112,074	3.9%
RabbitMQ	$123,641	-0.1%
Rackspace	$109,084	4.1%
Rally	$114,918	1.2%
RDBMS	$120,636	3.2%
React Native	$114,582	17.2%
ReactJS	$115,847	10.9%
Redis	$127,441	4.0%
REST	$121,300	6.3%
Routing	$98,874	8.2%
Ruby	$114,885	12.5%
Salesforce.com	$106,289	4.7%

SKILL	2019	YR/YR CHANGE
SAN	$111,918	7.1%
SAP	$104,845	3.4%
SAP Testing	$105,700	7.6%
SAS	$103,021	4.0%
Sass	$108,474	11.2%
SCCM	$89,190	9.5%
SDN	$115,789	11.4%
Security Clearance	$99,866	6.1%
Selenium	$113,599	4.0%
Service Oriented Architecture (SOA)	$131,556	7.6%
ServiceNow	$107,146	4.1%
Shell	$115,758	5.7%
Siebel	$110,742	7.2%
SIP	$99,591	3.8%
Sketch	$100,030	6.7%
SMTP	$101,325	7.7%
Snagit	$103,198	2.9%
SNMP	$102,392	4.4%
SOAP	$117,312	7.2%
SoapUI	$115,069	5.4%
Software as a Service (SaaS)	$111,468	3.1%
Solaris	$116,095	5.4%
Solr	$125,793	2.7%
Spark	$121,152	6.9%
Splunk	$118,774	4.5%
Spring Framework	$127,286	16.0%
SQL (Not SQL Server)	$106,728	5.5%
SQL Server	$101,840	2.1%
SQLite	$107,881	4.6%
SSIS	$108,688	0.8%
SUN	$116,903	16.0%
Swift	$116,949	15.1%
Switching	$96,680	9.4%
Sybase	$118,010	2.0%
Synology	$98,434	6.5%
T1 or T3	$100,492	7.1%
Tableau	$110,569	3.6%
TCL	$103,297	9.5%
TCP/IP	$98,945	6.2%
Telepresence	$114,383	12.3%

SKILL	2019	YR/YR CHANGE
Teradata	$117,017	1.1%
Test Management<	$107,824	3.6%
TestLink	$100,974	24.3%
TOAD	$116,207	1.3%
Tomcat	$117,072	5.4%
Transact SQL (T-SQL)	$109,040	5.8%
TypeScript	$111,689	7.7%
Unix	$110,858	5.3%
Vagrant	$113,913	-3.6%
VB Script	$105,097	10.0%
VBA	$102,440	2.2%
vCloud	$101,900	1.7%
VDP	$99,902	8.4%
Virtual Reality	$96,008	-0.3%
Virtualbox	$100,086	5.3%
Virtualization	$107,271	4.3%
Visual Basic	$98,792	7.7%
Visual Basic .net	$104,349	9.0%
Visual C++	$103,218	7.7%
VMWare	$100,767	3.9%
VMWare ESXi	$105,116	3.0%
VoIP	$94,472	7.0%
VPN	$98,226	6.2%
VSAM~	$104,457	5.3%
Wan Opt	$114,299	12.5%
Web App Firewall	$105,924	5.8%
Weblogic	$114,942	3.7%
Websphere	$114,383	4.6%
Wireless	$92,274	6.3%
WordPress	$86,781	2.8%
Workday	$103,565	0.2%
XAML	$114,162	5.9%
Xen	$102,856	4.6%
XML	$111,406	6.4%
XSLT	$123,922	7.5%
z/OS	$108,193	5.0%
Zendesk	$93,177	0.7%
Zeplin	$112,122	n/a
Zookeeper	$129,833	8.2%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