Wage Trends
For a subset of global IT services companies in the United States

July 2019
Executive summary

India-based and India-centric global IT services companies employ a large and rapidly growing number of people in the United States. IHS Markit was commissioned by the National Association of Software and Service Companies (NASSCOM)\(^1\) to study the economic impacts of this subset of the global IT services sector in the United States. This report is the second in a series presenting the results of our analysis. In this report, we present estimates of wages paid at such companies in the United States—both nationally and in the states with the largest number of employees—and compare these estimates with the entire US Computer Systems Design and Related Services industry, where these firms are primarily classified.

Principal findings are:

- Average wages at the subset of global IT services companies in the United States in 2017 were $96,300, and that figure is 2% higher than average wages in the computer systems design and related services industry ($94,800), of which it is part.

- It is important to note that this average wage at the subset of global IT services companies in 2017 is for a workforce that includes many individuals on temporary visas for high-skilled workers, such as the H-1B visa.

- The majority (>60%) of employees in computer-related occupations at the subset of global IT services companies are in two of the highest wage occupational categories: Computer systems and information security analysts, and computer programmers, software, and web developers.

- Industrywide, the subset companies’ wages are among the highest in the occupational category that includes computer programmers and software developers, which is the category in which the subset have the highest share of employees.

- The subset of global IT services companies, on average, pays higher than the US average wage for Bureau of Labor Statistics’ defined computer occupations nationally (across all industries).

- The subset of global IT services companies has a larger share of employees in states that are not typically considered “IT hubs” than the larger industry of which it is a part, which helps create a larger pool of tech talent in the United States and contributes to job creation in those states.

\(^1\) The global IT services companies/ NASSCOM member companies covered in this report include a diverse set of technology services and product companies, many of which have global operations and a variety of owners, headquarters, and locations in India, the United States, and around the world. Throughout this report, the authors use the terms “a subset of global IT services companies” and “these companies” to refer to the US presence of these truly global, India-headquartered and/or India-centric companies. See Appendix B for a list of companies in the subset studied in these reports.
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Introduction

India-based and India-centric global IT services companies (hereafter referred to as “the subset of global IT services companies” or “the subset companies”) employ a large and rapidly growing number of people in the United States. IHS Markit was commissioned by India’s National Association of Software and Service Companies (NASSCOM) to study the economic impacts of this set of member companies in the United States. This report is the second in a series presenting the results of our analysis. This report details the wage trends both for the subset of global IT services firms and the broader computer systems and design industry, of which it is a part.

As noted in the first report in the series, Employment Trends, the subset of global IT services companies employs a larger share of high skilled computer workers than the industry as a whole. With rapidly changing technology, computer skills are more in demand in the United States. According to US Bureau of Labor Statistics (BLS) employment projections, employment in computer occupations is expected to grow substantially faster than total US employment over the next 8–10 years. The speed at which technology is changing also makes continuous training necessary; therefore, formal education beyond the bachelor’s level is often not the only path to advancement for these occupations. Indeed, according to the US Department of Labor’s Occupational Information Network (O*NET), most computer occupations only require a bachelor’s degree.

In addition to computer occupations, the subset of global IT services companies also hires many other skilled positions such as marketing professionals, finance professionals, sales, and legal professionals. According to interviews with the companies, the business model of these companies has been rapidly evolving, with such changes largely driven by the rapid transformation from legacy-based business towards digital, which necessitates companies having more on-shore employees. Consequently, since about 2014, clients have been increasingly looking for more customized solutions that help integrate new technology into their processes. This often requires a shift to more “on-shoring” and hiring more US-based workers. As noted in the Employment Trends report, their workforce has been expanding faster than the overall industry for which it is a part. While the subset of global IT services companies has relied less on H-1B visas in recent years and increased their hiring of US citizens/permanent residents, IHS Markit estimates that over half of the employees at these companies in the US in 2017 were on H-1B visas. Thus, it is important to note that the estimate of overall wages at the subset of global IT services companies in 2017 is reflective of a workforce that includes a majority of H-1B visas employees.

As the US unemployment rate continues to fall, wage pressures build. Thus, to attract talent, especially for sought-after occupations, companies will need to continue to pay competitive wages. These facts make it likely that the subset of global IT services companies pay competitive wages to attract scarce workers. This report details the trends and statistics. The purpose of the report is to provide an analysis of the wages paid by the sector and a foundation for assessing the contribution these companies make to the US economy.

To estimate the wages for the subset of global IT services companies, IHS Markit developed a survey to gather basic information about employment, occupations/job titles, salary, and capital and operating expenditures from these companies. The survey was sent to 10 India-based and India-centric global IT services companies, which

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2 The global IT services companies/ NASSCOM member companies covered in this report include a diverse set of technology services and product companies, all of which have global operations and a variety headquarters, and locations in India, the United States, and around the world. Throughout this report, the authors use the terms “a subset of global IT services companies” and “these companies” to refer to the US presence of these truly global India-headquartered and India-centric companies.

3 [https://www.bls.gov/emp/tables/occupational-projections-and-characteristics.htm](https://www.bls.gov/emp/tables/occupational-projections-and-characteristics.htm) Total employment growth over the period 2016-26 is projected to be 7.4%, while employment in computer occupations is expected to grow 13.1%.

combined were estimated to account for more than 80% of the sector’s employment in the United States. The survey was then supplemented with employment data for the sector from the BLS and other public and private data sources.

To compare the subset of global IT services companies with its larger industry, data on wages by occupation from the Occupational Employment Statistics (OES) database compiled annually by the BLS was used. This is the most reliable occupational data that is published with detail on employment by occupation in individual industries, in some cases down to the five-digit level of the North American Industry Classification System (NAICS). Data on employment and wages by occupation within industries are also published for states and metropolitan areas, although with less industry and occupational detail. The OES is an annual database with a reference period of May of each year. We used data for May 2017, which were released in March 2018.

**US national wages by occupation**

The data on employment by occupation provided to IHS Markit in our survey of the subset of global IT services companies was typically in the form of employment counts in different job titles, which we translated into estimates of employment by occupation based on the Standard Occupational Classification (SOC). The quantity of data provided was not sufficient to permit estimating average wages in individual occupational categories for the subset of global IT services sector; therefore, we first provide an estimate of overall average wages for all employees of the subset of global IT services companies. We then present supplemental data on employment and wages in computer-related occupations in the computer systems design and related services industry.

Our estimate of average wages for the subset of global IT services companies shows that their wages are slightly above those for their industry as a whole. Figure 1 shows the comparison.

Based on the data submitted by NASSCOM member companies, we estimated that approximately 103,000 of the 170,000 workers employed by the subset of global IT services companies in the United States are in computer-related occupations in 2017; that is, the majority of employees at the subset companies are in computer occupations. Computer skills are in great demand and becoming even more so as the digital economy evolves. Because these employees make up a large percentage of the subset of global IT services companies, we estimated that approximately 103,000 of the 170,000 workers employed by the subset of global IT services companies in the United States are in computer-related occupations in 2017; that is, the majority of employees at the subset companies are in computer occupations. Computer skills are in great demand and becoming even more so as the digital economy evolves. Because these employees make up a large percentage of the subset of global IT services companies.

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5 Wage data are collected from companies over a period of several months before and after May and adjusted for wage changes in each instance to estimate a May value.

6 Note that the estimate is based on 30% of the population. The 95% confidence interval puts the range for the subset of global IT services companies between $95,962.55 and $96,671.45. For the industry as a whole, the range is $94,286.20 to $95,233.80.
companies’ employees, it is important to consider the competitive landscape in which the subset companies compete for computer-related employees in evaluating comparisons of their wages.

Our first report on the global IT services companies noted that they have employees in computer-related occupations economywide—in 237 of the 250 four-digit NAICS industries. Table 4 shows average wages in computer-related occupations in the top-10 four-digit industries for employment in computer occupations. These industries account for about three-fifths of all computer employment in the United States. Table 1 shows that average wages in computer occupations are higher in the computer systems design and related services industry, of which the subset of global IT services companies are a part, than in any other industry except software publishers. That is, the computer systems design and related services industry pays very competitive wages to hire and retain employees to meet their needs for computer skills.

Table 1

<table>
<thead>
<tr>
<th>NAICS code</th>
<th>Industry</th>
<th>Average annual wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>5112</td>
<td>Software publishers</td>
<td>$103,280</td>
</tr>
<tr>
<td>5415</td>
<td>Computer systems design and related services</td>
<td>$93,960</td>
</tr>
<tr>
<td>5220A1</td>
<td>Credit intermediation and related activities</td>
<td>$93,800</td>
</tr>
<tr>
<td>5182</td>
<td>Data processing, hosting, and related services</td>
<td>$91,500</td>
</tr>
<tr>
<td>5416</td>
<td>Management, scientific, &amp; technical consulting services</td>
<td>$90,830</td>
</tr>
<tr>
<td>5170</td>
<td>Telecommunications</td>
<td>$89,600</td>
</tr>
<tr>
<td>5511</td>
<td>Management of companies and enterprises</td>
<td>$89,520</td>
</tr>
<tr>
<td>5241</td>
<td>Insurance carriers</td>
<td>$89,020</td>
</tr>
<tr>
<td>5613</td>
<td>Employment services</td>
<td>$85,910</td>
</tr>
<tr>
<td>6113</td>
<td>Colleges, universities, and professional schools</td>
<td>$69,700</td>
</tr>
</tbody>
</table>

Source: BLS, Occupational Employment Statistics. © 2018 IHS Markit

Rapidly changing technology and skills

As mentioned in the introduction, there has also been an industrywide trend, driven by technological changes, that has brought employees at these companies closer to their clients. Lower skilled computer occupational jobs such as support specialists are being replaced by higher skilled computer occupations. Additionally, over the last decade, new computer occupations such as big data scientists, mobile-app specialists, and information security analysts have been added. These new occupations highlight the rapidly evolving skills needed in the computer occupation category.

The changes driven by new technologies often make training programs and certifications more important than formal advanced schooling beyond a bachelor’s degree. That is, the level of education is less a driver of wages than certificate training and job experience. According to O*NET, more than half of detailed computer occupations are expected to see employment growth faster than the average for all occupations. Of those six faster growing occupations, half of them usually require certifications instead of a formal degree beyond a bachelor’s degree. This is important when trying to determine apples-to-apples wage comparisons of employees or groups of employees, as educational level may not be as indicative of skill level for computer occupational employment. In particular, the rapidly evolving skill sets needed for companies to integrate into the digital economy (including cloud, IoT, big data, etc.) require keeping current on these skills. This is often done through on-the-job experience, training, and certification, which can be more important for job opportunities and higher wages. These skills need to be considered to do an apples-to-apples wage comparison.

Figure 2 shows US average wages paid by the computer systems design and related services industry and average wages paid by all industries for specific computer occupations in the United States. Although we do not have sufficient data to estimate wages at the more detailed occupational levels for the subset of global IT services
companies, we note from the first *Employment Trends* report that the subset of global IT services companies has a different employment mix than its industry as a whole. In particular, these companies have fewer computer user support specialist employees, about an equal mix of employees who are computer and information analysts and software developers and programmers, and slightly more employees in the database and systems administrators and network architects category.

Figure 2

<table>
<thead>
<tr>
<th>The subset of global IT service companies has a majority of computer occupational employees in the higher wage occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer systems &amp; information security analysts</td>
</tr>
<tr>
<td>Computer programmers, software and web developers</td>
</tr>
<tr>
<td>Database, network, &amp; computer administrators and architects</td>
</tr>
<tr>
<td>Computer user support specialists</td>
</tr>
<tr>
<td>Computer occupations, all other</td>
</tr>
<tr>
<td>Weighted average, all</td>
</tr>
</tbody>
</table>

Note: Subset includes India based and India-centric global IT Services Companies

Source: IHS Markit calculations based on 26% of the population and the Bureau of Labor Statistics

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The geographical mix of employees also influences wages. As noted in the Employment Trends report, the subset of global IT services companies has a greater share of employees (as a percent of all computer systems design and related services industry employees) in states that are not typically thought of as “IT hubs.” These shares are shown in Figure 3, which reveals that the subset of global IT services companies tends to have a higher concentration of employees (compared to the overall industry) in states such as Illinois and North Carolina and less concentration of computer occupation employees in states such as California and Maryland. For example, the subset companies’ have 12% of their total employment in computer occupations in California, while industrywide 15% of all computer workers are in California. As shown in the Economic Contribution report that is part of this series, the subset of global IT services companies not only contributes directly to job creation in the states where they operate, they also support thousands of other jobs indirectly through their operations and the consumer activities of their employees.

Conclusion
This report is one of a series of reports on the presence and impact of a significant subset of global IT services companies with operations in the United States. We find that the computer design and related services industry, of which the subset of global IT services firms are a part, pays a higher average wage for computer-related occupations than nearly all other industries that hire computer occupations. We also find that the overall average wage paid at the subset of global IT services companies in the United States is slightly higher than the average for the overall industry. This is especially noteworthy because these companies typically employ many individuals on H-1B visas. It is also significant that these companies pay higher wages than the rest of their industry because many of their employees are in states that are not traditionally viewed as “IT hubs.” In conclusion, we find that wage pressures from a historically low unemployment rate and the continuously growing competition for talent in computer occupations makes it likely the industry has paid—and will continue to—competitive wages for talent.
Appendix A: Wage estimation methodology

The data on employment at the subset of global IT services companies in the United States was compiled using a combination of survey data from 10 representative companies in the subset (i.e., the subset of India-based and India-centric global IT services companies operating in the United States) and their subsidiaries, as well as from public and private data sources. The following steps were taken to estimate wages for the computer occupations at both the national and state levels:

1. Survey companies reported employment-level data, noting the job titles (and in some cases occupational codes) and wages for each job title. Data were provided at either the employee level or the job title level.

2. In either case, we mapped job titles to occupational codes using the following approach to ensure consistency across companies: 1) where companies provided occupational codes, we used the occupational code and mapped similar job titles to this code for companies that did not provide occupational codes; 2) we utilized Labor Condition Application (LCA) data to determine how companies mapped job titles to occupational code; 3) for any remaining job titles that did not have a clear occupational code, we utilized a search on O*NET to see which occupational codes tended to be associated with the job title.

3. Once job titles were matched to occupational codes, we isolated those codes that are related to computer occupations, i.e., those beginning with 15-11.

4. For this study, we excluded 15-1111 (computer researchers), as this occupation was not represented at the surveyed companies. Instead, we focused on 15-112, 15-113, 14-114, 15-115, and 15-119.

5. For comparison, we utilized data from the BLS Occupational Employment Survey (OES). We pulled data for the comparison industry 5415, computer systems design and related services (the industry for which our study companies are a subset), and all computer occupations in the United States (regardless of the industry). As noted in our first study in this series, Employment Trends, nearly all industries in the United States employ people in computer occupations.

6. To determine average wages for the subset of global IT services companies, we also needed to estimate the distribution of employment among the various computer occupations. We triangulated the survey data using data from public and private databases. Using these sources, we determined that the distribution of occupations for the subset companies among the five subcategories of computer occupations differs from the distribution across the industry as a whole. We distributed the 103,416 estimated employees in computer occupations in our subset according to our estimate of the distribution.

7. We then calculated the weighted average wage for each of the five subcategories of computer occupations based on the survey data. Note the survey data represents 25% of the total population (103,416 employees). The weights applied to the wages were the percentages of employees at each wage level and then aggregated to get an overall weighted average wage for computer occupations.
Appendix B: Subset of global IT services companies

- 3i Infotech
- Aegis
- AxisCades
- Birlasoft
- Cognizant
- CSS Corp
- Cybage Software
- Cyient
- Datamatics
- eClerx
- EXL Services
- Firstsource
- Fractal Analytics
- Genpact
- Global Logic
- Happiest Minds
- HCL
- Hexaware
- Hinduja
- Infinite Computer Solutions
- Infosys
- Intelenet Global Services
- Interglobe Technologies
- ITC Infotech
- iYogi
- KPIT
- LTI – Larsen & Toubro Infotech
- Larsen & Toubro Technologies
- Masteck
- Microland
- Mindtree
- Mphasis
- MuSigma
- NIIT
- Persistent Systems
- Polaris Consulting & Services
- Quattrro Global Services
- Ramco Systems
- Rolta
- Sasken
- Sonata Software
- Subex
- Atos Syntel
- Tata Elxi
- Tata Technologies
- TCS
- Tech Mahindra
- UnitedLex
- UST Global
- Wipro
- WNS
- Zensar
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