



New IDC Technology Employment Impact Guide Forecasts Steady Growth in Technology Job Roles Through 2023, Led by Data and Machine Learning Positions

FRAMINGHAM, Mass., December 18, 2019 – According to the first [Worldwide Technology Employment Impact Guide](#) from International Data Corporation (IDC), information and communications technology (ICT) full-time employment (FTE) will reach 55.3 million worldwide in 2020, an increase of 3.9% over 2019. IDC expects ICT FTE to maintain this pace of growth over the 2019-2023 forecast period, reaching more than 62.0 million in 2023 with a five-year compound annual growth rate (CAGR) of 3.8%.

The Technology Employment Impact Guide represents IDC's best estimates of technology FTE by standardized role group, role, industry, region, technology, and digital transformation type (DX or non-DX). The employment demand estimates are based on a combination of qualitative and quantitative data from several primary and secondary sources which are used to determine a FTE (demand) forecast for each specific role by industry and by region.

IDC's technology employment job roles are roles that are stable over time — a person can, as part of an occupation, perform several roles and split his/her time across several roles. The combination of roles for an occupation may vary over time between industries and organizations, even though the activities performed by a role remain relatively stable. Within ICT job roles, activities are performed within projects, programs, and lines of business related to development of software, hardware, or related services. ICT job roles can be found in any industry, enterprise, or organization and are not related only to the ICT services, software, and hardware industries.

The largest role groups are the applications group, containing eight roles related to software development and management, the other IT/technical group, which includes five graphic, multimedia, and Web design roles, and the technical support group with five roles. Together, these three groups will account for roughly three quarters of all ICT FTEs throughout the forecast. The cybersecurity role group will see the fastest growth with a five-year CAGR of 9.6% while the other IT/technical role group will remain essentially flat with a 0.1% CAGR.

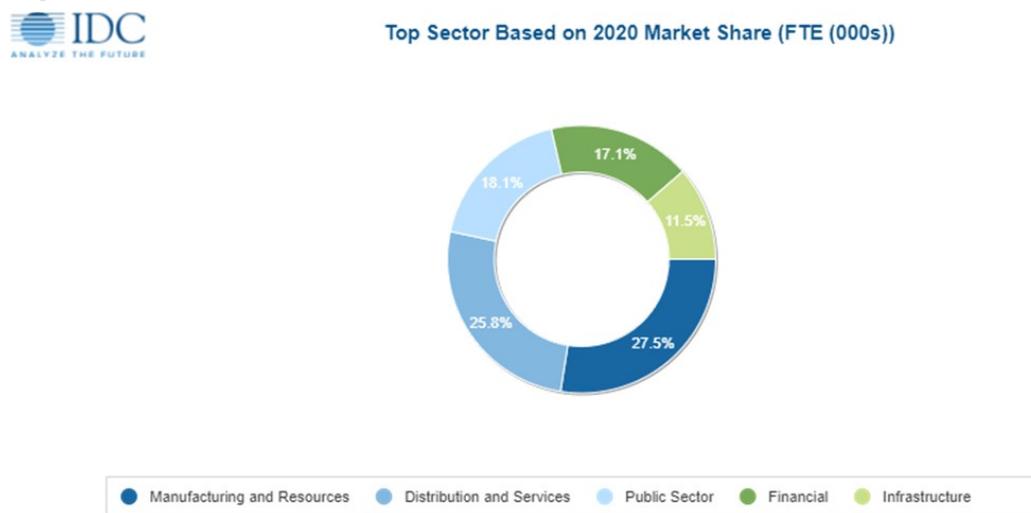
Of the 40 technology job roles covered in the guide, three will account for nearly one third of all ICT roles throughout the forecast: software developer/engineer, user support specialist, and systems analyst. The fastest growing roles will be data scientist (13.7% CAGR), machine learning design/development/engineer (13.6% CAGR), and data engineer (12.9% CAGR).

The guide also looks at the impact digital transformation (DX) is having and will have on skills and roles within an organization. DX-related job roles are those that focus on extracting and developing the value and utility of information, making business operations more responsive and effective, accelerating workforce transformation and optimization, applying an omnipresent and multidimensional ecosystem approach to customer experience, and optimizing products, services, and experiences to deliver value to partners, customers, and employees. Non-DX job roles typically focus on less strategic activities and primarily help to support day-to-day operations. Today, DX roles make up 40% of technology FTEs, but IDC expects this share to reach 52% by 2023.

"Digital transformation (DX) technology investment is the driving force behind IT investment. The IT skill set needed to deliver DX projects is changing, with some of the fastest growing demand for IT roles centered around data and intelligence," said [Craig Simpson](#), research manager, [Customer Insights & Analysis Group](#). "We are moving away from IT employees being focused around basic IT installation and maintenance roles and shifting toward roles that can build database architecture and functionality to derive intelligence and insights from an organization's DX efforts."

"As industries fully embrace digital transformation, new skills and roles are needed to shape technology roadmaps, and support and implement these changes," said [Eileen Smith](#), program vice president in IDC's [Customer Insights & Analysis Group](#). "Discrete manufacturing, process manufacturing and banking are expected to employ the most FTEs for these digital transformational efforts, as they look to technology roles in areas like applications and technical support to design software and services to enhance the customer experience."

Figure 1



Source: IDC Worldwide Technology Employment Impact Guide 2018H2

"The impact of digital transformation on the structure and composition of an IT organization is significant – as DX and innovation become a larger part of everyday IT operations, the IT organization is going to adjust who it hires, how IT employees are developed, and the

career progression of IT professionals. IT organizational change will be an organizational transformation as critical to the success of the enterprise as DX itself," said [Cushing Anderson](#), program vice president, [IT Education and Certification](#) at IDC.

The [Worldwide Technology Employment Impact Guide](#) quantifies the technology employment market at a regional and total worldwide level. The first release of this product forecasts FTEs by 40 job roles across nine regions, 19 industries, and two transformation types. The guide is designed to provide companies with insights into the large and rapidly growing market segments of the technology employment market and how the market will develop over the coming years.

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IDC's Spending Guides provide a granular view of key technology markets from a regional, vertical industry, use case, buyer, and technology perspective. The spending guides are delivered via pivot table format or custom query tool, allowing the user to easily extract meaningful information about each market by viewing data trends and relationships.

For more information about IDC's Spending Guides, please contact Monika Kumar at mkumar@idc.com.

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For more information contact:

Michael Shirer
press@idc.com
508-935-4200
Eileen Smith
esmith@idc.com
508-238-0190