



IT World of Work 2024 Outlook



76%

OF IT EMPLOYERS WORLDWIDE STRUGGLING
TO FIND THE SKILLED TALENT THEY NEED

4 Million

MORE CYBERSECURITY
WORKERS NEEDED

1 Million

SKILLED WORKERS NEEDED IN
SEMICONDUCTOR MANUFACTURING

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With global adoption of generative Artificial Intelligence (AI) and other digital transformation technologies accelerating, the critical importance of the Information Technology (IT) function is growing for every business. **This ManpowerGroup Global Insights report examines eight key global trends driving IT innovation and the impact they will have on the future of work.** Although many include the use of increased automation, the future of IT innovation will still depend on a highly skilled workforce.

- **What will be the impact of accelerating adoption of AI, cloud and quantum computing on the future of work?**
- **Why are soft skills becoming increasingly important in the IT industry?**
- **How do employers apply a people-first approach to digital transformation?**

The Evolution of AI from Wow to How

Today, there is a global consensus regarding the growing importance of generative AI and machine learning (ML) for every business. But now the conversation is shifting from wow to how. How do we use it to increase business differentiation and productivity? What are the change management, governance, ethics, safety, privacy, transparency, legal considerations and how do we help the workforce adapt?

- **Growing Adoption:** AI use in the workplace accelerated 24% in Q1 2024, with 1 in 4 desk workers reporting they have tried AI tools for work as of January 2024, compared with 1 in 5 as of September 2023.¹
- **But a Growing Skills Gap Challenge:** Most business leaders (78%) are concerned that they cannot train employees fast enough to keep pace with technology developments in the next three years.²
- **Rising to the Top of HR Priorities:** Hiring managers around the world rank “training our staff to leverage AI in their current roles” as their #1 workforce AI challenge.³

78% OF BUSINESS LEADERS ARE CONCERNED THEY **CANNOT TRAIN EMPLOYEES FAST ENOUGH** TO KEEP UP WITH NEW TECHNOLOGIES.²



Workforce Implications:

- HR and IT must bring workers along to realize the productivity benefits of AI.
- Upskilling and reskilling efforts must be scaled to address the scope of the challenge.
- Flexible IT staffing solutions and services will play an important role in helping organizations close AI skills gaps.



1. [Salesforce](#) 2. [World Employment Confederation](#) 3. [ManpowerGroup Employment Outlook Survey](#)



Cloudy Skies

Even before the widespread adoption of conversational AI, cloud adoption was growing rapidly around the world. Accelerating AI and ML adoption is turbocharging it. The potential to facilitate business transformation and create unique value is clear. However, there is still a very human

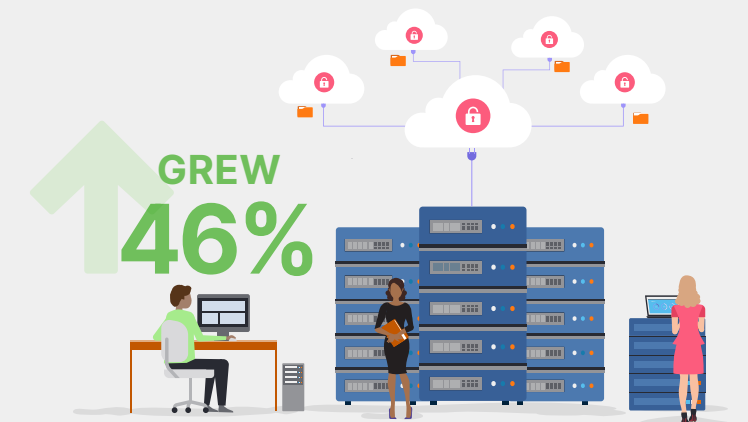
factor required to facilitate this growth. You need skilled talent to build and maintain the increasing number of data centers. Building the infrastructure required to meet the growing computing power needs of these data centers will require a skilled workforce.

- **Powering Up:** In North America alone, construction of new data centers grew 46% year-over-year to an all-time high of 3,077 megawatts in 2023. The power required for these new data centers could power up to 3 million average homes. Consequently, the cost in Northern Virginia (a popular location for data centers) for a 250–500-kilowatt power supply has increased 42% in the past year.¹
- **Scaling Up:** Worldwide public cloud services are forecast to grow 19.1% in 2024. As organizations continue to invest in cloud services, Gartner anticipates a five-year compound annual growth rate (CAGR) of 19.7%.²
- **A Cooler Hiring Forecast for Now:** Despite this anticipated growth, employers across industries expect Cloud & Infrastructure related hiring to cool in Q3 2024. The ManpowerGroup Global Net Employment Outlook—the net of employers expecting to increase or decrease hiring—for Cloud & Infrastructure related roles across industries declined 3% vs. Q2 and is down 12% year-over-year.³

1. [CBRE](#) 2. [Gartner](#) 3. [ManpowerGroup Employment Outlook Survey, Q3 2024](#)

Workforce Implications:

- The current cooler labor market could offer cost savings opportunities for employers willing to invest in Cloud & Infrastructure talent before hiring rebounds.
- Location strategy analysis will be critical to determine proximity to the right resources and skilled talent pools.
- The ongoing migration of so much information to the cloud will sustain demand for cyber security talent.



NEW CLOUD DATA CENTER CONSTRUCTION IN NORTH AMERICA ALONE GREW 46% YOY AND WILL CONSUME AS MUCH ENERGY AS 3 MILLION HOMES.¹

The Softer Side of IT

Much has been written about the hard skills gaps employers face when they are trying to find and retain skilled IT talent. However, the rapid pace of innovation will make soft skills such as collaboration, accountability, reasoning, adaptability, and stress tolerance increasingly important. In an environment which will require increasingly agile and collaborative teams, employers would be wise to prioritize these skills as much as hard skills.



- **Communication is Key:** Employers in the IT sector worldwide say communication, collaboration and teamwork skills are the most important when they select a new employee.¹
- **AI Makes Soft Skills More Important:** Employers in multiple countries say soft skills will become more important in the AI age. When asked which soft skills will become more important in the AI age, the number one answer was integrity, with 78% of frequent AI users anticipating that this quality will grow in importance. They also say integrity, strategic vision, ability to inspire others, motivation, and drive will become increasingly important.²
- **A Hard Task Killer:** “Although it is true that AI automation eliminates jobs, it mostly replaces tasks within jobs, changing the constellation of skills and behaviors needed to perform them, as opposed to displacing humans altogether. For example, just like the Uber app makes it less relevant for taxi drivers to know their way around a city, but more relevant for them to have clean cars, and an interesting conversation, generative AI devaluates a wide range of technical skills, from coding to translating, and proof-reading to e-mail drafting, thereby increasing the value of tasks that are dependent on human judgment, creativity, and action.” – Dr. Tomas Chamorro-Premuzic, Chief Innovation Officer, ManpowerGroup.³

Workforce Implications:

- Soft skills training should be included in tech upskilling and reskilling programs.
- Candidates with strong soft skills and some tech skills gaps offer an underutilized source of tech talent.
- IT and HR must partner to address the significant change management implications across their organizations.



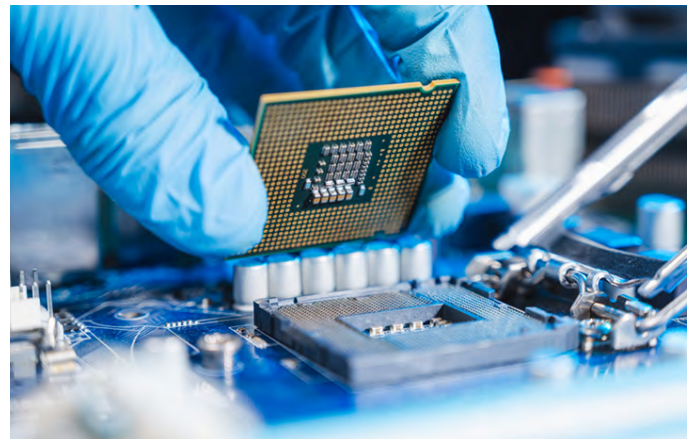
IT EMPLOYERS SAY COMMUNICATION, COLLABORATION & TEAMWORK ARE THE MOST IMPORTANT SOFT SKILLS.¹

1. [ManpowerGroup Employment Outlookd Survey, Q1 2024](#) 2. [Fast Company](#) 3. [Forbes](#)

CHIPS

In the wake of recent COVID-19 supply chain disruptions and growing geopolitical uncertainty in Asia, manufacturers and governments are investing in localizing a greater share of semiconductor production. The United States (U.S.) and European Union (EU) recently passed historic legislation to support new manufacturing facilities. As this momentum grows, so will the need for skilled talent to maintain and operate these state-of-the-art facilities.

- **U.S. CHIPS (Creating Helpful Incentives to Produce Semiconductors) Act:** The CHIPS Act was signed into law in 2022 and authorized more than \$52 billion in government subsidies to incentivize domestic semiconductor manufacturing. To date (Q2 2024), the incentives have already led to \$327 billion in private investment. By 2030, the U.S. share of advanced chip production will grow from almost zero to 20% of global output.¹
- **EU CHIPS Act:** The EU signed similar legislation into law in 2023. It authorizes €43 billion of public-private partnership investment to support new chip production within the EU.² European policymakers also share the ambition of growing local production of advanced chips to 20% of global production by 2030.
- **CHIPS Help Wanted:** By 2030, more than one million additional skilled workers will be needed to meet demand in the semiconductor industry.³



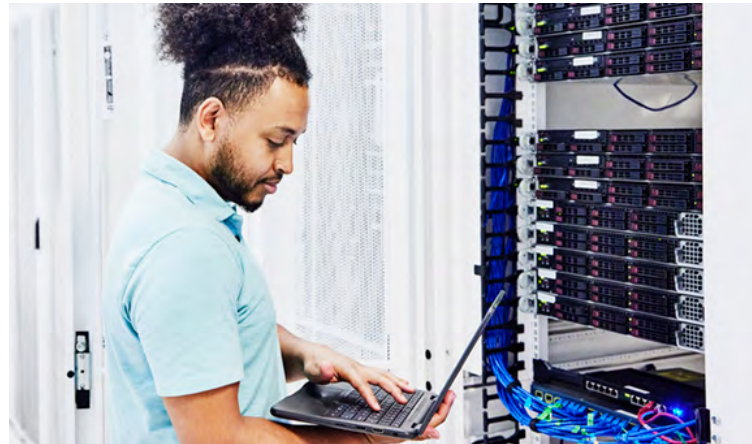
Workplace Implications:

- Construction of these advanced facilities takes years and offers employers the opportunity to build the skilled workforce they need.
- However, since more than 90% of the world's semiconductor industry is concentrated in Asia, there is no equivalent existing talent pool in other regions.
- Identifying skills adjacencies—defined as relevant skills learned in different roles or industries—will be critical in regions where semiconductor manufacturing is less established.

BY 2030, THE SEMICONDUCTOR INDUSTRY WILL NEED MORE THAN 1M ADDITIONAL WORKERS TO MEET GLOBAL DEMAND.³



1. [American Enterprise Institute](#) 2. [European Commission](#) 3. [Deloitte](#)



Quantum Leaps

The current state of the quantum computing industry is marked by a transition from theoretical research to practical applications and commercial

viability. This evolution is particularly timely as organizations grapple with increasing volumes of big data, accelerating use of AI and growing cybersecurity threats. However, there will be growing pains as the technology scales beyond use in a handful of laboratories and universities.

- **The Next Big Thing:** AI has already become a significant part of our lives, and quantum computing is following a similar trajectory. Initially, quantum computing was not seen as an immediate threat to data security, but today it has progressed to the point where it can break strong 128-bit encryption algorithms used by most banks and e-commerce platforms. Consequently, many believe business necessity will accelerate commercial adoption.¹
- **A Growing Opportunity:** The global quantum computing market will grow from \$1.1 billion in 2022 to \$7.6 billion in 2027. This represents a five-year compound annual growth rate (CAGR) of 48%.²
- **Quantum Talent Gaps:** The number of job postings which require quantum skills outnumber qualified candidates by a ratio of 3 to 1. Only 176 universities worldwide offer quantum research programs and only 29 in this group offer quantum graduate degrees. By 2025, as many as 50% of quantum computing jobs could remain unfilled.³

1. [Forbes](#) 2. [IDC](#) 3. [McKinsey](#)

Workplace Implications:

- Demand for cybersecurity talent will continue as organizations work to counter the growing threat posed by use of quantum technology by government and cybercriminals.
- Without a dramatic increase in the number of universities offering quantum computing research, in the near-term IT business leaders will need to build or source expertise.
- Since this is still an emerging area of IT, employers have an opportunity to get ahead of the curve before it becomes more mainstream.



BY 2025, UP TO
**50% OF QUANTUM
COMPUTING JOBS**
COULD REMAIN UNFILLED.³

The Future of IT is Green



As advanced computing continues to evolve, IT finds itself in the unique position of becoming a growing part of sustainability challenges and innovative solutions. Powering and cooling data centers will consume growing amounts of electricity and water. However, at the same time this computing power offers the opportunity to develop more innovative solutions by harnessing the power of big data.

- **A CIO Priority:** By 2027, 80% of CIOs will have performance metrics tied to the sustainability of the IT function.¹
- **Go Green or Go Home:** The global green technology and sustainability market is forecast to grow from \$13.76 billion in 2022 to more than \$61 billion by 2030. This represents a 20% CAGR each year.²
- **IT Employers Seek Green Skills:** Most IT employers worldwide (77%) say they are currently considering or actively recruiting candidates with green skills.³



Workplace Implications:

- **Most workers (62%) say they will check a potential employer's environmental reputation and 35% say it impacts their decision to work for them. These figures increase for younger workers.**⁴
- **More than half of global consumers (51%) across age groups say sustainability is more important to them than it was 12 months ago. In addition, nearly half (49%) say they paid a premium for a more sustainable product in the last 12 months.**⁵
- **The key takeaway for IT business leaders is that sustainability leadership is not just the right thing to do. It also impacts recruitment, retention, and business differentiation.**

1. [Gartner](#) 2. [Statista](#) 3. [ManpowerGroup Employment Outlook Survey](#) 4. [ManpowerGroup Workforce Survey, Oct 2023](#)
5. [IBM Institute for Business Value](#)



Cyber Shields Up

Daily headlines about cyberattacks and data breaches have shifted from novel to the new normal. Rising geopolitical tensions, increasingly sophisticated tactics and growing access to AI-enabled tools elevate the threat for every business. At the same time, the growing threat for every business is fueling a battle for scarce cybersecurity talent.

- **Priority #1:** Investing in increased security is the top priority for IT business leaders in 2024. Most (69%) say they plan to increase their cybersecurity budgets this year. This is an 8.5% increase from 2023.¹
- **AI Goes on Offense:** Unfortunately, a majority of cybersecurity leaders (56%) believe AI tools will provide an advantage to cyber criminals in the next two years.²
- **Talent in Short Supply:** Despite years of growing threats, the world still faces a shortage of cybersecurity talent. Today, 4 million more workers are needed to close the gap.³



Workplace Implications:

- **Cybersecurity talent will become increasingly in-demand and difficult to find in the coming years.**
- **Efforts to upskill and reskill in cybersecurity must be scaled to address the growing cyber talent shortage.**
- **The risks of failing to invest in the right cybersecurity expertise amid growing threats to intellectual property, client confidential information, and operational security cannot be understated.**

THE IT INDUSTRY NEEDS 4 MILLION MORE CYBERSECURITY WORKERS TO ADDRESS GROWING GLOBAL THREATS.³

1. [McKinsey](#) 2. [World Economic Forum](#) 3. [World Economic Forum](#)



Building People-First Digital Transformation

The democratization of conversational AI brought the resulting discussion about the long-term implications of digital transformation and automation to the top of every business leader's mind. However, to date it appears to be following the pattern of previous disruptive technologies as new skilled roles emerge. Employers who continue to put people-first during this period of change will capitalize as the technology matures.

- **Managers are Optimistic:** In a recent global survey business leaders were bullish on AI job growth. 86% are looking at how emerging technologies can help advance employee skillsets; 83% are planning to re-train their workforce and 82% are investing in new talent in response to rapid advances in technology.¹
- **But Workers are Skeptical:** Most (95%) workers see value in working with gen AI—but their top concern is that they don't trust organizations to ensure positive outcomes for everyone.²
- **Tech Help Wanted:** Most (82%) employers worldwide across industries are currently hiring for AI roles and they say IT & Data skills are the most difficult to find.³

1. [HSBC](#) 2. [Accenture](#) 3. [ManpowerGroup Employment Outlook Survey](#)

Workplace Implications

- Closing the gap between leadership optimism and worker skepticism will be the key to employee retention and engagement.
- Strategic workforce planning is an increasingly important priority as tech continues to change relevant skills and roles.
- Global talent sourcing and workforce economies of scale can free up valuable resources which can be reinvested to keep up with the accelerating pace of innovation.



Top Workforce Opportunities in IT



Skills-Based Hiring: The growing importance of in-demand tech skills is increasing the popularity of skills-based hiring and creating opportunities for a greater share of the workforce to transition into more skilled technical roles.



Building Better: As the cliché goes, necessity is the mother of all invention. IT leaders know talent scarcity is the new normal and efforts to rapidly upskill and reskill a greater share of the workforce are accelerating.



AI Assistance: It is important to remember we are still in the early days of AI and ML adoption. As adoption grows, so do opportunities for workers to use these powerful tools to make their jobs easier.



Governments Go All In: Governments around the world are making significant investments in building up their local tech industries, creating new opportunities for skilled talent around the world as industry leaders build more resilient supply chains.



Accelerating Innovation: What can this unprecedented computing power do for the future of medicine, mobility, sustainability, space exploration and business? If government and business leaders can overcome the ethical challenges to responsibly harness the power of this technology, IT will remain at the cutting edge of a brighter future.



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