



Tech skills transformation:

Navigating the future of work in 2025 and beyond

May 2023

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Foreword

Digital transformation is about the people behind the technology as much as the technology itself. The **'Tech skills transformation - Navigating the future of work in 2025 and beyond'** report offers a comprehensive analysis of how tech skills are evolving to be embedded across all job roles, including traditionally non-tech roles. This report aims to study the evolution through three key questions:

- 1 What would be the in-demand tech skills across domains in 2025 and beyond?
- 2 What would be the strategic and functional impacts of tech skills transformation?
- 3 How are organizations responding to tech skills transformation?

To holistically answer these questions, primary interviews were conducted with 50 HR and business leaders along with secondary research of 26 million profiles.

The report validated three key insights. First, tech skills are in demand for every job role, regardless of industry or function - leading to the demand for a new generation of "business application power users" and "power developers". Second, complexity of tech skills required has increased in terms of number of platforms and depth of functionality, necessitating revamp of tech skills across job roles. Third, companies are investing in developing real-time visibility into the organizational inventory of skills at an employee level - to enable data-driven decisions for fulfilling the tech-skills demand.

This report will enable readers to evaluate their tech skills strategy and reengineer their transformation approach to remain competitive in the market.



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Key takeaways

1

Technology skills are permeating every job role, regardless of industry or function.

- 1.1 Application developers and business app users are in high demand among 76% and 62% of organizations surveyed respectively
- 1.2 ISV and IT/ITeS are the largest supply pools of tech-skills, with US, India, EU and the UK accounting for ~56% of the total talent pool*

2

Increased complexity of tech skills is necessitating companies to revamp their talent for the future.

- 2.1 With the increasing usage of different tools, complexity of skills across functional areas (software engineering, IT, and business application power user) is increasing
- 2.2 ~81% of organizations surveyed affirmed low availability of 'power user/developer' tech skills
- 2.3 ~28% of organizations believe that they would need to revamp tech skills for a third of their talent base by 2025 to stay competitive

3

Companies are investing in developing real-time visibility into the organizational inventory of skills.

- 3.1 ~19% of organizations surveyed have built skill taxonomy, 43% have done skill benchmarking at an employee level
- 3.2 Real-time intelligence on tech-skills requires a multi-disciplinary approach

**Excluding China*



Introduction

The future of work is closely linked to the transformative potential of tech skills organically emerging across all job roles. This will be key to unlocking the next levels of workforce productivity. Applications such as Co-Pilot and ChatGPT continue to increase the productivity disparity, wherein a business generalist using ChatGPT can now do the work of several entry-to-mid level roles.

The realization of increased workforce productivity will require 'power users' and 'power developers' who use software platforms and AI (Artificial Intelligence) for designing integrated workflows and running seamless business operations.

To develop a point of view on this skills transformation underway, ~50 primary interviews were conducted at CXO, VP/Director, and manager levels.

The findings are synthesized to answer three questions -

- 1 What would be the in-demand tech skills and their availability across domains in 2025 and beyond?
- 2 What would be the strategic and functional impact of tech skills transformation?
- 3 How are organizations responding to tech skills transformation?

Methodology

Objective

This report was written with the objective of understanding the skills aspect of the technical talent driving digital transformation across industries. The report looks at the topic from three lenses - in-demand tech skills across domains, the organizational impact of tech skills transformation and how are organizations responding to the tech skills transformation.

Data source

This report has been developed by conducting primary and secondary research, discussions with several companies and industry stakeholders, and cross-referencing available data points. To the extent possible, the data has been verified and validated.

Responses from over 50 business and HR leaders were recorded via survey which was conducted during the period February to March 2023. The majority of our survey respondents represented sectors such as IT/ITeS (41%), BFSI (29%), ISV - Independent Software Vendors (16%), and telecommunications (9%). We also conducted in-depth interviews with a cross-section of industry leaders representing multiple sectors.

Survey demographics

Split by region		
India	UK/EU	USA
73%	11%	16%

Split by industry				
ISV	IT-IT/ITeS	BFSI	Telco	Others
16%	41%	29%	9%	5%

Split by job function		
TA*	TD**	Business
73%	23%	4%

Split by roles				
Manager	VP/AVP	Director	Executive	CXO
36%	32%	20%	9%	3%

Questionnaire

The questions were prepared in multiple-choice format. For questions where the answer options were not comprehensive, the respondents provided views and comments.

Mode of the survey

Conversations guided by questionnaire were held with the respondents. No questions could be skipped hence all the percentage figures represent responses to a question and the proportion of overall respondents.

* Talent acquisition
** Talent development

01

Demand-supply dynamics

What would be the in-demand tech skills and their availability across domains in 2025 and beyond?

1

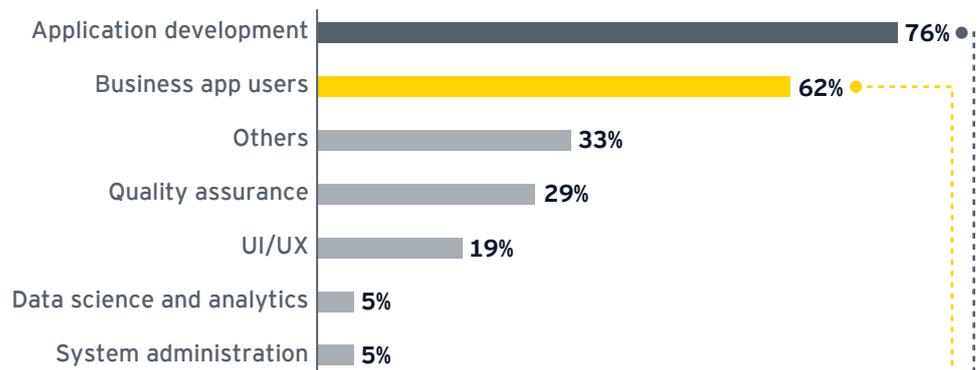
Technology skills are permeating every job role, regardless of industry or function



1.1

Application developers and business app users are in high demand among **76%** and **62%** of organizations surveyed respectively

Demand intensity across tech skills categories (% of respondents)

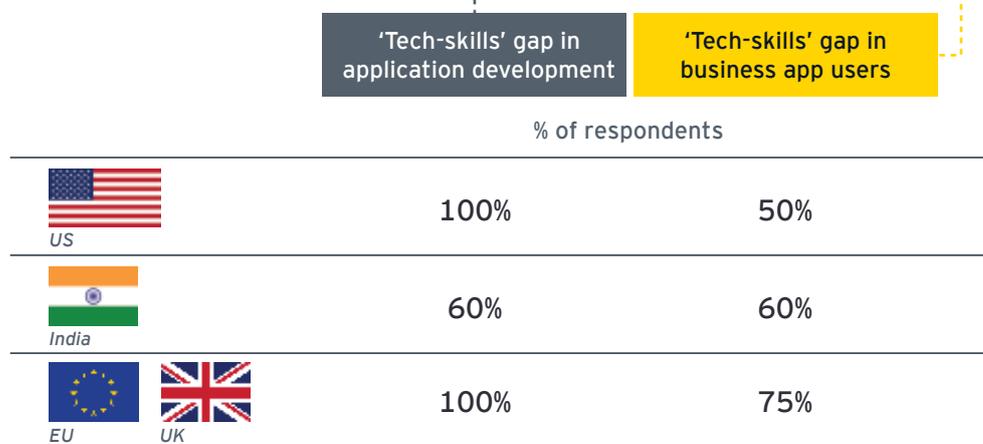


Geo insights

Shortage of application development skill is higher in the US and Europe compared to India

Shortage of business application power users is common to all three (USA, Europe and India)

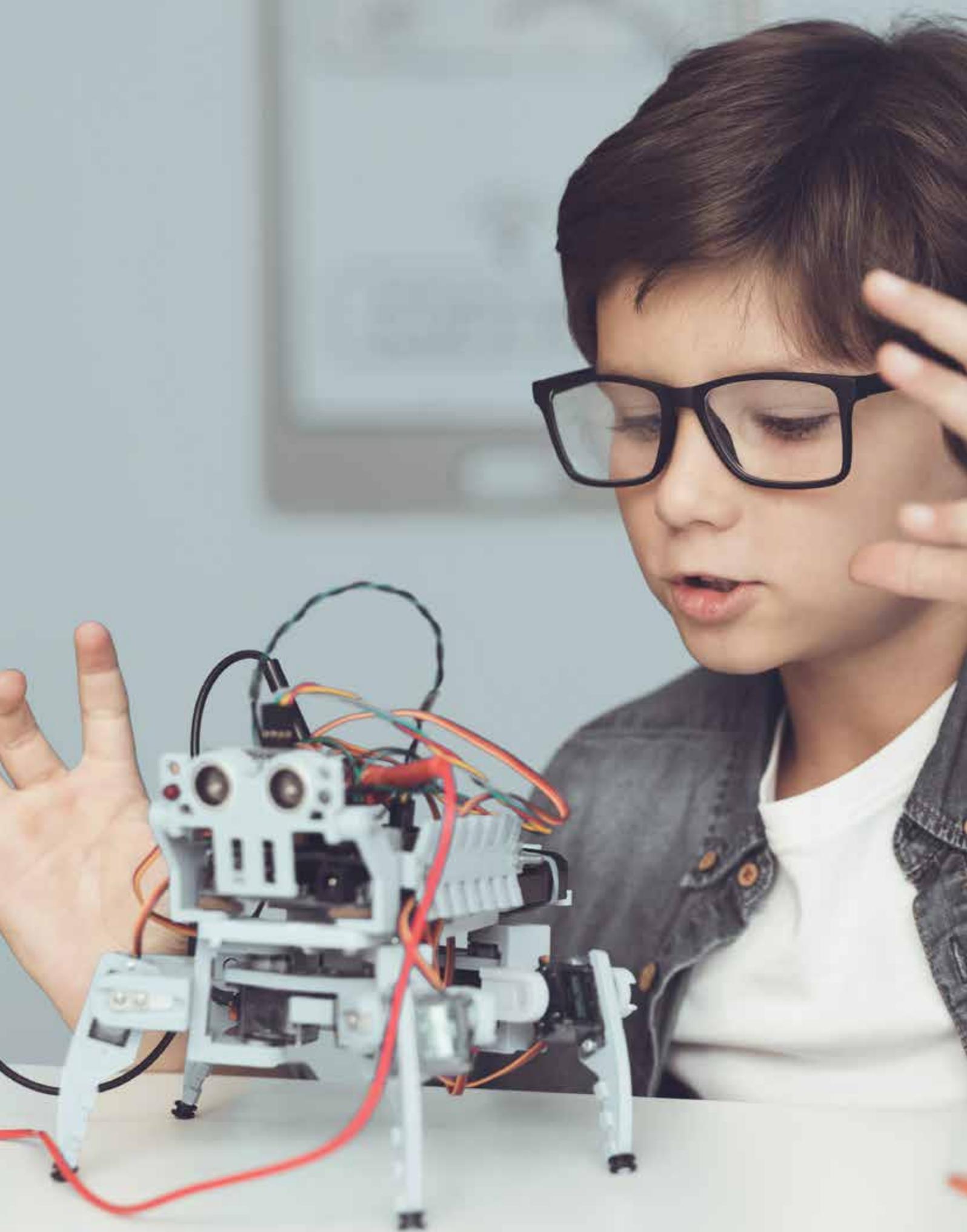
Geo insights - 'Tech-skills' gaps for the top skills categories



Primary research findings



Secondary research findings

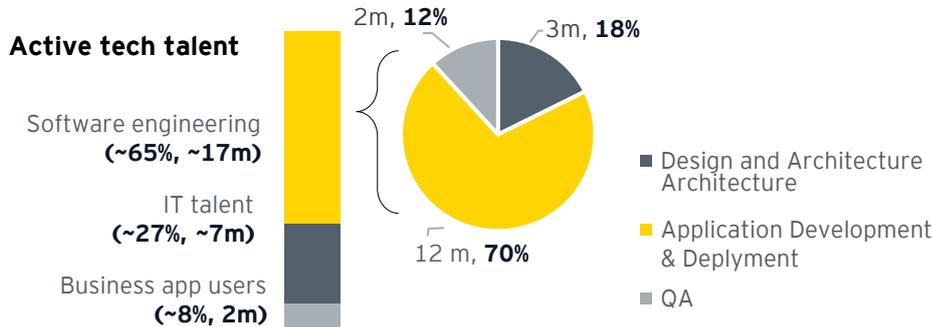




1.2

ISV (~24%) and IT/ITeS (~23%) are the largest supply pools of tech-skills, with the US, India, EU and the UK accounting for ~56% of the total talent pool

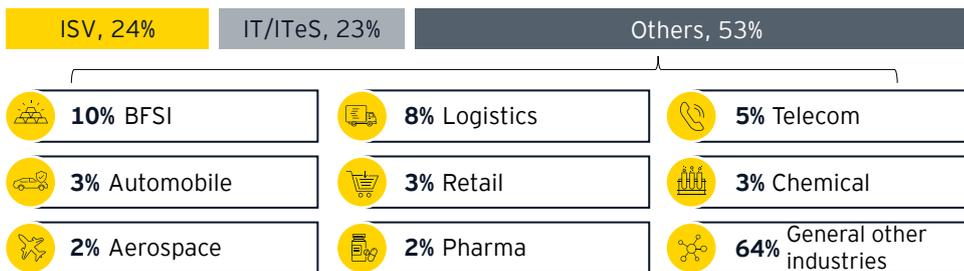
Global tech talent distribution by domain (~26m)*



Magnitude of active tech talent

Application development has the largest Installed tech talent base (~46% of 26m global tech talent*)

Global tech talent distribution by industry (~26m)*

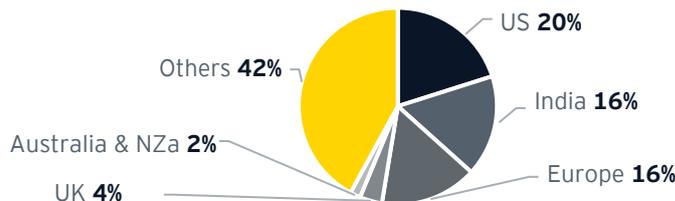


Note: The table above shows the 100% break-up of 'Others' industries

Leading industries

ISV and IT/ITeS industries are incubators for top tech talent, constituting half (~47%) of all tech talent. Other large industries include BFSI (Banking Financial Services and Insurance) (10%), logistics and supply chain (8%) and telecom (5%)

Country-wise tech talent distribution (~26m)*

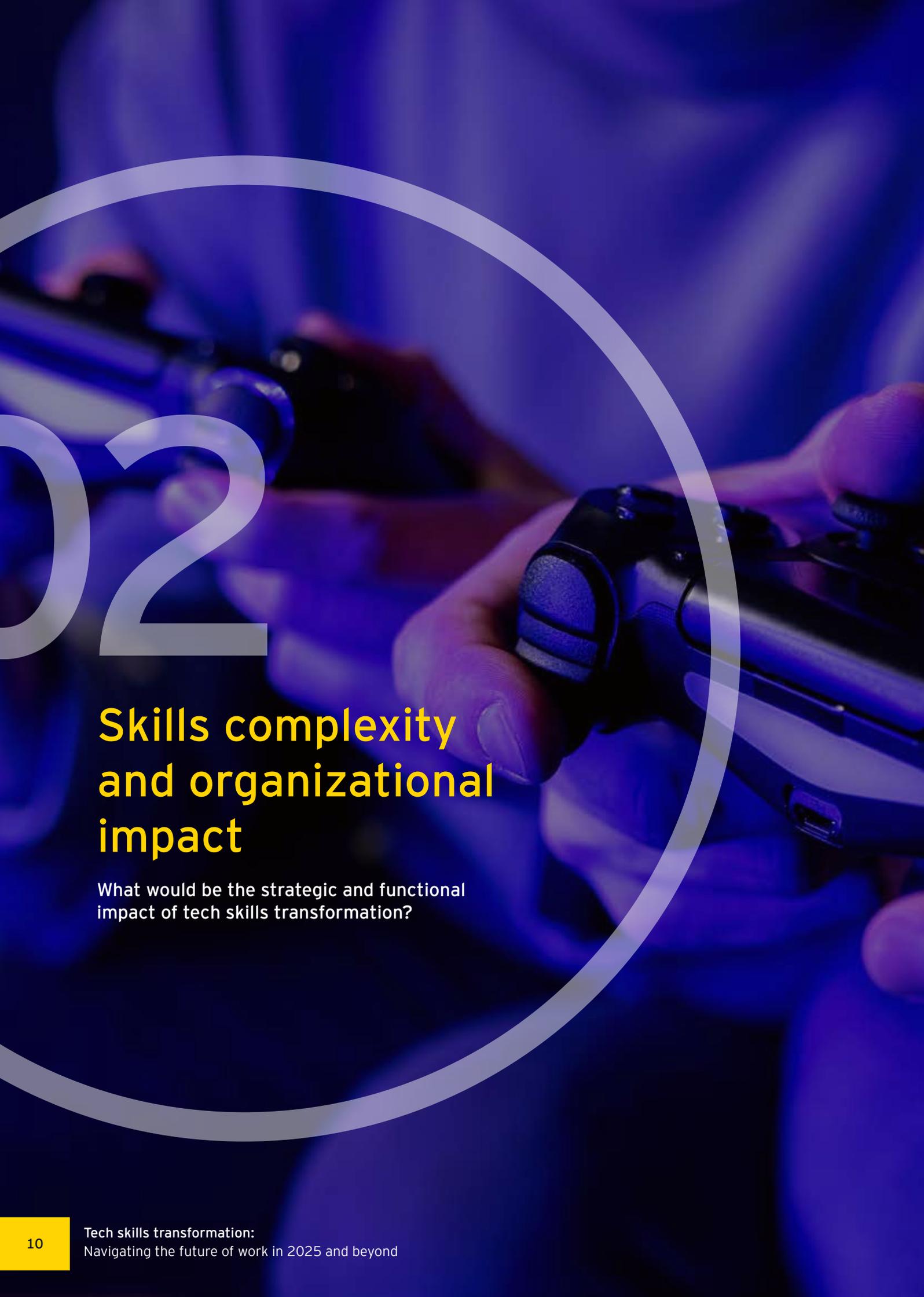


Geo insights

USA, Europe, and India are leading markets* for tech talent with 20%, 16%, and 16% of tech talent respectively, of the total ~26m global talent.

- Primary research findings
- Secondary research findings

*Excluding China



02

Skills complexity and organizational impact

What would be the strategic and functional
impact of tech skills transformation?

2

Increased complexity of tech skills is necessitating companies to revamp their talent for the future



2.1

With the increasing usage of different tools, complexity of skills across functional areas (software engineering, IT, and business application power user) is increasing

Roles such as software developers, IT engineer and function-specific non-technical roles have evolved into 'Power' software developer, 'Power' IT engineer and business application 'Power' user roles respectively.

Job roles	New-age job roles
 <p>Software developer</p> <p>Illustrative skills set:</p> <ul style="list-style-type: none"> ▶ Typical software development skills such as languages, databases etc with manual code writing, design and testing 	 <p>'Power' software developer</p> <p>Illustrative skills set (refer appendix A for more details):</p> <ul style="list-style-type: none"> ▶ Ability to execute end-to-end SDLC¹ across design, architecture, development, deployment and maintenance ▶ Unlock productivity using AI tools such as ChatGPT, Co-pilot etc.
 <p>IT engineer</p> <p>Illustrative skill set:</p> <ul style="list-style-type: none"> ▶ Expertise in isolated tools and skills such as OS administration, application support, DB administration etc. 	 <p>'Power' IT engineer</p> <p>Illustrative skills set (refer appendix B for more details):</p> <ul style="list-style-type: none"> ▶ Expertise on multiple tools along with usage of AI based tools for IT support, reporting, diagnosis, monitoring, customer management etc.
 <p>Non-technical business user</p> <p>Illustrative skill set:</p> <ul style="list-style-type: none"> ▶ Non-technical function specific skills with basic usage of software applications for decision making such as spreadsheets 	 <p>Business app 'Power' user</p> <p>Illustrative skills set (refer appendix C for more details):</p> <ul style="list-style-type: none"> ▶ Technical expertise on usage of multiple function specific business applications ▶ Design and development of business operating systems using low code/no-code tools

 Primary research findings

 Secondary research findings

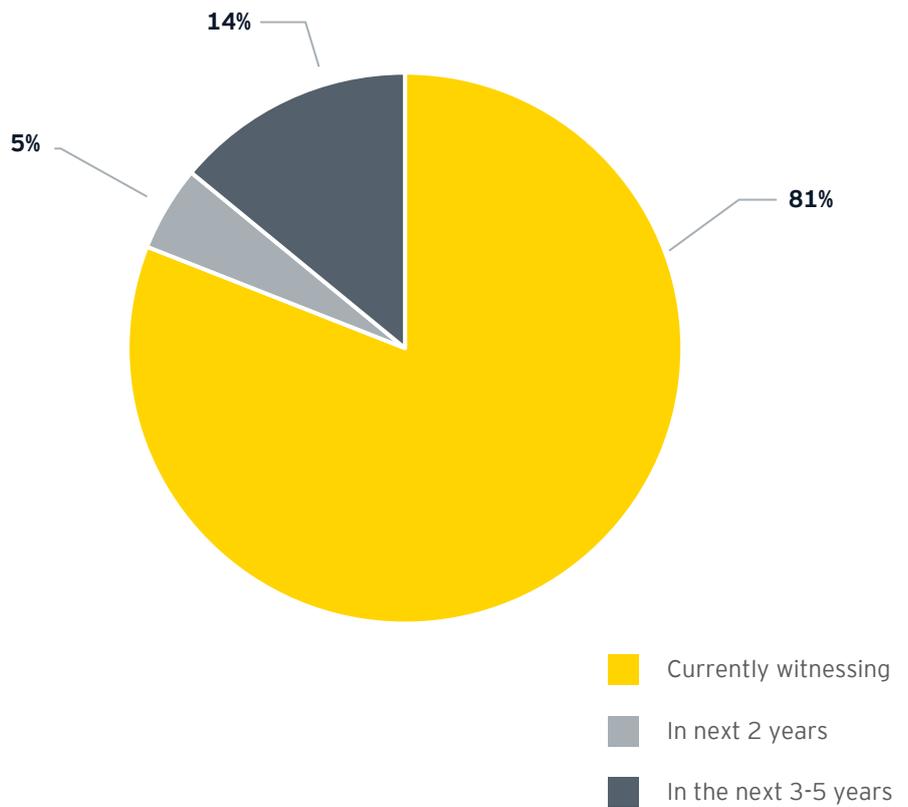
1. SDLC - software development lifecycle



2.2

81% of organizations surveyed affirmed low availability of 'power user/developer' tech skills

When do you expect tech-related skills gap to occur in your organizations?



Primary research findings



Secondary research findings

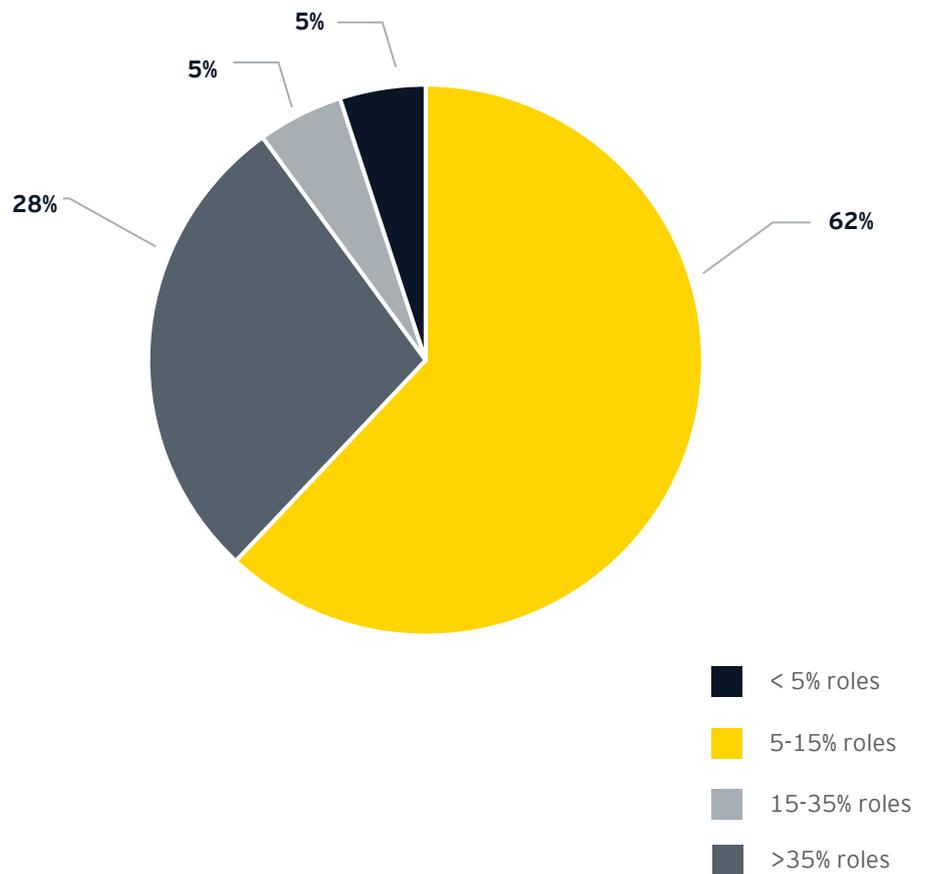


2.3

~28% of organizations believe that they would need to revamp tech skills for a third of their talent base by 2025 to stay competitive

Of the ~28% organizations that believe >35% of the tech roles will require skills transformation, majority are from India (50%) and UK/EU (50%).

What share of the current tech roles in your organization will require skills transformation in next 2-3 years?



Primary research findings



Secondary research findings

03

Organizational readiness

How are organizations responding to tech skills transformation?

3

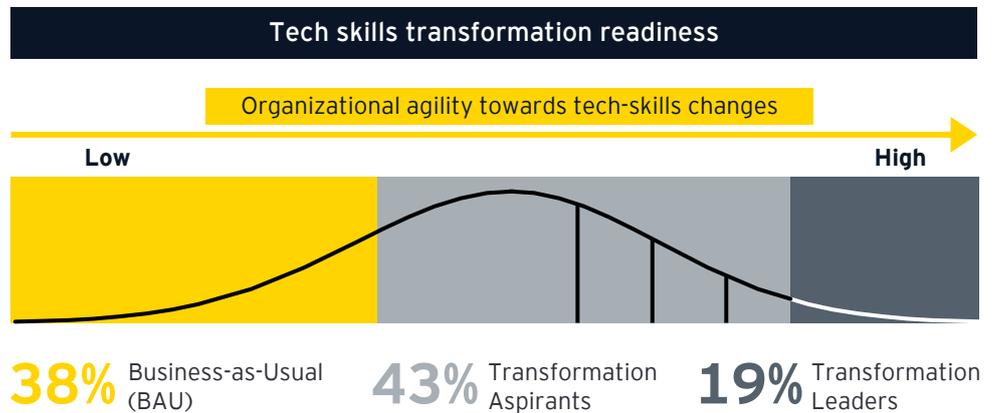
Companies are investing in developing real-time visibility into the organizational inventory of skills



3.1

~19% of organizations surveyed have built skill taxonomy, 43% have done skill benchmarking at an employee level

Organizations realize the strategic importance of skills as a competitive advantage. In response to the growing need for tech skills across job roles and its increasing complexity, they are investing in data and intelligence capabilities to stay ahead of the curve. We observed three segments of organizational readiness levels across the surveyed companies.



Tech-skills transformation readiness characteristics

	Business-as-Usual (BAU)	Transformation Aspirants	Transformation Leaders
Process	Application of skills intelligence limited to talent acquisition	Use cases expanded to include skill development, career path planning and deployment	End-to-end use cases across strategic planning, employee value proposition, performance etc.
Tech stack	Basic tech stack with HRMS ¹ , Payroll, ATS ² , LMS ³ , Job portals etc.	Basic HR tech stack integrated with point solutions in skills intelligence and LXP	Integrated AI-infused tech stack interwoven with business roles
HR functions and roles	No defined skills intelligence roles in HR	Increased HR-tech savviness	Integrated team of data scientists, strategic PMs and HR-tech power users
Tech-skills data	Estimation models based on sporadic sampling	Data and models updated regularly, for uses cases specific to functions and business units	Real-time, segment-of-1 data, with skill inventory organized for the business



Primary research findings



Secondary research findings

1. Human resource management system

2. Application tracking system

3. Learning management system



3.2

Real-time intelligence on tech-skills requires a multi-disciplinary approach

Skills intelligence empowers businesses by providing them with a centralized source of information on tech and business skills. The intelligence is leveraged to optimise decision making across strategic analysis & operational workflows through segment-of-1 data visibility, updated in real-time and available for the entire organization.

Illustrative top use cases of skills intelligence

- ▶ Defining the skills required to perform a certain role with high productivity
- ▶ Talent footprint optimization across geographies for R&D, GBS etc.
- ▶ Skills baseline while setting up distributed global teams
- ▶ Tech skills benchmarking for data-backed allocation of talent to projects
- ▶ Intelligence on talent trained in new age cloud and AI-powered financial applications and tools



Primary research findings



Secondary research findings

1. Learning experience platform
2. Customer relationship management
3. Customer data platform

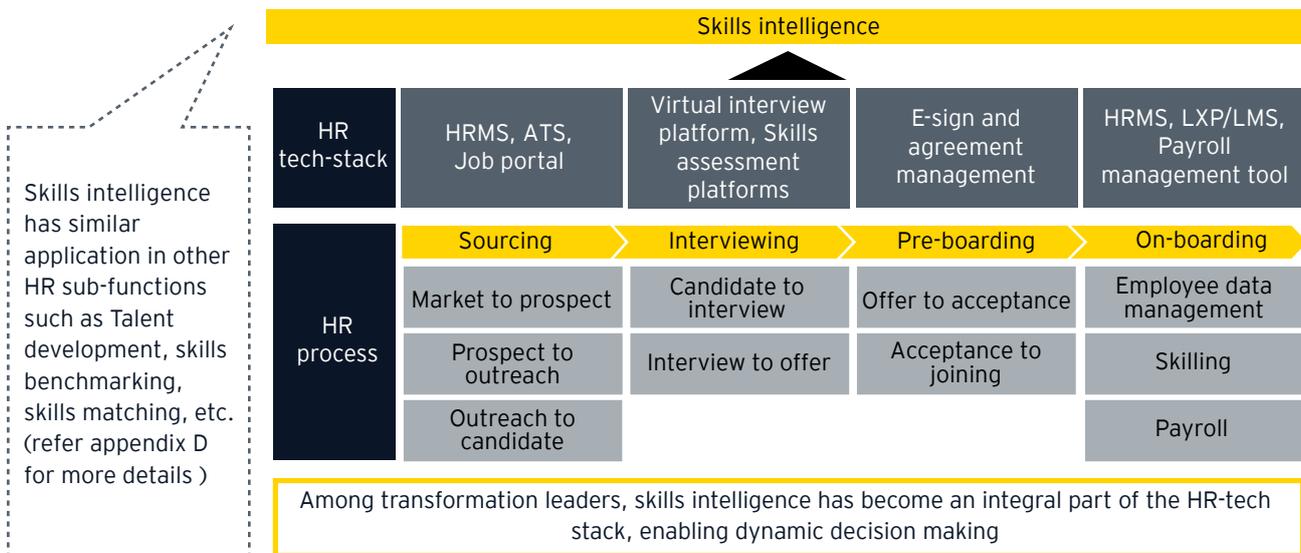
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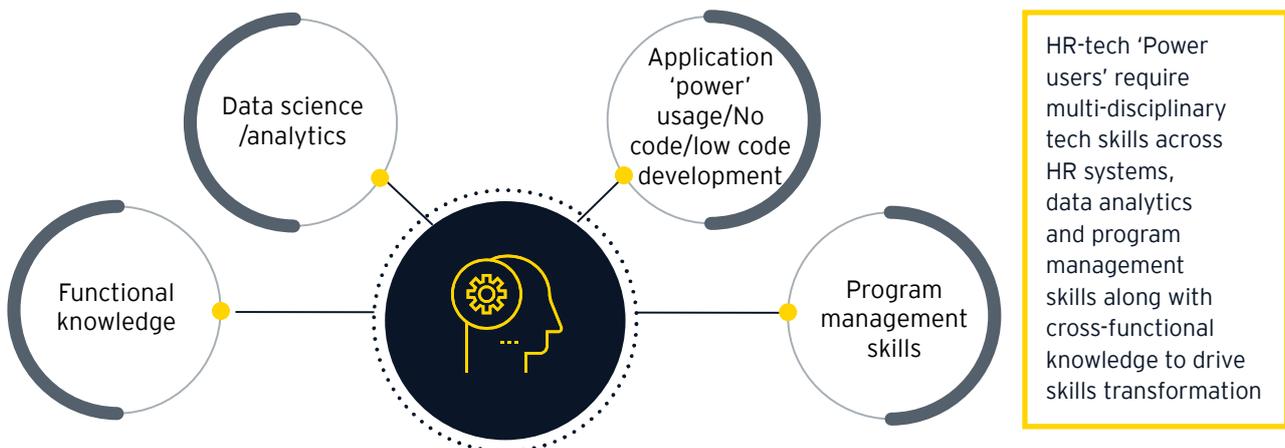
Evolution of the HR-tech stack

Evolution of HR-tech stack	2000-2010	2010-2015	2015-2020	2020-Current	By 2025 and beyond
	Data management - system of record	Spend efficiency - capex to opex	Employee value proposition - digital accessibility and enablement	Intelligent systems - integrated and externally connected with skills intelligence	AI-infused integrated workflow system

Illustrative use case for skills intelligence in Talent Acquisition



Core capabilities for HR-tech power users





Way forward



With the ongoing evolution and varying adoption of new technologies in the workplace, proficiency in tech-skills across job roles has become crucial for unlocking productivity.

This translates into differentiated transformation prerogatives at each level:

- 1** For individual professionals: 'Power user/ developer tech skills are now expected of every job role
- 2** For organizations: To remain competitive, it is essential to unlock on-ground productivity benefits of new technologies. To achieve this, tech skills should be prioritized across business functions and job roles:
 - A** For CFO/COOs: Deciding on better pricing for the products/services to ensure margin is met considering the cost of new-age skills
 - B** For Sales Leaders: Keeping pace with changing customer requirements and translating the needs internally for upskilling/acquiring talent for better go-to-market proposition
 - C** For HR leaders: Keeping pace with the tech skills transformation requires a multi-disciplinary approach, with focus on developing granular real-time intelligence on an organisation's skills inventory



Appendix

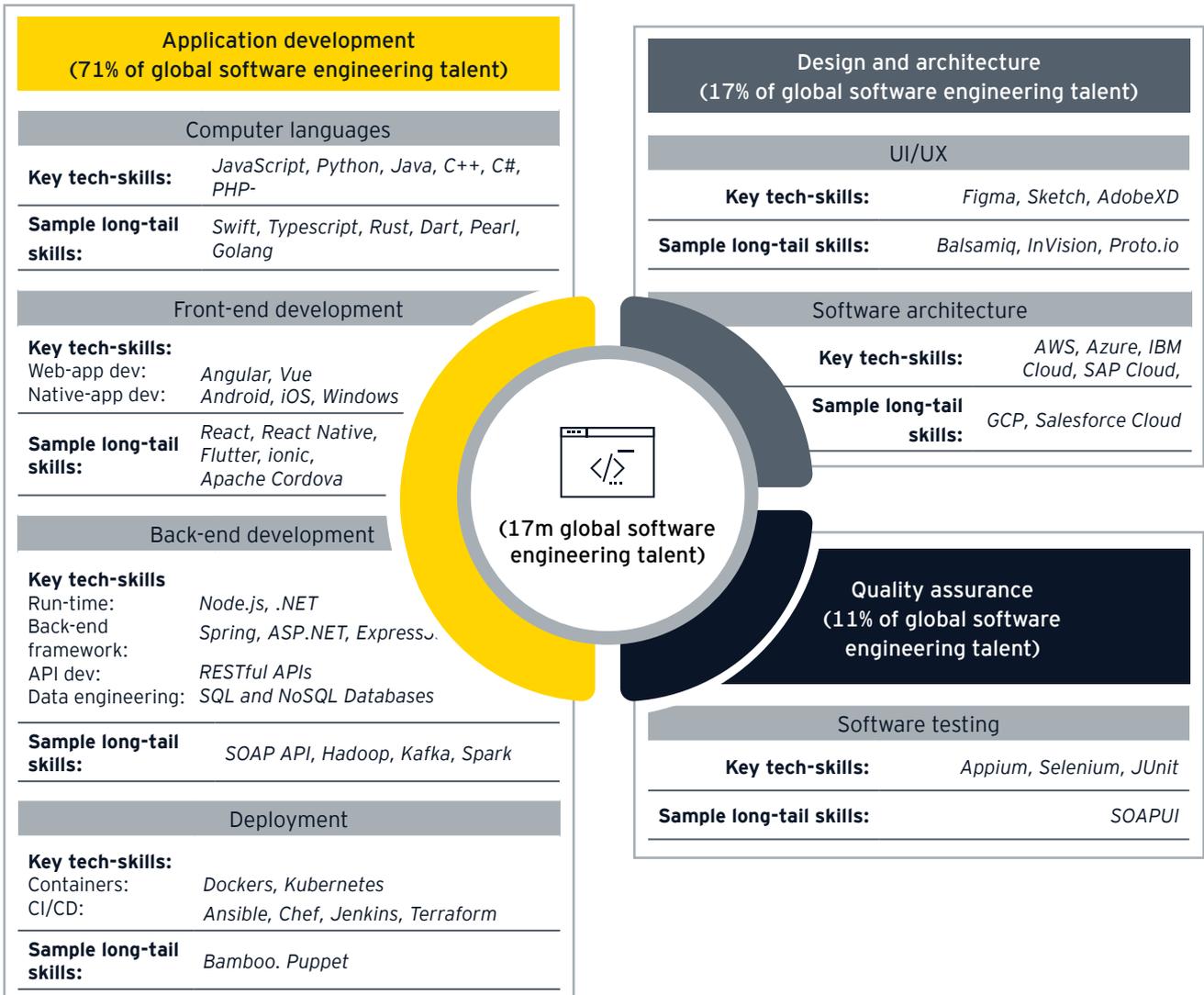
Appendix A

'Power Developer' tech-skills:

A generalist role in software engineering now includes new skills such as Kafka, Kubernetes etc in addition to prevalent older skills such as Angular, Spring Boot etc.

New skills are getting added to the prevalent older skills across all software engineering sub-functions, thereby increasing no. of skills in demand

Illustrative high-demand skills in software engineering sub-functions



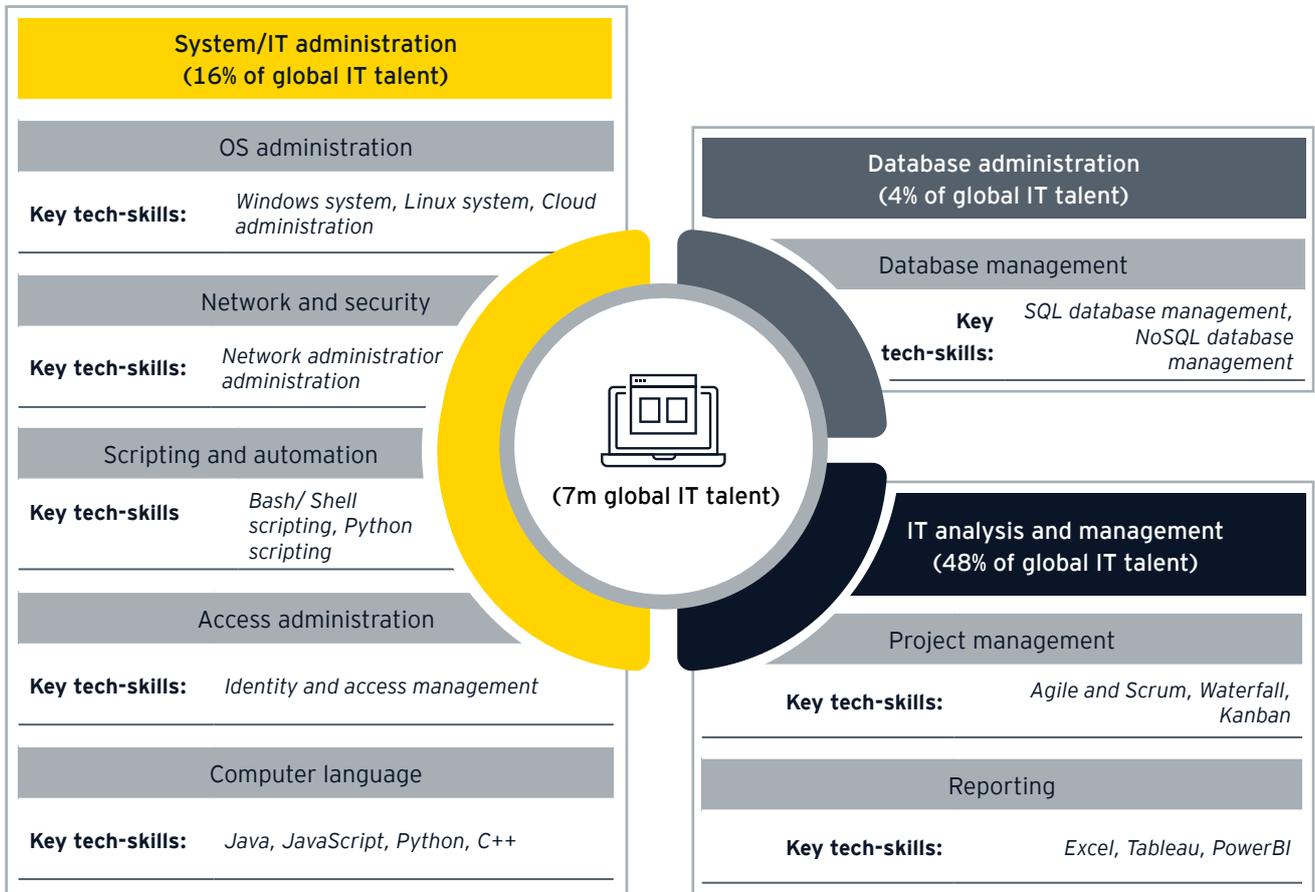
Appendix B

'Power IT engineer' tech-skills

A generalist role in IT is now expected to be proficient in multiple new tools such as NoSQL database, cloud administration tools etc., thereby making such roles more complex

In the larger IT job function, IT analysis and management and IT support have the highest talent. A generalist roles in IT is required to be proficient in multiple tools and platforms

Illustrative high-demand skills in Information & Technology (IT) sub-functions



IT support roles constitute 36% of the global IT talent. Skills and tools in IT support are primarily defined by the applications and tools the IT professionals are supporting. Hence there is no defined set of skills/tools in IT support

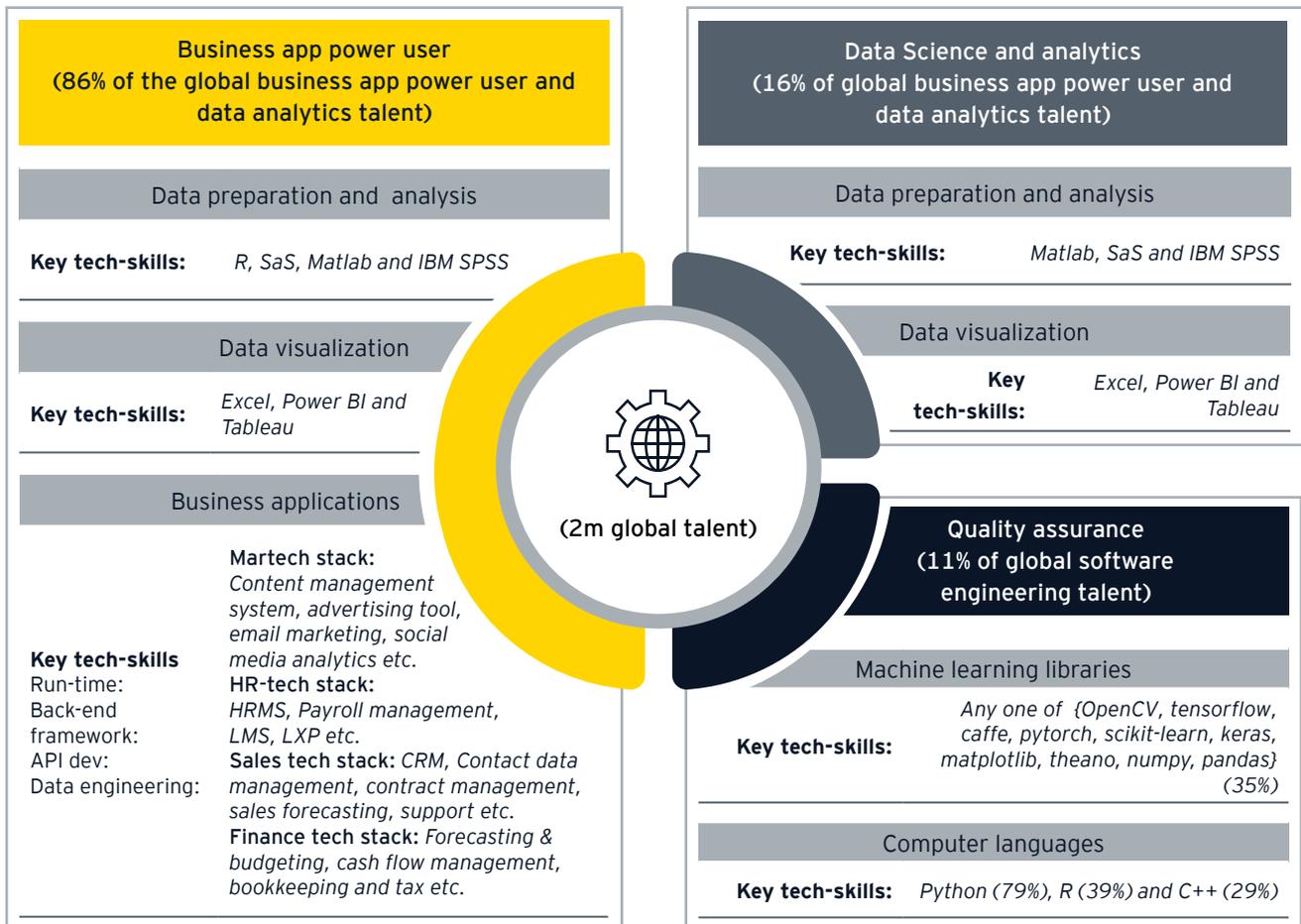
Appendix C

Business app 'Power user' and data analytics tech-skills

Generalist business function roles across S&M, finance, HR, etc., are increasingly tied to the hip with a diverse set of business applications and use cases

In the larger business app 'Power user' and data analytics landscape, talent is primarily divided into 2 types job sub-functions. Majority of the talent works in a Business power user role.

Illustrative high-demand skills in business app power user and data analytics sub-functions



Appendix D

Skills intelligence - Use cases

Application area	Use cases
 Talent recruitment	<ul style="list-style-type: none">▶ Identify and optimize best channels for talent acquisition▶ Generate job descriptions aligned to open job positions▶ Data backed assessment of candidates (both technical and non-technical assessment)▶ Intelligence on candidate engagement before, during and after conclusion of the recruitment process▶ Market intelligence on talent related standards/benchmarks such as salaries, talent hub spots, skills certification etc.▶ Forecast talent requirements and create data backed programs to meet future talent requirements
 Skills matching	<ul style="list-style-type: none">▶ Data driven decision making to help hiring managers recruit resources for specific open positions▶ Support employees with internal movement in the organizations
 Skills benchmarking	<ul style="list-style-type: none">▶ Create skills matrix at employee and organizational level with focus on proficiency level▶ Generate data-backed insights on employee skills gap▶ Plan for resource augmentation programs based on skills gap
 Talent reskill/upskilling	<ul style="list-style-type: none">▶ Design personalized reskilling/upskilling programs for employees▶ Track current and future skills capabilities at both organization and employee levels▶ Measure ROI of different L&D programs being run in the organization
 Measure employee satisfaction	<ul style="list-style-type: none">▶ Measure employee engagement and satisfaction levels▶ Design and track HR initiatives to improve employees engagement and satisfaction▶ Measure ROI of different employee engagement programs being run in the organizations
 Measure Customer satisfaction	<ul style="list-style-type: none">▶ Data driven insights on employee performance on client projects▶ Intelligence on areas of improvement at both organization and employee levels

Glossary

1 —————

Application development

Sub-function within software engineering that writes code to build software that perform as per user/business requirements

2 —————

Business app power users

Advanced application users that design and use inter-connected systems of business applications, business data analytics and visualization for data driven decision making.

3 —————

Business app user

Users of business applications with function specific skills and basic knowledge on usage of software applications for decision making such as spreadsheets

4 —————

Business application user and data analytics

Job function in the business domain that involves using business applications, data visualization and data driven decision making to solve business problems.

5 —————

Data science and analytics

Sub-function that Involves leveraging data to research and design new data models and algorithms to solve business problems.

6 —————

Database administration

Sub-function within IT that involves installation and maintenance of database servers while ensuring their security

7 —————

Design & architecture

Sub-function within software engineering that designs user interface/ user experience and under lying architecture for software applications.

8 —————

Information and technology (IT)

Job function in the technology domain that involves administration of computer networks, hardware and software configuration of an organization's IT infrastructure and support to ensure normal IT operation.

9 —————

ISV

Independent Software Vendors (ISV) develop and sell software products that run on one or more computer hardware or operating system (OS) platforms

10 —————

IT analysis and management

Sub-function within IT that involves gathering business requirements, designing IT solutions and managing IT implementation projects

11 —————

IT support

Sub-function within IT that provides technical support to resolve IT issues/queries

12 —————

IT/ITeS

Information Technology/ Information Technology enabled Services (IT/ITeS) provide IT services or IT enabled services to other firms



13

Quality assurance

Sub-function within software engineering to test and ensure that software applications meet various functional and non-functional requirements

14

Skills benchmarking

Structure process to standardize and create measurement criteria to measure skills proficiency in a firm

15

Skills taxonomy

Structured system to categorize and organize the various skills and competencies according to job roles

16

Software engineering

Job function in the technology domain that involves writing software code to design, develop, test, deploy and maintain software applications.

17

System/IT administration

Sub-function within IT that involves installation, configuration and management of hardware, software and network servers, monitoring security and performance of underlying systems

Acknowledgment

We would like to thank the survey participants for their time and valuable insights that helped us develop the report.

To connect with EY team,
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or scan the below QR code.



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iMocha

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