



TalentCorp
GROUP OF COMPANIES

MINISTRY OF HUMAN RESOURCES



Impact Study of Artificial Intelligence, Digital, and Green Economy on the Malaysian Workforce Volume 2

**Sector:
Global Business
Services**

**Impact Study of Artificial
Intelligence, Digital, and
Green Economy on the
Malaysian Workforce
Volume 2**

Sector:
Global Business Services



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Content

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Preface by the Group Chief Executive Officer of TalentCorp

As Malaysia stands on the threshold of a transformative era, we find ourselves driven by the accelerating forces of Artificial Intelligence (AI), Digital, and Green Economy. These global trends are reshaping industries, redefining the future of work, and challenging us to navigate both the opportunities for job creation and the realities of evolving role redundancies.

With a median age of 31, Malaysia leads a youthful ASEAN region where the median age is just 30. This demographic advantage presents a unique opportunity—a vibrant, dynamic workforce ready to harness the opportunities of a Digital and Green Economy. Yet, it also poses challenges. Youth unemployment and underemployment remain persistent issues across ASEAN, with Malaysia facing a youth unemployment rate of 11% and 36.3% of tertiary-educated employees grappling with skill-related underemployment. These figures demand immediate action. Reskilling and upskilling are not just important—they are imperative as the landscape of jobs continues to evolve.

At TalentCorp, we are honoured to serve as a strategic think tank under the Ministry of Human Resources' (KESUMA) mandate. This critical role allows us to leverage our networks and initiatives, providing data-driven insights that strengthen the government's intelligence capacity and support national policy development, advocacy, and long-term strategic planning.

One of our foremost initiatives in this capacity is the **Impact Study of AI, Digital, and Green Economy on the Malaysian Workforce**. This study is designed to offer key guidance to policymakers and industries, equipping them with the knowledge to prepare the workforce for upcoming shifts. It highlights essential reskilling and upskilling programmes to assist Malaysians affected by job displacement, ensuring they transition smoothly into new roles, fostering sustainable growth, and ensuring no one is left behind.

Through insights gleaned from this study, TalentCorp's MyMAHIR Future Skills Talent Council (FSTC)—an industry-led body dedicated to addressing skills needs—will drive efforts to close critical skills gaps. MyMAHIR's collaboration with industry leaders enables us to identify priority competencies and shape training programmes to meet the evolving demands of their sectors. Aligned with the MADANI Economy framework's focus on lifelong learning and guided by best practices from the International Labour Organization (ILO), TalentCorp will continue working closely with key ministries, agencies, and industry players to develop forward-looking curricula that meet the workforce needs of the future.

As Malaysia navigates this new landscape, the findings from this study will serve as an indispensable resource—providing policymakers, industries, and the workforce with the insights and tools required to stay competitive and resilient in an ever-evolving global economy.

On behalf of TalentCorp, I extend our deepest gratitude to our industry partners, colleagues, and experts for their invaluable contributions to this study. Together, we have crafted a comprehensive and impactful report that will serve as a guide for Malaysia's future of work, ensuring that we are prepared for the challenges and opportunities ahead.

Thomas Mathew
Group Chief Executive Officer
Talent Corporation Malaysia Berhad

“

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Thomas Mathew
Group Chief Executive Officer
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Executive Summary



Global Business Services (GBS) is a strategic pillar in Malaysia's economic agenda, as outlined in the Twelfth Malaysia Plan (RMKe-12). It plays an important role in advancing Malaysia's economic growth and transformation. Within this sector, components of Principal Hubs, Global Business Services, and headquarters operations stand out as significant contributors to Malaysia's foreign direct investments (FDI). Malaysia is home to more than 600 companies, 58% of which are foreign-owned, including globally recognised brands such as HSBC, BP, Roche, and IBM.

The GBS sector is projected to attract RM89 billion in digital technology investments by 2025, reinforcing Malaysia's status as a premier destination for GBS. This is further emphasised by Malaysia's 3rd ranking in the KEARNEY

“The GBS industry in Malaysia exemplifies our nation’s resilience and adaptability. We are poised not only to maintain our position as a global leader but to ascend even higher by looking at high technology value outsourcing business. The future of business services resides here in Malaysia.”

Ong Chin Seong, Chairman of PIKOM

The focal point of the impact study centres on roles significantly affected by the growth trends of AI, Digital, and Green Economy. It has identified 80 roles that are established positions essential to maintaining sector standards and efficiency. Among these, 18 job roles or 24% are highly impacted by AI, Digital and Green Economy; 49 job roles or 65% are medium impacted; and eight (8) job roles or 12% are low impacted. Additionally, five (5) emerging roles and 16 in-demand skills for AI, Digital, and Green Economy have been identified to drive future advancements and innovation within the GBS sector. Highly impacted roles face a substantial risk of becoming obsolete due to these trends. Therefore, the study identifies

1. Malaysia Investment Development Authority (MIDA), Malaysian global business services sector seen attracting RM89b digital tech deals by 2025, 6 November 2023, <<https://www.mida.gov.my/mida-news/malaysian-global-business-services-sector-seen-attracting-rm89b-digital-tech-deals-by-2025/>>
2. PIKOM, Global Business Services Malaysia Strategy 2022 - 2027, <http://www.pikom.org.my/2022/GBSMALAYSIA/Final_DigitalVersion.pdf>
3. Digital Investment Office, Value Driven Global Business Service: The Malaysian Landscape, <<https://mydigitalinvestment.gov.my/digital-gbs>>

viable career pathways and the necessary skill sets for the Malaysian workforce in the sector, ensuring they are prepared for future challenges and opportunities.

Through the impact study assessment, 11 Recommended Initiatives have been identified across the talent ecosystem of Malaysia's GBS sector to adapt to AI, Digital, and Green Economy trends within the sector. These plans aim to capitalise and create opportunities as well as address challenges posed by these trends for the Malaysian GBS workforce. Aligning the needs and aspirations of each stakeholder group of the sector will drive innovation, promote skill development, and ensure sustainable growth of the GBS sector.

These Initiatives have been grouped into four (4) categories based on the leading and enabling entities: **Government**, **Industry Players**, **Academia**, and **Training Providers**:



GOVERNMENT



INDUSTRY PLAYERS



ACADEMIA



TRAINING PROVIDERS

- IN1 Develop Policy/Adoption Framework to Govern and Promote AI Technology Adoption**
- IN2 Provide Funding, Incentives and Grants to Encourage Emerging Trends Adoption**
- IN3 Continuous Development of National Talent to Sustainably Address Talent Demand**

- IN4 Enhance Curriculum Alignment with Industry Needs Through Partnerships Between Academia and Businesses to Ensure Graduates are Workforce-ready**
- IN5 Enhance Talent Retention and Development Strategy for High-Skilled Employees**
- IN6 Foster Stronger Collaboration with Academia to Develop Programmes that Meet Current Market Demands and Drive Innovation**

- IN7 Partner with Sector Experts to Incorporate Real-world Practices Into the Curriculum and Syllabus**
- IN8 Improve the Quality of Educators Through Continuous Advanced Sector Training and Access to Updated Resources**
- IN9 Develop a National GBS Curriculum Focusing on AI, Digital, and Soft Skills Development**

- IN10 Create Relevant Training Content by Partnering with Sector Experts with Regular Updates to Meet Current Market Demands**
- IN11 Improve Training Delivery and Effectiveness by Engaging Additional Reputable and Certified Trainers**

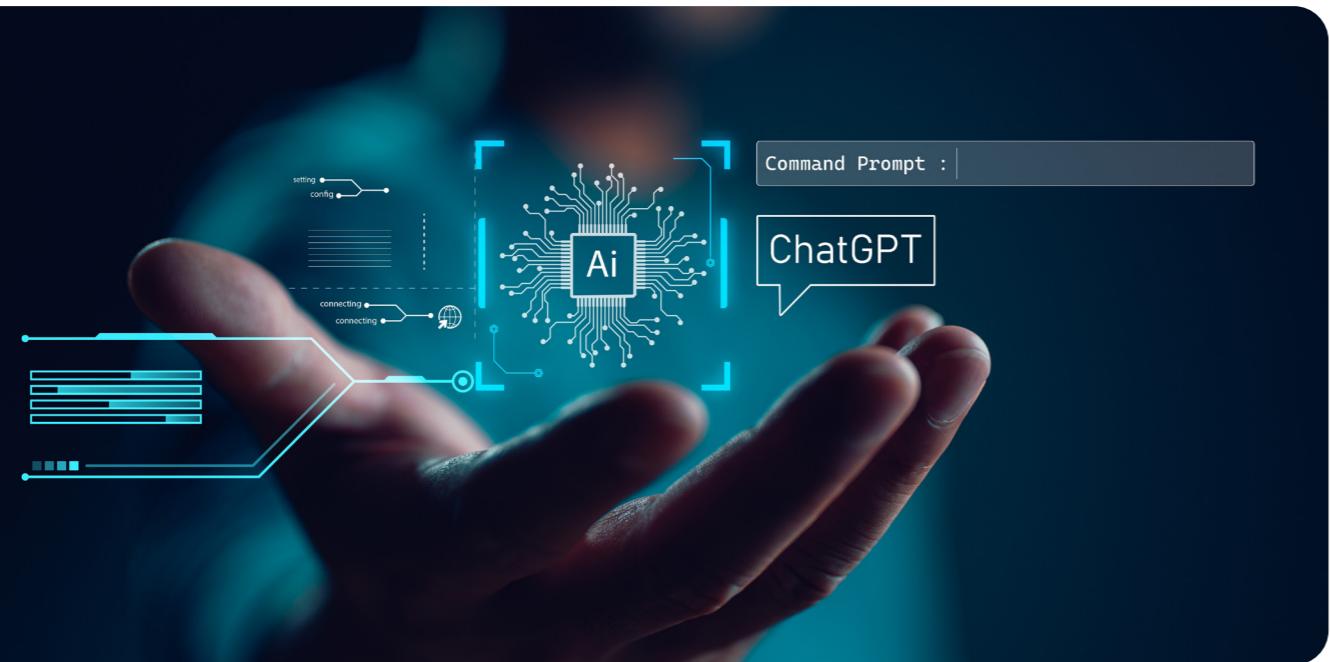
“We envision Malaysia having a hub that brings together high-value talent for collaboration and engagement. Malaysia has a diverse workforce which comes from multilingual and multicultural background, making it ideal to develop strong cross collaboration capabilities.”

Roche Services & Solutions APAC



Chapter 1: Introduction of the Study

Introduction of the Study



Purpose of the Study

The increasing focus and adoption of AI, Digital, and Green Economy call for a transformative shift in global operating models and workforce, supported by the digitally enabled drive beyond Industrial Revolution 4.0. The study aims to help government, industry players, academia, training providers, and the public to prepare for future workforce demands. The output of this study will contribute to the Malaysia National Skills Registry (MyNSR), a skills taxonomy that will be integrated into the MyMAHIR platform. This platform offers comprehensive insights into industry trends, job roles, required skills, career pathways, and available training programmes across all sectors.

These research and studies cover several sectors, namely Information and Communications Technology (ICT); Food Manufacturing and Services; Pharmaceutical Manufacturing; Medical Devices; Aerospace; Electrical and Electronics; Wholesale and Retail Trade; Energy and Power; Chemical; and Global Business Services.

AI will increasingly impact the nature of work and the broader societal progress

Majority of industry players in Malaysia are conscious about AI and the benefits it brings to organisations. While some have leveraged AI to carry out tasks, many organisations have yet to fully embrace AI as it remains difficult for organisations to justify the expense and effort required to implement AI due to the uncertainty

of Return on Investment (ROI). Organisations are also wrestling with how to address AI throughout their operations – not just from a technology perspective but also from the human perspective in terms of roles and skills readiness.

This is also consistent with an inaugural Cisco AI Readiness Index in 2023 where 86% of organisations worldwide are not fully ready to integrate AI into their businesses. Malaysia's AI Readiness tracks that of the Global level, standing at 87% with only 13% considered as "pacesetters".

With the rise of AI, the Malaysian government has launched the National AI Talent Roadmap 2024–2033 to cultivate a skilled workforce to unlock the potential of AI across various sectors. Adding to this momentum, tech giant Microsoft Corp announced a significant investment of RM10.5 billion in Malaysia's cloud and AI infrastructure. Additionally, global tech firms Google and ByteDance will invest RM9.4 billion and approximately RM10 billion to establish data centres and transform Malaysia into a regional AI hub.

Malaysia's digital transformation is key to enhance national competitiveness, empower industries and local enterprises to progress towards high-value added activities

Digital transformation has been a strategic imperative across many organisations for many years. By continuing to embrace digital technologies, Malaysia can

significantly elevate the capabilities of its industries and local enterprises. This technological advancement is not just about automating existing processes to enhance productivity, but also about enabling a shift towards higher value activities.

Digital economy is one of Malaysia's key economic pillars, contributing 22.6% to the country's gross domestic product (GDP).⁴ This number is set to rise to 25.5% by 2025. To remain relevant and resilient, the Malaysia Digital Economy Blueprint overseen by MyDIGITAL outlines the efforts and initiatives taken to transform Malaysia into a high-income nation that is focused on digitalisation and a regional pioneer in the digital economy.

Malaysia is also making significant strides in Green Economy

When it comes to Green Economy, most organisations in Malaysia today are still driven by compliance to regulations. However, there has been growing awareness and willingness to drive the Environmental, Social and Governance (ESG) agenda at the forefront with concerted efforts from the government, private sector, and public. While progress is being made, ongoing commitment and collaboration across all industries are necessary to ensure a sustainable future for the country.

This is in line with the Twelfth Malaysia Plan (2021–2025) that outlines the nation's aspiration to achieve net-zero greenhouse gas (GHG) emissions as early as 2050. Complementing this, the National Energy Policy (2022–2040) sets the foundation for transforming the energy landscape towards sustainability. In line with these objectives, the Malaysian Government has also developed the National Energy Transition Roadmap

(NETR) to accelerate the shift from a traditional fossil fuel-based economy to a high-value Green Economy. Malaysia's efforts are reflected in its leading position in the World Economic Forum Energy Transition Index, ranking 1st in ASEAN and 35th globally.⁵

It is imperative to future-proof Malaysia's workforce for the impact of AI, Digital, and Green Economy

This study aims to provide transformative and strategic inputs to complement the rapid growth of these areas. It will examine how these trends as a whole will reshape Malaysia's workforce in the upcoming three (3) to five (5) years and assess the impact of current and future trends of AI, Digital, and Green Economy; its implications for current and future job roles and skills; the nation's capacity to cater to future workforce demands and needs; and lastly, policy recommendations that the policy makers and agencies, industry players, academia and training providers as a whole can do in spurring the industry forward amidst flexible changes ahead.

This report will provide an overview of the Global Business Services sector, including its related sub-segments, the key trends and developments relating to AI, Digital, and Green Economy.

More importantly, it will highlight the roles impacted as well as the skills needed to be future-ready for the Global Business Services sector. These findings are based on engagements with industry associations and key players as well as regulators and government agencies.

The report concludes with Recommended Initiatives for four (4) key stakeholder groups, namely: Government, Industry Players, Academia, and Training Providers.

Microsoft's investments in digital infrastructure and skilling will help Malaysian businesses, communities, and developers apply the latest technology to drive inclusive economic growth and innovation across the country.

Satya Nadella, CEO of Microsoft

4. Vanessa Gomes, *Catalysing Malaysia's Digital Economy*, September 2022, <https://mdec.my/esg-mdcap/content-hub/catalysing-malaysia-digital-economy>
5. MIDA, *Malaysia ranked first place in S-E Asia in WEF energy transition index*, July 2020, <<https://www.mida.gov.my/mida-news/malaysia-ranked-first-place-in-s-e-asia-in-wef-energy-transition-index/>>



Chapter 2: **Approach and Methodology**

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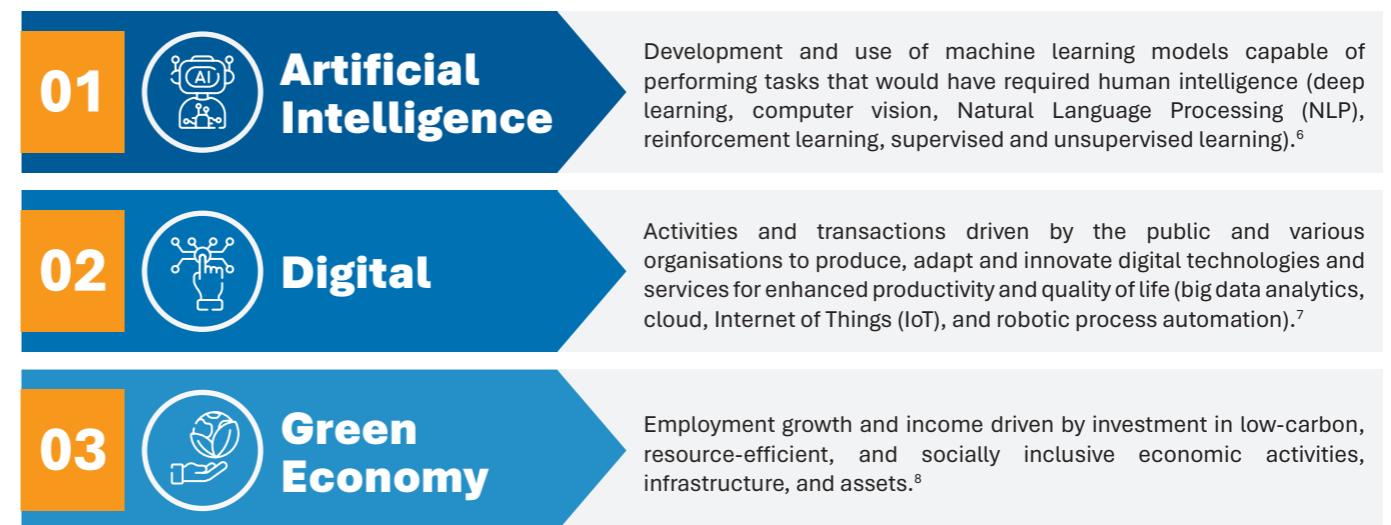
Approach

A six-pronged approach entailed a blend of qualitative and quantitative research techniques that generated insights and met the objectives desired from this study. The study's outcomes reflect what is happening in each sector today and what is expected of each sector in the next three (3) to five (5) years.



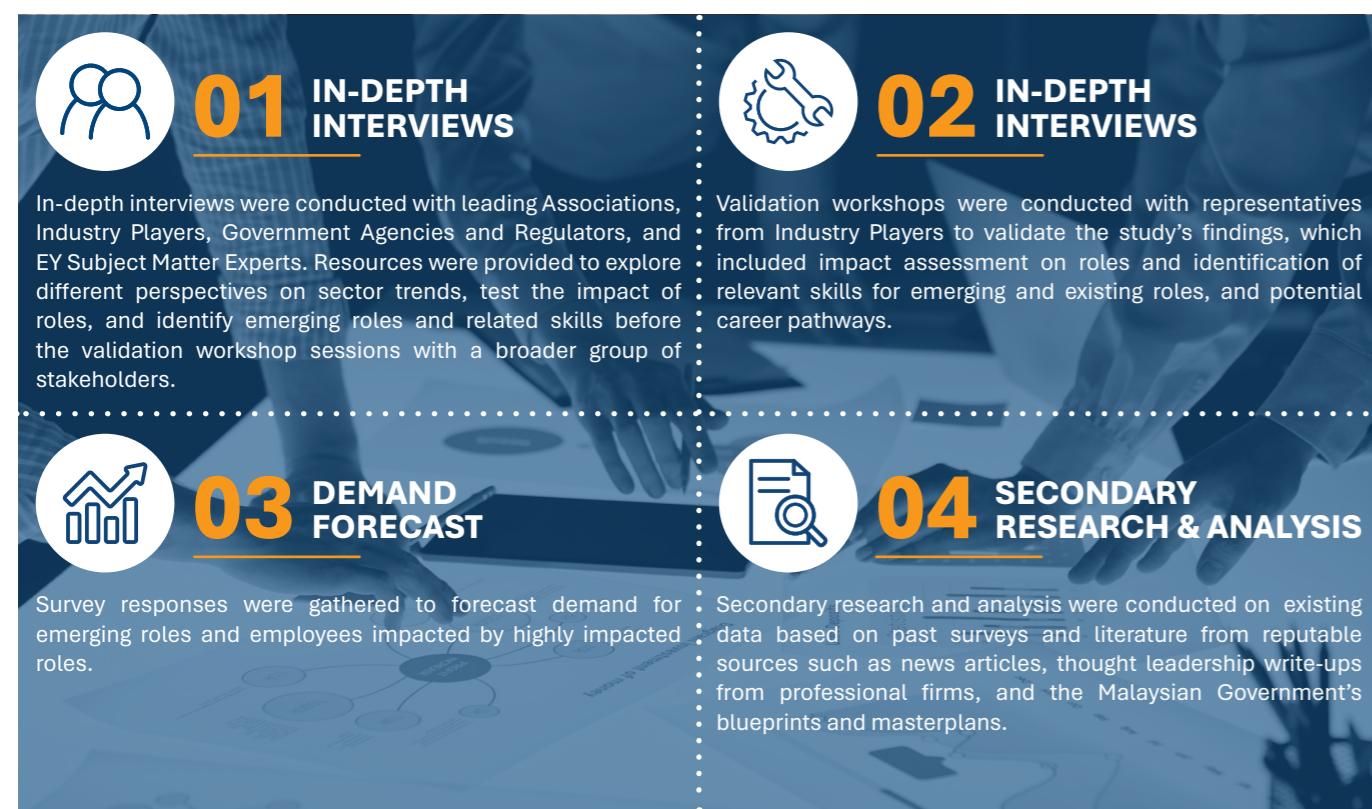
Research Methodology

The study focused on three (3) key trends shaping today's workforce: AI, Digital, and Green Economy. Their definition is outlined below:



Research Techniques

The qualitative and quantitative research techniques were as follows:



- To effectively analyse how the key trends impact existing roles, four (4) key parameters have been defined in the assessment process, as stated below:
- AI & Digital**
 1. **Opportunity to automate data-driven or low-creativity activities that are repetitive or rule-based via AI or other technology tools.**
 2. **Human intervention is required despite some or most activities being automated or digitalised, as:**
 - Strategic thinking and problem-solving are vital to making decisions
 - Creative thinking is needed to generate new ideas or ways of working
 - Outcomes need to be communicated or socialised and regulated
 - High importance is placed on human emotions or physical involvement in performing the activity
 - Typically performed by a critical role that holds accountability or a role requiring certification
 - Green Economy**
 1. **Impact of the environment on jobs that depend on limited natural resources and produce outputs that are polluting or may pollute the environment.**
 2. **Opportunity to diversify, requiring new skills to implement the organisation's Environmental, Social, and Governance (ESG) agenda, which includes:**
 - Environment: Areas for improvement in environmental sustainability
 - Social: Diversity, equity, inclusivity, ethics, and community engagement
 - Governance: Risk management, compliance, reporting, and corporate culture
6. World Economic Forum
 7. Malaysia Digital Economy Corporation (MDEC)
 8. United Nations Environment Programme (UNEP)

Based on the parameters above, the impact assessment of AI, Digital, and Green Economy on roles will result in one of the following outcomes:



The impact assessment results inform individuals and organisations about the levels of risk faced by job roles in the sector. This information can aid in strategising career development and workforce planning, ensuring relevance amidst advancements in the three (3) key trends.

Stakeholders' Selection Criteria

Selecting the right stakeholders ensures the impact study benefits from diverse perspectives and relevant expertise. The four (4) criteria used to identify stakeholders for engagement are:



Key Stakeholders Engaged in the Study

Recognising the importance of on-the-ground perspectives, the impact study gathered insights from key stakeholders across the country, including Government, Associations, Industry Players, and Training Providers. The contributions from these four (4) groups enriched and fine-tuned the study's findings.

Stakeholders and their Contributions to the Study

Stakeholder Groups	Government	Associations	Industry Players	Training Providers
Key Contributions	<ul style="list-style-type: none"> Share inputs on industry trends. Validate high-level impact assessments. Recommend initiatives. 	<ul style="list-style-type: none"> Identify selected industry players. Share inputs on industry trends. Validate high-level impact assessments. Recommend initiatives. 	<ul style="list-style-type: none"> Validate industry trends. Validate detailed impact assessments. Identify future roles and skills requirement. Provide a view of capacity demand and number of highly impacted workforce. Recommend initiatives. 	<ul style="list-style-type: none"> Recommend training providers and suitable programmes mapped to skills. Suggest new training programmes to close existing and future gaps. Recommend initiatives.

The study was conducted from April to September 2024, consulting **39 experts** from **22 organisations** during a workshop, followed by **two (2)** separate engagements with industry stakeholders.

Key Facts and Figures of Impact Study Stakeholder Engagements





Chapter 3: Sector Overview

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This section provides a more detailed overview of Global Business Services, a priority area in the 12th Malaysia Plan and the impact of global and Malaysia's macro trends on the sector, particularly the adoption of AI, Digital technologies, and Green Economy.

Overview of the Global Trends in the Global Business Services Sector

The Global Business Services (GBS) ecosystem has matured significantly with over 10,000 centres worldwide, and yet still holds immense growth potential. The sector continues to exhibit a positive trajectory. The GBS sector revenue is projected to grow from USD1.8 trillion (RM7.7 trillion) in 2022 to USD2.5 trillion (RM11.5 trillion) by 2025,⁹ exhibiting the industry's prowess as an important component of the value equation for global enterprises.

In line with this projection, the global market value of GBS continues to rise and is expected to reach USD525 billion (RM2.4 trillion) by 2028, with an impressive compound annual growth rate (CAGR) of 9.1%.¹⁰ Leading the growth of the industry in the Asia Pacific region, with an anticipated CAGR of approximately 11% from 2024 to 2030. The sector's growth in this region is driven by advancements in digital technologies, the rise of e-commerce platforms, and the increasing preference to outsource non-core services across various industries including telecommunications, financial services including insurance, healthcare, retail, as well as travel and hospitality.

The Shift to New S-curves

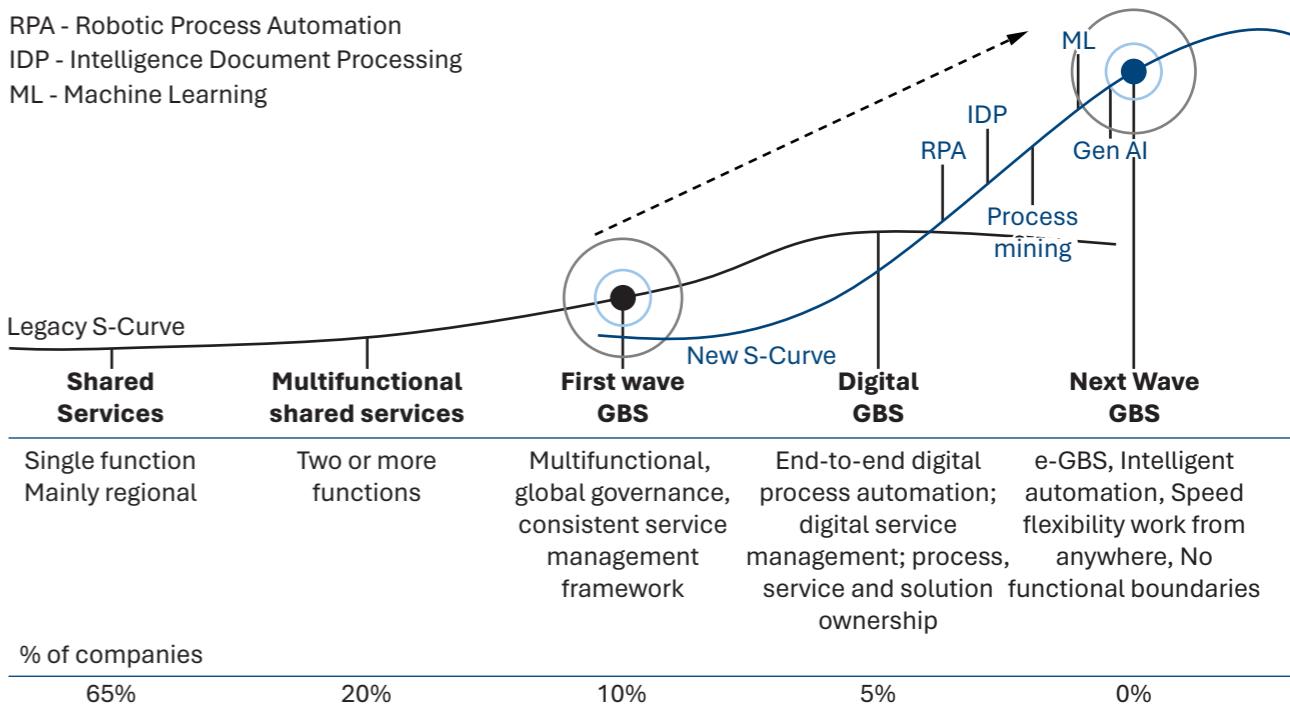
The future of GBS is poised for a transformative shift, driven by the adoption of advanced technologies and sustainability practices. In this rapidly evolving global landscape, GBS is transitioning to new S-curves, moving beyond its traditional roles of cost efficiency and process optimisation to become a strategic enabler of growth and innovation. The sector will need to intensify its focus on the integration of advanced technologies and sustainability practices across global operations to be able to shift to the new S-curves.

9. Rajiv Gupta et al., Boston Consulting Group, *Global Business Services: Yielding the Butterfly Effect*, 20 September 2022, <<https://www.bcg.com/publications/2022/global-business-services-growth-latest-trends-report-india>>

10. Nutun, *The Emerging GBS Trends Driving Outsourcing in 2022*, 22 June 2022 <<https://www.nutun.com/insights/the-emerging-gbs-trends-driving-outsourcing-in-2022>>

AI has the potential to redefine the way GBS organisations operate

RPA - Robotic Process Automation
IDP - Intelligence Document Processing
ML - Machine Learning



The convergence of advanced technologies and sustainability in GBS is expected to drive the sector towards new S-curves of growth. Advanced technologies such as AI, machine learning (ML), robotics, and data analytics are set to revolutionise and redefine the way GBS organisations operate. These innovations have enabled the automation of routine tasks, the generation of actionable insights from vast data sets, and improvements in decision-making processes. Thus, enhancing the levels of efficiency, accuracy, and speed in delivering services.

The integration of digital tools in GBS is translated into more value-added services that it can offer such as predictive analytics and personalised customer experience. The enhancement of services it can now offer is elevating GBS' role from a supporting role to a key strategic partner within organisations.



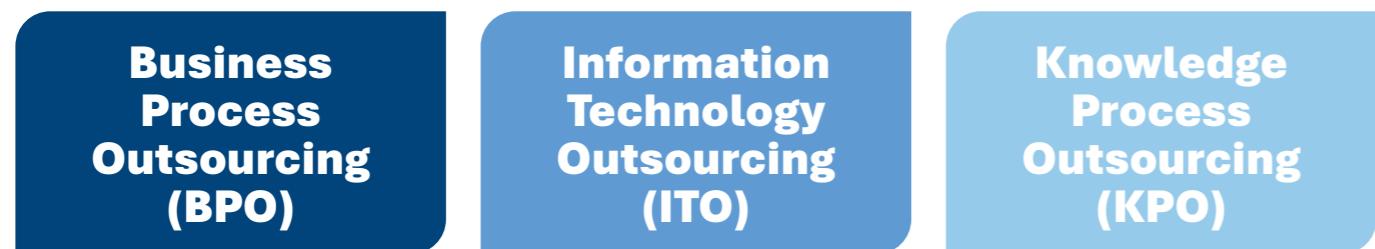
Parallel to technological integration, sustainability is emerging as a pivotal focus in GBS strategies. The increasing importance placed on environmental, social, and governance (ESG) criteria necessitates the adoption of sustainable practices in GBS operations, in line with the obligations to minimise their carbon footprint and promote ethical business conduct. This shift includes implementing green technologies, optimising energy consumption, minimising waste, and cultivating a strong culture of corporate social responsibility. Aligning GBS with sustainability objectives would not only enable companies to meet regulatory and stakeholders demands but also have the potential to unlock new avenues for innovation. This may involve developing eco-friendly products and services or tapping into new markets with sustainable offerings, positioning GBS as a key play in the global transition towards sustainability.

As GBS functions evolve along with the technological advancements, the sector is set to play an increasingly pivotal role in strategic decision-making and facilitating organisations to swiftly adapt to market changes, anticipate customer needs, and create long-term value. This transformation positions GBS as the heart of global operations, where it becomes instrumental in shaping the future direction of businesses in a global market that demands both technological innovation and a strong commitment to environmental stewardship.

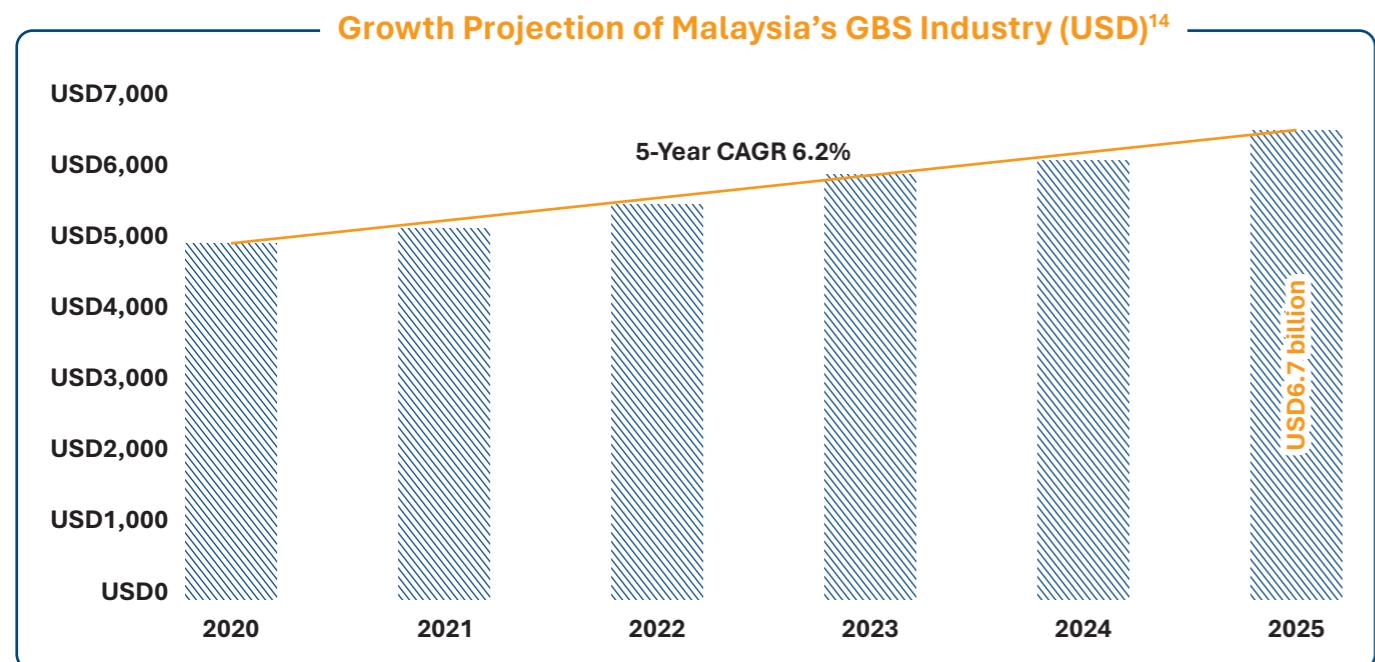
Overview of the Malaysian Global Business Services Sector^{11,12,13}

Global Business Services (GBS) is a priority area highlighted in the 12th Malaysia Plan, with a focus to accelerate the development of strategic and high-impact industries. This focus underscores the importance of the Global Business Services sector in driving Malaysia's economic growth and transformation. In 2022, the Global Services and Professional Services Sector contributed RM33.1 billion to Malaysia's GDP according to the New Industrial Master Plan (NIMP) Report. Malaysia hosts over 600 GBS companies, with 58% of these being foreign-owned, including globally recognised names such as HSBC, BP, Roche, and IBM that are often featured in global rankings.

Categories of GBS



This sector is forecasted to grow its revenue from RM22.7 billion (USD4.95 billion) in 2022 to RM30.8 billion (USD6.7 billion) in 2025 with a CAGR of 6.2%, driven by digital advancements and the continued expansion of multinational corporations. Notably, Malaysia's GBS sector demonstrated remarkable resilience during the COVID-19 pandemic while also prioritising talent development in the sector. As a result, the sector has cultivated a pool of over 250,000 trained professionals in areas such as customer experience, digital technology, finance, accounting, and human resources; as highlighted at the launch of the Global Business Services - Malaysia Strategy Report 2022-2027.



11. Malaysia Investment Development Authority (MIDA), *Malaysian global business services sector seen attracting RM89b digital tech deals by 2025*, 6 November 2023, <<https://www.mida.gov.my/mida-news/malaysian-global-business-services-sector-seen-attracting-rm89b-digital-tech-deals-by-2025/>>

12. PIKOM, *Global Business Services Malaysia Strategy 2022 - 2027*, <http://www.pikom.org.my/2022/GBSMALAYSIA/Final_DigitalVersion.pdf>

13. Digital Investment Office, *Value Driven Global Business Service: The Malaysian Landscape*, <<https://mydigitalinvestment.gov.my/digital-gbs/>>

14. IDC IT Services Tracker & Research, 2021

Malaysian GBS Sector's State of Play

Global Services in the 12th Malaysia Plan	<ul style="list-style-type: none"> Global Services is a priority area in the 12th Malaysia Plan, focusing on accelerating the development of strategic and high-impact industries. This emphasis underlines the importance of Global Services in driving Malaysia's economic growth and transformation.
Contributions to Foreign Direct Investments (FDI)	<ul style="list-style-type: none"> Global Services, comprising Principal Hubs, Global Business Services (GBS), and headquarter operations, is a major contributor to foreign direct investments in Malaysia's services sector. It is projected that this sector will reach RM89 billion by 2025, showcasing its significant impact on the national economy.
Role of the Global Business Services Industry	<ul style="list-style-type: none"> For the last 20 years, the Global Business Services sector has been an integral part of Malaysia's economy. Malaysia Digital Economy Corporation (MDEC) has championed this sector, working closely with various stakeholders to foster its growth and development.
Malaysia as a Premier Location for GBS	<ul style="list-style-type: none"> Since the early 2000s, Malaysia has emerged as a premier location for offshore and nearshore delivery, offering the right balance of cost, talent, and political stability. As the focus of GBS shifts from cost arbitrage to value-driven services, digitalisation plays a crucial role. Malaysia is now prioritising Digital GBS as a key sector under Malaysia Digital.
Global Recognition and Rankings	<ul style="list-style-type: none"> Malaysia is ranked 3rd globally in the KEARNEY Global Services Location Index 2023, reflecting its competitiveness and attractiveness as a GBS destination. The country is also home to nearly half of all analytics-based services in ASEAN, highlighting its strategic importance in the region.
Economic Impact and Growth Projections	<ul style="list-style-type: none"> The GBS industry in Malaysia generated USD4.95 billion in revenue in 2022. More than 600 GBS firms in Malaysia with more than 250,000 staff employed. This figure is expected to grow to USD6.7 billion by 2025, with a compound annual growth rate (CAGR) of 6.2%. Growth drivers include the increasing adoption of digital technologies, the rising demand for shared services, and the expansion of multinational companies into Malaysia.
Resilience During the Pandemic	<ul style="list-style-type: none"> Malaysia's competitiveness in business continuity during the pandemic has been exemplary. Many GBS companies chose to relocate jobs to Malaysia due to its effective handling of business operations during challenging times.
Focus on Talent Development	<ul style="list-style-type: none"> Global and local companies are focusing on enhancing the skills of their employees, which has led to the creation of more than 250,000 trained talents in areas such as customer experience, digital technology, finance, accounting, and human resources. This was highlighted during the launch of the Global Business Services — Malaysia Strategy Report 2022-2027.

Impacts of trends on the Malaysian Business Services Sector

The impact of AI, Digital, and Green Economy trends is profoundly reshaping Malaysia's GBS sector. AI and Digital technologies are driving automation, enhancing efficiency, and enabling data-driven decision-making, positioning Malaysia as a competitive global hub for GBS. Concurrently, the growing emphasis on Green Economy trends is prompting GBS organisations to adopt sustainable practices, aligning their operations with global environmental standards. This convergence of technology and sustainability is transforming Malaysia's GBS sector, fostering growth, resilience, and leadership in a rapidly evolving global market.

A Challenges and Opportunities

As we move towards integrating AI, Digital, and Green Economy into the GBS sector, we must first acknowledge and address the challenges these advancements bring. By understanding these obstacles, we can effectively overcome them and seize the opportunities that lie ahead. Despite the strategic significance of AI, many GBS organisations face significant challenges in advancing their AI initiatives. Cultural and organisational resistance, coupled with technological and operational hurdles often impede progress on this front; highlighting the complexities involved in fully integrating AI into GBS functions, underscoring the need for targeted strategies to overcome these barriers and unlock the full potential of the sector.

Challenges

Operating Model

Cultural and Organisational Resistance

Transitioning GBS from a transactional and cost-oriented role into a strategic enabler for business requires a major cultural shift in the relationship of the business. Resistance may arise from the traditional perception of GBS as a back-office support function. Overcoming this challenge requires a strategic focus on retraining and upskilling the workforce, alongside fostering a culture of innovation collaboration across the organisation.

Integration with Core Business Functions

GBS must overcome several critical challenges to remain competitive and fully integrate into the core business value chain. Legacy systems, often comprising outdated software or hardware, create significant barriers to efficiency and scalability by lacking compatibility with modern technologies. This consequently hampers their ability to adopt innovative solutions. Additionally, fragmented data due to poor data governance further worsen these inefficiencies. Information spread across various systems, departments, or databases without proper integration results in disjointed insights, making it difficult for GBS organisations to leverage data-driven decision-making effectively. Siloed processes, often a byproduct of organic growth, development, and a siloed organisational culture, further hinder collaboration and cross-functional synergy. To address these challenges, GBS must strategically invest in upgrading technology infrastructure, implementing robust data management frameworks, and undergo process reengineering to streamline operations. Adopting integrated digital platforms can facilitate better connectivity between systems, ensuring seamless flow and accessibility of information across departments. Furthermore, clear governance structures must be established to ensure alignment between business units and accountability for performance outcomes. By fostering a culture of collaboration, transparency, and continuous improvement, GBS can transition from a back-office support function to a strategic enabler of growth and innovation within the organisation.

Resistance From Customers and Partners

The introduction of new technology into GBS may invite wariness from customers and partners due to the technological risks it may pose. GBS must address customer scepticism, as many remain wary of the risks associated with AI technology. To build trust, companies should implement AI in a transparent manner, focusing on automating simple and repetitive tasks. For more complex inquiries, live agents should be readily available to ensure a seamless handoff between AI and human support. This approach enables customers to experience the benefits of AI while retaining the options to choose human assistance, consequently fostering confidence in the technology, and improving overall customer experience.

Increasing Cost and Shrinking Margins

The traditional GBS model is under increasing pressure in terms of cost and margins as its services become increasingly commoditised. To remain competitive, GBS organisations must identify and develop new high-value-added services, with AI, digital transformation, and green initiatives serving as key enablers.

Technology Adoption – AI & Digital

Building an AI-ready workforce

To keep up with the advancements of technology, there is an increasing need for the GBS sector to develop an AI-proficient workforce to support the sector. Upskilling initiatives, coupled with strategic recruitment and cross-functional collaborations are needed to effectively integrate AI technologies into GBS services. Thus ensuring the companies remain competitive.

Change Management

Tailored change management strategies must address regional and functional diversity within GBS to ensure a cohesive adoption of AI across the organisation and to appease workforce apprehension during the transition to AI-enabled processes. Clear communication and employee involvement are essential to overcoming the resistance against the transformational shifts and securing buy-in at all levels.

Data Management

Organisations must strengthen data management through robust governance, standardisation, and strategic infrastructure investments. These efforts are essential for providing clean, integrated, and centralised data for effective AI deployment and improved GBS processes.

Shared Services & Outsourcing Industry Report 2023

80%
respondents view digital as vital for GBS

However, only
25%
of respondents use AI/ML



Opportunities

Operating Model

GBS organisations are increasingly evolving into strategic enablers of growth and innovation, embedding themselves deep within the core business value chain. This integration empowers GBS to not only drive competitive advantage of business but also to deliver enhanced values across the entire organisation.

Technology Adoption – AI & Digital

Operational Efficiency

The arrival and adoption of AI and digital technologies enables GBS organisations to improve the efficiency of their operations through the automation of routine and repetitive tasks. Automation reduces manual efforts, minimises errors, and accelerates processes, resulting in significant cost savings and enhanced productivity. Robotic Process Automation (RPA) in particular, is effective in managing high-volume tasks such as data entry, invoice processing, and customer support. Offloading these repetitive tasks to RPA allows employees to focus on more strategic and high-value tasks for the organisation.

Scalability and Flexibility

The adoption of cloud-based digital solutions offers GBS organisations the ability to scale their operations quickly and efficiently. Thus, providing organisations with the flexibility needed to swiftly respond to evolving business requirements and explore new markets with agility. Additionally, the use of digital platforms facilitates seamless collaboration among geographically dispersed teams, consequently improving the management of global operations of organisations.

Sustainability and Resource Optimisation

Digitalisation plays an important role in advancing sustainability initiatives by improving resource efficiency and minimising waste within GBS operations. Similarly, AI contributes significantly by analysing energy consumption and facilitating the optimisation of supply chains and minimising the environmental impact of operations. These efforts not only support global sustainability goals but also enhance the organisation's reputation and attractiveness to environmentally conscious clients.

B

Impact of AI, Digital, and Green Economy

Artificial Intelligence

GBS organisations are increasingly placing strategic importance on AI adoption into its operations. Balancing significant investments in advanced technologies while carefully navigating data privacy and security risks.

Global Trends

27%

of shared services and GBS organisations have already initiated the enterprise digital agenda or operate as a digital centre of excellence (COE) for the enterprise.

68%

of shared services and GBS organisations plan to offer Business Intelligence & Analytics as a new service supported by Generative AI (GenAI) within 2-5 years. It is anticipated that within this timeframe, GBS organisations will increasingly leverage AI to provide deeper, more actionable insights, enabling businesses to make data-driven decisions with greater precision and speed.

55%

of shared services and GBS organisations plan to offer Knowledge Management & Model Curation as a new service supported by Gen AI. There will be a growing emphasis on creating and maintaining a comprehensive knowledge base. This will empower businesses to better manage intellectual assets, improve efficiency, and foster innovation through the effective use of curated models and knowledge repositories in the near future.

AI

particularly GenAI, will become a core component of GBS, transforming it from a mere cost centre to a strategic partner.

Intelligent Analytics In Decision-Makings

AI, powered by intelligent analytics and vast data from GBS, is revolutionising decision-making processes of GBS organisations. Its ability to mine diverse sources such as transactions, blockchain, and Internet of Things (IoT) enables real-time insights and more definite outcomes. Forward-thinking GBS leaders are establishing dedicated analytics hubs within their GBS organisation to consistently harness data from standard operation functions, fostering sustainable augmented intelligence. GBS organisations can optimise the full potential of AI by aligning their process operating towers. This exercise enables GBS organisations to consistently innovate to meet the unique needs of each operating ecosystem, accelerating time to market through agile analytics development. Leveraging on AI's ability on prescriptive and predictive analytics as well as cognitive computing to interpret unstructured data enabling more efficient decision-making processes.

Managing Risks with AI

The most successful companies, those that fully leverage the potential of GBS, manage risks proactively and consistently. The companies utilise intelligent analytics and cognitive computing to make more informed and less risky strategic decisions. In their predominantly virtual environment, GBS centres of excellence develop security bots that can automatically test cloud infrastructure for vulnerabilities, ensuring robust security measures without causing downtime.

People Are Still An Invaluable Asset

GBS serves as an important talent incubator, especially in emerging markets, where it cultivates future leaders through rotational programmes and an innovative environment. Contrary to initial doubts, automation in GBS has proven to enhance employee value; the technology allows employees to focus on high-impact works, fostering collaboration, and providing a clear understanding of their role's significance within the organisation.



Case Studies

**ThermoFisher
SCIENTIFIC**

¹⁵

The company's GBS team has dramatically improved efficiency by automating Procure-to-Pay (P2P) invoice processing with the usage of UiPath Document Understanding. This AI-powered solution seamlessly processes invoices, purchase orders, and related documents, delivering a consistent and standardised processing. The integration of Robotic Process Automation (RPA) and AI has significantly reduced invoice processing time by 70% while achieving 85% accuracy in automated data collection. This AI-driven transformation has streamlined operations and significantly improved reliability and overall organisational efficiency.

L'ORÉAL¹⁶

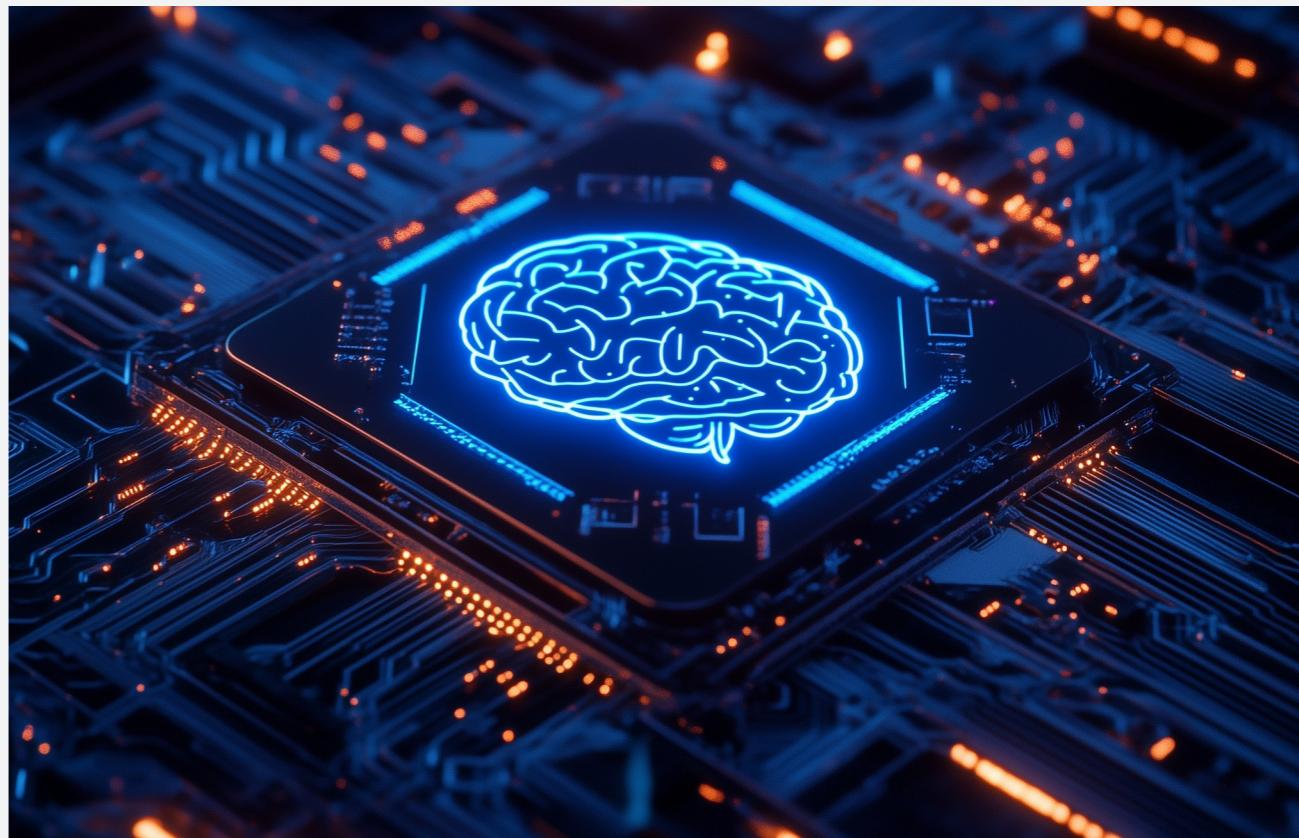
Since 2018, L'Oréal has been leveraging AI to identify and address errors, misuse, fraud, and inefficiencies in its financial processes, particularly in Accounts Payable, Purchase Cards, and Travel Expenses. The implementation of AI in travel and expenses was driven by the need to mitigate fraud, ensure policy compliance, and manage high transaction volumes with limited staff resources. This led to a substantial 230% increase in efficiency and a significant 45% - 65% reduction in exception rates. AI has enhanced rather than replaced jobs, fostering both company performance and personal development opportunities for employees.

“

AI poses challenges in policy, governance, and process efficiency, making human intervention essential for refining algorithms, while emphasising the need for agility and adaptability in transforming long-established behaviours and processes.

”

Jannette Perez, AVP Finance, L'Oréal



Malaysian Trends

Data privacy and security remains a concern

Compliance with regulations such as the Personal Data Protection Act (PDPA) is crucial to mitigate the security risks and ensure responsible usage of AI. The potential for data breaches and misuse is heightened due to the large amount of data that AI systems often require. Additionally, GenAI systems are exposed to cyber threats such as malware and phishing, which can lead to data breaches, financial losses, and reputational damage.

Intelligent automation offers significant opportunities

The automation of routine tasks and processes dramatically improves efficiency in GBS functions by enabling parallel processing, optimising workload distribution, and reducing wait times as well as down times across different time zones. Intelligent automation has significantly reduced processing time and minimised time zone discrepancies through this continuous operation. Automation facilitates the standardisation of processes, ensuring consistent quality thresholds and the application of uniform business rules. This aids in identifying and reducing recurring control inconsistencies, resulting in more reliable quality control. Moreover, the integration of automation into GBS operations enhances the speed, accuracy, and quality of services delivered to partners. By ensuring timely and precise delivery of services, automation not only upholds high operational standards but also strengthens the trust and reputation of GBS organisations to their partners.

GenAI is advancing intelligent automation in GBS¹⁷

Generative AI offers GBS the opportunity to elevate their intelligent automation capabilities to new heights. By integrating technologies such as Optical Character Recognition (OCR), Natural Language Processing (NLP), and computer vision, GenAI enhances data capture and analysis, leading to more accurate insights and improved decision-making. Additionally, GenAI's advanced capabilities are revolutionising customer service by refining chatbot interactions through better contextual understanding. Combined with its forecasting tools for supply chain management, this technology boosts customer engagement and operational efficiency across the GBS landscape.

15.SSON, *AI Unleashed: Transforming GBS With Generative AI*, 9 June 2023, <<https://www.ssonetwork.com/intelligent-automation/articles/ai-unleashed-transforming-gbs-with-generative-ai>>

16.SSON, *AI In Action: L'Oréal's Journey*, 29 April 2024, <<https://ssonetwork.libsyn.com/ai-in-action-lorals-journey>>

Digital

The adoption of digital technologies is reshaping the GBS landscape, empowering organisations to streamline operations, elevate customer experiences, and unlock the full potential of their data and analytics. Digital transformation is driving greater business value and strategic growth for GBS organisations.

Global Trends

GBS as a strategic asset for digitalisation

GBS is evolving from its traditional role as a company's operational hub to becoming a strategic asset for digitalisation within companies. By leveraging their unique position, GBS is now integral to the digital transformation journey of a company, collaborating closely with businesses from the outset and taking the lead in long-term strategic planning. Leading-edge GBS organisations are significantly ahead of their peers in offering a diverse range of technology services. These services include business process management, cognitive automation, low-code/no-code platforms, smart data capture, chatbots, process and task mining, cloud migration, and master data management services.

GBS driving digitalisation of businesses

GBS has the potential to serve as the digital transformation engine for the entire organisation, thanks to its deep integration across the enterprise and its ability to implement standardised processes. Positioned at the core of the businesses, GBS can drive the adoption of emerging technologies such as intelligent automation, NLP, blockchain, and data analytics. Leveraging these capabilities enables the creation of fully automated and transparent end-to-end process chains. Strategic investments in digital business models is essential for ensuring sustainable growth in the digital age.

Global integration

Digitalisation has transformed organisations into agile entities, empowering them to operate with the efficiency and flexibility of start-ups. GBS has delivered on its promises of efficiency by establishing a globally defined and standardised processes, governance, and IT infrastructure to enable companies to adopt a more agile operating model. Process design has evolved beyond end-to-end, now focusing on personalised one-to-one engagement, supported by an extensive catalogue of services. The global IT architecture is seamlessly integrated within an ecosystem of specialised suppliers, governed by a dynamic set of rules that guide the technology and processes to deliver a consistent customer experience worldwide. This new 'hybrid' operating model has shifted the balance between captive and outsourced services as it adapts to evolving demands. Some outsourcing models are disappearing as intercompany sourcing models emerge and technology enables more processes to be managed in-house or locally to enhance operational flexibility and responsiveness.

Automation and innovation are perfecting processes

Automation has become prevalent in GBS organisations, with transactions, tax returns, and audits fully automated in its operations. This allows advanced software robots to support high-value activities, driving significant efficiency gains. GBS organisations are also leveraging on experience centres to anticipate and capitalise on disruptive trends, thus allowing even older organisations to compete with 'born digital' disruptors.

Prioritisation of value-adding capabilities

As GBS organisations embrace digital transformation, GBS is poised to transcend its traditional focus on routine tasks, shifting their efforts towards value-adding capabilities powered by advanced technology. This strategic shift empowers GBS to enhance and strengthen their workforce, positioning itself as strategic partners in driving business growth.

Applications of Robotic Process Automation (RPA)

RPA, analytics, and dashboards are the most offered services across GBS organisations. The transactional nature of shared service environments makes them ideal for RPA implementation, as these processes can be automated without modifying existing systems. This not only enhances quality, accuracy, and productivity but also empowers organisations to make faster and more informed decisions.

Building on technology enablers

The demand for digital end-to-end (E2E) processes is rapidly growing, driven by the need for sophisticated tools and solutions that leverage machine learning, artificial intelligence, and other advanced technologies. Organisations are increasingly seeking transparent and harmonised data systems that not only enhance operational efficiency but also provide deeper insights and more informed decision-making capabilities.

Enhancing process redesigning

GBS leverages emerging technologies in support functions like Purchase-to-Pay by automating traditionally manual tasks such as processing paper invoices through intelligent algorithms. As early adopters of these advanced solutions, GBS plays a pivotal role in driving the advancements in process redesign; and its impact is amplified across the broader organisation.

Interaction technology is rewriting the future of businesses

Traditional, cumbersome ERP systems are rapidly becoming obsolete. It is being replaced by agile plug-in robotics and cloud-based technologies that offer real-time analytics, seamless mobility, and the continuous evolutions of bespoke platforms. These advancements are fundamentally rewriting the DNA of future businesses, empowering organisations with unprecedented agility, flexibility, and responsiveness to meet the demands of a dynamic market environment.

Customer Personalisation at scale

GBS has transformed Customer Relationship Management (CRM) by demonstrating the power of personalised customer experiences to drive value across the enterprise. Through fully integrated digital systems, GBS enables individualised and transparent interactions on a global scale. By leveraging automation and cognitive computing, employees can cultivate deeper customer relationships, thus encouraging customer loyalty while delivering tailored solutions that meet specific needs. This shift underscores the strategic importance of seeing and treating each customer as an individual, even within vast, global markets.



Case Studies



18

Genpact has harnessed the power of digitalisation with Genpact Cora – a powerful integrated digital business platform developed by the company's intelligent automation team. Genpact Cora unifies people, processes, and technology to optimise digital operations. A key feature of this platform is Cora Orchestration, a dynamic tool that manages workflows across end-to-end processes to ensure efficiency and agility. Cora offers a range of specialised solutions that can be tailored to specific business needs, such as Cora APFlow for automating accounts payable, Cora ARFlow for streamlining order-to-cash operations, and Cora Financial Controllership for real-time financial management. These capabilities are enhanced through strategic partnerships with leading technology providers, including Microsoft Azure, Amazon Web Services (AWS), and RPA experts such as Automation Anywhere, Blue Prism, and UiPath. Moreover, Genpact also collaborates with process mining experts like Celonis and other technology leaders in finance, supply chain, and procurement to deliver comprehensive, industry-specific solutions.

Malaysian Trends

The 13th GBS Summit 2023 highlighted the importance for GBS to harness digital technologies to foster innovation. It was emphasised that GBS is not only central to shaping the future of work but also plays a critical role in making a positive societal impact. As the global landscape becomes increasingly digital, businesses must prioritise investment in innovation, embrace new technologies, and stay attuned to emerging trends. Achieving success in this evolving environment requires leveraging on digital innovation to enhance efficiency and value creation, while also taking the lead in transforming the future of work and contributing to broader societal goals.



Case Studies

¹⁹


Axiata is rapidly advancing its digital transformation across its operating companies with AWS to deliver enhanced services to its 174 million customers across Southeast Asia and South Asia. By the end of 2024, Axiata plans to migrate a significant number of its mission-critical applications to AWS, encompassing over 650 services in areas such as customer service, enterprise resource planning, and human resources. The company will leverage on AWS technologies such as data analytics, GenAI, and machine learning to drive data-driven business decisions, tailor offerings to emerging markets, and develop new services that cater to the evolving needs of customers in the telecommunications, banking, and payments sectors.



Daythree has developed a proprietary digital tool named Daisy™, equipped with RPA capabilities. Daisy™ empowers executives to manage customer interactions more effectively across multiple communications channels. The tool streamlines the process of retrieving customer data, displaying all relevant details on a single, intuitive interface. Daisy™ not only enhances customer experience but also significantly reduces average interaction time, thus driving efficiency and satisfaction in customer service operations.

“

Using these digital tools that we have developed for our customer experience operations, we are seeing amongst others, improvements in service levels by 40%, 20% drop in unnecessary repeat customer interactions, and a significant drop in average customer handling time due to transferring the administrative workload to bots.

“

Raymond Davadass, Founder and Managing Director of Daythree

19. New Straits Times, *Axiata Picks Amazon Web To Accelerate Digital Transformation*, 1 December 2023, <<https://www.nst.com.my/business/corporate/2023/12/985265/axiata-picks-amazon-web-accelerate-digital-transformation>>

20. Business Today, *Daythree Redefines GBS Industry With The Employ Of Cutting-Edge Technologies*, 7 July 2023, <<https://www.businesstoday.com.my/2023/07/07/daythree-redefines-gbs-industry-with-the-employ-of-cutting-edge-technologies/>>

Green Economy



Sustainability is becoming a cornerstone of GBS organisation, as Green Economy practices are increasingly integrated into their core business strategies. The growing importance of Green Economy is driving GBS to align operational excellence with environmental responsibility. In Malaysia, Green Economy and sustainability within the GBS sector are increasingly aligned with both the global and country's own sustainability goals and economic policies.

Global Trends

Sustainable Operations and Energy Efficiency

GBS organisations are increasingly prioritising the adoption of sustainable operations and improving efficiency of its energy consumption. This commitment involves the adoption of renewable energy solutions, implementing water conservation initiatives and optimising overall energy consumption. Energy-efficient data centres have become central to GBS' sustainability initiatives, significantly reducing environmental impact while also driving cost savings and boosting operational efficiency.



Case Studies



IBM's Green Data Centres²¹

IBM has been at the forefront of developing and operating green data centres, incorporating cutting-edge cooling technologies, energy-efficient hardware, and renewable energy resources. As a result, these initiatives have significantly reduced IBM's carbon footprint while enhancing the efficiency and reliability of their operations.

Infosys Infosys and Carbon Neutrality²²

Infosys pledged to achieve carbon neutrality across its global operations. The company has invested in renewable energy projects and optimised its energy usage to meet this goal. Through these efforts, Infosys has aligned its operations with global sustainability goals, thus significantly reducing its carbon emissions across its operations.

21. IBM, *Green Data Centre Initiative*, 2022

22. Infosys, *Infosys Achieves Carbon Neutrality Across Scope 1, 2, and 3 Emissions*, 2021

Sustainable Finance and Investment

There is a growing focus on integrating sustainable finance practices within GBS organisations, particularly in the management of investments and financial services. ESG criteria now guide investment decisions, enabling GBS organisations to offer green financing solutions and giving access to sustainable investment opportunities for its clients. By aligning financial operations with sustainability goals, GBS organisations can drive positive environmental outcomes while generating economic value.



Case Studies



HSBC HSBC's Sustainable Finance Solutions²³

HSBC, a leading global banking entity, has developed a range of sustainable finance solutions, including green bonds and sustainable investment funds. These initiatives are managed by HSBC's GBS centres, making them an integral part of HSBC's sustainable finance solutions, and ensuring the company meets its ESG standards.



BNP Paribas and ESG Integration²⁴

BNP Paribas is advancing its sustainable goals by integrating ESG criteria into its investment decisions and its suite of sustainable financial products. These initiatives are supported by its GBS operations, which provides critical analysis and reports on ESG metrics.

Climate Risk Management

With increasing cases of environmental hazards, climate risk management is becoming a core component of sustainability initiatives in the GBS sector. GBS organisations assess the potential impacts of climate change on business operations and develop strategies to mitigate these climate risks, ensuring business continuity and long-term sustainability solutions.



Case Studies



BlackRock BlackRock's Climate Risk Assessment²⁵

BlackRock is at the forefront of managing the financial impacts of climate change. The company's GBS centres play a vital role in assessing climate risks for the firm and its clients. Recognising the significant impact of climate change, this global business entity capitalises on the capabilities of its GBS centres to incorporate climate risk assessments into its investment decisions.



Allianz Allianz's Climate Risk Strategy²⁶

Supported by its GBS operations, Allianz has developed a comprehensive climate risk strategy that thoroughly evaluates both physical and transitional risks posed by climate change. These insights are then integrated into the company's broader risk management framework, ensuring a proactive and resilient approach to environmental challenges.

Malaysian Trends

Adoption of Renewable Energy

In line with Malaysia's National Energy Transition Roadmap (NETR), the country is actively promoting the use of renewable energy sources such as solar, wind, and biomass in businesses. Aligning with the country's sustainability goals for a low-carbon economy, an increasing number of GBS centres in Malaysia are adopting renewable energy to power their operations. Thus, reducing the carbon footprint of GBS operations in Malaysia.



Case Studies

DELL Technologies

Dell Technologies' GBS centre in Penang has invested heavily in solar energy to power a significant portion of its operations. This initiative is in line with the Malaysian government's push towards renewable energy and Dell's global aspiration to reduce its carbon footprint.



HP Malaysia's GBS centre has been active in implementing a series of green skill development programmes to improve its employees' knowledge on sustainability issues and initiatives. These programmes involve sustainability-related issues and practices such as energy efficiency, waste reduction, and sustainable business practices.

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At Philips GBS, we use Robotic Process Automation (RPA) and Deep Analytics knowledge to either help uncover hot spots that need to be remedied or for improved insights such as - optimising lead times in supply chain, deploying RPA during transitions, and even automating training platforms.

Saswata Kar is the Global Head of Master Data, Analytics & Data Sciences for Philips GBS

23. HSBC, HSBC's Commitment To Sustainable Finance, 2023

24. BNP Paribas, BNP Paribas and Sustainable Finance, 2023

25. BlackRock, BlackRock Sustainability, 2023.

26. Allianz, Allianz's Climate Change Strategy, 2023



Chapter 4: **Key Findings**

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Overview of Roles and Skills

Consolidated Job Clusters, Roles, and Skills in Global Business Services



The impact study focuses on roles significantly affected by the rapid growth of AI, Digital and Green Economy. It analyses the evolving trends and the value these roles bring to the sector and aims to identify viable career pathways and essential skills for the Malaysian workforce. Additionally, this impact study also highlights emerging roles driven by these trends to enhance the competitive advantage of Malaysia's GBS sector.

The ongoing advancements in AI, Digital, and Green Economy are driving transformative changes within Malaysia's GBS sector, particularly across the Finance and Accounting (F&A), Human Resources (HR), Information Technology (IT), Customer Service, and Procurement functions. These technological and operational shifts are enabling GBS organisations to transition from their traditional roles to become strategic enablers that are deeply integrated into the core business value chain. As AI and Digital solutions streamline processes, reduce manual workloads, and improve decision making, these departments are evolving in their roles and responsibilities. This transformation not only elevates the strategic importance of these functions within GBS but also positions them as key contributors to organisational growth, innovation, and sustainability. Coverage of the impact study includes all roles in the Global Business Services of the different key functions across the different sectors as shown below.

Sector Coverage



8 Job Functions			
Finance & Accounting (24 job roles*)	IT & Technology (18 job roles*)	Human Resource (11 job roles)	Procurement (9 job roles)
Customer Services (6 job roles)	Transformation and Change Management (4 job roles)	Leadership and Strategic Management (2 job roles)	Process and Performance Management (6 job roles*)
80 Job Roles (*Including Emerging Roles)			
23 Skills Clusters			
(Categorised into 21 specific skill clusters and two (2) basic skill clusters)			
Specific Skills			
Accounting and Finance Management (28 skills)	Agile and Continuous Improvement (2 skills)	Automation and Robotics (1 skill)	Branding, Sales, and Marketing (3 skills)
Business Development and Strategy (2 skills)	Business Operation Management (4 skills)	Customer Service and Experience (1 skill)	Customer, Vendor, and Stakeholder Management (1 skill)
Data Development and Implementation (17 skills)	General Business Management (6 skills)	Health, Safety, and Environment (HSE) (7 skills)	Legal and Regulatory (8 skills)
People Management and Development (15 skills)	Project and Process Management (7 skills)	Quality Management (3 skills)	Risk Management, Compliance, and Governance (24 skills)
Software Development and Implementation (19 skills)	Supply Chain and Logistics Development (9 skills)	Technical Design and Architecture (4 skills)	Technology Management (16 skills)
Warehouse and Inventory Management (3 skills)			
Basic Skills			
Innovation and Delivery (10 skills)	Social Intelligence (6 skills)		
141 Skills Which comprises 184 Specific Skills and 16 Basic Skills			

Job Clusters and Roles

Job Clusters	Roles
Finance & Accounting	1. Budget Analyst 2. Cost Accountant 3. Financial Analyst 4. Internal Auditor 5. Tax Analyst 6. Accounting Manager 7. Finance Manager 8. Accounts Payable (AP) Analyst 9. Accounts Receivable (AR) Analyst 10. Fixed Assets Accountant 11. General Ledger (GL) Accountant 12. Finance Systems Analyst 13. Invoice Processing Administrator 14. Vendor Master Data Administrator 15. Payment Processing Analyst 16. Procure-to-Pay (P2P) Reporting Analyst 17. Order Management Analyst 18. Billing Analyst 19. Credit Analyst 20. Cash Application Analyst 21. Dispute Resolution Specialist 22. Order-to-Cash (O2C) Reporting Analyst 23. Master Data Management Analyst 24. Design Ethicist and Product Philosopher*
IT & Technology	1. Technical Support Specialist 2. IT Compliance Officer 3. Data Analyst 4. Data Scientist 5. DevOps Engineer 6. Database Administrator (DBA) 7. IT Helpdesk Technician 8. Network Administrator 9. Systems Administrator 10. RPA (Robotic Process Automation) Specialist 11. Information Security Manager 12. Innovation Manager 13. IT Manager 14. IT Risk Manager 15. Cybersecurity Analyst 16. Application Management Services (AMS) 17. AI and Machine Learning Specialist* 18. Bot Trainer*
Human Resource	1. HR Operations Specialist 2. Diversity, Equity and Inclusion (DEI) Specialist 3. Employee Relations Specialist 4. HR Information Analyst 5. HR Manager 6. Learning and Development Specialist 7. Recruitment / Talent Acquisition Specialist 8. Compensation and Benefits Specialist 9. Payroll Specialist 10. Performance Management Specialist 11. Talent Management Specialist
Procurement	1. Contracts Manager 2. Procurement Compliance Specialist 3. Procurement Manager 4. Strategic Sourcing Manager 5. Inventory Manager 6. Logistics Coordinator 7. Buyer/Purchasing Agent 8. Procurement Analyst 9. Sourcing Specialist
Customer Service	1. Customer Experience Manager 2. Customer Relationship Manager 3. Customer Service Manager 4. Customer Relationship Management (CRM) Specialist 5. Customer Service Representative (CSR) 6. Customer Service Trainer

Job Clusters	Roles
Transformation and Change Management	1. Continuous Improvement Specialist 2. Change Management Specialist 3. Transformation Manager 4. Transformation Specialist
Leadership and Strategic Management	1. GBS Head/Director 2. Service Delivery Manager
Process and Performance Management	1. Compliance and Governance Specialist 2. Global Process Owner 3. Shared Services Centre Manager 4. Sustainability Analysts / Green Economist 5. Prompt Injection Engineer* 6. Data Steward*

*Emerging Roles

Skills Clusters and Skills

The skills clusters were further categorised into two (2) groupings: basic skills and specific skills, with 16 in the former and 194 in the latter.

Skills Category	Skills Clusters
BASIC SKILLS	Innovation and Delivery <ul style="list-style-type: none"> Digital and AI Fluency Innovative Thinking Learning Agility Cognitive Skills Critical Thinking Social Intelligence <ul style="list-style-type: none"> Communication Teamwork and Collaboration Coaching and Mentoring Conflict Management Empathy Influencing and Negotiation
Essential skills required for a person to be fit for a job	

Skills Clusters and Skills (Continue)

Skills Category	Skills Clusters	Skills Category	Skills Clusters
SPECIFIC SKILLS Skills relating to a specific task or situation. It involves both understanding and proficiency in such specific activity that involves methods, processes, procedures, or techniques	Accounting and Finance Management <ul style="list-style-type: none"> • Variance Analytics • Cost-Benefit Analysis • Financial Analysis and Reporting • Activity-Based Costing (ABC) • Accounting Principles • Standard Costing • Reconciliation Processes • Financial Modeling • Tax Planning • Tax Preparation • Green Tax Strategies • General Ledger Management • Invoice Processing • Cash Application • Credit and Collections Management • Invoice Management • Depreciation Accounting • Fixed Assets Management • Green Asset Management • General Ledger Accounting • Financial Systems Implementation • Cash Flow Analysis • Debt Structuring • Financial Statement Analysis • Credit Scoring Systems • Knowledge of Banking Procedures • Payroll Processing • Financial Planning, Analysis and Forecasting 	SPECIFIC SKILLS Skills relating to a specific task or situation. It involves both understanding and proficiency in such specific activity that involves methods, processes, procedures, or techniques	Customer Service and Experience <ul style="list-style-type: none"> • Customer Experience Design Customer, Vendor, and Stakeholder Management <ul style="list-style-type: none"> • Stakeholder Management • Customer Relationship Management • Vendor Management • Service Level Management • Supplier Relationship Management (SRM)
	Agile and Continuous Improvement <ul style="list-style-type: none"> • Continuous Improvement • Process Re-engineering 		Data Development and Implementation <ul style="list-style-type: none"> • Big Data Analytics • Statistical Analytics • Data Validation • Backup and Recovery Proficiency • Data Management • Data Stewardship • Data Visualisation • Data Warehousing • Data Mining • Database Querying • Data Modeling and Design • Cryptography • Database Management • Database Security • Data Engineering • Prompt Engineering • Fine-tuning Model Techniques
	Automation and Robotics <ul style="list-style-type: none"> • Robotics and Automation Application 		General Business Management <ul style="list-style-type: none"> • Budget Management • Organisational Awareness • Cost Management • Shared Services Management • Resource Management • Business Networking
	Branding, Sales, and Marketing <ul style="list-style-type: none"> • Market Research and Analytics • Recruitment Marketing • Demand and Supply Analytics 		Health, Safety, and Environment (HSE) <ul style="list-style-type: none"> • Environment, Health and Safety • Sustainable Business Practices • Life Cycle Assessment • Eco-Design Principles • Renewable Energy • Waste Management • Green Procurement Policies and Standards
	Business Development and Strategy <ul style="list-style-type: none"> • Solutions Design Thinking • Business Intelligence Business Operation Management <ul style="list-style-type: none"> • Enterprise Resource Planning (ERP) • Reporting and Documentation • Dashboard Creation and Visualisation • Knowledge of Ethical Design Frameworks 		Social Intelligence <ul style="list-style-type: none"> • Knowledge of e-Invoicing Standards • Knowledge of Tax Regulations • Knowledge of Contract Law and Dispute Clauses • Legal and Regulatory Research • Knowledge of HR Policies and Procedures • Knowledge of Labour Law • Knowledge of Legal and Compliance • Knowledge of Procurement Law and Compliance

Skills Clusters and Skills (Continue)

Skills Category	Skills Clusters
SPECIFIC SKILLS	
Skills relating to a specific task or situation. It involves both understanding and proficiency in such specific activity that involves methods, processes, procedures, or techniques	<p>People Management and Development</p> <ul style="list-style-type: none"> • Training Programme Development • Compensation and Benefits Administration • Survey Design and Analytics • Cultural Awareness and Sensitivity • Diversity Metrics and Analytics • Human Resource Information Systems (HRIS) • People and Performance Management • Employee Relations • Recruitment and Selection • Curriculum Design • Learning Management • Training Evaluation • Candidate Sourcing • Interviewing Techniques • Salary Benchmarking <p>Project and Process Management</p> <ul style="list-style-type: none"> • Project Management • Business Process Management • Process Standardisation • Process Optimisation • Process Automation • Process Mapping • Value Stream Mapping <p>Quality Management</p> <ul style="list-style-type: none"> • Service Quality Management • Root Cause Corrective Action (RCCA) • Attention to Detail <p>Risk Management, Compliance and Governance</p> <ul style="list-style-type: none"> • Internal Audit • Ethical Judgement • Cybersecurity Basics • Internal Controls Evaluation • Risk Management • Green Auditing • Tax Compliance • Capitalisation Policy Compliance • Data Governance • Fraud Detection • Credit Risk Assessment • Case Evaluation and Risk Assessment • Employee Investigations • Audit Management • Compliance Reporting • Cybersecurity Management • Cyber and Data Breach Incident Management • IT Compliance and Governance • Business Continuity Management • Crisis and Disaster Recovery Management • Contractual Risk Assessment • International Trade Legislation Compliance • Ethical Sourcing and Fair Trade Practices • Data Privacy and Security

Skills Category	Skills Clusters
SPECIFIC SKILLS	
Skills relating to a specific task or situation. It involves both understanding and proficiency in such specific activity that involves methods, processes, procedures, or techniques	<p>Software Development and Implementation</p> <ul style="list-style-type: none"> • User Testing and Usability Testing • Programming, Coding and Scripting • Structured Query Language (SQL) • Software Configuration • Network and Systems Administration • Network Configuration and Troubleshooting • Operating Systems • Applications Integration • System Integration and Configuration • Cloud Computing • Continuous Integration and Continuous Deployment <p>Supply Chain and Logistics Management</p> <ul style="list-style-type: none"> • Order Fulfilment Administration • Logistics Management • Supply Chain Management • Contract Management • Supplier Code of Conduct Implementation • Supplier Evaluation and Selection • Supplier Performance Evaluation • Route Planning and Optimisation • Transportation Management <p>Technical Design and Architecture</p> <ul style="list-style-type: none"> • User Experience Design • Network Security • Natural Language Processing • Infrastructure as Code <p>Technology Management</p> <ul style="list-style-type: none"> • Technical Support • Hardware and Software Troubleshooting • System Performance Management • Green IT Practices • Vulnerability Assessment and Penetration Testing • Machine Learning • Monitoring and Logging • Mobile Device Management • Wireless Networks • Server Management • Workflow Automation • Security Information and Event Management (SIEM) • Information Technology Infrastructure Library (ITIL) • Knowledge of Application • Emerging Technology Synthesis • Model Deployment and MLOps <p>Warehouse and Inventory Management</p> <ul style="list-style-type: none"> • Inventory Control Management • Inventory Optimisation • Warehouse Management Systems (WMS)

In-Demand Skills

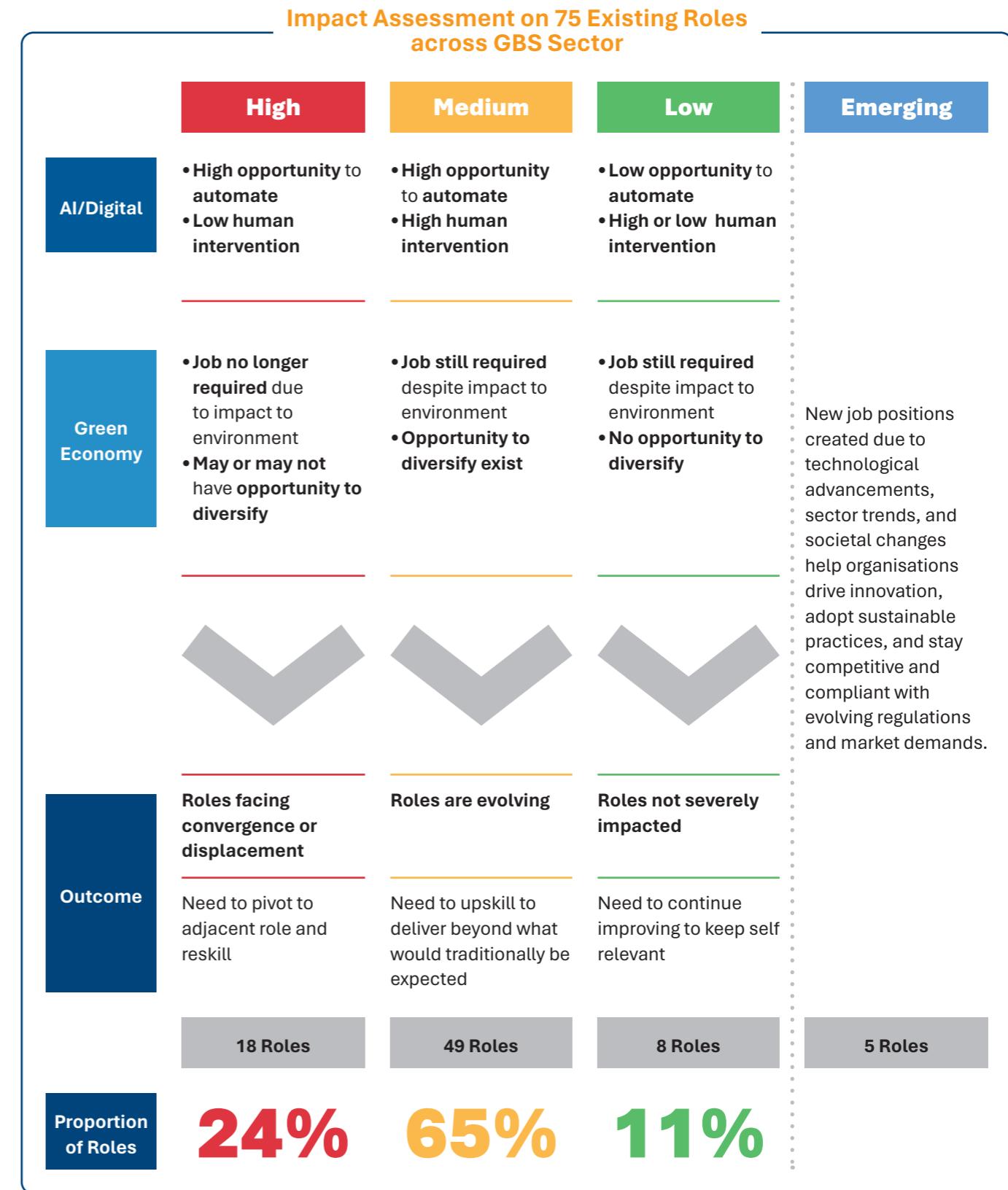


This impact study has identified 16 in-demand skills for the GBS sector. 8 of these are AI / Digital-related skills that are essential for roles in the sector to adopt for business enhancements and overall improvement on workforce productivity. The remaining 8 skills are Green Skills that are needed to integrate sustainability efforts and initiatives into business operations as sustainability continues to take centre stage globally.

Areas	Skills
 AI & DIGITAL	<ul style="list-style-type: none"> • Big Data Analytics • Application Integration • Data Management • Vulnerability Assessment and Penetration Testing • Data Validation • Structured Query Language (SQL) • System Performance Management • Network and Systems Administration
 GREEN SKILLS	<ul style="list-style-type: none"> • Sustainable Business Practices • Green IT Practices • Green Procurement Policies and Standards • Green Asset Management • Environment, Health, and Safety • Eco-Design Principles • Green Auditing • Life Cycle Assessment

Role and Skills Analysis by Impact Level

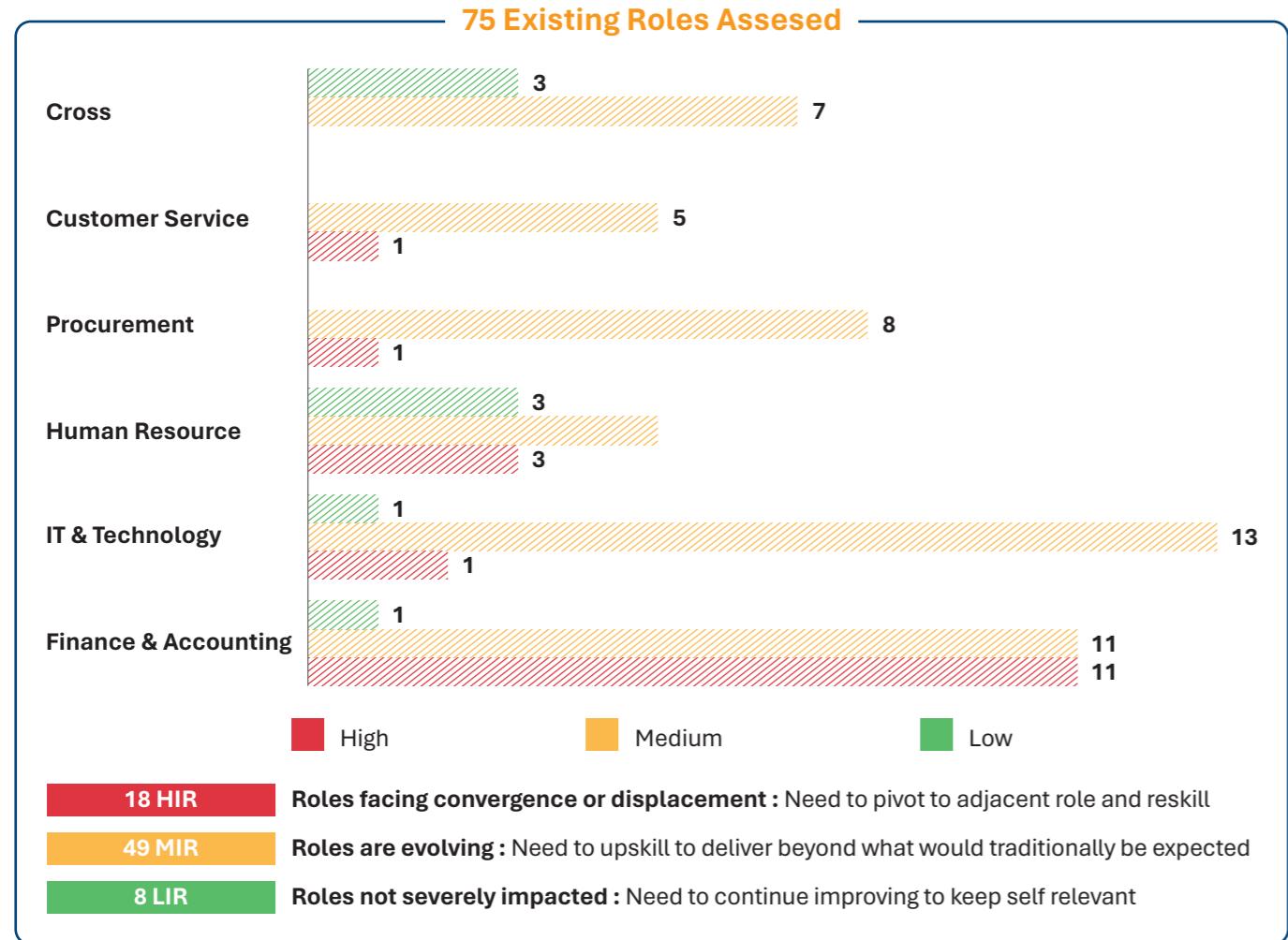
The impact study for the GBS sector has identified 75 key roles across five (5) common functions that are integral for maintaining sector standards and operational efficiency. These roles are adapting to evolving trends in the GBS sector and driving enhanced value throughout the organisation. It has also identified five (5) emerging roles that are set to drive future advancements and innovations of the sector.



The Global Business Services sector is undergoing significant transformation due to the influence of AI, Digital advancements, and the growing emphasis on Green Economy in the sector. The impact study has assessed a total of 80 roles within the GBS sector.

The impact study revealed that 24% of these roles are highly impacted by the ongoing changes. This is primarily due to the automation of routine tasks and the integration of intelligent systems that can perform complex analyses and decision-making processes traditionally managed by human professionals. 65% of the roles assessed are experiencing medium level of impact. The adoption of digital tools and sustainable practices is reshaping job functions and redefining skills and responsibilities required by the roles. The remaining 11% of roles are considered to be minimally impacted by the transformations in the industry. These roles are typically more specialised or less susceptible to current technological and environmental trends.

The findings of this impact study demonstrated the need for the GBS sector to move beyond traditional roles of cost efficiency and operational efficiency. Prioritising upskilling, reskilling, and strategic workforce training will enable GBS organisation to remain competitive and sustainable amid these evolving market forces.



Overview of Roles by Impact Level

The impact study focuses on roles that are heavily influenced by advancements in AI, Digital, and Green Economy, aiming to identify viable career paths and necessary skills essential for the Malaysian workforce. It also highlights emerging roles that are driven by these trends to help bolster the sector's competitive advantage and future resilience.

HIGH	MEDIUM	LOW	EMERGING
18 Roles	49 Roles	8 Roles	5 Roles
1. Financial Analyst 2. Accounts Payable (AP) Analyst 3. Accounts Receivable (AR) Analyst 4. Invoice Processing Administrator 5. Vendor Master Data Administrator 6. Payment Processing Analyst 7. Order Management Analyst 8. Billing Analyst 9. Credit Analyst 10. Cash Application Analyst 11. Master Data Management Analyst 12. Data Analyst 13. IT Helpdesk Technician 14. HR Information Analyst 15. Learning and Development Specialist 16. Payroll Specialist 17. Logistics Coordinator 18. Customer Service Representative (CSR)	1. Customer Experience Manager 2. Customer Relationship Manager 3. Customer Service Trainer 4. Budget Analyst 5. Performance Management Specialist 6. GBS Head/Director 7. Shared Services Center Manager 8. Sustainability Analysts / Green Economist	1. Tax Analyst 2. Data Scientist 3. Diversity, Equity and Inclusion (DEI) Specialist 4. Employee Relations Specialist 5. Performance Management Specialist 6. GBS Head/Director 7. Shared Services Center Manager 8. Sustainability Analysts / Green Economist	1. AI and Machine Learning Specialist 2. Bot Trainer 3. Design Ethicist & Product Philosopher 4. Prompt Injection Engineer 5. Data Steward
			38. Cybersecurity Analyst 39. Application Management Services (AMS) 40. Compliance and Governance Specialist 41. Global Process Owner 42. Contracts Manager 43. Procurement Compliance Specialist 44. Procurement Manager 45. Strategic Sourcing Manager 46. Inventory Manager 47. Buyer/Purchasing Agent 48. Procurement Analyst 49. Sourcing Specialist

Highly Impacted Roles and Career Pathways



The increasing influence of AI and automation technologies are transforming GBS functions, highly impacting certain roles in the sector. There is a rising demand for professionals adept in data analysis, machine learning, and AI algorithm development. While these roles are heavily impacted by technological advancements and trends, it also presents an opportunity for individuals in these roles to transition into other in-demand roles. 18 highly impacted roles have been identified in this impact study.

To remain relevant, the workforce needs to effectively leverage AI tools to analyse extensive datasets, forecast outcomes, and optimise processes. Additionally, the rapid pace of digitalisation has meant digital literacy has become an essential skill across all levels of the workforce, alongside strong cybersecurity skills to safeguard sensitive information. The rise of green technologies is also significantly impacting highly impacted roles, as it requires advanced technical skills and research capabilities to develop sustainable alternatives to traditional methods.

Case Studies for Highly Impacted Roles

Roles	Impact and Case Studies
Human Resources: HR Information Analyst	<p>AI is transforming the role of HR Information Analysts by enhancing data analysis, predictive analytics, and automated report generation. AI can efficiently handle large volumes of HR data, uncover trends, and generate insights that support strategic decision-making. This automation significantly reduces the time spent on manual data analysis and reporting, allowing analysts to focus on more strategic tasks. Advanced digital tools streamline routine HR functions by automating data entry, system updates, and integration with other organisational systems. Modern Human Resource Information System (HRIS) platforms enable real-time data updates, and enhance operational efficiency through seamless system integration. These advancements lead to more effective and efficient management of HR information.</p> <p>DHL</p> <p>DHL Supply Chain has integrated AI-driven HR analytics to optimise its HR functions. The company uses AI to streamline HR processes, including workforce planning and employee engagement. DHL employs AI to analyse employee data, improve workforce planning, and enhance employee engagement. The use of predictive analytics helps in forecasting staffing needs and identifying trends in employee performance. Automation reduces manual data processing, allowing HR analysts to focus on strategic initiatives.²⁷</p>

27. DHL, *Digitalised HR Can Make For Happy Employees*, <<https://www.dhl.com/my-en/home/supply-chain/insights-and-trends/digitalized-hr-can-make-for-happy-employees.html>>

Roles	Impact and Case Studies
Human Resource: Learning and Development Specialist	<p>AI is reshaping the role of Learning and Development Specialists by enabling personalised learning experiences, automating assessments, and analysing feedback. AI tailors training programmes to accommodate individual learning styles and needs. AI-driven systems not only streamline assessments but also provide actionable insights from feedback, ensuring a more targeted and effective skills development. Digital tools also play a pivotal role in modernising the learning and development ecosystem. E-learning platforms facilitate the delivery of training modules, manage training schedules, and track learner progress. These digital solutions offer flexibility by allowing learners to access materials at any time and from any location, while also providing efficient tracking of progress and performance metrics.</p> <p>Capgemini</p> <p>Capgemini has embraced digital learning tools and AI to transform its employee training and development programmes. By leveraging AI, Capgemini is able to personalise learning experiences and improve training outcomes. The company uses digital platforms for delivering e-learning content and managing training initiatives across the organisation. This integration of AI and digital tools increases learner engagement and training efficiency.²⁸</p>
Human Resource: Payroll Specialist	<p>AI is transforming the role of Payroll Specialists by automating key functions such as payroll calculations, tax withholdings, and compliance checks. The use of AI ensures accuracy in payroll processing by automating complex calculations and deductions, minimising errors, and streamlining the overall payroll process. Modern digital payroll systems simplify the calculation of wages, streamline tax reporting, and keep employee records up-to-date, all while ensuring compliance with regulatory requirements. These advancements lead to a more efficient and error-free payroll management process.</p> <p>genpact</p> <p>Genpact has integrated AI into its payroll processing solutions to enhance accuracy and efficiency. The company uses AI to automate payroll tasks and improve compliance. AI automates routine payroll tasks such as calculations, tax withholdings, and benefits management. AI ensures adherence to regulatory requirements and reduces the risk of errors. The integration of AI accelerates payroll processing and improves overall accuracy.²⁹</p>

28. Capgemini, *Digital Learning Operations*, <<https://www.capgemini.com/solutions/digital-learning-operations/#:~:text=Capgemini%20%99s%20%EE%80%80Digital>>

29. Genpact, *GenAI Solution For Accounts Payable Helpdesk*, <<https://www.genpact.com/solutions/empowering-the-accounts-payable-helpdesk-with-generative-ai>>

Roles	Impact and Case Studies	Roles	Impact and Case Studies
Procurement: Logistics Coordinator	<p>AI is revolutionising the role of Logistics Coordinators by enhancing tasks such as route optimisation, demand forecasting, and real-time shipment tracking. AI systems can analyse vast datasets to identify the most efficient transportation routes, predict inventory needs, and provide up-to-the-minute updates on shipment status. This leads to improved operational efficiency, cost savings, and more precise logistics planning. Additionally, digital technologies also play a crucial role in streamlining logistics operations. Advanced logistics management systems, real-time tracking solutions, and automated documentation tools enable Logistics Coordinators to efficiently monitor shipments, manage inventory levels, and prepare shipping documents. These digital tools offer comprehensive real-time visibility into shipment progress, automate documentation tasks, and facilitate seamless communication with suppliers and carriers, resulting in optimised transportation and inventory management for better overall performance.</p> <p> MAERSK Maersk has embraced digital transformation to enhance its logistics services. The company leverages AI and digital tools to improve supply chain visibility, optimise operations, and enhance customer experience. Maersk also uses digital platforms for real-time shipment tracking, automated logistics management, and data-driven decision-making. The adoption of AI and digital tools helps the company to predict demand and manage inventory more effectively on top of streamlining logistics processes and improving overall efficiency.³⁰</p>	IT & Technology: Data Analyst	<p>The arrival of AI is revolutionising the role of Data Analysts by automating key tasks such as data preprocessing, anomaly detection, and predictive analytics. AI technologies streamline the data analysis process by automating data cleaning, identifying patterns and outliers that may be overlooked manually, and generating accurate predictive models. This results in enhanced efficiency and precision in data analysis. Digital technologies, such as advanced analytics platforms, cloud computing, and sophisticated data visualisation tools, further transform the Data Analyst role. These tools enable more efficient data collection, processing, and presentation by automating workflows, enabling real-time analytics, and creating interactive dashboards. With scalable infrastructure, real-time processing capabilities, and advanced visualisation features, digital tools empower Data Analysts to deliver actionable insights more effectively and efficiently.</p>
Customer Service: Customer Service Representative (CSR)	<p>AI is transforming the role of Customer Service Representatives by automating routine tasks such as responding to standard inquiries, processing orders, and tracking shipments through chatbots and automated response systems. These AI technologies efficiently handle repetitive tasks and common queries, freeing human agents to concentrate on more complex and nuanced customer interactions that require personal touch and problem-solving skills. Complementing AI, digital tools, including advanced CRM systems, order management software, and email automation, further enhance the efficiency of customer service operations. These technologies streamline the management of customer inquiries, order processing, and shipment tracking by ensuring accurate data management and providing real-time updates. As a result, the overall customer service experience is significantly improved, with faster response times and more effective issue resolution.</p> <p>concentrix Concentrix has embarked on a transformative journey in its customer service operations by integrating advanced AI and digital tools. The company's strategy focuses on enhancing service efficiency, improving customer interactions, and leveraging data-driven insights to optimise support processes. Concentrix uses digital platforms to manage customer interactions across various channels, including chat, email, social media, and voice. This omnichannel approach ensures consistent and seamless customer support experiences. Digital tools enable real-time tracking and management of customer interactions, allowing agents to respond quickly and efficiently.³¹</p>	IT & Technology: IT Helpdesk Technician	<p>AI is increasingly reshaping the role of IT Helpdesk Technicians by automating routine tasks such as ticket classification, utilising chatbots for initial troubleshooting, and employing predictive analytics to anticipate common technical issues. AI enhances support efficiency by automatically categorising and prioritising tickets, delivering instant responses via chatbots, and forecasting recurring problems before they escalate. This automation helps to streamline processes and significantly reduces response times. Digital tools, including remote desktop software, advanced ticketing systems, and comprehensive knowledge management platforms, further enhance IT support services. These technologies enable efficient remote troubleshooting, systematic ticket handling, and seamless access to support resources. As a result, IT Helpdesk Technicians can offer higher quality support and deliver improved support experience for users.</p> <p>IBM IBM has leveraged its AI technologies - IBM Watson, to revolutionise IT helpdesk operations. The integration of AI into IT support aims to enhance efficiency, improve user experience, and streamline support processes. IBM Watson provides AI-driven chatbots that handle a wide range of routine IT support queries. These chatbots can perform tasks such as answering common questions, guiding users through troubleshooting steps, and creating support tickets.^{32,33}</p>
		Finance & Accounting: Financial Analyst	<p>The role of Financial Analyst is undergoing a transformation thanks to AI, as it automates the handling of large datasets, complex calculations, and the identification of trends for variance analysis and forecasting. AI algorithms significantly enhance the speed and precision of financial analysis, offering deeper insights into financial performance and supporting more informed decision-making. The introduction of digital tools, including advanced financial modelling software, data analytics platforms, and sophisticated reporting systems, are revolutionising financial analysis, forecasting, and reporting. These technologies boost efficiency by automating repetitive tasks, enabling real-time monitoring of financial metrics, and facilitating the development of comprehensive financial reports and presentations. Consequently, Financial Analysts can focus more on strategic analysis and less on manual data processing.</p>

30. Maersk, *Transforming Logistics Through Technology-Enabled Digital Supply Chain Solutions*, 7 March 2022, <<https://www.maersk.com/news/articles/2022/03/07/transforming-logistics-through-technology-enabled-digital-supply-chain-solutions>>

31. Concentrix, *Concentrix and Webhelp Complete Combination, Creating A Diversified Global CX Leader, Well-Positioned For Growth*, 25 September 2023, <<https://ir.concentrix.com/node/8741/pdf>>

32. IBM Blog, *AI Transforms the IT Support Experience*, 26 April 2024, <<https://www.ibm.com/blog/ai-transforms-the-it-support-experience/>>
33. IBM, *CIO AskIT*, <<https://www.ibm.com/case-studies/cio-watsonx-askit>>

Roles	Impact and Case Studies	
Finance & Accounting: Accounts Payable (AP) Analyst	<p>AI is poised to transform this role by automating key tasks such as data entry, invoice verification, and flagging discrepancies for review. AI algorithms will significantly enhance the efficiency and accuracy of invoice processing, reducing manual effort and ensuring compliance with company policies and procedures. Digital AP automation software, invoice management systems, and expense reporting tools will streamline the overall payment cycle - from processing to approvals and reconciliation activities. The results are a more efficient, accurate, and transparent AP function that supports timely financial reporting and contributes to better overall financial management.</p>  <p>Shell Business Operations has implemented AI-driven automation in its Accounts Payable processes as part of its broader digital transformation strategy. The company has strategically focused on automating repetitive tasks to improve the efficiency and accuracy of its financial operations. Shell has introduced AI-powered Optical Character Recognition (OCR) technology to automatically scan, process, and validate invoices. This reduces manual data entry errors and speeds up the invoice processing time. AI algorithms are used to detect anomalies and potential fraud in the Accounts Payable process by analysing patterns and identifying unusual transactions.</p>	
Finance & Accounting: Accounts Receivable (AR) Analyst	<p>AI is poised to transform accounts receivable processes by automating invoice generation, payment matching, and discrepancy identification. Through AI algorithms, AR processes will see significant improvements in efficiency and accuracy, minimising manual effort and ensuring compliance with billing policies and procedures. The adoption of digital AR automation software, payment processing systems, and credit management tools will streamline invoice issuance, monitor payments in real-time, and improve credit risk management capabilities, thus, improving overall efficiency.</p>  <p>Standard Chartered's GBS centre has integrated AI and advanced analytics into their AR function to streamline processes and enhance efficiency. The bank deployed AI algorithms to analyse vast amounts of transaction data, predict customer payment behaviours, and identify high-risk accounts. This data-driven approach allowed the AR team to prioritise collections more effectively and reduce the risk of bad debts. Additionally, AI was used to automate the reconciliation of accounts, which traditionally required significant manual effort.^{34,35}</p>	

34. Standard Chartered, *About Us*, <<https://www.sc.com/my/about-us/>>

35. Standard Chartered, *The Disruptive Potential of Generative AI*, 11 December 2023, <<https://www.sc.com/en/news/ccib/the-disruptive-potential-of-generative-ai/>>

36. Infosys BPM, *Business Process Management Services*, <<https://www.infosysbpmpm.com/>>

Roles	Impact and Case Studies	
Finance & Accounting: Order Management Analyst	<p>AI will make a big impact on the functions of an Order Management Analyst through the automation of tasks such as order entry, demand forecasting, and issue resolution. AI has the ability to streamline the order entry process, predict demand to optimise inventory levels, and leverage natural language processing to address common customer inquiries and issues, thus, improving efficiency and accuracy. Digital technologies like OMS, CRM software, and real-time tracking tools will play a crucial role in optimising the order management process. These tools will provide real-time visibility into orders, automate routine tasks, and enhance coordination between sales, logistics, and warehouse teams.</p>	
	 <p>P&G's GBS division significantly transformed their order management processes by integrating AI and digital technologies. This transformation involved automating routine tasks, such as order entry and invoicing, which traditionally required substantial manual effort. The AI-driven automation reduced errors, sped up order processing times, and allowed analysts to focus more on exception handling and value-added tasks.³⁷</p>	
Finance & Accounting: Billing Analyst	<p>AI will transform the Billing Analyst role by automating tasks such as invoice generation, error detection, and dispute resolution. AI can streamline the billing process by automatically generating invoices, identifying errors and discrepancies, and using natural language processing to assist in resolving customer disputes, thereby enhancing both efficiency and accuracy. Digital technologies such as billing software, electronic invoicing systems, and data analytics tools will play a critical role in optimising the billing process. These tools will automate routine tasks, provide real-time visibility into billing transactions, and ensure the generation of accurate and timely invoices.</p>	
	 <p>P&G's GBS division significantly transformed their order management processes by integrating AI and digital technologies. This transformation involved automating routine tasks, such as order entry and invoicing, which traditionally required substantial manual effort. The AI-driven automation reduced errors, sped up order processing times, and allowed analysts to focus more on exception handling and value-added tasks.³⁸</p>	

Roles	Impact and Case Studies
Finance & Accounting: Credit Analyst	<p>AI will significantly affect the Credit Analyst role by the automation of tasks such as credit scoring, risk assessment, and financial analysis. AI tools can process large volumes of financial data, generating credit scores, evaluating risk factors, and analysing financial statements with greater speed and accuracy than traditional methods, leading to faster and more informed credit decisions. Complementing the AI tools, digital technologies like credit management software, data analytics tools, and electronic financial statement analysis systems will significantly streamline the credit assessment process. These tools will automate data collection, provide real-time analysis, and produce accurate credit reports, enabling quicker and more reliable credit decisions.</p>
	<p>The automation of key tasks like payment matching, discrepancy identification, and report generation will transform the role of Cash Application Analyst. AI can streamline the cash application process by automatically matching payments to invoices, flagging discrepancies for review, and producing accurate, timely reports, thereby reducing manual workload and minimising errors. Digital technologies such as automated payment processing systems, reconciliation software, and electronic record-keeping tools will significantly enhance the cash application process. These tools will automate routine tasks, provide real-time visibility into cash transactions, and ensure accurate record-keeping, leading to faster and more reliable cash application.</p>
Finance & Accounting: Master Data Management Analyst	<p>AI will change the functions of a Master Data Management Analyst by automating tasks such as data cleansing, validation, standardisation, and anomaly detection. AI-driven solutions will enhance data quality management by identifying and correcting inconsistencies, detecting anomalies, and ensuring data accuracy and completeness with greater efficiency. Digital technologies, including data integration platforms and data quality software, will further streamline master data management processes. These tools will automate data integration, cleansing, and validation, ensuring consistency and accuracy across systems and platforms, ultimately enabling more reliable and efficient data management.</p>

37. EY, How GBS Becomes the NextGen Driver of Digital Transformation, 13 November 2019, <https://www.ey.com/en_be/digital/how-gbs-becomes-the-nextgen-driver-of-digital-transformation>

38. EY, How GBS Becomes the NextGen Driver of Digital Transformation, 13 November 2019, <https://www.ey.com/en_be/digital/how-gbs-becomes-the-nextgen-driver-of-digital-transformation>

“AI is revolutionising HR functions within companies, enhancing productivity and cost efficiency. Tools like dashboards and chatbots have significantly streamlined performance and talent management, while automating key HR processes. However, despite the clear benefits, there are potential challenges, particularly around ethical issues and regulatory compliance, as AI adoption continues to expand.

Tai Yih Yann, Country HR Leader, IBM Malaysia

Highly Impacted Roles Career Pathways

Roles	Examples of Additional Skills Required and Analysis		Possible Roles for Transition Within the Sector	
HUMAN RESOURCES: HR INFORMATION ANALYST <p>Key Responsibilities: Manage and analyse HR data to support strategic decision-making and optimise HR processes. This includes maintaining accurate HR information systems, generating reports and visualisations on various HR metrics, conducting data quality assessments, and collaborating with HR and IT teams to ensure data integrity and effective use of HR technology</p>	AI / DIGITAL SKILLS <p>1. Financial Systems Implementation: Upskilling in Financial Systems Implementation equips an HR Information Analyst with the ability to manage and optimise financial software and processes; this skill is essential for transitioning into a Finance Systems Analyst role where financial data handling and system integration are key responsibilities.</p>	GREEN SKILLS <p>1. Environment, Health, and Safety (EHS): Developing expertise in EHS enhances an HR Information Analyst's ability to manage workplace safety and compliance with environmental regulations, which is crucial for roles such as Compliance and Governance Specialist where ensuring adherence to health, safety, and environmental standards is important.</p> <p>2. Green Auditing: Gaining skills in Green Auditing provides an HR Information Analyst with the ability to assess and improve environmental performance and sustainability practices, valuable for a Compliance and Governance Specialist role where evaluating and ensuring adherence to environmental regulations is a key function.</p>	 HR Operations Specialist  Finance Systems Analyst	 Compliance and Governance Specialist

Highly Impacted Roles Career Pathways

(Continue)

Roles	Examples of Additional Skills Required and Analysis	Possible Roles for Transition Within the Sector
HUMAN RESOURCE: LEARNING AND DEVELOPMENT SPECIALIST Key Responsibilities: Design, develop, and deliver comprehensive training programmes and materials tailored to organisational needs, while assessing training effectiveness, coordinating sessions, and leveraging technology to enhance learning and development.	AI / DIGITAL SKILLS <ul style="list-style-type: none"> 1. Big Data Analytics: Upskilling in Big Data Analytics enhances a Learning and Development Specialist's ability to analyse and leverage employee data, which is valuable for roles like Talent Management Specialist to make data-driven decisions on talent development and performance management. GREEN SKILLS <ul style="list-style-type: none"> 1. Consumer Sustainability Education: Developing expertise in Consumer Sustainability Education supports the transition to a Sustainability Coordinator by equipping with the skills to educate employees and stakeholders on sustainable practices, which is crucial for integrating sustainability into training programmes. 2. Green Business Innovation: This skill enables the development of sustainable and eco-friendly business practices. This expertise supports roles in driving innovation and sustainability initiatives, enhancing career prospects in green business leadership. 	Possible Roles for Transition Within the Sector <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  Talent Management Specialist </div> <div style="text-align: center;">  Diversity, Equity and Inclusion (DEI) Specialist </div> </div> Possible Roles for Transition into Other Sectors <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  Store Training Manager Sector: Wholesale and Retail Trade </div> <div style="text-align: center;">  Sustainability Coordinator Sector: Wholesale and Retail Trade </div> </div>

Highly Impacted Roles Career Pathways

(Continue)

Roles	Examples of Additional Skills Required and Analysis	Possible Roles for Transition Within the Sector
HUMAN RESOURCE: PAYROLL SPECIALIST Key Responsibilities: Accurately process and administer payroll, ensuring timely compliance with regulatory requirements and company policies, while managing employee records, resolving discrepancies, and providing support for payroll-related inquiries.	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>AI / DIGITAL SKILLS</p> <ol style="list-style-type: none"> Big Data Analytics: Upskilling in Big Data Analytics enables a Payroll Specialist to analyse large datasets related to employee compensation and benefits, improving the ability to make data-driven decisions and providing valuable insights for a Compensation and Benefits Specialist role. Financial Systems Implementation: Mastering Financial Systems Implementation helps a Payroll Specialist to manage and integrate financial software related to payroll and compensation, which is essential for transitioning to a Finance Systems Analyst role where overseeing financial systems and processes is important. </div> <div style="width: 45%;"> <p>GREEN SKILLS</p> <ol style="list-style-type: none"> Environment, Health, and Safety: Gaining skills in EHS provides a Payroll Specialist with the knowledge to ensure compliance with safety and environmental regulations, which is valuable for roles like HR Operations Specialist where managing workplace safety and regulatory adherence is crucial. </div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Compensation and Benefits Specialist</p> </div> <div style="text-align: center;">  <p>HR Operations Specialist</p> </div> <div style="text-align: center;">  <p>Finance Systems Analyst</p> </div> </div>

Highly Impacted Roles Career Pathways

(Continue)

Roles	Examples of Additional Skills Required and Analysis	Possible Roles for Transition Within the Sector
PROCUREMENT: LOGISTICS COORDINATOR <p>Key Responsibilities: Manage and optimise logistics operations by coordinating transportation, monitoring inventory, preparing documentation, and leveraging technology to ensure efficient and compliant delivery of goods.</p>	<div> AI / DIGITAL SKILLS </div> <div> 1. Statistical Analytics: </div> <p>Upskilling in Statistical Analytics allows a Logistics Coordinator to analyse data trends and performance metrics, which is essential for a Continuous Improvement Specialist role to identify areas for operational enhancements and optimise logistics processes.</p> <div> GREEN SKILLS </div> <div> 1. Green Procurement Policies and Standards: </div> <p>Gaining skills in Green Procurement Policies and Standards is important for a Procurement Analyst or Buyer/Purchasing Agent as it enables the ability to implement and manage eco-friendly procurement practices, aligning with sustainability goals and improving procurement processes.</p> <div> 2. Sustainable Business Practices: </div> <p>Mastering Sustainable Business Practices supports a transition to roles like Logistics & Transport Coordinator by providing the ability to integrate and promote sustainable practices within logistics and supply chain operations, enhancing overall environmental and operational efficiency.</p>	<div> </div> <div> Continuous Improvement Specialist </div> <div> </div> <div> Procurement Analyst </div> <div> </div> <div> Buyer / Purchasing Agent </div> <div> </div> <div> Logistics & Transport Coordinator </div> <div> Sector: Wholesale and Retail Trade </div>

Highly Impacted Roles Career Pathways

(Continue)

Roles	Examples of Additional Skills Required and Analysis	Possible Roles for Transition Within the Sector
CUSTOMER SERVICE: CUSTOMER SERVICE REPRESENTATIVE (CSR)	<div> AI / DIGITAL SKILLS </div> <div> <p>1. Advanced Technology Integration: Upskilling in Advanced Technology Integration enables a Customer Service Representative to leverage cutting-edge tools and systems for managing customer relationships and operations, which is crucial for roles like CRM Specialist to enhance customer interaction and improve service efficiency.</p> </div> <div> GREEN SKILLS </div> <div> <p>1. Consumer Sustainability Education: Developing expertise in Consumer Sustainability Education helps a CSR transition into roles such as Sales Operations Assistant or Customer Service Representative in Wholesale and Retail Trade by providing the ability to inform and engage customers on sustainable products and practices, aligning with modern consumer expectations.</p> <p>2. Sustainability Facilities Management: Gaining skills in Sustainable Facilities Management supports roles like CRM Specialist and Customer Service Representative by ensuring that customer service environments adhere to sustainability standards, enhancing the overall customer experience and aligning with eco-friendly business practices.</p> </div>	<div> </div> <div>CRM Specialist</div> <div> </div> <div>Dispute Resolution Specialist</div>
Possible Roles for Transition into Other Sectors		
<div> </div> <div> Sales Operations Assistant Sector: Wholesale and Retail Trade </div> <div> </div> <div> Customer Service Coordinator Sector: Wholesale and Retail Trade </div>		

A Swedish fintech company developed an ‘AI assistant’ that operates in 23 markets, 24/7, and supports 35 languages. This AI now handles two-thirds of their customer service interactions, reducing resolution time from 11 minutes to just two (2) and achieving a 25% drop in repeat inquiries. Remarkably, it has taken over the work previously done by 700 full-time agents.

Sanjay Sarma, CEO of the Asia School of Business

Highly Impacted Roles Career Pathways

(Continue)

Roles	Examples of Additional Skills Required and Analysis	Possible Roles for Transition Within the Sector
IT & TECHNOLOGY: DATA ANALYST <p>Key Responsibilities: Analyse and interpret data by cleaning, visualising, and applying statistical and machine learning techniques to provide actionable insights and support business decision-making, while collaborating with teams and automating processes for efficiency.</p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>AI / DIGITAL SKILLS</p> <p>1. Cloud Computing: Upskilling in Cloud Computing enables a Data Analyst to manage and process large datasets using cloud-based platforms, which is crucial for roles like Data Scientist and Data Engineer to leverage scalable computing resources and enhance data analysis and storage capabilities.</p> </div> <div style="width: 45%;"> <p>GREEN SKILLS</p> <p>1. Data Engineering: Developing expertise in Data Engineering equips a Data Analyst with the skills to design and maintain robust data pipelines and architectures, essential for transitioning into roles such as Data Engineer and Data Scientist, where handling and structuring large volumes of data efficiently is key.</p> </div> </div>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  <p>Data Scientist</p> </div> <div style="width: 45%;">  <p>Finance Systems Analyst</p> </div> </div> <div style="background-color: #667788; color: white; padding: 5px; margin-top: 10px;"> <p>Possible Roles for Transition into Other Sectors</p> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  <p>Data Engineer Sector: Information and Communications Technology</p> </div> <div style="width: 45%;">  <p>Data Scientist / Artificial Intelligence Scientist Sector: Information and Communications Technology</p> </div> </div>

Highly Impacted Roles Career Pathways

(Continue)

Roles	Examples of Additional Skills Required and Analysis	Possible Roles for Transition Within the Sector
IT & TECHNOLOGY: IT HELPDESK TECHNICIAN <p>Key Responsibilities: Provide technical support by diagnosing and resolving hardware and software issues, managing user accounts, and documenting support activities, while escalating complex problems to higher-level support as needed.</p>	<div> AI / DIGITAL SKILLS </div> <div> 1. Cloud Computing: </div> <p>Upskilling in Cloud Computing enables an IT Helpdesk Technician to manage and support cloud-based services and infrastructure, which is essential for roles like Technical Support Specialist and Systems Administrator to ensure effective cloud resource management and troubleshooting.</p> <div> 2. Programming, Coding, and Scripting: </div> <p>Developing skills in Programming, Coding, and Scripting allows an IT Helpdesk Technician to automate tasks, develop custom solutions, and troubleshoot complex issues, which is crucial for roles such as Technical Support Specialist and Associate Data Centre Operations Engineer.</p> <div> GREEN SKILLS </div> <div> 1. Eco-Design Principles: </div> <p>Upskilling in Eco-Design Principles enables an IT Helpdesk Technician to contribute to designing and implementing environmentally friendly IT systems and infrastructure, which is important for roles like Systems Administrator and Associate Data Centre Operations Engineer to reduce the environmental impact of technology operations.</p> <div> 2. Green Business Innovation: </div> <p>Developing skills in Green Business Innovation helps an IT Helpdesk Technician incorporate sustainable practices and innovative solutions into IT support and infrastructure management, which is valuable for roles like Technical Support Specialist and Associate Network Engineer to enhance the environmental sustainability of IT operations.</p>	

Highly Impacted Roles Career Pathways

(Continue)

Roles	Examples of Additional Skills Required and Analysis	Possible Roles for Transition Within the Sector
FINANCE & ACCOUNTING: FINANCIAL ANALYST <p>Key Responsibilities: Conduct comprehensive financial analysis and forecasting, prepare and present accurate financial reports, and collaborate with departments to support strategic decision-making and ensure regulatory compliance</p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>AI / DIGITAL SKILLS</p> <ol style="list-style-type: none"> Digital Business Model Innovation: Upskilling in Digital Business Model Innovation equips a Financial Analyst with the ability to leverage digital tools and strategies to transform financial processes and models, which is crucial for roles like Finance Systems Analyst and Market Research Senior Analyst to stay competitive in a digital economy. Financial Systems Implementation: Developing expertise in Financial Systems Implementation allows a Financial Analyst to manage and optimise financial software and systems, which is essential for roles such as Finance Systems Analyst to ensure efficient financial operations and accurate reporting. </div> <div style="width: 45%;"> <p>GREEN SKILLS</p> <ol style="list-style-type: none"> Environment and Social Governance: Gaining skills in Environment and Social Governance helps a Financial Analyst assess and integrate sustainability factors into financial analysis and reporting, which is valuable for roles like Budget Analyst and Asset Investment Portfolio Engineer to align investment and budgeting strategies with ESG criteria. Sustainable Business Practices: Mastering Sustainable Business Practices enables a Financial Analyst to incorporate sustainability into financial planning and analysis, supporting roles like Asset Investment Portfolio Engineer and Market Research Senior Analyst by promoting eco-friendly and socially responsible investment and business strategies. </div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Finance Systems Analyst</p> </div> <div style="text-align: center;">  <p>Budget Analyst</p> </div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Asset Investment Portfolio Engineer Sector: Energy and Power</p> </div> <div style="text-align: center;">  <p>Market Research Senior Analyst / Analyst Sector: Wholesale and Retail Trade</p> </div> </div>

Highly Impacted Roles Career Pathways

(Continue)

Roles	Examples of Additional Skills Required and Analysis	Possible Roles for Transition Within the Sector
FINANCE & ACCOUNTING: ACCOUNTS PAYABLE (AP) ANALYST Key Responsibilities: Manage and process invoices and expense reports, ensure accurate and timely payment to vendors, reconcile discrepancies, and maintain compliance with financial policies and procedures.	<p>GREEN SKILLS</p> <p>1. Green Asset Management: Upskilling in Green Asset Management enables an Accounts Payable Analyst to effectively manage and report on assets with a focus on sustainability and environmental impact, which is essential for roles like Fixed Assets Accountant to ensure that asset management practices align with green standards. </p> <p>2. Green Auditing: Developing expertise in Green Auditing equips an Accounts Payable Analyst to assess and ensure compliance with environmental and sustainability standards in financial processes, which is valuable for roles such as Compliance and Governance Specialist to uphold and enforce eco-friendly practices within financial and operational audits. </p>	 Cost Accountant  Compliance and Governance Specialist  Fixed Assets Accountant
FINANCE & ACCOUNTING: ACCOUNTS RECEIVABLE (AR) ANALYST Key Responsibilities: Manage and oversee the collection of outstanding payments from customers, ensuring that invoices are issued accurately and timely, payments are applied correctly, and any discrepancies or overdue accounts are addressed efficiently. Monitor account balances, reconciling discrepancies, following up on overdue payments, and collaborating with other departments to resolve billing issues and improve cash flow.	<p>GREEN SKILLS</p> <p>1. Energy Management and Audit: Upskilling in Energy Management and Audit enables an Accounts Receivable Analyst to oversee and optimise energy usage within financial operations, which is valuable for roles like Cost Accountant and Fixed Assets Accountant to manage energy costs and sustainability in asset management. </p> <p>2. Green Asset Management: Developing expertise in Green Asset Management helps an Accounts Receivable Analyst effectively manage and track assets with a focus on sustainability, which is crucial for transitioning into roles like Fixed Assets Accountant and Commercials & Billings Engineer to ensure that asset management aligns with environmental and sustainability standards. </p>	 Cost Accountant  Fixed Assets Accountant  Commercials & Billings Engineer Sector: Energy and Power

Highly Impacted Roles Career Pathways

(Continue)

Roles	Examples of Additional Skills Required and Analysis	Possible Roles for Transition Within the Sector
FINANCE & ACCOUNTING: INVOICE PROCESSING ADMINISTRATOR <p>Key Responsibilities: Accurately and efficiently manage the entry, verification, and reconciliation of invoices, ensuring compliance with company policies and resolving any discrepancies or issues.</p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>AI / DIGITAL SKILLS</p> <ol style="list-style-type: none"> Big Data Analytics: Upskilling in Big Data Analytics enables an Invoice Processing Administrator to handle and analyse large datasets, which is crucial for roles like Continuous Improvement Specialist and Order-to-Cash (O2C) Reporting Analyst to identify trends, optimise processes, and drive data-informed decisions. Statistical Analytics: Developing expertise in Statistical Analytics allows an Invoice Processing Administrator to interpret and apply statistical methods to financial data, which supports roles such as O2C Reporting Analyst and Continuous Improvement Specialist in enhancing reporting accuracy and process improvements. </div> <div style="width: 45%;"> <p>GREEN SKILLS</p> <ol style="list-style-type: none"> Sustainable Business Practices: Mastering Sustainable Business Practices equips an Invoice Processing Administrator to integrate sustainability into financial processes and reporting, which is valuable for roles like Commercials & Billings Engineer to ensure that business practices align with environmental and social responsibility goals. Energy Management and Audit: Gaining skills in Energy Management and Audit helps an Invoice Processing Administrator to manage and optimise energy use in financial operations, which is useful for roles such as Continuous Improvement Specialist to enhance efficiency and sustainability in billing and processing functions. </div> </div>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  <p>Continuous Improvement Specialist</p> </div> <div style="width: 45%;">  <p>O2C Reporting Analyst</p> </div> </div> <div style="background-color: #667788; color: white; padding: 5px; margin-top: 10px;"> <p>Possible Roles for Transition into Other Sectors</p> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  <p>Commercials & Billings Engineer Sector: Energy and Power</p> </div> </div>

Highly Impacted Roles Career Pathways

(Continue)

Roles	Examples of Additional Skills Required and Analysis	Possible Roles for Transition Within the Sector
FINANCE & ACCOUNTING: VENDOR MASTER DATA ADMINISTRATOR <p>Key Responsibilities: Accurately process and administer payroll, ensuring timely compliance with regulatory requirements and company policies, while managing employee records, resolving discrepancies, and providing support for payroll-related inquiries.</p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>AI / DIGITAL SKILLS</p> <p>1. IT Asset Management: Upskilling in IT Asset Management enables a Vendor Master Data Administrator to efficiently manage and track IT assets, which is crucial for roles like Finance Systems Analyst and Associate Data Centre Operations Engineer to ensure optimal use and maintenance of technology resources.</p> <p>2. Systems Performance Management: Developing expertise in System Performance Management allows a Vendor Master Data Administrator to monitor and optimise system performance, which is essential for roles such as Finance Systems Analyst and Associate Database Support Engineer to ensure reliable and efficient system operations.</p> </div> <div style="width: 45%;"> <p>GREEN SKILLS</p> <p>1. Green Procurement Policies and Standards: Mastering Green Procurement Policies and Standards equips a Vendor Master Data Administrator to implement and manage sustainable procurement practices, which is valuable for roles like Procurement Analyst to align sourcing and purchasing with environmental and social responsibility criteria.</p> </div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Finance Systems Analyst</p> </div> <div style="text-align: center;">  <p>Procurement Analyst</p> </div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>Possible Roles for Transition into Other Sectors</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Associate Database Support Engineer Sector: Information and Communications Technology</p> </div> <div style="text-align: center;">  <p>Associate Data Centre Operations Engineer Sector: Information and Communications Technology</p> </div> </div> </div> </div>

Highly Impacted Roles Career Pathways

(Continue)

Roles	Examples of Additional Skills Required and Analysis	Possible Roles for Transition Within the Sector
FINANCE & ACCOUNTING: PAYMENT PROCESSING ANALYST	<div> AI / DIGITAL SKILLS </div> <p>1. Systems Integration: Upskilling in Systems Integration is crucial for ensuring that various financial and payment systems work seamlessly together. This is essential for P2P Reporting Analyst and Commercials & Billings Engineer to facilitate smooth data flow and accurate reporting across different platforms.</p> <div> GREEN SKILLS </div> <p>1. Energy Management and Audit: Gaining expertise in Energy Management and Audit is valuable for understanding and optimising energy consumption and costs, which is particularly relevant for a Commercials & Billings Engineer in the Energy and Power sector to manage energy resources effectively.</p> <p>2. Environment, Health, and Safety: Mastering Environment, Health, and Safety practices is important for ensuring compliance with regulatory standards and maintaining a safe working environment, which supports roles like Compliance and Governance Specialist by addressing environmental and safety concerns.</p> <p>3. Green Auditing: Learning Green Auditing techniques enables the assessment of environmental impacts and sustainability practices, which is beneficial for roles such as Compliance and Governance Specialist to ensure adherence to green standards and promote environmental responsibility.</p>	<div> </div> <p>P2P Reporting Analyst</p> <div> </div> <p>Compliance and Governance Specialist</p>

Key Responsibilities:
Accurately and timely execute payment transactions, reconcile entries, ensure compliance with policies and regulations, and optimise payment processes while addressing issues and implementing security measures.

Highly Impacted Roles Career Pathways

(Continue)

Roles	Examples of Additional Skills Required and Analysis	Possible Roles for Transition Within the Sector
FINANCE & ACCOUNTING: ORDER MANAGEMENT ANALYST <p>Key Responsibilities: Accurately enter and manage customer orders, coordinate fulfilment with internal teams, address order-related issues, and optimise order processing performance while maintaining detailed records and collaborating with finance and sales teams.</p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>AI / DIGITAL SKILLS</p> <ol style="list-style-type: none"> Advanced Technology Integration: Upskilling in Advanced Technology Integration allows an Order Management Analyst to effectively incorporate and utilise cutting-edge technologies in financial systems and order processing, which is crucial for roles like Finance Systems Analyst and O2C Reporting Analyst to enhance operational efficiency and accuracy. Data Management: Mastering Data Management is essential for organising and analysing large volumes of data related to orders, finance, and logistics. This skill supports roles such as Finance Systems Analyst and O2C Reporting Analyst by ensuring data integrity and facilitating informed decision-making. </div> <div style="width: 45%;"> <p>GREEN SKILLS</p> <ol style="list-style-type: none"> Sustainable Business Practices: Understanding Sustainable Business Practices enables an Order Management Analyst to incorporate environmentally responsible practices into business operations, which is valuable for roles like Sales Operations Assistant and Logistics and Transportation Coordinator to drive sustainability and improve corporate responsibility. Sustainable Facilities Management: Learning Sustainable Facilities Management is important for optimising resource use and reducing environmental impact within facilities. This skill benefits roles such as Logistics and Transportation Coordinator by promoting efficiency and sustainability in the management of logistics and warehousing operations. </div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Finance Systems Analyst</p> </div> <div style="text-align: center;">  <p>O2C Reporting Analyst</p> </div> </div> <div style="background-color: #667788; color: white; padding: 5px; margin-top: 10px;"> <p>Possible Roles for Transition into Other Sectors</p> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;">  <p>Logistics and Transportation Coordinator Sector: Wholesale and Retail Trade</p> </div> <div style="text-align: center;">  <p>Sales Operations Assistant Sector: Wholesale and Retail Trade</p> </div> </div>

Highly Impacted Roles Career Pathways

(Continue)

Roles	Examples of Additional Skills Required and Analysis	Possible Roles for Transition Within the Sector
FINANCE & ACCOUNTING: BILLING ANALYST Key Responsibilities: Manage and process customer invoices accurately, ensure timely collection of payments, resolve billing discrepancies, and analyse billing data to support financial reporting and customer relationship management.	AI / DIGITAL SKILLS <ul style="list-style-type: none"> 1. Data Management: Mastering Data Management is crucial for organising, storing, and analysing financial and billing data effectively, which supports roles like Finance Systems Analyst and O2C Reporting Analyst by ensuring accurate and accessible data for decision-making and reporting. 2. Financial Systems Implementation: Gaining expertise in Financial Systems Implementation allows a Billing Analyst to manage and deploy financial software solutions, which is essential for a Finance Systems Analyst to configure and optimise systems that support financial operations and reporting. 3. Systems Integration: Learning Systems Integration is key for connecting various financial and billing systems to ensure seamless data flow and functionality, which is important for roles like O2C Reporting Analyst and Commercials & Billings Engineer to enhance system interoperability and efficiency. 	 Finance Systems Analyst  O2C Reporting Analyst  Commercials & Billings Engineer Sector: Energy and Power

Highly Impacted Roles Career Pathways

(Continue)

Roles	Examples of Additional Skills Required and Analysis	Possible Roles for Transition Within the Sector
FINANCE & ACCOUNTING: CREDIT ANALYST <p>Key Responsibilities: Evaluate customer creditworthiness by analysing financial data, setting and monitoring credit limits, and managing credit risk while collaborating with sales and finance teams to ensure sound credit decisions and adherence to company policies.</p>	AI / DIGITAL SKILLS <ol style="list-style-type: none"> Advanced technology Integration: Upskilling in Advanced Technology Integration equips a Credit Analyst with the ability to implement and leverage sophisticated financial systems and technologies, which is essential for a Finance Systems Analyst to streamline financial processes and enhance system capabilities. Business Environment Analytics: Mastering Business Environment Analytics allows a Credit Analyst to interpret market and economic data, providing valuable insights for roles like O2C Reporting Analyst to make informed decisions and improve financial reporting and forecasting. GREEN SKILLS <ol style="list-style-type: none"> Energy Management Audit: Learning Energy Management and Audit practices is crucial for understanding and optimising energy consumption and costs, which is particularly relevant for a Commercials & Billings Engineer in the Energy and Power sector to manage and report on energy usage efficiently. Green Business Innovation: Developing skills in Green Business Innovation enables a Credit Analyst to contribute to sustainable business practices and innovative solutions, which is important for roles in any sector, including finance and energy, to drive environmentally friendly initiatives and enhance corporate responsibility. 	 <p>Finance Systems Analyst</p>  <p>O2C Reporting Analyst</p> <p>Possible Roles for Transition into Other Sectors</p>  <p>Commercials & Billings Engineer Sector: Energy and Power</p>  <p>Market Research Senior Analyst / Analyst Sector: Wholesale and Retail Trade</p>

Highly Impacted Roles Career Pathways

(Continue)

Roles	Examples of Additional Skills Required and Analysis	Possible Roles for Transition Within the Sector
FINANCE & ACCOUNTING: CASH APPLICATION ANALYST <p>Key Responsibilities: Accurately apply incoming payments to customer accounts, reconcile cash receipts, maintain precise transaction records, and collaborate with the Accounts Receivable team to ensure timely and accurate cash application while using ERP systems to enhance efficiency.</p>	<p>AI / DIGITAL SKILLS</p> <ol style="list-style-type: none"> 1. Big Data Analytics: Upskilling in Big Data Analytics enables a Cash Application Analyst to handle and analyse large datasets, which is crucial for roles like O2C Reporting Analyst and Cost Accountant to gain insights, identify trends, and make data-driven decisions. 2. Data Visualisation: Learning Data Visualisation techniques allows for the effective presentation of complex data in a clear and actionable format, which is essential for roles such as Business Analyst and Commercials & Billings Engineer to communicate insights and support strategic decisions. 3. Software Testing: Developing skills in Software Testing ensures that systems and applications function correctly and meet user requirements, which is important for Business Analysts and other ICT roles to ensure the reliability and accuracy of software solutions. 4. Systems Performance Management: Mastering System Performance Management helps in monitoring and optimising the performance of IT systems, which is valuable for roles like Commercials & Billings Engineer and other ICT positions to ensure efficient and effective system operations. 	<p>Possible Roles for Transition Within the Sector</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>O2C Reporting Analyst</p> </div> <div style="text-align: center;">  <p>Cost Accountant</p> </div> </div> <p>Possible Roles for Transition into Other Sectors</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Associate Business Analyst Sector: Information and Communications Technology</p> </div> <div style="text-align: center;">  <p>Commercials & Billings Engineer Sector: Energy and Power</p> </div> </div>

Highly Impacted Roles Career Pathways

(Continue)

Roles	Examples of Additional Skills Required and Analysis	Possible Roles for Transition Within the Sector
FINANCE & ACCOUNTING: MASTER DATA MANAGEMENT ANALYST <p>Key Responsibilities: Ensure the accuracy and consistency of master data across systems by implementing data governance policies, performing data quality assessments, and supporting data integration efforts while collaborating with stakeholders to align data management practices with business needs.</p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>AI / DIGITAL SKILLS</p> <ul style="list-style-type: none"> 1. Data Engineering: Gaining expertise in Data Engineering allows a Master Data Management Analyst to build and optimise data pipelines, which is crucial for ensuring efficient data flow and integration across financial systems and databases, enhancing data reliability and accessibility. 2. Data Migration: Learning Data Migration techniques is critical for seamlessly moving data between systems while maintaining data integrity, which supports roles like Finance Systems Analyst and DBA by ensuring smooth transitions and system upgrades. 3. Data Modelling and Design: Mastery of Data Modeling and Design enables the creation of effective data structures that meet organisational needs, which is essential for database management and data protection by ensuring data is well-organised and accessible. </div> <div style="width: 45%;"> <p>GREEN SKILLS</p> <ul style="list-style-type: none"> 1. Green IT Practices: Understanding Green IT Practices helps in implementing eco-friendly and energy-efficient technologies in data centres and IT infrastructure, which is increasingly important for Data Centre Operations Engineers and those involved in ICT roles to meet sustainability goals and reduce operational costs. </div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Finance Systems Analyst</p> </div> <div style="text-align: center;">  <p>Database Administrator (DBA)</p> </div> </div> <div style="background-color: #546A7B; color: white; padding: 5px; text-align: center;"> <p>Possible Roles for Transition into Other Sectors</p> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Data Protection Executive Sector: Information and Communications Technology</p> </div> <div style="text-align: center;">  <p>Associate Data Centre Operations Engineer Sector: Information and Communications Technology</p> </div> </div>

Demand Projection and Number for Highly Impacted Roles

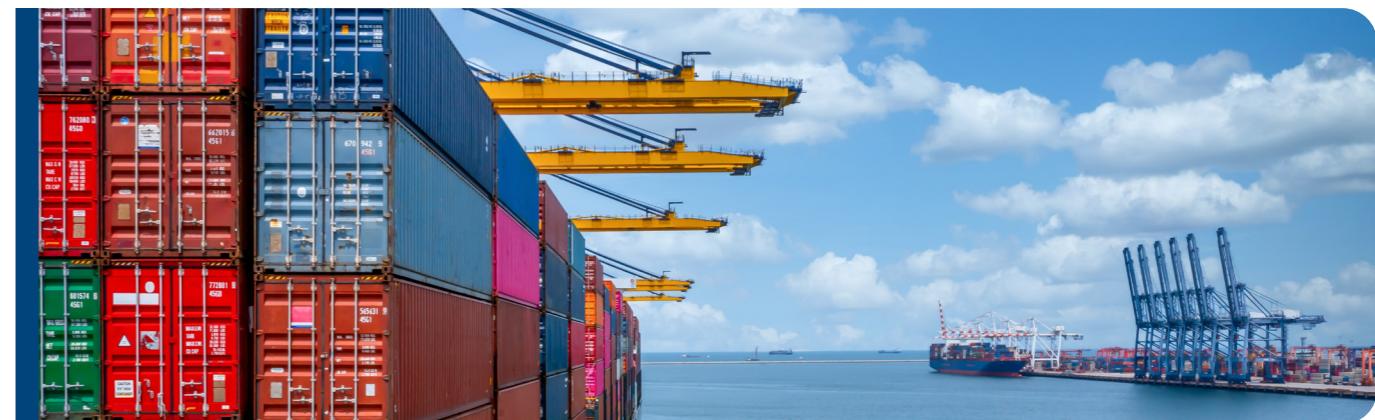
According to the TalentCorp Demand Model Projection, approximately 32% (89,000) employees will be at risk in the next three (3) to five (5) years due to highly impacted roles.³⁹

Summary of Highly Impacted Roles

Finance & Accounting	IT & Technology	Human Resources	Customer Service	Procurement
<ul style="list-style-type: none"> • Financial Analyst • Accounts Payable Analyst • Accounts Receivable Analyst • Invoice Processing Administrator • Vendor Master Data Administrator • Payment Processing Analyst • Billing Analyst • Order Management • Analyst • Credit Analyst • Cash Application Analyst • Master Data Management Analyst 	<ul style="list-style-type: none"> • Data Analyst • IT Helpdesk Technician 	<ul style="list-style-type: none"> • HR Information Analyst • Learning and Development Specialist • Payroll Specialist 	<ul style="list-style-type: none"> • Customer Service Representative 	<ul style="list-style-type: none"> • Logistics Coordinator

Based on the TalentCorp Demand Model Projection, the workforce in the GBS sector is expected to grow from 250,000 to 276,000⁴⁰ employees by 2029, reflecting the sector's expansion, with a notable shift towards roles that support business transformation and strategic initiatives as GBS evolves into a strategic partner for growth and innovation. Additionally, increasing regulatory and market pressures are pushing GBS functions to incorporate green technologies and sustainable practices into their strategies, creating new opportunities for employees and reshaping traditional job functions. 32% of the workforce,⁴¹ or 89,000 employees in the GBS sector will face significant challenges due to the impact of AI, Digital technologies, and Green Economy. As GBS organisations adopt emerging trends in automation, data analytics, and sustainability measures, reskilling and upskilling become essential for those in highly impacted roles to thrive and remain relevant in an evolving GBS landscape. This transformation presents opportunities for growth but also underscore the urgency of aligning workforce capabilities with emerging trends in technology and sustainability.

Medium and Low Impacted Roles



Medium Impacted Roles

49 medium impacted roles have been identified in this impact study. Medium impacted roles in the GBS sectors are mainly roles that centre around the use of technology to enhance delivery of services. As GBS gravitates towards a customer-centric model, AI and digital technologies play an important role in GBS as it facilitates employees to gain a deeper understanding of customer preferences. The insights from these technologies become more valuable as GBS organisations evolve into strategic enablers that are deeply integrated into the core business value chain.

GBS sector players are leveraging AI to optimise service delivery processes, resulting in improved productivity and service quality. The adoption of digital transformation tools such as IoT, cloud computing and data analytics has enabled real-time monitoring, leading to informed decision-making and greater operational efficiency. In parallel, sustainability is becoming a core focus in the GBS sector. In line with this, GBS sector players are ensuring compliance with local and international environmental regulations, pursuing certifications such as ISO 14001 for environmental management. This not only demonstrates a commitment to sustainable practices but also enhances market competitiveness and strengthens the organisation's reputation. As these trends continue to evolve, medium impacted roles are encouraged to upskill and exceed traditional expectations to effectively navigate and leverage evolving trends in the GBS sector. medium impacted roles are becoming more dynamic and crucial to the sector's overall growth and success.

Job Clusters

Finance and Accounting Function

Roles

- Budget Analyst
- Cost Accountant
- Internal Auditor
- Accounting Manager
- Finance Manager
- Fixed Assets Accountant
- General Ledger (GL) Accountant
- Finance Systems Analyst
- PTP Reporting Analyst
- Dispute Resolution Specialist
- O2C Reporting Analyst

Skills

Specific Skills

- Ethical Judgement
- Financial Analysis and Reporting
- Attention to Detail
- Accounting Principles
- Cost-Benefit Analysis

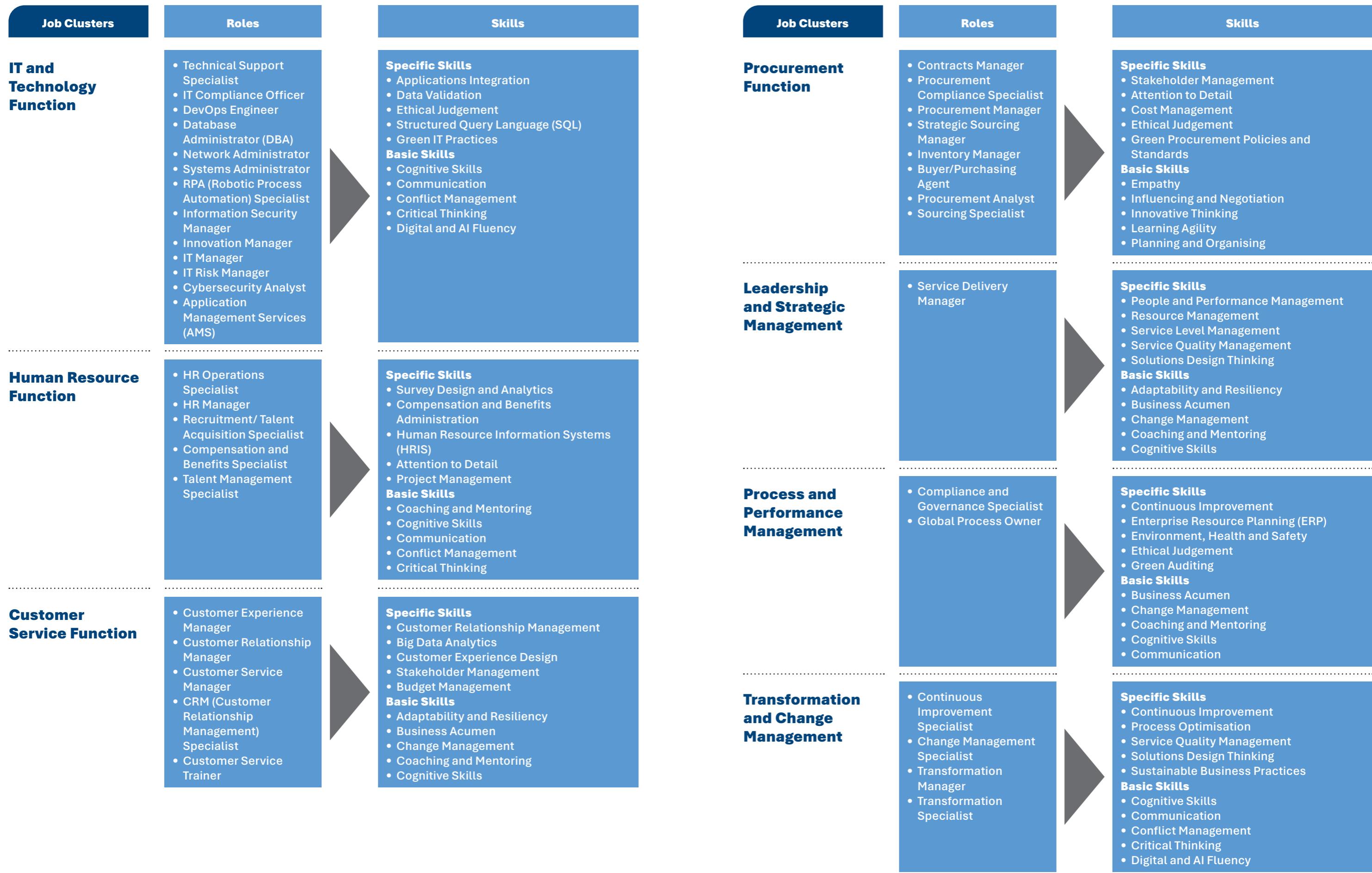
Basic Skills

- Influencing and Negotiation
- Innovative Thinking
- Learning Agility
- Planning and Organising
- Conflict Management

39. Department of Statistics Malaysia (DOSM) and TalentCorp Demand Model Projection

40. Impact Study Industry Survey

41. Impact Study Industry Survey

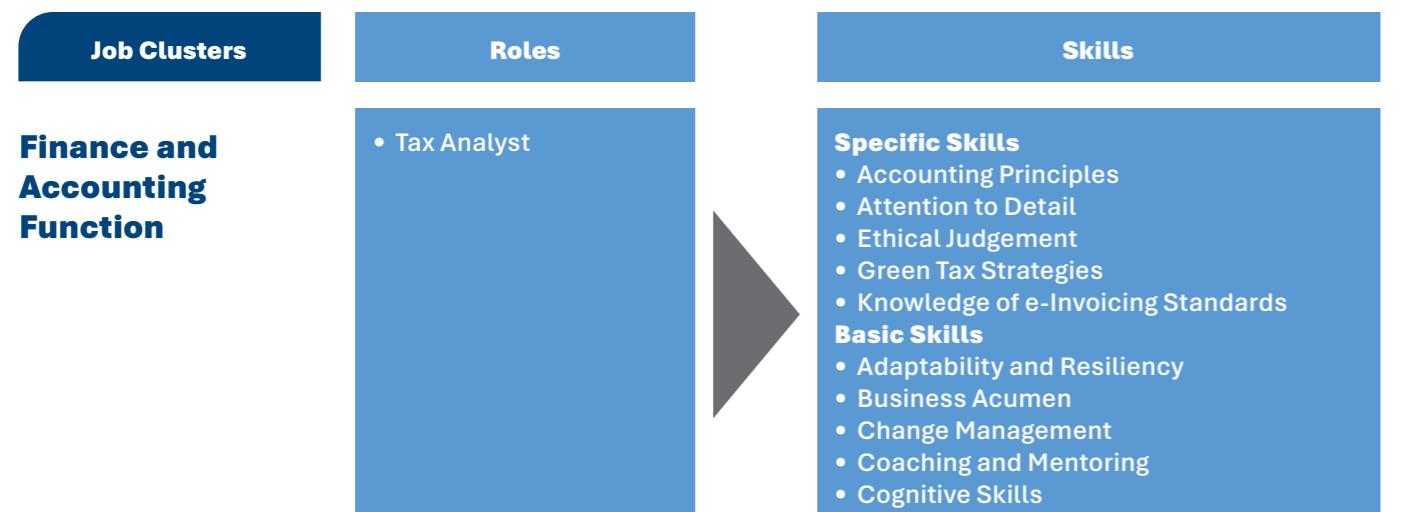




Low Impacted Roles

18 low impacted roles have been identified in this impact study. Low impacted roles are the least affected in the GBS sector as the roles typically require high levels of creativity, judgement, and human interaction. However, as AI and digitalisation becomes more integrated in the sector, skills to leverage technology and drive sustainability agenda will become increasingly important for these roles.

To maintain competitiveness and relevance in the industry, GBS sector players should actively participate in industry-specific sustainability initiatives and forums. This will allow for the exchange of best practices, collaborations in sustainability research, and encourage collective advocacy for regulatory policies that promote green practices. Transparent reporting mechanisms should also be adopted to communicate environmental performance metrics, sustainability goals, and progress to stakeholders. Thereby fostering trust and accountability. Furthermore, the adoption of IoT technologies in operations such as for real-time monitoring of service performance and environmental conditions can significantly enhance operational efficiency and sustainability. The strategic use of technology will enable low impacted roles to effectively adapt and continue to add value within the GBS sector's evolving landscape.



Demand Projection and Number for Medium and Low Impacted Roles

Based on the TalentCorp Demand Model Projection, 59% of the GBS workforce, or 163,000 employees in medium impacted roles require upskilling related to AI, Digital, and Green Economy. Upskilling has become an essential requirement for the individuals in these roles in order to remain relevant and gain skills beyond the traditional expectations of their roles. Industry assessment and feedback have identified 16 basic and 184 specific skills necessary for the GBS sector, with 30% of these skills tied to AI and digital technologies and 6% related to Green Economy skills. This highlights the growing importance of continuous learning and adaptation, as employees will be expected to contribute beyond traditional expectations in an increasingly tech-driven and sustainability-focused environment.

In-Demand Skills for AI, Digital, and Green Economy

AI / Digital skills that are essential for roles to adopt for business operations enhancements and overall workforce productivity improvements

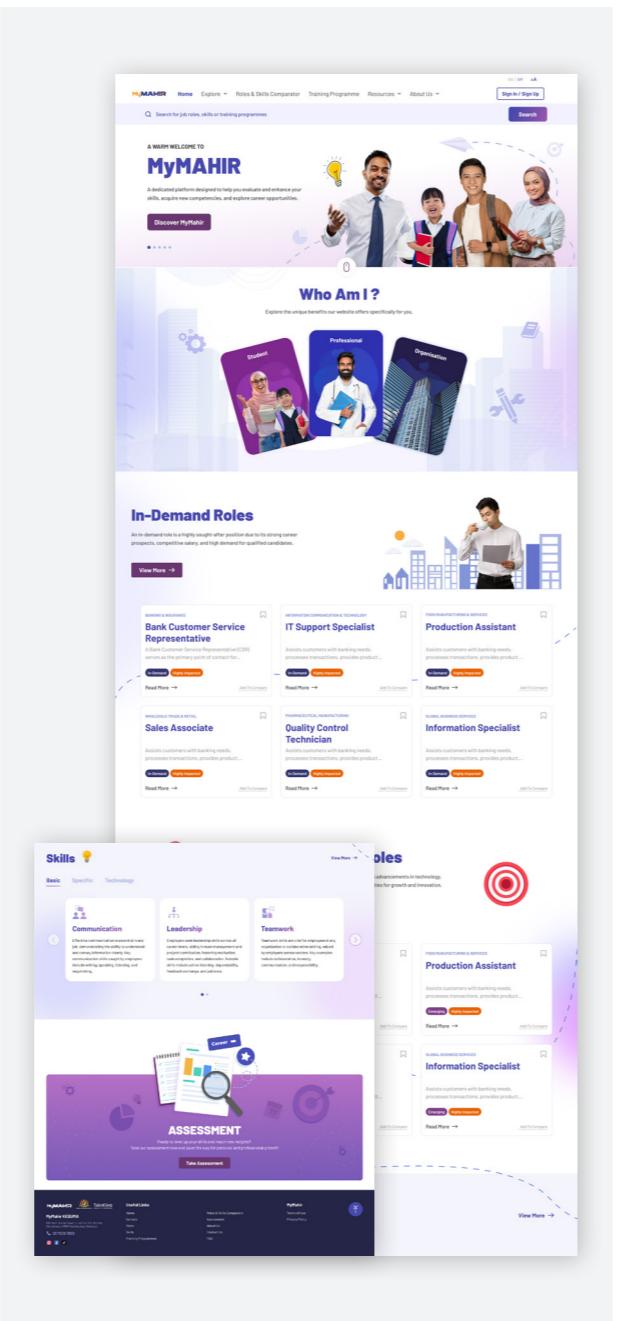
- Cloud Computing
- Big Data Analytics
- Machine Learning
- Data Engineering
- Prompt Engineering
- Robotics and Automation Application
- Bot Development and Deployment
- Data Privacy and Security

Green skills that are needed for roles to integrate sustainability efforts and initiatives into business operations

- Sustainable Business Practices
- Life Cycle Assessment
- Waste Management
- Green Asset Management
- Green Auditing
- Eco-Design Principles
- Green IT Practices
- Environment, Health and Safety

Training Programmes Available

List of proposed training programmes is accessible on the [MyMAHIR platform](#).



Emerging Roles

AI and Machine Learning Specialist

These specialists create and implement algorithms that drive data analysis and influence strategic decisions based on AI, machine learning, and predictive modelling. To succeed in this role, skills such as digital and AI fluency, machine learning, cloud computing and cybersecurity management are needed. Green skills such as Sustainability Awareness, Eco-Design principles, and Green IT Practices are also important on top of technical proficiencies. The demand for this role is driven by the increasing adoption of AI technologies across sectors such as finance, healthcare, and manufacturing, particularly in countries like the **US**, **Canada**, and the **United Kingdom (UK)**. As AI becomes more integrated in business operations, there is significant emphasis on developing ethical AI models that ensure transparency and fairness, particularly in regions with stringent data privacy regulations such as the **European Union (EU)** and the **US**.⁴² Automation through AI and machine learning is a key trend in the GBS industry as it aims to improve efficiency and reduce operational costs. Countries with strong IT sectors like **India** and **China** are at the forefront of implementing AI-driven automation.

Bot Trainer

Bot Trainers are responsible for the design and refining of AI systems to handle complex and diverse conversations, enabling bots to process and respond to multiple types of inputs such as text, voice, and images. The advancements of NLP are enhancing the bots' understanding of human language, improving their contextual awareness, hence a good grasp in NLP is needed for this role. With the growing emphasis on personalised interaction, Bot Trainers play a crucial role by designing techniques to tailor bot responses to an individual user's preferences and needs. Bot Trainers also play an important role in addressing ethical concerns, ensuring bots operate fairly and without bias across diverse user groups. On top of competency in NLP, this role also requires skills in User Experience Design, Applications Integration, Bot Development and Deployment, and Green IT Practices, to name a few. Increasing interaction of AI technology across various sectors such as customer service, manufacturing, and digital transformation initiatives are driving the demand for Bot Trainers globally, particularly in countries like the **US**, **India**, **Germany**, and **Singapore**.

Design Ethicist & Product Philosopher

This role guides ethical considerations and philosophical principles in product design and development from conception through deployment, aligning it with ethical standards and societal values. It is also responsible to consider various user needs and avoid biases in design decisions that could exclude or disadvantage certain groups, especially in light of the growing demand for inclusive and accessible products. Heightened concern regarding data privacy also means there is a need for this role to ensure privacy considerations are embedded in product design. To succeed in this role, the individual must develop expertise in skills such as Data Governance and Compliance, Data Privacy and Security, Data Stewardship, Eco-Design Principles as well as Sustainability Awareness. The demand for Design Ethicists and Product Philosophers globally is driven by the increasing emphasis on ethical considerations and user-centric design in the development of AI and digital products across various industries, particularly in countries like the **US**, **UK**, **Germany**, and **Canada**.

⁴²IBM, *The Most Important AI Trends in 2024*, <<https://www.ibm.com/think/insights/artificial-intelligence-trends>>

Prompt Injection Engineer
<p>These engineers develop and test strategies to secure AI systems against prompt injection attacks, ensuring reliable and safe model interactions. As AI systems become more prevalent, there is a growing focus on securing the systems against vulnerabilities like prompt injection. This role is crucial for identifying and mitigating risks associated with adversarial attacks on AI models, especially as new methods for prompt injection attacks are continually emerging. Effective prompt injection engineering requires collaboration between AI researchers, security experts, and software engineers to address vulnerabilities comprehensively and develop robust defences. Hence, it is crucial for engineers in this role to develop expertise in skills such as Vulnerability Assessment and Penetration Test, Fine-Tuning Model Techniques, Prompt Engineering and Cybersecurity Management. With the increased focus in sustainability efforts, skills in Green Auditing and Green IT Practices would also be beneficial for this role. The growing adoption of AI models and natural language processing technologies across various fields such as cybersecurity, software development, and AI research is driving the rising demand for Prompt Injection Engineers globally, particularly in the US, India, Canada, and China.</p>

Data Steward
<p>Data Stewards are responsible for overseeing the quality, integrity, and governance of data across systems to ensure data is managed effectively and in line with regulatory frameworks such as General Data Protection Regulation (GDPR). With the growing reliance on data-driven decision-making, Data Stewards are employing advanced data quality management techniques to maintain the accuracy, consistency, and reliability of financial and operational data. This role also plays a key part in integrating AI and data analytics technologies to enhance data integration, perform predictive analytics, and improve decision-making processes. Expertise in skills such as Data Governance and Compliance, Database Management, and Database Security is essential for Data Stewards on top of Sustainability Awareness, Green Auditing, and Green IT Practices skills. In an era of heightened data privacy concern, Data Stewards also play an essential role in implementing robust data security measures to protect sensitive information. Data Stewards are in demand globally, particularly in US, UK, Germany, and Singapore, driven by the increasing importance of data governance and compliance across sectors such as finance, healthcare, and IT and technology.</p>

Projected Demand for Emerging Roles for each company in the next three (3) to five (5) years ⁴³			
	Multinational Corporations (MNCs)	Public Listed Companies (PLCs)	Small and Medium-Sized Enterprises (SMEs)
AI and Machine Learning Specialist	2-200	~10	N/A
Bot Trainer	10-20	N/A	N/A
Design Ethicist & Product Philosopher	10-20	N/A	1-2
Prompt Injection Engineer	2-25	N/A	1-2
Data Steward	~5	N/A	1-2

The impact study revealed MNCs have a significantly higher demand for emerging roles in the GBS sector compared to PLCs and SMEs. Roles such as AI and Machine Learning Specialists, Bot Trainers, and Prompt Injection Engineers are crucial for MNCs due to their large-scale operations, global reach, and the need for advanced AI solutions to optimise processes and maintain a competitive edge. Additionally, MNCs emphasise on specialised roles like Design Ethicists and Product Philosophers to ensure their products align with ethical standards and societal values across diverse markets, highlighting the importance of responsible innovation in complex global environments.

MNCs also require more Data Stewards compared to PLCs and SMEs due to their intricate data landscapes, which involve managing vast amounts of data across multiple countries and business units. The complexity of ensuring data accuracy, compliance, and consistency across different regulatory environments places a greater demand on data governance expertise. While PLCs and SMEs operate on smaller scales with fewer data challenges, MNCs' global operations necessitate specialised roles to maintain data integrity and regulatory adherence, driving the need for dedicated professionals in these emerging roles.

Based on the survey conducted during the study, the headcount of the organisation by company type ranges as follows:

Multinational Corporations (MNCs)
400 – 14,000

Public Listed Companies (PLCs)
~ 500

Small and Medium-Sized Enterprises (SMEs)
~ 1000



Chapter 5:

Recommended Initiatives

Government

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| Initiative 1: | Develop Policy/Adoption Framework to Govern and Promote AI Technology Adoption | 107 |
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Industry Players

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Academia

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Training Providers

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Through the impact study assessment, 11 initiatives have been identified within the GBS sector's talent ecosystem in Malaysia to adapt to trends in AI, Digital, and Green Economy. These plans are designed to leverage on emerging opportunities while also addressing challenges posed by these transformative trends. These action plans will prioritise initiatives that offer quick wins, focusing on high-impact projects that are easy to implement, while simultaneously laying the groundwork for long-term transformational changes to maximise effectiveness. Aligning the needs and aspirations of each stakeholder group will foster innovation, promote skills developments, and ensure the sustainable growth of the GBS sector. The initiatives are grouped into four (4) categories based on the leading and the enabling entities – **Government, Industry Players, Academia, and Training Providers.**



Government

IN1

Develop Policy/Adoption Framework to Govern and Promote AI Technology Adoption

Establish a comprehensive policy and adoption framework that will guide the ethical, responsible, and effective integration of AI technologies across the sectors. The framework aims to promote innovation while addressing potential risks including ethical concerns, security vulnerabilities, and potential operational disruptions associated with AI integration. This initiative also seeks to mitigate the lack of effective oversight for implementing and regular evaluation of AI technologies, ensuring that AI adoption aligns with societal values and regulatory standards.

Initiative	Case Studies
IN1.1 <ul style="list-style-type: none"> Convene a multi-disciplinary panel including AI experts, ethicists, industry leaders, consumer advocates, and policymakers to provide diverse perspectives on AI technology adoption Conduct a comparative analysis of existing AI governance models and adoption frameworks internationally to identify best practices and lessons learned Analyse the current state of AI technology within the sector to understand the specific needs and challenges of AI adoption Develop GBS sector-specific adoption guidelines that address the unique characteristics and risks associated with AI applications Regularly review and update the framework based on technological advancements, stakeholder feedback, and evaluation outcomes 	<p>Singapore has been at the forefront of AI adoption, particularly in its business services sector. The Singaporean Government introduced the "Model AI Governance Framework,"⁴⁴ which provides detailed guidelines on how organisations can implement AI in a responsible manner. The framework addresses key issues such as AI ethics, data protection, and algorithm transparency.⁴⁵</p> <p>As part of its digital strategy, the EU aims to regulate AI to foster an environment that promotes innovation while ensuring safety and accountability of using this cutting-edge technology. In April 2021, the European Commission introduced the first regulatory framework for AI within the EU,⁴⁶ a pioneering effort to systematically categorise AI systems based on the risks they pose to users. This framework categorises AI systems according to the level of risk it poses to users and implements a tiered regulatory approach; with stricter regulations for higher-risk AI applications.</p>

Benefits

- A well-defined policy and adoption framework** that facilitates the ethical and responsible use of AI technologies
- Increased confidence among stakeholders** in the governance of AI, leading to greater adoption and innovation
- A dynamic and adaptable framework** that evolves with the AI landscape and continues to serve the interests of all stakeholders

44. PDPC, Singapore's Approach to AI Governance, <<https://www.pdpc.gov.sg/help-and-resources/2020/01/model-ai-governance-framework>>

45. IMDA, Nine Dimensions of the Model AI Governance Framework for Generative AI, <<https://www.imda.gov.sg/-/media/imda/files/news-and-events/media-room/media-releases/2024/05/annex-a-nine-dimensions-of-the-model-ai-governance-framework-for-generative-ai.pdf>>

46. European Parliament, EU AI Act: First Regulation on Artificial Intelligence, 8 June 2023, <<https://www.europarl.europa.eu/topics/en/article/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence>>

IN2 Provide Funding, Incentives and Grants to Encourage Emerging Trends Adoption

The government to accelerate the adoption of emerging trends and technologies by providing financial support, incentives, and grants that reduce barriers to entry and encourage innovation. This initiative aims to address key challenges such as the perception among sector players that adopting emerging trends is costly and financially prohibitive. By alleviating these financial concerns, this initiative seeks to stimulate growth, enhance competitiveness, and foster a culture of continuous advancement while also highlighting the long-term benefits of sustainability that are often overlooked due to perceived low return in investment.

Initiative	Case Studies	Benefits
IN2.1 <ul style="list-style-type: none"> Design incentive programmes such as tax relief, rebates, or reduced interest rates for businesses that invest in new technologies and trends Establish grant schemes that provide direct financial support for research and development, pilot projects, and scaling of innovative AI, Digital and ESG solutions Partner with financial institutions to offer green loans with favourable terms for retailers investing in eco-friendly technologies and practices Define clear and transparent eligibility criteria for funding, incentives, and grants to ensure fair access and distribution of resources Implement a robust monitoring system to track the progress and impact of funded projects 	<p>Australia's Research and Development Tax Incentive (R&DTI)⁴⁷ provides tax offsets for companies engaged in eligible R&D activities, including AI and Digital innovation. This incentive is designed to encourage businesses to invest in R&D, fostering growth and innovation within their operations. Supporting these activities not only helps companies grow but also contributes to broader economic benefits for Australia.</p> <p>Singapore's Productivity & Innovation Credit (PIC) Scheme⁴⁸ for Digital Transformation was introduced in Singapore's Budget 2010 and subsequently enhanced in Budget 2011, 2013, 2014, and 2015. It offers substantial financial incentives for businesses investing in R&D, innovation, automation, and training. Companies registered in Singapore can benefit from a 400% tax deduction/allowance and/or 60% cash payouts for qualifying investments in innovation and productivity improvements.</p>	<ol style="list-style-type: none"> Increased investment in emerging trends and technologies leading to innovation and growth within sectors Enhanced global competitiveness of businesses and sectors that adopt new trends

47. Australian Government, *Overview of Australia's R&D Tax Incentive*, 16 April 2024, <<https://business.gov.au/grants-and-programs/research-and-development-tax-incentive/overview-of-rd-tax-incentive>>

48. Singapore Company Incorporation, *Guide on SG Productivity & Innovation Credit (PIC) Scheme*, <<https://www.singaporecompanyincorporation.sg/how-to/taxation/a-guide-on-singapores-productivity-and-innovation-credit-pic-scheme/>>

IN3 Continuous Development of National Talent to Sustainably Address Talent Demand

The government to establish a dynamic and sustainable talent development ecosystem that continuously cultivates the skills and competencies required in the workforce to meet the evolving demands of the sector. The pace of technological innovation outstrips the education and training programmes' ability to remain relevant, leading to a skills mismatch in the workforce. Through this initiative, it aims to bridge the gap between the skills taught in educational institutions and the actual needs of the industry. Thus, ensuring the long-term economic growth and competitiveness of Malaysia's GBS sector.

Initiative	Case Studies	Benefits
IN3.1 <ul style="list-style-type: none"> Identifying critical skills gaps and areas of high demand listed in Chapter 4 of this report Develop and implement education and training programmes that are aligned with national talent needs, including internship, and continuous professional development courses Encourage industry involvement in shaping educational content and providing practical experience through internships and on-the-job training Promote a culture of lifelong learning among the workforce, emphasising the importance of continuous skill enhancement and adaptability 	<p>SkillsFuture Singapore (SSG)⁴⁹ drives and coordinates the implementation of the national SkillsFuture movement, promotes a culture and holistic system of lifelong learning through the pursuit of skills mastery, and strengthens the ecosystem of quality education and training in Singapore.</p> <p>The United Arab Emirates (UAE) National Innovation Strategy (NIS)⁵⁰ is a comprehensive, cross-sectoral initiative designed to elevate innovation in the UAE. This initiative aims to cultivate a pervasive culture of innovation among individuals, companies, and governments, with a primary focus on key sectors crucial for future innovation.</p>	<ol style="list-style-type: none"> Develop a skilled and adaptable workforce that meets the current and future needs of the national economy Increased innovation and productivity across sector due to a well-trained talent pool Enhanced global competitiveness and attractiveness as a destination for business and investments

49. SkillsFuture Singapore, <<https://www.skillsfuture.gov.sg/>>

50. United Nations Environment Programme, *UAE National Innovation Strategy*, <<https://leap.unep.org/en/countries/ae/national-legislation/uae-national-innovation-strategy>>

IN4

Enhance Curriculum Alignment with Industry Needs Through Partnerships Between Academia and Businesses to Ensure Graduates are Workforce-ready

The government to strengthen the collaboration between academic institutions and businesses to enhance curriculum alignment with industry needs. By establishing industry-academia councils and a continuous improvement feedback among the entities, this initiative will address the disconnect between academic curricula and industry needs and consequently enables academic programmes to adapt swiftly to industry needs. This initiative aims to create a seamless transition from education to employment, ensuring graduates are equipped with the skills and knowledge demanded by the modern workforce.

Initiative	Case Studies
IN4.1 <ul style="list-style-type: none"> Utilise councils to regularly discuss curriculum development and alignment with academic institutions, identify current and future skill requirements and integrate into academic programmes Involve industry professionals in the design and delivery of course content to ensure practical relevance Facilitate faculty development programmes that allow educators to stay abreast of industry developments and incorporate them into their teaching 	South Korea introduced the National Competency Standards (NCS)⁵¹ as part of its strategy to improve the alignment between educational outcomes and industry requirements. Through the Ministry of Employment and Labor, the South Korean Government developed NCS in collaboration with industry experts and educational institutions to ensure students acquire the competencies required by employers, leading to improved job readiness and a more efficient labour market. The NCS outlines the knowledge, skills, and abilities required for various occupations and forms the basis for curriculum development in vocational education. The NCS has been instrumental in aligning education and training programmes with the actual needs of the labour market in South Korea.
Benefits	<ol style="list-style-type: none"> Sustaining a workforce with industry-aligned skills contributes to higher productivity, innovation, and competitiveness, which can drive economic growth and attract investment Aligning education with industry to minimise skills gap will ensure businesses have access to the talent required to fill critical roles

Industry Players**IN5**

Enhance Talent Retention and Development Strategy for High-Skilled Employees

Industry players to take decisive steps to enhance talent retention and development strategies for continuous upskilling. This initiative requires a proactive approach to creating a work environment that not only attracts exceptional talent but also encourages their long-term commitment and professional growth. By implementing targeted programmes that address specific skills gaps, particularly for high-skilled employees, and updating training programmes to meet the evolving needs of the workforce and sector standards, this initiative can foster a culture of continuous learning and innovation as well as improve employee engagement and development.

Initiative	Case Studies
IN5.1 <ul style="list-style-type: none"> Work with employees to regularly review and update individualised career development plans that align with their aspirations and the company's goals Allocate resources for ongoing education and training programmes that enable employees to enhance their skills and stay in line with sector developments Encourage internal mobility to expose employees to different aspects of the business, broadening their skill sets Partner with universities, vocational schools, and sector associations to offer tailored training programmes that meet the specific needs of the GBS sector 	Infosys, a global leader in consulting, technology, and outsourcing solutions, recognises the need to retain and develop high-skilled talent in its GBS centres. To achieve this, Infosys created a comprehensive Learning and Development (L&D) ecosystem⁵² that included continuous learning opportunities, leadership development programmes, and partnerships with leading universities for advanced courses.
Benefits	<ol style="list-style-type: none"> Employees will be more engaging in ongoing learning, increase job satisfaction and lower retention Employees gaining relevant skills in AI, digital technologies, and green practices will better align their expertise with sector demands, enhancing their value and career prospects Relevant and effective training programmes will strengthen workforce capabilities

51. South Korea, *National Competency Standards*, <<https://www.ncs.go.kr/index.do>>

52. Infosys, *Learning and Development Avenues*, <<https://www.infosys.com/careers/graduates/learning-development.html>>

IN6 Foster Stronger Collaboration with Academia to Develop Programmes that Meet Current Market Demands and Drive Innovation

Sector players should actively seek to foster stronger collaboration with academic institutions to develop programmes that are closely aligned with current market demands and encourage innovation. This requires a strategic partnership approach, where sector players and academia work together to identify skills gaps, design relevant curricula, and create opportunities for practical experience. This initiative aims to ensure that the education system produces graduates with skills and knowledge that are immediately applicable and valuable in the workplace. This will create a pipeline of qualified talents, address the gap between academic programmes and workforce requirements and keep the academic curricular up to date with rapidly changing technologies and practices.

Initiative	Case Studies
IN6.1 <ul style="list-style-type: none"> Create formal partnerships with universities and colleges to facilitate ongoing dialogue and collaboration on curriculum development and research initiatives Work with academic partners to design curricula that incorporate the latest industry trends, technologies, and skills requirements Provide students with hands-on work experience through internships and cooperative education programmes that complement their academic learning Fund academic research projects that align with industry needs, fostering innovation and providing real-world applications for academic theories Encourage sector experts to participate in academic settings as guest lecturers or workshop facilitators to share practical insights and knowledge 	<p>Recognising a skills gap in emerging technologies like AI, cloud computing, and cybersecurity, IBM partnered with Northeastern University⁵³ to design specialised courses and certifications that focus on practical, industry-relevant skills. The curriculum was developed with input from IBM's technical experts to ensure alignment with current market demands. This partnership resulted in a steady pipeline of workforce-ready graduates who were well-equipped with the skills needed by IBM and the broader tech industry. It also fostered innovation by allowing students to work on real-world projects and research initiatives.</p>
Benefits <ol style="list-style-type: none"> Strong sector-academia collaboration can drive economic growth by creating a more skilled workforce and fostering innovation Equipping graduates with in-demand skills helps close the skills gap, improving their employability and meeting workforce demand 	

53. Northeastern University, *Northeastern University and IBM partners first to turn digital badges into academic credentials for learners worldwide*, 25 September 2017, <<https://news.northeastern.edu/2017/09/25/northeastern-university-and-ibm-partnership-first-to-turn-digital-badges-into-academic-credentials-for-learners-worldwide/>>

Academia

IN7

Partner with Sector Experts to Incorporate Real-world Practices into the Curriculum and Syllabus

Academia needs to actively seek partnership with sector experts to ensure that educational content is aligned with current sector standards. This collaboration enhances the relevance of the curriculum and syllabus, effectively preparing students with the knowledge and skills needed for the workforce. Consequently, bridging the gap between knowledge and real-world experience.

Initiative	Case Studies
IN7.1 <ul style="list-style-type: none"> Integrate sector guest lecturers, internships with sector players, and sector projects into the curriculum to provide students with hands-on experience and direct sector exposure Academic institutions and sector experts should collaborate to co-create and revise course materials, incorporating practical insights, case studies based on relevant skill set Establish advisory boards consisting of sector experts to provide ongoing guidance and feedback on curriculum design and syllabus content Academia to implement internships with extensive timelines, to be undertaken by students after the final semester of their final year before graduation; allowing interns to continue their employment or learning with the employer without disruption, in contrast to internships completed a year or a semester before graduation 	<p>The University of Waterloo is renowned for its co-op programmes. The University of Waterloo's Co-op and Career Action⁵⁴ integrates work experience into academic studies. Students alternate between academic terms and work terms, gaining practical experience while earning their degree. The university collaborates with over 7,000 employers across various sectors</p>
Benefits <ol style="list-style-type: none"> Students who graduate with real-world experience can transition into the workforce more smoothly Students will gain knowledge of relevant and current material, aligning their education more closely with workforce needs Advisory boards provide guidance, helping institutions adapt to sector needs and maintain high-quality education 	

54. University of Waterloo, *Co-Op, Career and Entrepreneurship*, <<https://uwaterloo.ca/students/co-op-career-and-entrepreneurship-0>>

IN8 Improve the Quality of Educators Through Continuous Advanced Sector Training and Access to Updated Resources

Academia should prioritise improving the quality of educators through continuous professional development in advanced sector-specific training. Educators may lack opportunities for specialised professional development and face challenges in accessing most current resources to keep up with sector advancements and trends. This initiative is designed to keep educators at the forefront of their fields, enabling them to deliver education that is both academically rigorous and sector relevant. Investing in the professional development of academics would facilitate educational institutions to foster an environment of excellence and innovation.

Initiative	Case Studies
IN8.1 <ul style="list-style-type: none"> Facilitate partnerships with sector leaders to provide educators with opportunities for practical experience and insight into the latest industry practices and challenges Create structured programmes that offer advanced training in both subject matter expertise and pedagogical skills, tailored to the needs of educators in the GBS sectors Establishing channels for regular feedback on curriculum relevance and teaching effectiveness can help educators fine-tune their approaches to meet industry standards 	The Center for the Advancement of Teaching (CAT) at University of California, Los Angeles (UCLA)⁵⁵ offers a range of professional development programmes for faculty members. The centre provides workshops, seminars, and courses focused on pedagogical skills, technological advancements, and research methodologies. Additionally, the centre also provides access to resources such as teaching tools and research databases.
Benefits	Benefits
<ol style="list-style-type: none"> Educators will see a growth in their professional capabilities as they gain the latest sector-relevant knowledge and skills Educators' teaching quality improves as they are equipped with the latest resources to support their teaching 	<ol style="list-style-type: none"> A national GBS curriculum with a focus on advanced technologies such as AI, digitalisation, and soft skills prepares students to compete in the global marketplace The emphasis on continuous learning within the curriculum instil a mindset of lifelong learning in students, which is essential in a rapidly changing business environment within the GBS sector

IN9 Develop a National GBS Curriculum Focusing on AI, Digital, and Soft Skills Development

Academia to develop a national Global Business Services curriculum focusing on AI, Digitalisation, and Soft Skills Development to address the disconnect between taught skills in academic institutions with the skills needed in the evolving industry. The GBS sector requires professionals who can adapt to the evolving challenges and technological advancements. The collaboration between the academia and sector players will ensure the taught curriculum is comprehensive, current, and aligned with the needs of the global market thus, ensuring a steady pipeline of qualified professionals.

Initiative
IN9.1 <ul style="list-style-type: none"> Establish committees with representatives from academia and industry to develop and regularly update the GBS curriculum Work with educational policymakers to ensure that the national GBS curriculum receives the necessary support and recognition Facilitate project-based learning by providing real-world challenges and case studies for students to work on
Benefits

55. University of California Los Angeles, Center for the Advancement of Teaching, <<https://teaching.ucla.edu/faculty-programs/>>

Training Providers

IN10 Create Relevant Training Content by Partnering with Sector Experts with Regular Updates to Meet Current Market Demands

Training providers need to collaborate closely with sector players to develop and regularly update practical training content tailored to sector-specific operational needs. Conventional training programmes often rely on a fixed syllabus and can quickly become outdated to address the specialised skills required in the evolving GBS sector. This initiative aims to foster strong partnerships between training providers and sector players, leading to dynamic and relevant training programmes. These programmes will be designed to address existing skill gaps and align with the GBS sector's current operational demands, particularly in crucial areas such as AI, Digital, and Green Economy skills such as data analytics and sustainable business strategies.

Initiative	Case Studies
IN10.1 <ul style="list-style-type: none"> Training providers can refer to the on-demand skills analysis listed in Chapter 4 of this report to identify potential new training courses Training institution should conduct training gaps analysis based on current training programmes and refine existing training offerings On an ongoing basis, training providers should ensure their training content is kept up to date with the latest technology and sustainability developments Create advisory panels composed of sector experts, business leaders, and retail associations to provide guidance on curriculum development. 	<p>American training platform, Coursera⁵⁶, collaborates with leading universities and industry experts to create and update its training programmes, including professional certificates and specialisations. Their content is regularly updated to reflect the latest industry standards and technologies. Partnerships with companies like Google and IBM ensure that the training is aligned with current market needs.</p> <p>India's Simplilearn⁵⁷, partners with industry leaders and certification bodies to create and update its training programmes. Their courses are designed to meet current market demands and include regular updates based on feedback from sector experts and changes in industry standards.</p>
Benefits	
<ol style="list-style-type: none"> Greater accessibility and flexibility encourage individuals to engage in learning, providing them with easy access to high-quality materials and courses at any time Training programmes tailored to industry needs will enable the workforce and the public to acquire relevant skills for the sector. 	

56. Coursera, <<https://www.coursera.org/>>

57. Simplilearn, <<https://www.simplilearn.com/>>

IN11 Improve Training Delivery and Effectiveness by Engaging Additional Reputable and Certified Trainers

Training institutions need to engage with reputable training providers, particularly those with expertise in AI, Digitalisation, and Green Economy practices – areas that are increasingly vital to the GBS sector. Outdated or generic training content, a shortage of credible trainers, and the lack of regular evaluation to ensure trainers maintain relevance are challenges that this initiative aims to address. Improving the quality of training will ensure that the workforce will be equipped with the latest skills and knowledge, fostering a more competent and future-ready workforce.

Initiative	Case Studies
IN11.1 <ul style="list-style-type: none"> Establish committees with representatives from academia and industry to develop and regularly update the GBS curriculum Work with educational policymakers to ensure that the national GBS curriculum receives the necessary support and recognition Facilitate project-based learning by providing real-world challenges and case studies for students to work on 	<p>Singapore's Train the Trainer (TTT) Programme⁵⁸ is designed for workplace managers, supervisors and others in Singapore who are responsible for training, coaching, and assessing employees, while also addressing the organisation's educational needs.</p> <p>Example of TTT module:</p> <ul style="list-style-type: none"> Prepare and Conduct Coaching: This module provides the knowledge and skills needed to prepare and conduct on-the-job training within an organisation. Design and Develop Training Design and Develop Training Curriculum: This module provides an overview of identifying training needs and creating
Benefits	
<ol style="list-style-type: none"> Training delivery will stay up-to-date with the latest retail sector trends and requirements Learners will receive high-quality, sector relevant education including AI/ Digital and Green practices related to the GBS sector Training delivery will continuously improve, maintaining high standards through regular evaluation and ongoing refinements 	

58. Train the Trainer Programme , <<https://www.ite.edu.sg/courses/part-time-courses/train-the-trainer>>

Taking into account the Initiatives proposed, moving forward, these are the

Top 5 Initiatives

needed to kickstart the workforce transformation towards AI, Digital, and Green Economy to ensure their successful implementation

1**GOVERNMENT**

Conduct a comparative analysis of existing AI governance models and adoption frameworks internationally to identify best practices and lessons learned to enable sector players to implement robust and effective AI strategies that align with global standards and enhance competitive advantage

2**GOVERNMENT**

Establish grant schemes that provide direct financial support for research and development, pilot projects, and scaling of innovative AI, Digital and ESG solutions to empower sector players to accelerate innovation, drive sustainable growth, and maintain a competitive edge in the evolving market landscape

3**INDUSTRY PLAYERS**

Encourage sector experts to participate in academic settings as guest lecturers or workshop facilitators to share practical insights and knowledge to enriching the learning experience for students and bridging the gap between theoretical concepts and real-world applications

4**ACADEMIA**

Facilitate project-based learning by providing real-world challenges and case studies for students to work on, equipping them with practical skills and hands-on experience that prepare them for success in their future careers

5**TRAINING PROVIDERS**

On an ongoing basis, training providers should ensure their training content is kept up to date with the latest technology and sustainability developments ensuring that learners acquire relevant skills that meet current industry demands and contribute to sustainable progress

Conclusion

The GBS sector is at a pivotal point of transformation, driven by rapid technological advancements, particularly in AI and digital technologies, as well as the growing emphasis on sustainability through Green Economy. As these trends continue to reshape the industry, Malaysia's GBS sector stands as a critical enabler for enterprise-wide digital transformation, driving innovation, efficiency, and value creation.

The impact study conducted as part of this report reveals significant shifts within the GBS workforce. **Out of 75 roles assessed, 24% are classified as highly impacted by trends** such as AI and digitalisation, requiring immediate upskilling and potential role transitions. **Another 65% of roles face medium-level impact**, where evolving skill requirements are necessary to keep pace with industry changes. In addition, **five (5) emerging roles have been identified as critical to the future of the GBS sector**, with new demands for expertise in AI, machine learning, and sustainability. These findings underscore the urgency for targeted workforce development strategies to ensure that Malaysia's GBS sector can continue to thrive in an increasingly automated and environmentally conscious global market.

GBS organisations have transitioned from a traditional back-office support function to becoming strategic enablers integrated deeply within core business operations. With Malaysia positioning itself as a global hub for GBS, the sector is expected to experience continuous growth, with projected revenue increases and significant investments in digital technologies. However, this growth brings both opportunities and challenges. AI and automation offer vast potential to enhance productivity and operational efficiency, but also require organisations to address workforce reskilling, data governance, and integration with emerging sustainability goals. At present, some

GBS organisations are still busy with getting the fundamentals right and building a solid foundation. At the same time, many leading enterprises have already positioned GBS as their “digital transformation engine”, with the aim of delivering transformational capabilities and long-term value for the business centrally from GBS. The next wave of GBS will accelerate digital capabilities, work within a constantly evolving environment and provide resiliency, as well as push the boundaries of innovation.

To leapfrog to the next wave of GBS, leading organisations are **expanding their remit and capabilities to deliver new sources of value through four (4) key levers of action: elevating the user experience to be more streamlined and intuitive; driving digital capabilities and innovation at scale to improve productivity and impact; enhancing end-to-end process performance to increase credibility; and developing compelling branding to attract and retain top talent.** To achieve this would require transformational initiatives, alongside deep change management effort. In response to these challenges, **the 11 strategic initiatives proposed, focusing on collaboration between government, industry players, academia, and training providers**, aim to build a future-ready workforce, foster innovation, and align Malaysia's GBS sector with global trends.

In conclusion, the future of GBS in Malaysia lies in leveraging AI, digitalisation and sustainability trends to not only enhance its global competitiveness but also contribute to the broader goals of economic growth and environmental stewardship. By embracing these strategies, Malaysia's GBS sector will continue to play a key role in shaping the future of work, fostering innovation, and driving long-term value for businesses both locally and globally.

Key trends impacting existing roles:**Artificial Intelligence****Digital****Green Economy**

The study identified **75 job roles** that will be highly impacted by these trends, along with **five (5) emerging roles**, and **16 in-demand skills** essential for future advancements.

11 initiatives have been identified for implementation across the talent ecosystem

MyMAHIR Future Skills Talent Council (FSTC) has been set up to prepare for these changes

Validation Workshop



Abbreviations

AI	Artificial Intelligence	ITO	Information Technology Outsourcing
AP	Accounts Payable	KPO	Knowledge Process Outsourcing
APAC	Asia-Pacific	L&D	Learning and Development
AR	Accounts Receivable	MDEC	Malaysia Digital Economy Corporation
ASEAN	Association of Southeast Asian Nations	ML	Machine Learning
AWS	Amazon Web Services	MNC	Multinational Corporation
BP	British Petroleum	MyNSR	Malaysia National Skills Registry
BPO	Business Process Outsourcing	NCS	National Competency Standards (South Korea)
CAGR	Compound Annual Growth Rate	NETR	National Energy Transition Roadmap
CAT	The Centre for the Advancement of Teaching (UCLA)	NIMP 2030	New Industrial Master Plan
CRM	Customer Relationship Management	NIS	National Innovation Strategy (UAE)
CSR	Customer Services Representatives	NLP	Natural Language Processing
DBA	Database Administrator	O2C	Order-to-cash
DE&I	Diversity, Equity and Inclusion	OCR	Optical Character Recognition
DOSM	Department of Statistics Malaysia	OCR	Optical Character Recognition
E2E	End-to-End	OMS	Order Management Systems
ESG	Environment, Social and Governance	P2P	Procure-to-Pay
EU	European Union	PDPA	Personal Data Protection Act
F&A	Finance and Accounting	PDPC	Personal Data Protection Commission
FDI	Foreign Direct Investment	PIC	Productivity and Innovation Scheme (Singapore)
GBS	Global Business Services	PIKOM	National ICT Association of Malaysia
GDP	Gross Domestic Product	PLC	Public Listed Company
GDPR	General Data Protection Regulation	R&DTI	Research and Development Tax Incentive (Australia)
GenAI	Generative AI	RMKe-12	Twelfth Malaysia Plan
GHG	Greenhouse Gas Emissions	ROI	Return on Investment
HP	Hewlett-Packard	RPA	Robotic Process Automation
HR	Human Resources	SME	Small and Medium Enterprises
HRIS	Human Resource Information System	SQL	Structured Query Language
HSBC	Hong Kong and Shanghai Banking Corporation	SSG	SkillsFuture Singapore
HSE	Health, Safety, and Environment	SSON	Shared Services and Outsourcing Network
IBM	International Business Machines Corporation	TTT	Train the Trainer Programme (Singapore)
ICT	Information and Communication Technology	UAE	United Arab Emirates
IMDA	Infocomm Media Development Authority Singapore	UCLA	University of California, Los Angeles
IoT	Internet of Things	UK	United Kingdom
IR4.0	The Fourth Industrial Revolution	US	United States of America

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