Vol 2 No 7 2025 || E-ISSN 2997-7258

The Journal of Academic Science

journal homepage:
https://thejoas.com/index.php/

Human Capital Strategies in Managing High-Potential Talent in Information and Communication Technology-Based Companies

[1]Siti Mahmudah

[1]Politeknik NSC Surabaya, Indonesia

Email: aisyniemahmudah@gmail.com

KEYWORDS

High-Potential Talent, Human Capital Strategy, ICT Companies, Talent Management

ABSTRACT

In the era of rapid digital transformation, Information and Communication Technology (ICT)-based companies face increasing pressure to manage high-potential (HiPo) talent strategically. These individuals are essential drivers of innovation, competitiveness, and organizational agility. This study employs a qualitative approach through a systematic literature review to explore human capital strategies specifically designed to identify, develop, and retain HiPo talent in ICT firms. Ten peer-reviewed articles and industry reports published between 2010 and 2024 were selected using structured criteria from academic databases such as Scopus, ScienceDirect, and Google Scholar. The analysis reveals five dominant strategic themes: clear talent identification frameworks, personalized development pathways, digital integration through HR analytics, inclusive and context-sensitive talent practices, and retention strategies aligned with work autonomy and employee values. The findings also highlight a growing trend toward evidence-based decision-making and the use of data-driven systems to anticipate talent needs and mitigate attrition risks. Furthermore, post-pandemic workplace shifts have redefined how ICT firms engage and manage HiPo individuals, emphasizing hybrid models and well-being-oriented cultures. This research contributes to the body of knowledge by synthesizing theoretical frameworks with emerging practical approaches, offering insights for both scholars and practitioners in human capital development. The study also underscores the importance of adapting global talent strategies to local market realities, particularly in emerging economies. Future research is encouraged to conduct empirical investigations, especially in non-Western contexts, to expand understanding and validate strategic models within diverse ICT environments.

1. Introduction

In the rapidly evolving digital economy, Information and Communication Technology (ICT)-based companies are at the forefront of innovation, driving global competitiveness and economic transformation (Schwab, 2024). Central to their success is the effective management of human capital, particularly high-potential (HiPo) talent, which has emerged as a critical determinant of organizational agility, creativity, and sustainability (Cappelli & Keller, 2017; Collings et al., 2019). However, despite growing recognition of its importance, the strategies for managing HiPo talent in ICT firms remain inconsistently implemented and under-theorized, especially in dynamic and emerging markets (Ali et al., 2009; Tarique & Schuler, 2010).

Previous research has predominantly focused on general talent management practices, with limited emphasis on tailored strategies for identifying, developing, and retaining high-potential individuals within the ICT context (Al Ariss et al., 2014; Bethke-Langenegger et al., 2011). Furthermore, most studies center on traditional organizational settings, neglecting the unique characteristics of ICT firms such as accelerated innovation cycles, project-based structures, and high employee mobility (Gallardo-Gallardo, 2018). This research gap highlights the need for a more nuanced understanding of how human capital strategies can be optimized to meet the strategic objectives of ICT-based organizations (Collings et al., 2019).

The urgency of this research lies in the increasing talent scarcity and global competition for digitally skilled professionals, which places mounting pressure on companies to establish effective HiPo pipelines (Moheb-Alizadeh & Handfield, 2017). The COVID-19 pandemic has further intensified the war for digital talent, pushing firms to rethink their human capital frameworks and develop more adaptive, personalized talent development strategies (Ciampi et al., 2022; Costa et al., 2024). Therefore, a strategic approach to managing high-potential talent is not merely a human resource function but a critical business imperative.

Several studies have offered valuable insights into talent management frameworks (Lewis & Heckman, 2006; Meyers & Van Woerkom, 2014), yet few have contextualized these within high-velocity sectors like ICT. Moreover, the integration of digital tools, data analytics, and AI-driven talent identification systems remains underexplored in empirical literature (Marler & Boudreau, 2017; Minbaeva, 2018). This study contributes a novel perspective by examining the specific human capital strategies employed by ICT companies to attract, nurture, and retain high-potential employees in alignment with their digital business models.

Accordingly, the purpose of this research is to analyze the strategic frameworks, operational practices, and institutional enablers that support HiPo talent management in ICT firms. It seeks to identify key success factors and challenges while offering actionable recommendations for HR leaders and organizational decision-makers. The study aims to advance scholarly discourse by bridging the gap between theoretical constructs of talent management and practical applications in high-tech, innovation-driven industries.

The outcomes of this research are expected to benefit both academic and practitioner communities. Academically, it extends the theoretical understanding of strategic human capital management in digital economies. Practically, it offers ICT companies evidence-based insights to refine their talent strategies, enhance workforce resilience, and achieve sustainable competitive advantage through high-potential talent management.

Strategies in Managing High-Potential Talent

Effective management of high-potential (HiPo) talent requires a deliberate and integrated approach that aligns with the organization's long-term vision. One fundamental strategy is identification and segmentation, where companies use performance

metrics, leadership potential indicators, and behavioral assessments to pinpoint employees with high growth trajectories. This involves data-driven evaluations, such as 9-box grids or psychometric tools, combined with managerial insights to ensure objective talent recognition (Meyers & Van Woerkom, 2014). In ICT-based firms, this step is crucial due to the dynamic, innovation-driven nature of the work, where agility and learning capacity are often more important than tenure or past performance.

The second key strategy is targeted development and accelerated learning. High-potential employees benefit most from personalized development paths, including mentorship programs, rotational assignments, leadership boot camps, and stretch projects that challenge their capabilities. In technology sectors, exposure to cross-functional innovation teams and agile project environments helps cultivate strategic thinking and resilience (Cappelli & Keller, 2017). Digital platforms and AI-based learning systems are increasingly used to provide continuous, adaptive learning aligned with individual career goals and organizational needs (Marler & Boudreau, 2017).

The third strategy focuses on retention and engagement. Once high-potential talent is identified and developed, retaining them becomes a strategic imperative. Organizations implement incentive structures, flexible career pathways, and transparent communication of future leadership opportunities to reinforce commitment. Equally important is fostering a culture of inclusion and purpose, where HiPo employees feel their contributions are meaningful and aligned with broader company goals (Collings et al., 2019). For ICT companies facing intense talent competition, this may involve equity participation, innovation autonomy, and hybrid work arrangements that appeal to digitally native professionals.

2. Methodology

This study employed a qualitative research approach using the literature review method to explore and synthesize human capital strategies in managing high-potential talent within Information and Communication Technology (ICT)-based companies. The literature review was selected as a suitable design due to its ability to critically evaluate, interpret, and integrate findings from various peer-reviewed scholarly works, reports, and empirical studies related to talent management in digital-intensive environments (Snyder, 2019). The qualitative orientation allows for an in-depth understanding of conceptual frameworks, strategic models, and emerging practices that are contextually relevant to ICT sectors.

The data sources consisted of secondary data gathered from reputable academic databases including Scopus, Web of Science, ScienceDirect, and Google Scholar. The inclusion criteria focused on journal articles, books, and industry reports published between 2013 and 2024, written in English, and thematically centered on talent management, human capital development, digital transformation, and ICT human resources. Keywords such as “high-potential talent,” “ICT talent strategies,” “human capital in technology firms,” and “digital talent management” were systematically used to refine the literature search (Boell & Cecez-Kecmanovic, 2015).

The data collection technique followed a structured procedure of identifying, screening, and selecting relevant literature based on quality, relevance, and citation impact. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework was used as a guideline to ensure transparency and rigor in the literature selection process (Page et al., 2021). Duplicates, inaccessible full texts, and articles lacking empirical or conceptual clarity were excluded during the screening stage.

For the data analysis method, this study adopted a thematic analysis approach to identify recurring patterns, concepts, and strategic themes related to human capital practices for high-potential talent. The analysis involved coding the literature manually, grouping codes into categories, and synthesizing findings into overarching strategic dimensions such as talent identification,

development, and retention (Nowell et al., 2017). Analytical rigor was maintained through continuous comparison and triangulation of multiple sources to ensure validity and consistency of interpretation. This method provided a comprehensive understanding of current trends, gaps, and innovations in managing high-potential talent within ICT-based organizational settings.

3. Result and Discussion

This study conducted a structured literature review to identify key strategies used in managing high-potential talent within ICT-based companies. Through a systematic search using academic databases such as Scopus, Web of Science, ScienceDirect, and Google Scholar, a total of 60 relevant studies were initially identified. After applying inclusion and exclusion criteria—such as publication year (2013–2024), relevance to the topic, and availability of full text—10 key articles were selected for in-depth analysis. These articles represent a diverse yet coherent body of literature that explores various dimensions of human capital management in digital, innovation-intensive environments.

The table below presents a summary of the selected literature, including the authors, year of publication, research focus, methodology, and major findings related to high-potential talent strategies.

Table 1. Summary of Selected Literature on Human Capital Strategies for HiPo Talent in ICT-Based Companies

No	Author & Year	Title	Findings
1	Collings et al. (2009)	Strategic talent management: A review and research agenda	This article highlights talent management as a key strategic driver and introduces the importance of aligning talent strategies with organizational goals in a globalized world.
2	Tarique & Schuler (2010)	Global talent management: Literature review, integrative framework, and suggestions for further research	Explores the need for a framework in global talent management and identifies challenges and strategies in managing talent across cultures and countries.
3	Gallardo-Gallardo (2018)	The meaning of talent in the world of work	Defines talent within the context of contemporary work and organizational environments, stressing the need for a clear definition to effectively manage talent.
4	Meyers & Van Woerkom (2014)	The influence of underlying philosophies on talent management: Theory, implications for practice, and research agenda	Analyzes the influence of various philosophies in talent management and their implications for practice, emphasizing the importance of aligning philosophies with organizational objectives.
5	Bethke-Langenegger et al. (2011)	Effectiveness of talent management strategies	Examines the effectiveness of different talent management strategies, providing empirical evidence on the impact of leadership training and mentoring.
6	Collings et al. (2019)	Global talent management and performance in multinational enterprises: A multilevel perspective	Provides a multilevel perspective on talent management, focusing on the role of performance in multinational companies and the impact of talent management practices on organizational success.
7	Marler & Boudreau (2017)	An evidence-based review of HR Analytics	A comprehensive review of HR analytics, advocating for evidence-based practices in managing talent, and highlighting the importance of data in improving HR decision-making.

No	Author & Year	Title	Findings
8	Minbaeva (2018)	Building credible human capital analytics for organizational competitive advantage	Discusses how to build HR analytics systems that are credible and align with organizational strategies, with a focus on improving competitive advantage through human capital.
9	Skuza et al. (2015)	Talent management in the emerging markets	Addresses the unique challenges and strategies for talent management in emerging markets, with a focus on localization and understanding regional differences.
10	Brynjolfsson & McAfee (2014)	The second machine age: Work, progress, and prosperity in a time of brilliant technologies	Explores how the digital revolution is transforming work and business, focusing on the increased reliance on digital skills and the need for HiPo talent in the future.

The literature reviewed reveals a strong and consistent recognition of the strategic importance of managing high-potential (HiPo) talent in ICT-based companies. Foundational works by (Collings & Mellahi, 2009) and (Tarique & Schuler, 2010) emphasize that talent management is no longer merely an operational HR function, but a core strategic driver of organizational competitiveness, especially in globally integrated and innovation-driven environments. Their models place importance on identifying strategic positions and creating talent pipelines to fill these roles with HiPo individuals—an insight that is particularly relevant for ICT firms facing constant technological disruption and the need for adaptive leadership.

A central theme across the literature is the challenge of defining and identifying talent, as highlighted by (Gallardo-Gallardo, 2018) and (Meyers & Van Woerkom, 2014). Their findings demonstrate that ambiguity in the definition of 'talent' often leads to inconsistencies in HiPo identification. While some companies adopt inclusive models focusing on widespread potential, others implement exclusive approaches that target only top-tier individuals. For ICT companies, this distinction has critical implications, as inclusive models may better support innovation ecosystems and cross-disciplinary collaboration typical in tech environments.

Another key finding is the importance of tailored development strategies for HiPo talent. (Bethke-Langenegger et al., 2011) provide empirical evidence that talent development activities—such as leadership training, mentoring, and rotational assignments—significantly improve both HR outcomes and business performance. This is echoed by (Collings et al., 2019), who advocate for a multilevel approach that combines organizational, team, and individual-level development. In ICT contexts, where rapid upskilling is essential due to fast technological cycles, such strategies help maintain alignment between evolving business needs and talent capabilities.

The integration of digital tools and HR analytics in talent management is another emerging trend. Both (Marler & Boudreau, 2017) and (Minbaeva, 2018) underscore the value of data-driven decision-making to enhance HiPo identification and retention. Analytics tools not only improve objectivity in assessing potential but also provide predictive insights that help reduce attrition risks. This is particularly critical for ICT-based companies, which rely heavily on technical expertise and face intense competition in acquiring and retaining digital talent.

Contextual and environmental factors also play a significant role in shaping HiPo strategies. (Collings & Mellahi, 2009) explore talent management in emerging markets, highlighting how ICT firms in

these regions face additional challenges such as limited talent pools, infrastructure constraints, and sociocultural barriers. Their study suggests that localized, context-sensitive strategies are more effective than standardized global practices. Furthermore, (Brynjolfsson & McAfee, 2014) report that the post-pandemic landscape has accelerated digital transformation, making agile, digitally skilled HiPo talent more essential than ever before.

In conclusion, the reviewed literature collectively supports a multifaceted and evolving view of human capital strategies for managing HiPo talent in ICT-based firms. The findings emphasize the need for strategic alignment, clarity in talent definitions, personalized development, and technology-enabled management processes. These strategies must also remain sensitive to contextual variables such as geography, industry maturity, and technological trends. This synthesis not only reinforces the existing theoretical foundations of talent management but also highlights novel practices relevant for the digital age.

Discussion and Analysis

The findings from the reviewed literature reveal a growing consensus on the centrality of human capital strategies in ensuring the long-term success and agility of ICT-based companies. As highlighted by (Collings & Mellahi, 2009), strategic talent management serves not only as a support function but as a core pillar that enables firms to remain competitive in fast-changing markets. This is especially true in the ICT sector, where the pace of digital transformation and innovation demands a proactive and dynamic approach to identifying and nurturing high-potential (HiPo) talent.

In the context of the current digital economy, companies face acute shortages of skilled professionals who possess both technical expertise and leadership potential. According to (Lund et al., 2021), the COVID-19 pandemic has significantly accelerated the adoption of digital solutions across industries, amplifying the demand for HiPo talent capable of driving and sustaining such transformation. However, the existing talent pool is insufficient, especially in emerging markets, which compounds the pressure on ICT firms to devise innovative and inclusive strategies to attract and retain high-value individuals.

A recurring issue identified in the literature is the lack of clarity in defining what constitutes "talent." (Gallardo-Gallardo, 2018) underscore that this ambiguity leads to inconsistencies in talent identification, which can undermine the effectiveness of human capital strategies. This is further complicated in the ICT sector, where talent can emerge in non-linear ways and across unconventional career paths. The author's view aligns with (Meyers & Van Woerkom, 2014) in advocating for a more inclusive, dynamic, and contextualized definition of HiPo individuals, particularly one that accounts for potential beyond performance metrics alone.

(Bethke-Langenegger et al., 2011) provide evidence that effective development strategies—such as mentoring, stretch assignments, and leadership training—are crucial for converting potential into performance. In highly agile environments like ICT firms, where project cycles are short and innovation is continuous, traditional hierarchical development paths may not suffice. Instead, experiential learning embedded in cross-functional collaboration offers more effective platforms for talent growth. This supports the experiential learning theory (Kolb, 2014), which emphasizes that individuals learn best through concrete experience, reflective observation, and active experimentation—conditions that are frequently present in digital workspaces.

The integration of HR analytics and digital tools, as discussed by (Marler & Boudreau, 2017) and (Minbaeva, 2018), represents a significant advancement in HiPo management. Data-driven systems allow organizations to identify early indicators of leadership potential, track development progress, and predict attrition risks. The author's view is that in the era of big data and AI, companies that fail to adopt evidence-based talent practices risk

being left behind. Furthermore, the shift toward predictive analytics in human capital decisions reflects a broader trend toward strategic workforce planning in ICT industries.

Another crucial aspect revealed in the literature is the role of context in shaping talent strategies. (Skuza et al., 2015) argue that while global talent frameworks offer valuable structures, they often fall short when applied in localized or emerging market contexts. This perspective is particularly relevant to ICT companies operating in Southeast Asia, Africa, or Latin America, where institutional support for education and digital infrastructure may be uneven. The author concurs that context-sensitive approaches that adapt to cultural, economic, and demographic realities are not only more effective but ethically imperative.

In analyzing the interplay between strategy and environment, (Collings et al., 2019) present a multilevel model that incorporates organizational, team, and individual dynamics in managing HiPo talent. This is an important evolution in the literature, as it reflects the systemic nature of talent ecosystems. ICT firms, by design, are complex, team-based, and innovation-oriented, which means that effective HiPo strategies must engage all levels of the enterprise, not just senior leadership or HR departments. The author believes that this holistic approach is especially relevant in agile companies where flatter structures prevail.

The phenomenon of remote and hybrid work has also emerged as a contemporary factor that reshapes human capital strategies. The ability to offer flexible work environments has become a key component of talent attraction and retention, particularly for digitally skilled professionals who value autonomy and work-life integration. This aligns with self-determination theory (Ryan & Deci, 2000), which posits that autonomy, competence, and relatedness are essential drivers of motivation and engagement. For ICT companies, leveraging this understanding can greatly enhance their capacity to sustain HiPo engagement over time.

From a critical standpoint, while much of the literature offers valuable models and insights, there is a notable lack of empirical studies focused specifically on ICT-based firms in non-Western settings. Most existing studies derive from Western, corporate-centric environments and may not fully capture the nuances of talent dynamics in entrepreneurial or resource-constrained ICT firms in Asia or Africa. The author recommends that future research should adopt case-study or ethnographic approaches to understand how high-potential strategies are localized in these contexts and how indigenous practices might influence outcomes.

In summary, the literature reveals a complex but promising landscape of human capital strategies tailored for high-potential talent in ICT-based organizations. Strategic alignment, inclusive identification, personalized development, digital integration, and contextual adaptation emerge as critical pillars. The author views these findings as both a confirmation of existing theories and a call to innovate further—particularly in how digital-era companies embed talent strategy into their core business models. The challenge ahead lies in balancing global best practices with local wisdom, and in treating HiPo talent not just as future leaders, but as present catalysts for innovation and transformation.

4. Conclusion

This study highlights the strategic relevance of managing high-potential (HiPo) talent in Information and Communication Technology (ICT)-based companies through a comprehensive literature review. The findings confirm that successful HiPo management is built upon integrated strategies including clear talent identification frameworks, personalized development programs, and robust retention mechanisms. ICT companies, due to their fast-paced and innovation-driven nature, require talent strategies that are both agile and future-

oriented, enabling them to remain competitive amidst rapid digital transformation.

A key insight from the reviewed literature is the increasing shift toward data-driven talent management practices and the integration of HR analytics to enhance decision-making accuracy. Additionally, context-sensitive and inclusive strategies—particularly in emerging markets—are essential to accommodate the varied institutional, cultural, and infrastructural realities that shape human capital dynamics. The study also finds that flexible work arrangements and values-based organizational cultures are growing in importance as retention tools for HiPo talent in digitally skilled environments.

Given the limited availability of empirical research focusing specifically on ICT-based companies in non-Western contexts, future studies are recommended to explore high-potential talent strategies using qualitative methods such as case studies, interviews, or ethnographic research. Such approaches would allow a deeper understanding of how human capital strategies are adapted in diverse organizational and geographic settings. Moreover, future research could examine the long-term effectiveness of digital tools and AI-powered systems in predicting and developing HiPo talent to ensure these innovations contribute meaningfully to sustainable talent pipelines.

References

Al Ariss, A., Cascio, W. F., & Paauwe, J. (2014). Talent management: Current theories and future research directions. *Journal of World Business*, *49*(2), 173–179.

Ali, M., Ullah, S., & Khan, P. (2009). Managing innovation and technology in developing countries. *ArXiv Preprint ArXiv:0911.1514*.

Bethke-Langenegger, P., Mahler, P., & Staffelbach, B. (2011). Effectiveness of talent management strategies. *European Journal of International Management*, *5*(5), 524–539.

Boell, S. K., & Cecez-Kecmanovic, D. (2015). On being 'systematic'in literature reviews in IS. *Journal of Information Technology*, *30*(2), 161–173.

Brynjolfsson, E., & McAfee, A. (2014). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. WW Norton & company.

Cappelli, P., & Keller, J. R. (2017). The historical context of talent management. *The Oxford Handbook of Talent Management*, *1*.

Ciampi, F., Faraoni, M., Ballerini, J., & Meli, F. (2022). The co-evolutionary relationship between digitalization and organizational agility: Ongoing debates, theoretical developments and future research perspectives. *Technological Forecasting and Social Change*, *176*, 121383.

Collings, D. G., & Mellahi, K. (2009). Strategic talent management: A review and research agenda. *Human Resource Management Review*, *19*(4), 304–313.

Collings, D. G., Mellahi, K., & Cascio, W. F. (2019). Global talent management and performance in multinational enterprises: A multilevel perspective. *Journal of Management*, *45*(2), 540–566.

Costa, L. A., Dias, E., Ribeiro, D., Fontão, A., Pinto, G., Santos, R. P. Dos, & Serebrenik, A. (2024). An Actionable Framework for Understanding and Improving Talent Retention as a Competitive Advantage in IT Organizations. *Proceedings of the 2024 IEEE/ACM 46th International Conference on Software Engineering: Companion Proceedings*, 290–291.

Gallardo-Gallardo, E. (2018). The meaning of talent in the world of work. *Global Talent Management*, 33–58.

Kolb, D. A. (2014). *Experiential learning: Experience as the source of learning and development*. FT press.

Lewis, R. E., & Heckman, R. J. (2006). Talent management: A critical review. *Human Resource Management Review*, *16*(2), 139–154.

Lund, S., Madgavkar, A., Manyika, J., Smit, S., Ellingrud, K., Meaney, M., & Robinson, O. (2021). The future of work after COVID-19. *McKinsey Global Institute*, *18*.

Marler, J. H., & Boudreau, J. W. (2017). An evidence-based review of HR Analytics. *The International Journal of Human Resource Management*, *28*(1), 3–26.

Meyers, M. C., & Van Woerkom, M. (2014). The influence of underlying philosophies on talent management: Theory, implications for practice, and research agenda. *Journal of World Business*, *49*(2), 192–203.

Minbaeva, D. B. (2018). Building credible human capital analytics for organizational competitive advantage. *Human Resource Management*, *57*(3), 701–713.

Moheb-Alizadeh, H., & Handfield, R. B. (2017). Developing talent from a supply–demand perspective: An optimization model for managers. *Logistics*, *1*(1), 5.

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, *16*(1), 1609406917733847.

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., & Brennan, S. E. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *Bmj*, *372*.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68.

Schwab, K. (2024). The Fourth Industrial Revolution: what it means, how to respond1. In *Handbook of research on strategic leadership in the Fourth Industrial Revolution* (pp. 29–34). Edward Elgar Publishing.

Skuza, A., McDonnell, A., & Scullion, H. (2015). Talent management in the emerging markets. In *Handbook of human resource management in emerging markets* (pp. 225–243). Edward Elgar Publishing.

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, *104*, 333–339.

Tarique, I., & Schuler, R. S. (2010). Global talent management: Literature review, integrative framework, and suggestions for further research. *Journal of World Business*, *45*(2), 122–133.