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Artificial Intelligence-facilitated Global Talent Management (AI-GTM) in the international hospitality industry: high time for a strategy

Discussion paper
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The international hospitality business is a rapidly growing business responsible for millions of jobs. Identifying, attracting, recruiting and retaining the human talents who excel in these jobs is a major challenge. International hospitality is not that attractive an industry to work for, and has a rather poor employer brand image in many countries around the world. In addition, the international hospitality business in general is not considered to be a forerunner in talent management and the application of technology for talent management.

Artificial Intelligence (AI) may offer solutions in two ways: by replacing human talents with AI applications that improve the guest experience and by innovating global talent management applications for hospitality businesses. When it comes to replacing human talents, robots and service automation are being adopted by the hospitality industry,ⁱⁱⁱ and smart hospitality has started to take off.^{iv} The pros and cons of this development will not be the scope of this paper. I intend to focus here on what AI can mean for GTM innovation in the international hospitality business.

Three types of AI-GTM are being introduced: transformational AI-GTM, relational AI-GTM and operational AI-GTM. However, since technology is not neutral, but technical and social at the same time, I would suggest to boards of international hospitality businesses that they develop an AI-GTM strategy first before starting to adopt separate AI-GTM applications. AI is not new, but since Silicon Valley-based tech firms and investors have promoted AI, developments seem to be speeding up, and AI expectations have increased. AI needs appropriate regulation from governments or supranational bodies, but the international hospitality business should not wait for this before starting to work on an AI-GTM strategy.

1. Introduction

Technology and human resource management (HRM) are becoming ever more integrated. Terms such as e(lectronic)-HRM^v and variations such as digital HRM have been around since the 2000s. They refer to all kinds of integrations between information technology and HRM,^{vi} whether in non- or cross-cultural settings.^{vii} This integration has resulted in more efficient HRM processes, a higher quality HRM service delivery and a better role for HRM as a strategic business partner. However, the value created could only be realized by well-managed design, implementation and organizational change processes.^{viii ix x xi xii} Technology keeps on providing new opportunities for HRM, with many challenges ahead for practice and research^{xiii}. Artificial Intelligence (AI)^{xiv} looks like the most challenging technological development for HRM and for Global Talent Management^{xv xvi}, a subset of HRM.

AI for HRM and GTM is not a new topic, though. More than 20 years ago, the *Journal of Management* published an article on AI for HRM^{xvii} with mixed results on the effects of a computer-based expert system as a decision-making aid in a job evaluation system. Even back then it was expected that computer learning would advance further and ultimately offer more and better assistance for HRM decision-making and managerial decision-making in general.

But in the past few years, it seems that AI developments have sped up, perhaps due to the fact that the Silicon Valley-based tech firms such as Neuralink (Elon Musk), Facebook, Alphabet (Google) and many other AI startups are investing aggressively in AI. One of the major aims is to find the 'holy grail' for how to read the brain and to develop a brain-computer interface (BCI).^{xviii}

Bryan Johnson, a big Silicon Valley-based AI investor, believes that AI will require an upgrade in human capabilities: "*I find it hard to imagine a world by 2050 where we have not intervened to improve ourselves.*"^{xix} In mid-2017, Elon Musk and Mark Zuckerberg ended up in a row over the impact of AI, with Musk warning about the threat AI poses to human civilization and Zuckerberg positioning himself as an AI optimist. Among experts, opinions vary about how likely it is that a high level of machine intelligence will be developed by 2040-2050, but many believe there is a 50 percent chance of it happening. By 30 years later, this may move on to superintelligence, with one-third of experts estimating that this will be 'bad' for humankind.^{xx}

Later in this paper, I will return to the different views that exist on AI as it may help the international hospitality business to analyze and decide on how to approach AI for global talent management.

2. Artificial Intelligence's promises for global talent management innovations in the international hospitality business

Artificial Intelligence (AI) holds many promises for global talent management (GTM) innovation in the international hospitality business. This business is suffering from a rather poor employer brand in many countries around the world. At the same time, the international hospitality business is growing rapidly. Technology innovations for GTM in the hospitality business are rather limited and low key. AI as 'the next big thing' offers opportunities for the international hospitality business to catch up and address the GTM challenges. However, these opportunities are associated with challenges and risks. And I believe that since AI's potential may indeed be the development of superintelligence, ethical

and regulatory considerations need to be addressed more than ever. Will AI help to identify, attract, recruit, select, and retain the talents the international hospitality business needs? Let me first briefly outline the opportunities of AI for GTM in the international hospitality industry.

Three types of AI-GTM

AI offers opportunities for GTM at all three levels: strategic, tactical, and operational. Similarly to the early 2000s when my colleagues and I were aiming to understand e(-lectronic) HRM^{xxi} and provide a roadmap and insights for practice which laid the basis for future research, I use the label transformational AI-supported GTM (for the strategic level), relational AI-supported GTM (for the tactical level), and operational AI-supported GTM (for the operational level).

- **Transformational AI-GTM (strategic level)**
 - **Relational AI-GTM (tactical level)**
 - **Operational AI-GTM**

Box 1: three types

Intelligence-supported global talent management

of Artificial

The definition of AI-GTM that I propose is *all kinds of digital technology or neural network-based intelligence with learning capabilities that an organization chooses to put in place in a consciously, ethically, and regulatory correct and focused way for the systematic identification of pivotal positions, and the development and deployment of a talent pool of high-performing, high-potential employees that contribute to the organisation's competitive advantage in the short or long term.*^{xxii}

I find it important to stress my addition of 'consiously, ethically, and regulatory correct' to the definition. The human application of information technology always carries the risk of invading privacy and compromising human integrity, but with the relatively aggressive progress pushed by Silicon Valley investments, I believe that the application of AI will be at risk of compromising human integrity and invading privacy to a greater extent than e-HRM. The application of AI for GTM needs careful consideration, and I believe that societies around the world do not have the legal framework in place to guide and regulate AI applications for GTM. This concerns the issue of allowing AI to serve GTM in new and better ways as well as avoiding the application of AI for GTM that disrespects the talents' individual integrity and rights in favour of the integrity and rights of the talent workforce as a collective.

Transformational AI-GTM

Transformational AI-GTM is applying AI to GTM in a way that is aligned with and facilitates the overall business strategy. It concerns activities regarding strategic employer branding, strategic talent forecasting, planning and development, strategic organizational change processes, strategic re-orientation, strategic competence management, and strategic knowledge management. It facilitates the creation of a strategic talent pool through a coherent set of AI applications for GTM that enables the talent to develop in line with the company's strategic choices.

Examples of specific applications of AI for transformational AI-GTM are:

- Global employer brand sentiment monitoring with web text mining
- Global hospitality talent search with knowledge-based search engines^{xxiii}
- Talent turnover predictions with artificial neural networks^{xxiv}

Relational AI-GTM

Relational AI-GTM concerns the application of AI to GTM activities at the line management or business unit level. It applies AI tools that support GTM practices at the tactical level such as the identification, attracting, recruiting, selection, socialization, development, commitment and performance management, appraisal and rewards of talent for specific positions (groups).

Examples of applications of AI for relational AI-GTM are:

- Talent resumé data acquisition with information extraction^{xxv}
- Staff rostering with genetic algorithms^{xxvi}

Operational AI-GTM

Operational AI-GTM refers to AI applications for GTM for talent self-service for personal data management, job, role or task assistance, individual competence management, and individual performance enhancement and measurement.

Examples of an application of AI for relational AI-GTM is employee self-service with interactive voice response^{xxvii} and individual performance monitoring and improvement assistance.

<p>Transformational AI-GTM (strategic level)</p> <p>Examples:</p> <ul style="list-style-type: none">• Global employer brand sentiment monitoring with web text mining• Global hospitality talent search with knowledge-based search engines¹• Talent turnover predictions with artificial neural networks¹ <p>• Relational AI-GTM (tactical level)</p> <p>Examples:</p> <ul style="list-style-type: none">• Talent resumé data acquisition with information extraction¹• Staff rostering with genetic algorithms¹ <p>• Operational AI-GTM</p> <ul style="list-style-type: none">• Talent self-service with interactive voice response¹• Talent self-service performance monitoring and improvement assistance

Box 2: three types of Artificial Intelligence-supported global talent management with examples

The AI-GTM types described here and the examples provided are promising, and businesses have started to introduce and experiment with them. However, much more is possible with the advancement of AI in the coming years, with opportunities for GTM but also risks.

3. Artificial intelligence for GTM risks: international hospitality businesses need to develop an AI-GTM strategy

Technology is never neutral, its designers, developers and users have intentions. Technology is therefore technical as well as social in nature,^{xxviii xxix xxx} and only in its use, deployment or enactment are its effects realized. While this all sounds quite abstract and philosophical, it is essential to keep this in mind when discussing the opportunities and risks of AI for GTM in the international hospitality industry.

Artificial intelligence as a concept and a challenge is not new at all, but it seems that since Silicon Valley-based tech firms and investors have promoted AI, developments are speeding up, and hopes and expectations are increasing. The possibilities of AI to give an impulse to the innovation of GTM in the international hospitality industry are starting to be implemented and adopted, but this is just the beginning. And since technology, whether information technology or artificial intelligence, is not neutral but can be used in the way intended by developers (funded by big investors with perhaps big profit expectations as their major goal) and users (with hopefully appropriate regulations on their side), the international hospitality business needs to ensure that it creates an AI-GTM strategy first before starting to implement loosely coupled AI applications. The sooner boards develop an AI-GTM strategy, the better, even without having any AI-GTM applications in place. The box below presents an overview of the AI revolution that started in the early 1990s and whose end is not yet in sight.

AI Revolution

(Brain power)

Substituting, supplementing and/or amplifying practically all mental tasks

1990 Neural net device reads handwritten digits
1993 Robot Polly navigates using vision
1997 Deep Blue defeats the world chess champion
1998 Robotic toy Furby learns how to speak
2005 Robot ASIMO serves restaurant customers
2009 Google's first self-driving car
2011 Watson computer beats Jeopardy's champions
2016 AlphaGo defeats GO champions using neural learning algorithms

Widespread use of:

202? Computer translations
202? Self-driving cars

202? Deep neural learning

203? Machines reach human intelligence

Box 3: the AI revolution. Adopted from ^{xxxí}Makridakis, S. (2017)

In order to frame an AI-GTM strategy discussion in international hospitality business board rooms, I refer to a paper by Makridakis (2017),^{xxxii} 'The forthcoming artificial intelligence revolution: its impact on society and firms'. Four scenarios for AI are outlined in it: the views of the optimists, the pessimists, the pragmatists, and the doubters. The optimistic view on AI sees only advantages as AI will improve human capabilities and become ever more integrated with human beings; the pessimists believe that AI will result in a super intelligence that will overtake human control; the pragmatists believe that with open AI and proper regulations, AI can serve society and firms; the doubters do not believe that AI will become a reality.

Currently, the pessimists are in the majority, and people like Elon Musk have called on governments and regulators to take action. I personally belong to the pragmatists, and assume that with appropriate regulations and checks in place, AI has promises and opportunities for GTM in the international hospitality industry. In that case, AI can deliver on its promises to give an impulse to GTM innovation. I advise the boards of international hospitality businesses to develop an AI-GTM strategy as soon as possible in order to reap the benefits of AI for individual talents, for their businesses and for guests. With an AI-GTM strategy that respects the individual talent's integrity, rights, and privacy, AI may have a lot to offer for GTM innovation in the international hospitality business.

4. Hotelschool The Hague's Global Talent Management Innovations in the International Hospitality Business Research Programme

Hotelschool The Hague (HTH) is a leading international hospitality business school. Our teaching programmes are world-class, and our research targets are cutting-edge and serve the industry and society.

The Global Talent Management Innovations in the International Hospitality Business Research programme is a new research programme. The role of technological innovations for GTM is one of its core foci.

HTH is interested in working with you! Please contact h.ruel@hotelschool.nl if you are interested in working with us.

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ⁱⁱ © Huub Ruël

ⁱⁱⁱ Ivanov, S. H., Webster, C., & Berezina, K. (2017). Adoption of robots and service automation by tourism and hospitality companies.

^{iv} Buhalis, D., & Leung, R. (2018). Smart hospitality—Interconnectivity and interoperability towards an ecosystem. *International Journal of Hospitality Management*, 71, 41-50.

^v Ruël, H., Bondarouk, T., & Looise, J. K. (2004). E-HRM: Innovation or irritation. An explorative empirical study in five large companies on web-based HRM. *Management revue*, 364-380.

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- ^{vi} Bondarouk, T. V., & Ruel, H. J. M. (2009). Electronic Human Resource Management: challenges in the digital era. *The International Journal of Human Resource Management*, 20(3), 505-514.
- ^{vii} Ruël, H. J., & Bondarouk, T. (2012). 18 A cross-national perspective on the intersection between information technology and HRM. *Handbook of Research on Comparative Human Resource Management*, 416.
- ^{viii} Ruël, H., Bondarouk, T., & Looise, J. K. (2004). E-HRM: Innovation or irritation. An explorative empirical study in five large companies on web-based HRM. *Management revue*, 364-380.
- ^{ix} Ruel, H. J., Bondarouk, T. V., & Van der Velde, M. (2007). The contribution of e-HRM to HRM effectiveness: Results from a quantitative study in a Dutch Ministry. *Employee relations*, 29(3), 280-291.
- ^x Bondarouk, T., Ruël, H., & van der Heijden, B. (2009). E-HRM effectiveness in a public sector organization: a multi-stakeholder perspective. *The International Journal of Human Resource Management*, 20(3), 578-590.
- ^{xi} Bondarouk, T. V., & Ruel, H. J. M. (2009). Electronic Human Resource Management: challenges in the digital era. *The International Journal of Human Resource Management*, 20(3), 505-514.
- ^{xii} Ruël, H., & van der Kaap, H. (2012). E-HRM usage and value creation. Does a facilitating context matter?. *German Journal of Human Resource Management*, 26(3), 260-281.
- ^{xiii} Bondarouk & Brewster (2017)
- ^{xiv} Artificial Intelligence is defined as: high-level non-human intelligence that is capable of learning and accelerating on any other feature of intelligence. A definition inspired by Müller, V. C., & Bostrom, N. (2016). Future progress in artificial intelligence: A survey of expert opinion. In *Fundamental issues of artificial intelligence* (pp. 555-572). Springer, Cham.
- ^{xv} Global Talent Management is defined as “Global structures and processes that allow the systematic identification of pivotal positions, and the development and deployment of a talent pool of high-performing, high-potential employees that contribute to the organisation’s competitive advantage in a short or long term” (Stefan Jooss, Doctoral thesis, forthcoming/2018). This definition is inspired by Downs, Y., & Swailes, S. (2013). A capability approach to organizational talent management. *Human Resource Development International*, 16(3), 267-281 and by McDonnell, A., Lamare, R., Gunnigle, P., & Lavelle, J. (2010). Developing tomorrow's leaders—Evidence of global talent management in multinational enterprises. *Journal of world business*, 45(2), 150-160.
- ^{xvi} Talents in our view are people who make valuable contributions to an organization regardless of their positions. In this we follow: Morris, S., Snell, S., & Björkman, I. (2016). An architectural framework for global talent management. *Journal of International Business Studies*, 47(6), 723-747.
- ^{xvii} Lawler, J. J., & Elliot, R. (1996). Artificial intelligence in HRM: an experimental study of an expert system. *Journal of Management*, 22(1), 85-111.
- ^{xviii} Economist, the (2018) ..
- ^{xix} Economist, the (2018). Thought experiments. *Technology quarterly*, January 6 – 2018, p. 5.
- ^{xx} Müller, V. C., & Bostrom, N. (2016). Future progress in artificial intelligence: A survey of expert opinion. In *Fundamental issues of artificial intelligence* (pp. 555-572). Springer, Cham.
- ^{xxi} E.g. Ruël, H., Bondarouk, T., & Looise, J. K. (2004). E-HRM: Innovation or irritation. An explorative empirical study in five large companies on web-based HRM. *Management revue*, 364-380. Or: Ruel, H. J., Bondarouk, T. V., & Van der Velde, M. (2007). The contribution of e-HRM to HRM effectiveness: Results from a quantitative study in a Dutch Ministry. *Employee relations*, 29(3), 280-291. Or: Bondarouk, T., Ruël, H., & van der Heijden, B. (2009). E-HRM effectiveness in a public sector organization: a multi-stakeholder perspective. *The International Journal of Human Resource Management*, 20(3), 578-590. Or: Bondarouk, T. V., & Ruel, H. J. M. (2009). Electronic Human Resource Management: challenges in the digital era. *The International Journal of Human Resource Management*, 20(3), 505-514.
- ^{xxii} In this definition I combine components of our earliest e-HRM definitions^{xxii}, the work of Müller & Bostrom (2016) and of Jooss (2018/forthcoming).
- ^{xxiii} Strohmeier, S., & Piazza, F. (2015). Artificial Intelligence Techniques in Human Resource Management—A Conceptual Exploration. In *Intelligent Techniques in Engineering Management* (pp. 149-172). Springer, Cham.
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- ^{xxvi} Strohmeier, S., & Piazza, F. (2015). Artificial Intelligence Techniques in Human Resource Management—A Conceptual Exploration. In *Intelligent Techniques in Engineering Management* (pp. 149-172). Springer, Cham.
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