



Digital HR, Technology at the fore-front: An Overview

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Abstract

This paper attempts to study the frontiers of **digital HR** that refers to the digital transformation currently affecting the human resources industry at large, driven largely by **cutting edge technology**. The concept of digital human resource management and related concepts such as the digitization of human resource management, the digitalization of human resource management, the digital transformation of human resource management, and the digital disruption of human resource management are gaining prominence in scholarly discussion. Frequently, however, the use of these concepts is implicit, heterogeneous, and proliferating. These concepts, thus, lack the “conceptual clarity” necessary in research. Therefore, a conceptual clarification of digital human resource management and of related concepts of the digitization of human resource management, the digitalization of human resource management, the digital transformation of human resource management, and the digital disruption of human resource management is a must. The terminology offers precise and parsimonious definitions of the concepts and relationships between them, offering a basic understanding.

The digital human resource management typology offers precise and parsimonious ideal-types, which order and classify phenomena related to digital human resource management, in turn expanding knowledge about these phenomena. Together, the terminology and typology clarify the concept of digital human resource management and related concepts, uncover digital human resource management as an evolutionary advancement of previous conceptualizations of technology-based human resource management, and provide a conceptual basis for future work on digital human resource management. the exploitation of digitization potentials for strategic purposes is particularly relevant to the digital transformation concept. Fully transferring the concept to HR implies not merely aligning digital technologies to pre-formulated HR strategies but formulating and executing HR strategies that are directly based on the potential for digitization to create value for an organization. In concretizing this notion, it makes sense to transfer the concept of digital business strategy to HR whereby a digital HR strategy can be defined as an HR strategy formulated and executed by exploiting digitization potentials to create value for an organization

Key words: Human Resources, Recruitment and Selection, Performance Expectations, Performance Evaluation, Employee Relations, Digital transformation

Introduction

Concepts such as “digitization,” “digitalization,” “digital transformation,” or “digital disruption” currently rank among the most prominent and discussed terms. Roughly speaking, such concepts denote an ever-increasing use of technology and corresponding substantial changes in numerous domains of business and society. This notion is also true for the domain of human resource management (HR). In HR, the concept of digital HR (e.g. Pantelidis, 2019; Thite, 2019) and related concepts such as digitization (e.g. Meijerink et al., 2018; Van Kruining, 2017), digitalization (e.g. Dixit, 2017; Parry and Strohmeier, 2014), digital transformation (e.g. Bissola and Imperatori, 2018; Vardarlier, 2020), and digital disruption (e.g. Larkin, 2017; Platanou and Mäkelä, 2016) of HR are increasingly used. Conceptual components such as “transformation” and even more “disruption” imply substantial changes for HR, hinting at a clearly considerable importance of these concepts.

Currently, however, these concepts are frequently used in an implicit, heterogeneous, and proliferating manner. First, authors frequently use the concepts in an implicit manner; that is, they do not offer explicit definitions but rather assume that readers understand the intended meaning (e.g. Bajer, 2017; Larkin, 2017). Second, authors use the concepts in a heterogeneous manner; that is, they use concepts with multiple and sometimes contradictory understandings (e.g. understandings of digital disruption of Larkin, 2017, and Platanou and Mäkelä, 2016). Third, authors frequently use concepts in a proliferating manner; that is, they use new concepts to denote well-known old phenomena (e.g. Martini and Cavenago, 2018; Thite, 2019). The current discussion on digital HR therewith evidently lacks “clarity of concepts” (Suddaby, 2010).

Clarity of concepts, however, is important for different interrelated reasons. First, conceptual clarity is important to preventing a mere proliferation of concepts (Suddaby, 2010). It must be ensured that digital HR (and related concepts) not merely represent “new designations for old phenomena.” Otherwise, new concepts are just used as synonyms of established concepts and most notably of the prominent concept of electronic (e-) HR (e.g. Bondarouk et al., 2016; Strohmeier, 2007). Second, conceptual clarity is necessary to avoid confusion and misunderstanding (Suddaby, 2010). It must be ensured that human resource (HR) researchers share a common understanding that facilitates mutual communication on digital HR. Third, conceptual clarity is necessary to avoid research deficiencies (Suddaby, 2010). The use of ill-defined concepts must be avoided, as they do not allow for precise operationalizations and lead to disparate results of research on digital HR.

It is against this backdrop that this article aims at a conceptual clarification of digital HR and related concepts. To do so, the article develops a terminology and typology of digital HR. Developing a terminology constitutes an initial clarification step that offers precise and parsimonious definitions of concepts and relationships between them, in turn offering a basic understanding (e.g. Suddaby, 2010). Developing a typology constitutes a subsequent clarification step that offers precise and parsimonious ideal-types that order and classify phenomena related to digital HR, further deepening their understanding (e.g. Doty and Glick, 1994). Together, the proposed terminology and typology can clarify the concept of digital HR and related concepts and provide a conceptual basis for future work on the topic.

Objective:

This paper intends to explore and analyze **Digital HR**; digital transformation of HR services and processes through the use of **social, mobile, analytics and cloud (SMAC)** technologies. Digital HR represents a sea change in both the approach and execution, although it takes place on a continuum as **organizations progress**.

What is Digital HR?

The term digital HR refers to the digital transformation currently affecting the human resources industry at large, driven largely by advancements in data collection and analysis and in various technologies.

In some businesses, for instance, it could be as simple as taking certain processes and making them paperless, while in others it might involve fully rethinking the recruitment and training process. Some examples of digitizing HR processes include:

- E-sign and self-service applications, which allow an applicant to complete their job application one hundred percent online or by mobile app, reducing the need to print physical materials.
- Automation in recruitment, such as in posting jobs, which enables HR professionals to put their time to better use in other processes.
- Virtual and remote interviews and training, which can reduce expenses associated with travel, attracting a wide range of qualified job applicants and leading to greater employee engagement.
- Gamification of training and learning, which uses psychological queues to encourage employees to complete their training and improve their skills.
- Digital HR can also include embracing more complicated technologies—such as artificial intelligence, machine learning, complex automation, and HR analytics—in order to achieve strategic goals.

There is potential for virtually every function of the human resources department to be impacted by these digital advancements, from recruitment and hiring to employee performance monitoring to training and development, and everything in between.

Terminology of digital HR

Based on the above elaboration, the transfer of general terminology to HR can be discussed. First, a general concept can be transferred if the organizational phenomenon denoted by the concept has a comparable counterpart in HR. In this case, an already existing HR phenomenon is denoted. Second, however, a general concept can also be transferred if the organizational phenomenon designated by the concept currently has no comparable counterpart in HR but could be realized in the future. In this case, a potential future HR phenomenon is denoted.

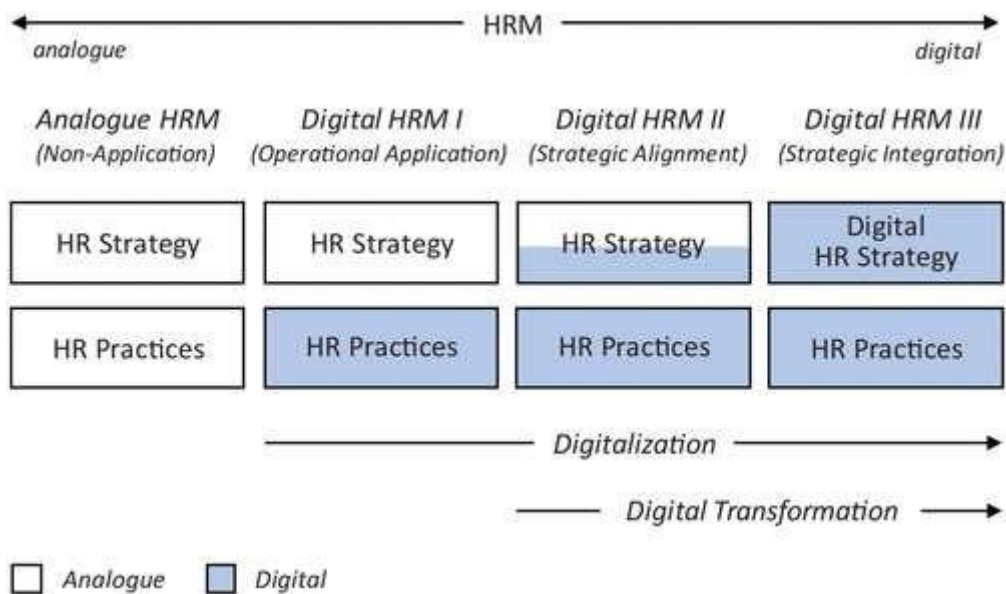
Starting with the digitization concept, in HR there are also technical processes of converting analogue information into digital information for processing purposes. A simple example refers to scanning paper-based application credentials of applicants. Thus, there is a comparable counterpart in HR, and the general digitization concept can be transferred.

Second, regarding the digitalization concept, also in HR, the potential for technical digitization is exploited to achieve operational and limited strategic goals. Digitization potentials are especially exploited for a broad range of operational purposes from payroll processing to course administration. There have also been attempts to exploit digitization potentials for strategic purposes—mainly by aligning digital technologies with functional HR strategies (e.g. Burbach, 2012). However, the frequency and success of such attempts appear to be rather limited at present (see the review of Marler and Fisher, 2013). Thus, regarding a comparable counterpart in HR, exploitation for operational purposes has been realized while exploitation for strategic purposes has not yet been fully realized. Despite this “hybrid” situation, the digitalization concept can be transferred to HR.

Third, the exploitation of digitization potentials for strategic purposes is particularly relevant to the digital transformation concept. Fully transferring the concept to HR implies not merely aligning digital technologies to pre-formulated HR strategies but formulating and executing HR strategies that are directly based on the potential for digitization to create value for an organization. In concretizing this notion, it makes sense to transfer the concept of digital business strategy to HR whereby a digital HR strategy can be defined as an HR strategy formulated and executed by exploiting digitization potentials to create value for an organization (transferred from Bharadwaj et al., 2013). To the best of my knowledge, such strategies have not yet been realized. However, they might become achievable in the future as can be briefly demonstrated from the example of HR analytics (HRA). Rather than merely improving HR information provisions, HRA constitutes a broad and ambitious concept for the entire HR domain (e.g. Marler and Boudreau, 2017). HRA aims at systematically creating value for an organization by basing all HR decisions on evidence. If such an evidence-based approach of HR could be established, systematic quality improvements across all HR functions would result. Since such improvements on their part create value for an organization, HRA can be interpreted as (the nucleus of) an HR strategy. Moreover, since the value creation intended by HRA is directly based on digitization potentials, HRA could be understood as (the nucleus of) a digital HR strategy. Thus, even though there has presumably been no full digital transformation in HR, a future realization is imaginable and the concept can be transferred.

Typology of digital HR.

The counterpart of organizational operations is *HR practices*, which are understood as a set of HR activities performed to afford employees abilities, motivation, and opportunities to perform (e.g. Ostroff and Bowen, 2000). Employing HR strategies and practices as description dimensions and the digitalization or non-digitalization of these as values results in a parsimonious typology with four ideal-types



The *non-application of digital technologies* constitutes a first ideal-type. As a major characteristic, this ideal-type is fully analogue; that is, neither HR practices nor HR strategy is supported by digital technologies. Again, while *not* a digital ideal-type, it has been necessary for a typology of digital HR since uncovering that the digitalization of HR is not mandatory.

The *operational application of digital technologies* constitutes a second ideal-type. As a major characteristic, digital technologies are employed to support operational HR practices such as recruiting or compensation for this ideal-type. This support is realized by automating HR practices with the aim of increasing their speed, decreasing their costs, and improving their quality (e.g. Snell et al., 1995; Strohmeier, 2007). Strategic purposes are not supported by this ideal-type.

The *strategic alignment of digital technologies* constitutes a third ideal-type (e.g. Burbach, 2012; Marler, 2009; Parry, 2011). Again, this ideal-type aims at the digital support of the execution phase, yet not of the formulation of HR strategies. Thus, the overall idea of providing value is developed without considering digitization potentials. Once an HR strategy has been formulated, a derivative second step refers to aligning digital technologies with an HR strategy to support and execute it (Marler, 2009; Martin and Reddington, 2010). While the concrete technology used depends on the concrete strategy, technologies frequently refer to recruiting, performance management, compensation, and/or the development of employees. For instance, organizations that, based on a “prospector” business strategy, pursue an “internal labor market” HR strategy will heavily invest in learning technologies that support and implement the strategy (Martin and Reddington, 2010).

The *strategic integration of digital technologies* constitutes a fourth ideal-type. This ideal-type integrates digital technologies already in the strategy formulation phase by directly basing the value proposition of HR on the potentials of digitization. As briefly outlined above, this integration implies the formulation and execution of digital HR strategies as equivalent of digital business strategies. HRA and Employee Relationship Management (ERM) can be cited as initial examples of such future digital HR strategies: HRA aims at creating value for an organization through digitization-based systematic improvements of HR decisions (e.g. Marler and Boudreau, 2017). ERM aims at creating value for an organization through digitization-based building and maintaining mutually valuable relationships with current and

potential employees (e.g. Strohmeier, 2013). Both ideas thus aim at adding direct value to an organization based on digitization potentials.

Benefits of Digital HR

1. Automation frees up time for the HR professional.

Perhaps one of the most obvious benefits realized by embracing digital HR is the fact that automating easily repeatable, low-value tasks frees up time that an HR professional can use to perform other, high-value tasks.

Administrative duties like data entry, pre-screening of applicants, and even the processing of payroll in some organizations, can require hours of attention each week, which could be put to better use on tasks that require more critical thinking, reasoning, and evaluation.

2. Technology allows HR processes to become more efficient.

Beyond simply freeing up time for other processes, making the switch from manual to automated or tech-supported HR processes also allows for increased efficiency in many areas.

Digitizing the recruitment process, for example, can reduce friction and improve how HR professionals service job applicants. This can, in turn, prevent high-quality applicants from growing frustrated and abandoning the application process. More high-quality applicants means that an HR professional has a greater chance of hiring the applicant who best fits the needs of the role and the company culture.

Similarly, algorithms and artificial intelligence have made it easier than ever to screen out applicants that do not meet the minimum requirements for a particular job, allowing the HR professional to instead focus on the applicants who most deserve their attention. Similar increases in efficiency can be realized across many of HR's functions.

3. Embracing technology allows HR to become more data-driven in many of its processes.

At both the organizational and individual levels, businesses generate troves of data each and every day. By learning how to capture and analyze this data, it is possible for businesses to leverage data in their decision-making processes, tying decisions back to a logical rationale instead of an observation or gut reaction. This, in turn, allows for more disciplined processes.

HR analytics—also known as people analytics, talent analytics, and workforce analytics—refers to the ways in which human resources teams can leverage data in their processes to better meet the department’s strategic goals, whether they’re related to recruitment and hiring, retention, motivation, or development.

Benchmarking key performance indicators such as average cost per hire and time to hire can, for example, enable HR professionals to set goals for improvement and better understand what, if any, impact is derived from changes to processes or workflows.

“HR analytics allows both the HR department and the business at large, to understand insights and create improvements for our people,” Penque says. “It allows us to improve the effectiveness of our people-related decisions.”

4. Digital advances allow the company to adapt to a changing workforce.

Thanks to advancements in technology, geography, and proximity are no longer as great of an issue when it comes to securing top talent as it was in the past. It is now easier than ever for companies to connect with prospective employees and to facilitate remote work as necessary. Some examples of this trend include:

Video communications software such as Zoom, Uberconference, GoToMeeting, and Skype make it easier than ever for remote teams to connect and align on projects and tasks.

Job hiring platforms like Upwork and Fiverr have streamlined the process of finding and hiring freelance or contract workers. It is important to note that these are just a few examples. A plethora of other technologies have all played a part in bridging the gap between employers and applicants, enabling a truly global workforce.

Preparing for the Digital Transformation

For individuals working in or considering a career in human resources management, it’s important to realize just how significant the impacts of digital HR have been, and will continue to be, on the field.

According to Deloitte, 56 percent of surveyed companies are redesigning their human resources programs in order to leverage digital and mobile tools, while 33 percent are using some form of artificial intelligence in their strategies. A recent survey by Gartner, echoes this message, reporting that 58 percent of HR leaders have indicated that executing business transformations (including digital transformation) is a top priority.

To remain relevant and competitive, HR professionals must understand this change and take steps to ensure that they have the

appropriate skills to successfully navigate the new digital reality. Earning a master's degree in human resources management can be an excellent way of developing the skills and expertise that HR professionals will need to better leverage and implement these strategies and advance within their organizations.

Conclusion

Against the backdrop of increased yet unclear consideration in research, this article provides a conceptual clarification of digital HR and related concepts. Based on general research on digital organizations, a terminology and typology of digital HR could be developed. The results suggest a perspective that is not fundamentally different from previous perspectives on technology-based HR but that incorporates and develops the previous perspective further. A core advancement of this article lies in its introduction of the idea of a strategic integration of digital technologies ("digital HR strategy") and in its corresponding further development of the concept of the digital transformation of HR. Moreover, the integration of the digitalization of HR with the digitalization of organizations marks a conceptual step forward. Digital HR thus constitutes a further evolutionary step in conceptualizing technology-based HR. As the digitalization of HR accelerates, the need for corresponding research efforts increases. This article provides a conceptual basis for such research and is intended to support the next step of research on technology-based HR.

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