Critical Review of Peer-Reviewed Literature Describing Human Resources and Blockchain

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BLCN 634 B01 - Human Resources Management & Blockchain

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November 12, 2023

Introduction

Founder of the World Economic Forum, Klaus Schwab, released a small book shortly after COVID-19 began that called for a radical change to the way we govern our world economy (Schwab & Malleret, 2020). In this book, he dubbed COVID-19 as "The Great Reset" - an event that would call for the world to question the long regarded economic theories, monetary measures, and governance practices of the present and past. The three core components of the essay include creating conditions for a stakeholder economy, measuring the health of the economy through the use of novel environmental, social, and governance (ESG) monetary measures, and harnessing the innovations of the fourth industrial revolution (i.e. big data analytics, cloud technology, machine learning, blockchain, and similar technology). Though Schwab & Malleret never explained how exactly the world might get there, blockchain technology actually has the ability to provide utility for all three of these components discussed. This essay will focus only on the stakeholder economy, since it is most directly involved with human resources management (HRM). This essay critically reviews what the peer-reviewed literature has to say regarding stakeholder economics and how human resources professionals can pave the way to enable the conditions for the stakeholder economy. Chillakuri & Prakash Attili's (2022) paper is unique in that it was one of the first papers to try and map out how blockchain would affect the entirety of HR processes end-to-end, including 5 major use-cases. The use-cases are candidate validation, skill mapping, payroll processing, performance management, and data protection.

Before proceeding, it seems appropriate to define what exactly a stakeholder is and how they differ from the shareholder. MacNeil (2023) describes this difference quite succinctly.

While shareholders or investors can also be stakeholders, a stakeholder encompass a much larger group of transacting entities, including but not limited to customers, suppliers, employees, the local community, and end-users of an application. Essentially, a stakeholder is anyone who is affected by the projects a particular business engages in, while a shareholder is someone who simply provides money to a company for a share of the profits the company generates. Economist Milton Friedman argued that executives of a company work for the shareholders who invest in the company and that it is not up to the executives to be socially or environmentally responsible - it is the shareholder's responsibility to hold executives accountable. The problem with this line of thinking is that shareholders are short-sighted in nature, since all they usually want is for their shares to go up value so that can sell for a profit. Most shareholders simply don't care about the long-term health of a company nor how ethically a business operates. Dr. R. Edward Freeman introduced the concept of Stakeholder Theory back in 1984, which stated that it was the responsibility of companies to look after the interests of all stakeholders involved. While it might have been difficult to enforce stakeholder theory back in the 1980s, the fourth industrial revolution gives businesses, governments, and regulatory bodies the compute capabilities to actually enforce Stakeholder Economics. Exchanges such as The New York Stock Exchange, regulatory bodies like FINRA or the SEC, or institutional investors like Vanguard no longer have to independently manage capital allocation, like we currently see in the modern day practice of Shareholder Economics. Blockchain technology can enable HR professionals around the world to enforce stakeholder friendly practices that can shape the world to be a more equitable, fair, empowering, and inclusive place.

Article Purpose and Problem

While there were a number of research papers linking payment and payroll with blockchain technology, there was little research that linked entirety of HR processes, end-to-end, with blockchain technology. Since blockchain technology is rather new, there isn't a whole lot of research literature to work off of, especially when trying to understand how blockchains will transform HRM as a whole. Chillakuri & Prakash Attili's paper asks 4 key questions relating to blockchain in HR. The first question assesses whether blockchains can offer protection against data tampering or falsification. Second, they assess whether blockchains can validate the various qualifications a candidate provides on their resume/CV. Third, they asses whether blockchains can automate secure payments to contractors or vendors/suppliers. Lastly, they assess whether all stakeholders, as described by Dr. R. Edward Freeman's early theories, can be more seamlessly connected to one another through blockchain technology. Stakeholders examined include employees, employers, vendors, and clients, though more stakeholder interactions could also be examined in future studies.

Chillakuri & Prakash Attili utilize a case study approach in their research. Most information system products make use of an iterative approach in order to make improvements. Through trial and error, business owners are able to receive feedback from end-users to better serve their customers and ultimately create a better product. Chillakuri & Prakash Attili don't provide any initial ideas, but rather analyze reports from 12 focused group discussions, each with a group size of 5-8 participants. They summarize their findings from the group discussions.

Article Content

As discussed earlier, the blockchain has the ability to streamline 5 key processes in HR, including certificate verification, skill mapping, payroll processing, data protection, and performance management. Chillakuri & Prakash Attili discuss how blockchain might exactly streamline these 5 processes, while also discussing the current challenges many HR professionals face in their data-to-day job duties.

When candidates are applying for a job, there are certain things about them that just shouldn't change. Such things include certificates received, skills obtained, employment history, successes at the workplace, schools attended, and diplomas received. According to a survey from Careerbuilder, up to 75% of candidates change their resume based on a particular job requirement (p. 1365). After COVID-19 and the rise of remote work, jobs began to receive an influx of applicants. This also forced HR departments to use third-party Applicant Tracking Systems (ATS) to scan resumes/CVs to deal with the overwhelming applicant pool. The blockchain could enable people to turn documents like tax documents related to employment history or issued university certificates into real value within the market. HR professionals could simply reference a candidates data store, provided the candidate provides permission for the HR department to do so.

Skill mapping is somewhat related to certificate verification. Unfortunately, according to a 2018 Employment Screening Benchmark Report, 85% of employers caught candidates falsifying their skills and job roles in their current organization (pp. 1366-1367). This is a complex issue, since employees spend so much time outside of the workplace upskilling, which often goes unnoticed. Job titles also vary from company to company, so it is difficult for HR

professionals to easily understand where one candidate may have fit in their previous organizational hierarchy. Blockchains have the ability to keep track of upskilling endeavors and potentially contextualize different organizational hierarchies. HR leaders wold be able to understand their employees' skills, achievements, strengths, and access their upskilling records.

Payroll processing has been talked about by a number of other research papers on the topic of HR and blockchains. Unfortunately, HR professionals spend considerable time on this task and many companies need to outsource this task to external firms. These external companies must receive sensitive employee information and while they may sign non-disclosure agreements (NDAs), the potential for misuse remains. The blockchain could make it much easier to pay gig/temp workers in a real-time basis. Also, due to its transnational nature, cross-border payments could more easily comply with international law, as payments could more easily be made in local currencies facilitated by a digital currency technology like cryptocurrency.

HR leaders usually have to collect a large amount of personal information from employees including medical records, bank details, performance records, and other PII. As a result, many HR professionals are reluctant to share information with management, despite it being important to do so at times, for the fear of such employee data being misused. As information systems have come to evolve, regulatory bodies from the EU have enacted the General Data Protection Regulation (GDPR) in 2018 to protect users from the misuse of their personal information, but physical CVs or resumes with contact information on them are sometimes left all around the office, which can be a breach of trust as well. The blockchain encrypts data within its blocks such that only users with the right private key can view the data

inside. Prospective employees can share their keys and only enable the HR department or other necessary entities to view their data.

Finally, Chillakuri & Prakash Attili discuss the challenges HR leaders face when trying to gather feedback from all pertinent stakeholders for performance reviews. Performance reviews are not usually given in real-time or too frequently, but annual reviews are going out of style. Performance reviews are necessary to assess whether an employee has earned promotions, salary hikes, recognition, or career progression. The problem right now is that HR professionals struggle to get feedback from all the stakeholder involved in a project. Gathering feedback from multi-stakeholders is a hectic task, but obtaining feedback from all stakeholders would reduce bias and subjectivity in the performance review process. Blockchain technology could help collect feedback from all stakeholders and provide more objective feedback for the performance review process.

Findings and Conclusions

Chillakuri & Prakash Attili had a positive outlook on blockchain technology's ability to transform each of the 5 use cases in HRM. The distributed ledger acts as a single source of truth and transition validity is expected to have a positive impact on "validation of certificates and employment history (p. 1366)." Transition validity is the concept of major nodes in the blockchain being immutable and retaining all records. This feature will also enable HR professionals to better map skills to the right job for a particular project. In the payroll processing space, the cryptographic features and quicker settlement times will speed up the disbursement of paychecks both domestically and internationally. These enhanced security features will also enable HR professionals to protect employees' PII from cyber attacks. Finally,

decentralization server management and consensus layers in blockchain will enable HR professionals to get feedback from all stakeholders involved within a particular project. It will enable the adoption of a more holistic, transparent, and ultimately objective way of assessing the performance of employees.

Incorrect or Unsubstantiated Points of View, Assumptions, and Biases

As a relatively early paper on the topic of end-to-end HR processes on the blockchain, only time can tell whether this paper truly contributed to the betterment of our understanding of blockchains and HR management. HR professionals do more than the 5 topics discussed in this paper, including receiving complaints from employees, managing workplace disputes, dealing with workplace harassment, and providing support systems for employees. Such topics were not covered in the research paper and could be good future research topics.

Chillakuri & Prakash Attili also do not talk much about technology and instead focus on use-cases and testimonials. Their research is more qualitative in nature, and there is little calculation or novel ideas presented within the paper. They focus solely on interviewing professionals and providing real-world testimonials. They praise blockchain technology without talking much about the challenges involved with building such a technology. The amount of research it would take to create a blockchain protocol that both solves the Scalability Trilemma (combining decentralization, scalability, and security) and provides seamless interoperability between different chains is unknown at this time. Such a blockchain seems to be bordering on science fiction at the moment. It is simply unfeasible for HR departments to work on this problem alone and innovations need to come from other sources. The challenging nature of developing blockchains needs to be emphasized. Also, fully public blockchains don't exactly

make much sense for human resources use-cases. Private or permissioned chains, which would be better choices for human resources apps, are not discussed in particular (though role-based/ user access controls are mentioned).

Significance of Article

Chillakuri & Prakash Attili's case study paper was one of the early peer-reviewed literature to study the impact of blockchain technology on HRM. Currently, HR apps are disjoint and spread across a number of systems like CRMs or ERPs. As a result, HR professionals struggle to reconcile the data they need in order to make an informed decision. With client-server or 3-tier application models, the trust boundary is limited to the one, siloed system. Any attempt at fusing data from multiple systems together can be time consuming and expensive. While adopting technology in general may not be anything new for HR professionals, blockchain technology has the ability to provide an all-in-one, all-pervasive solution for the reconciliation of data necessary for the HR professional to make the right call.

Conclusion

The very nature of the HR professional's job requires them to work with a number of stakeholders. It seems like quite the jump to link capital markets with the stakeholder management HR professionals do, but experts around the world seem to think this link is at least plausible. Blockchains provide for us the ability to link the microeconomic to the macroeconomic. No longer do monetary measures like GDP or market capitalizations need be estimated in a vacuum by third-party firms like KPMG. Instead, the raw data can come directly from a secure, blockchain database (one with a company's HR, supply chain, customer relationship data, etc.), which then can be linked to another blockchain that calculates monetary

measures directly off of said raw data. Capital allocation and valuation can be based on things such as a the health of employees, improvements a business provides for the local community, environmental safeguard followed, or other ESG-based initiatives. Blockchains can also make it easier for HR professionals to do basic day-to-day operational tasks such as onboarding new employees, mapping skills to the right job, issuing payroll, performing performance reviews, and protecting private data, but the grander vision of at least supplementing shareholder economics could have a larger impact on the world overall.

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