

Blockchain in HR

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Abstract — Blockchain is an innovative IT technology that will undoubtedly determine development of our network society in post-modernity of the coming decades. Being a young technology, blockchain needs a doctrinal explanation and a well thought regulation to ease contradictions that will arise as a result of non-uniform commercial adoptions. Blockchain technologies are already in the phase of active adoptions by the corporate mainstream, the grade of adoption to increase and cover virtually all areas of our lives. Hence it is important to analyze trends and define its prospective developments. One of such areas covers relationships in the labour market, including search and recruiting of new stuff, talent management and retainment, as well as all related activities. The application of blockchain technologies provides benefits to each aspect of HR related activities, in professional growth and career advice, in remunerations and related reductions of costs. For example, blockchain provides job seekers with an opportunity to create, to edit and to deliver their CVs in a fully transparent yet protected environment, while employers may get the provided data on educations, job experiences skills confirmed in the automatic mode by consensys tools. In many situations, blockchain allows to remove intermediaries such as recruiters (headhunters). Also, blockchain allows to simplify compliance with labour, social security and fiscal regulations, enforced by Labour Agencies and trade unions. Labour legislation and regulation falls into the realm of law that regulates one of the most important segments in societal interactions. Hence, the labour law is closely and directly related to production outputs and other important socio-economic features. To match the need of significant economic developments in the digital space, the quality of relations between the participants of remote transactions become more important then ever. Such relations need to be secured by reliable practices in electronic registrations.

Keywords — *blockchain technology, digital signature, electronic document management, personnel administration, labour law, blockchain technologies, electronic registrations, personnel administration.*

I. INTRODUCTION

In the context of modern regulations, the minimal requirements to the concept of electronic registrations, or electronic management of documents, usually includes application of electronic media to store and manage corporate and other documents, as opposed to paper media, as well as

employment of digital signatures. However, in practice it requires the formation of a legal regime that allows for the total use of digital communications. In labour related interactions, Russia has until relatively recently seen the regulatory regime that did not accept any ways of electronic creation, change and termination in employments. Today the stable increase in requests to use digital tools in this area is observed, and the trend to employ modern electronic means of communication is in general followed by all actors of the labour market.

The introduction of new technologies will improve system operations, increase their safety, reliability and efficiency [1]. The effectiveness of law enforcement depends significantly on the ability of legislators to take into account these promising technological opportunities. Labour regulations, both private and public, tend to employ tools of electronic registrations that gradually allow use of online platforms. The latter provide innovative and rich opportunities to develop new labour relations, including not only the use of e-documents, but also e-transactions. However labour laws, unlike civil laws, secure protection against a different set of social risks, and are based on other social expectations.

II. METHODS

A comprehensive review of trends and an analysis of current issues in provision of adequate legal regime to employ blockchain in electronic registration in the framework of labour relations in various jurisdictions, are possible only via application of comparative legal research.

At the same time, it is important to pay attention to positions taken by experts in various related fields, to study trends and issues in applications and developments of blockchain technologies that allow to create digital architecture and maintain a reliable digital infrastructure to store personal data.

III. RESULTS

Digital technological innovations develop into legal novelties, blockchain is a good example as it increases legal

transparency [2]. On one hand, electronic registrations are widely accepted as a norm today in many legal realms. Labour law must respond to these practices in modern business communications. But it is also worth taking into account justified cautions in introduction of legal regulation that allows electronic documents. To recall the start in adoption of e-documents, some experts went as far as to advise to maintain hardcopies to protect against data loss.

Today, the feasibility to enjoy the capabilities of electronic registration and data management is no longer an issue. And it concerns, first of all, remote workers, who are regulated by legal procedures to establish, to change and to terminate labour relations, taking into account physical distance between an employee and the location of their employers. Here, various ways and means of digital communication, electronic documentation, digital signatures are widely used. Today such “gig contracts” often entered into with lawyers, editors, journalists, software developers and designers, when their services are based upon unique skills or considerations of costs, notwithstanding their physical location.

Despite the general compliance by remote workers with the requirements of the digital environment, despite successful adoptions of this practice, labour law is in no hurry to extend these rules to all categories of contracts. So far, there are only individual legal initiatives in place to implement particular types of electronic documents. First, these are electronic version of ‘work books’ to ensure that an employee receives data on his/her job experience in electronic form from the employer at the last place of work or by the authority that administers pension payments.

In Russia, following the Law [3] planned to be enforced on January 1st, 2021, management of the employment related data will be carried out in electronic form. In Italy, record keeping in traditional ‘labour books’ was replaced by IT systems in 1997. Slovenia has in 2010 replaced employment records with data provided by the National Pension Fund. In Estonia, since 1999 the data needed to calculate pensions is based upon the social tax, and this data is available in electronic form, since 2010 neither employees nor employers are obliged to keep records in work books.

Spain has set an example in the introduction of an IT system “Vida Laboral” (Working Life), that registers all employments and dismissals of employees, as well as taxes paid. All data is automatically sent to the Ministry of Labour and to the Social Insurance Fund (Seguridad Social). Statements (reports) by Vida Laboral is a document issued by the Seguridad Social, that contains details on employments (employer’s name, date of commencement and expiry of a work contract, type of a work contract, number of days in employment). One may obtain the report by request or at the website of Seguridad Social.

IV. DISCUSSION

Legal regulations for remote workers contribute significantly to the development of the modern labour market. At present, qualified assistance by professional experts via a

digital access becomes common, both for consultations and for direct management of individual operations. Registration of these relations in the legal scope creates stable terms to receive highly qualified assistance in those human settlements, where no such specialists are available. At the same time, it establishes conditions for a greater degree of unification in requirements and capabilities of professional communities and in the development of business competition.

The practices of the modern labour market include changes in the HR techniques to attract workforce, changes in the ‘geography’ of workforce, in order to ease invitation of the affordable personnel to areas where there is demand [4]. It is very difficult to expect a quick and sufficiently “flexible” response to requests by employers in distribution of labour migration. Remote workers can resolve these issues through the use of digital communications. At present, however, the application of digital communication is still very fragmented, and does not take into account the full potential of this exciting legal and economic phenomenon.

Until now, electronic registrations in labour related activities have been reduced to issues of expressing wills of the parties to an employment contracts, in order to establish, amend or terminate legal relations [5]. Moreover, it was not full consolidation of legal relations in digital formats, but it was also necessary to duplicate most important documents with snail mail. It is a rather conservative and a cautious approach to the development of regulations on electronic registrations in labour law. E-documents in this legal form, that we consider here, play an important role to legitimize practical needs in digital communication, in particular, its convenience and accessibility. On the other hand, the use of an enhanced qualified digital signature, that aims to establish greater confidence in record-keeping, creates significant obstacles to the dissemination of electronic registrations in labour related activities.

In most European countries and in the USA, there are no dedicated digital systems to record employment data. Instead of work books, employers require applicants to submit a CV, a diploma of education, and references from previous places of work. If an employer does not have the confidence to the received data, information on potential employees is obtained by HR departments, corporate security departments and even by private detectives.

Work related data is recorded by tax authorities based upon the taxes paid. To calculate pensions, personal accounts of citizens are used, they contain data on employers, salaries received and amounts contributed. Today, digital practices have already won priorities in labour law, in administration of recruitments and staffing.

For example, blockchain based APPII service allows applicants to create smart-profiles, where they can record details of their professional achievements and education degrees in decentralized ledgers, where this data is verified automatically. In blockchain, this data is stored forever; it cannot be deleted or canceled. APPII provides former employers and educational institutions with a possibility to

confirm the data provided by a job seeker in the CV. This platform also uses face recognition technology to confirm the identities of applicants.

On average, in Anglo-Saxon countries confirmation and verification of identities of applicants and details in their CVs takes from four to six weeks. According to Forbes [6], the APPII platform may save money and efforts to many companies. Further, the IT sector often employs temporary contracts. Hence, some professionals have to renew their contracts three or four times a year, each time they have to go through the hiring process.

Experts state, that almost two-thirds of job seekers exaggerate or tell half-truths in their CVs. The CVs confirmed by APPII will most likely have an advantage compared to the non-confirmed. An interesting innovation in this platform is the introduction of tokens, which organizations and applicants receive for verifying their resumes. These tokens may be used to pay for courses and training programs conducted by partners to the APPII.

Another interesting case in application of blockchain is the platform by Gradbase for the University College London. The platform placed the diplomas by the UCL on blockchain, each diploma receives a unique hashtag code. The code in the form of a QR-code may be placed by an UCL graduate in his/her CV, or even on business cards to be scanned by recruiters with use of any smartphone [7].

Verification of any records related to employees by blockchain is possible, as a blockchain based decentralized network verifies and automates any data flow [8]. Experts state that introduction of blockchain will affect not only payroll schemes, but also issues tax payments and the hiring process. CVs and work books will become obsolete once blockchain obtains mass adoption. At present, a job seeker describes where she/he worked and professional experience she/he has acquired, while the blockchain environment will store the entire history of the applicant's work related activity in a digital secured format. Not only does blockchain optimize lengthy verifications of education and previous work experiences, it may diminish subjectivity in the hiring process, that will positively effect the very quality of hiring.

In fiscal issues, blockchain will optimize not so much the payments themselves but the speed of reconciliations and settlements. With blockchain employed, it will not be necessary to prove whether this expense was or carried or not, as the very presence of the corresponding block in the blockchain is the proof. Bitwage, one of the first blockchain based projects in payments of salaries by large international companies, is an example. Originally based on the bitcoin blockchain, the platform allows transfer of salaries to employees in different countries, subsidiaries and branches in less than a day. It is not even a transfer, a corporate payroll fund is converted to bitcoins (now stablecoins), and placed in portions defined by smart contracts to e-wallets opened to each employee. It is then up to employees to convert inside the system their salaries to the national currency. The transition to the blockchain also made it possible to split

international payments so finely that it became possible to pay salaries for a day or even an hour of work, as well as per projects and even concrete tasks, that is important in the gig economy.

Electronic registrations allow to establish operational 24/7 communication between all participants to the labour relations, including dissemination of all relevant reports and proposals to all, to separate groups and to individual employees. In particular, various corporate communication networks gain significance due their ability to record receipt of a document. Another interesting approach in application of e-documents in work space is employed by specialized e-systems, CRM software, such as the Russian 1C, that includes a full scale personnel management module, a payroll module, a module for business trips, modules for holidays, sick leaves etc, that is the full cycle of corporate registrations in digital format.

In Russia, to accelerate integration of labour relations into the digital environment, besides such legislative innovations as electronic work books, legal initiatives are required to define and to legitimize the regulatory regime of digital communications between participants to labour relations.

Further to the above mentioned projects and initiative, others ways and means exist to use digital resources in the labour related areas. There are, for example, public databases, exchanges and platforms engaged in provision of services (for example, rewriting, programming, and design). Here further blockchain adoptions, that do not enjoy wide awareness currently, may be employed [9].

V. CONCLUSION

Labour regulation of remote employees marks a new approach in the labour legislation, with a special feature in norms to regulate processing of commencements, changes and terminations of labour relations with employment of digital documents (with an enhanced qualified digital signature).

Today we observe the active development of professional interest to electronic registrations in labour relations. This phenomenon includes not a simple exchange of information, but a legal regime to formalise the commencement, change and termination of work relations. In this area, a number of laws, that aim to change the way legal relations are formalized, have been introduced or are proposed/developed. Hardcopies are being replaced by digital formats. The innovations do not cause a significant negative response amongst practitioners, because the means of communication between an employer and an employee have been reduced various formats of remote communications long time ago. The most popular formats are e-mails and messengers, corporate intranets are also widely used.

One may expect that the introduction of electronic work books will result in a significant decrease in the number of conflicts related to work books, resulting in dismissal and restoration of data related to labour activities. On the other hand, a number of practitioners have expressed well grounded doubts on a full transfer to digital formats, especially for documents that future important legal decision may depend

upon. Labour law ensures regulation of socially significant relations, including formation of norms for legal actions open to a wide range of people. In this respect, a subsequent development to regulatory concepts of proofs and a legal qualification of some aspects in legal relations with regards to data loss or related to immutable doubts, seems important. Perhaps, such provisions shall account for a certain distribution in the burden of proof, as the management of digital documents will be conducted by an employer. Features and requirements related to such regulation may also be established by judicial decisions.

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