Competitive Edge Technology

BLOCKCHAIN, DATA PROTECTION & REGULATION COMPLIANCE

White Paper - July 2019

Competitive Edge Technology - HR Technology Advisors & Custom-Built Platform & Integration Specialists

John Macy, the author of this White Paper, is a thought leader and visionary in the world of HR technology. He has spent many years travelling around the world providing advice to companies on HR technology selection, writing articles and presenting his views on future technology direction. In 1999 he wrote a chapter for the IHRIM publication *21TOMORROWS: HR Systems in the Emerging Workforce of the 21st Century*. His article on Component-Based Technology described the technology now forming the foundation layer for microservices architecture and modern system delivery. He was 20 years ahead of his time then and now his focus on blockchain technology for HR adoption is seen as a creditable strategy for HR technology's future.

In May 2018 the General Data Protection Regulation (GDPR) came into effect. The European Union (EU) document is the model for other data privacy regulations around the world.

Chapter 3 of the GDPR is about the **Rights of the Data Subject** and the 11 Articles (Articles 12 to 23) deal with the processing and maintenance of personal data and advocates **"conceptual" ownership** and control over the data to the individual. Other chapters in the regulation mention control over data processing and who determines who can see what and for what purpose.

BLOCKCHAIN NOW ENABLES "DATA SUBJECT" OWNERSHIP of DATA

No regulation ever imposes controls that cannot be reasonably enforced, and I believe that was the case when the GDPR was drafted in the years leading up to 2018. That happened to be a period in which enterprise blockchain technology was just emerging as a serious HR data architecture component for personal data. If the regulation was reviewed today the **"conceptual" ownership of personal data** (the Data Subject) would be clearly defined as **"actual" ownership** and unambiguously enshrined in the document. Today, because of technical capability, **distributed data storage** would also be contained in the legislation as the secure method for personal data storage, and that means blockchain.

A NEW ERA OF DATA STORAGE & PROTECTION

Gone are the days when employee private data could be kept under lock and key: Data now lives in the Cloud and is accessed by current versions of the Internet. Now, new sophisticated means of stealing data is available to anyone who wishes to illegally access data. The hacking tools are no longer limited to professionals. Everything that has happened recently in the world of cyber security illustrates the vulnerability of private data to hacking and misuse

and reinforces the need to tighten regulations to address technology issues associated with storage and access authorisation. Blockchain technology, that applies distributed ledger and encryption techniques, represents the only way data management can be tightened and it is only a matter of time before that is spelled out in privacy regulations. An obvious strategy for companies is to participate in the CET blockchain network to store personal data and avoid a rush later. This article describes what can be done now to set up a fully integrated operation to maintain data in multiple environments.

AUSTRALIAN DATA PRIVACY PROTECTION LEGISLATION DUE FOR UPDATE

Currently, the Australian workforce relies on 1988 Data Privacy legislation to protect their personal details. The associated Privacy Principles offer very little protection and the Data Breaches legislation focuses on "after the event" and doesn't do much to prevent identity theft and financial damage incurred by victims. Data Sharing and Release draft legislation to be presented to parliament soon does not help the private sector. Even cyber security does not hold a high priority for Government. Although identified as a weapon to be used in conflict in the middle east recently and allegations of numerous state sponsored hacking activities there is no dedicated minister responsible for Australian cyber security in the Prime Minister's inner cabinet.

The bottom line is: Australia is overdue for an update to data privacy legislation and if the GDPR is to be used as a guide it could be the first country in the world to include technology capability as a partner in guaranteeing personal data protection and "data subject" ownership. Company risk aversion strategy should be technology flexibility and readiness to respond. The move to a supplementary blockchain data store should be on every company's board agenda in 2019.

CURRENT HR TECHNOLOGY COULD NEVER BE COMPLIANT WITH AN UPDATED GDPR

Today, the reality is most HR software still hasn't made the transition to digital technology, stores data centrally (that includes Cloud solutions using large data centres) and are monolithic by design. Companies using aging HR technology could not possibly be compliant with modern data privacy legislation. A new approach is needed to re-architect HR systems to give ownership of the personal data component to the individual. There is a solid business case to adopt the new approach based on process improvement and data quality, even if compliance was not a mandatory issue.

## TRANSITIONING DATA to the BLOCKCHAIN

Then, there is the issue of how will data be transitioned to the new secure blockchain platform? Compliance is a company motivator, but the workforce does not have a similar incentive at present. So, if we wait for individuals to load their private data into a blockchain, it will never happen. There must be a more realistic way of ensuring the mass data migration takes place. The blockchain industry cannot guarantee success: Almost all the emerging blockchain products are for knowledge workers and focus on credential checks and recruitment solutions. Compliance requires a **fundamental change to data storage** and needs to be a company initiative.

ABOUT CET's DATA TRANSITION PLATFORM

Competitive Edge Technology (CET) has designed its' blockchain application, and supporting governance network and ecosystem, around **mass migration of workforce data** to the new blockchain environment. Obviously, there are logistic issues and every workforce member (employees, freelancers, contractors, etc.) would not have access to the blockchain on day one. There needs to be a period of parallel processing where data can be updated from either environment. That is where CET's unique patented process for data transition comes into play.

Competitive Edge Technology – www.cet-hr.com

A NEW HR DATA ARCHITECTURE IS REQUIRED

The result of private personal data ownership is a new HR data architecture and infrastructure, including data and application integration using advanced API (Application Programming Interface), illustrated in the diagram below.

Blockchain as a component of HR technology architecture
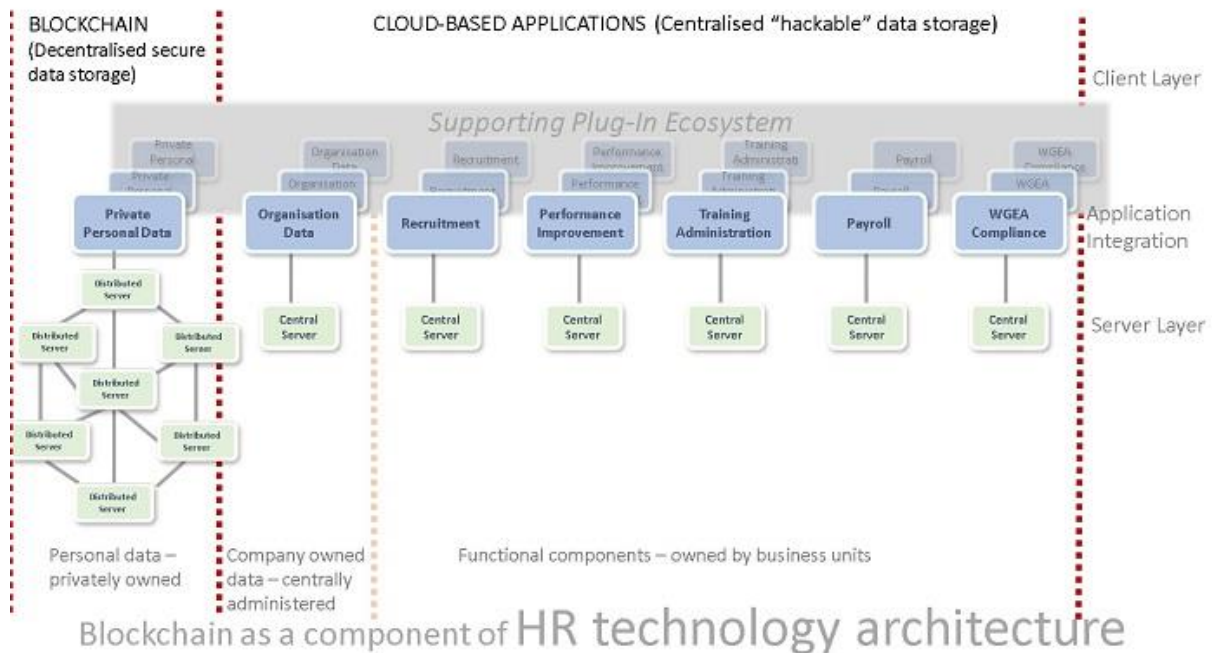
Adjusting to the new architecture will require a change in mindset for existing data custodians or data stewards. That is where the HR profession comes into play. HR are entrusted with employee data right from the start of the employment process and they are accountable for data protection: That is an implied responsibility in most country's current data privacy legislation. It is only after HR monolithic data structures are partitioned to enable ownership, between the employee and company, that other GDPR compliance issues, such as data retention and intended usage, can be resolved.

CET's SUPPORTING BLOCKCHAIN ECOSYSTEM

CET offers **three ways** in which currently held HR data can be **mass migrated to the secure blockchain environment** and provides ecosystem support to define **standards**, provide an **apps store** to better align technology to business practice, a **code store** to assist custom development and help make AI (Artificial Intelligence) applications more transparent by recording logic and data sources, and an installed **metadata platform** to track data movement for analytics, integration devices (including Internet of Things – IoT) and other sources.

CET HOSTS A PRIVATE BLOCKCHAIN NETWORK

Companies that meet governance rules and are eligible (e.g. Australian registered employer companies with an ABN number) for an invitation to the private enterprise blockchain network, are given the option of simply providing current employee data on a CSV file, and CET will upload the data to the blockchain and park it there until the company is ready to take control, and give ownership to employees. Once uploaded, the CSV file can be destroyed. Some companies may decide that is all that is required for now, and the data would not be integrated back to the legacy HR system. Integration options are set out in the following section. Privately owned data is fairly static (Names, addresses, date of birth, etc.) and could remain current for a short time or may need another upload later to refresh. The important fact is data is present in the new blockchain environment and ready to provide a company with legislative compliance status whenever it happens.

CET OFFERS A FULLY INTEGRATED CROSS-PLATFORM SOLUTION

Companies may opt for a two-way **integration from the blockchain to a PaaS** (platform as a Service) Cloud application and add company data relating to position and organisation assignment. For small companies that could be used as their HR technology solution and replace spreadsheets, or whatever fragile method they are using at present to record employee information.

Companies wishing to **extend their HR functionality**, and build additional custom applications, can opt for a platform licence that will deliver a solution that **integrates to their current HR legacy system** and delivers additional features.

CET's MASS DATA MIGRATION OPTIONS

The following options are on CET's custom-built Lightning (Salesforce.com platform) application.

Option 1 - Free data transition
No software license needed to transition data. **FREE to members** of the CET Blockchain network. Employee only can access and maintain data later, ensuring compliance, but would operate in duplication with a company's HR system (unless integration is built). The basic **data migration method uses a CSV file** format. Some data cleansing and data standards alignment may be necessary.

Option 2 - Limited integration platform
10 object (Lightning Starter) license: API connectivity for HR legacy systems is possible for members of the CET Blockchain network. Basic company objects (Limited Platform – see diagram below). Some data cleansing and data standards alignment may be necessary. CET ecosystem membership (Apps store, code store, metadata platform).

Option 3 - Extended integration platform
10+ object (Lightning Plus) license: Two-way integration with blockchain. Employee and basic organisation data. Can be used as simple HR system for data recording and reporting. Annual license required for data transition and use of extended functionality platform. CET ecosystem membership (Apps store, code store, metadata platform).

The diagram below illustrates how **an integrated cross-platform architecture** is designed and developed using blockchain as the central employee record.

Competitive Edge Technology – www.cet-hr.com
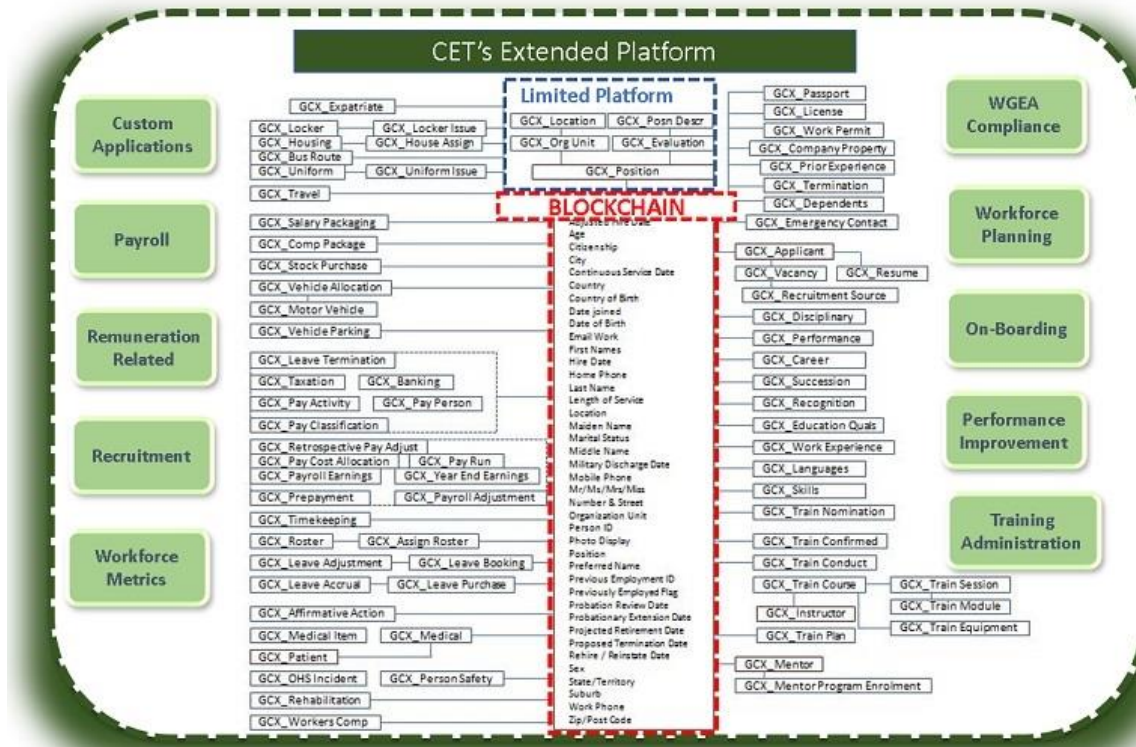
IMPORTANT NOTE

All API requests and data uploads to the CET IBM Blockchain must pass through the CET AWS gateway for credential checking and appropriate authorisation. Both platforms are capable of scaling up to accommodate workforce records globally.

CET's data integration practice, connecting HR legacy system employee data direct to the blockchain, and bypassing the PaaS platform, is available to clients. See below for contact information.

Current inter-ledger protocol being developed enables CET to connect their base layer blockchain with partner organisations wishing to focus on career, identity management, and government services applications.

CONTACT US

For more information about how your company can participate in the mass migration of data to blockchain technology contact blockchain@cet-hr.com