



SAP  
Innovation  
Awards 2019



# SAP Innovation Awards 2019 Entry Pitch Deck

## Blockchain-based Digital Credentials Application

itelligence - NTT DATA Business Solutions

THE BEST RUN



# Blockchain-based Digital Credentials Application

**itelligence** - NTT DATA Business Solutions

## “Quote”

*“Blockchain-based digital credentials eliminates the need for an intermediary to prove or verify the diploma and streamlines the process of recruiting”*

## Challenge

A Diploma/Certificate is a document that certifies that a person has received specific education and/or has passed a test. Today, issuing and verifying a certificate is a slow and complicated process where errors and fraud are a real risk. There is a need for a unique and coherent transcript all education credentials and experience, verified and verifiable by educational providers and employers.

## Solution

By implementing Blockchain as a “Digital Credentials Application”, we put the learner in control. The solution helps students, government and educational institutions, also employers who benefit from easy verification. The solution, based on open industry-standards, enables verifying the truthfulness and validity of certificates, licenses, diplomas or any official document.

## Outcome

We deliver a working POC to showcase the “Education certification and verification” powered by SAP SCP with components of SAP Leonardo, UX and Blockchain as a Service (BaaS).

**Decrease cost** of credential validation process

**Faster and Easier verification** of qualifications:  
From 6 weeks tot real-time

**Transparency and Credibility** by improved record keeping



## Partner Information

**itelligence**

**Technology partner. We Transform. Trust into Value.**



At itelligence, we focus on SAP solutions to create value for our clients. As a partner, we help them transform, grow and be more successful.

Blockchain-based applications, such as digital credentials have the potential to transform Higher Education. Implementing Blockchain eliminates the need for the need for an intermediary as well as streamlines the recruitment process for potential employers by instant verification of credentials.



## Business Challenge & Objectives

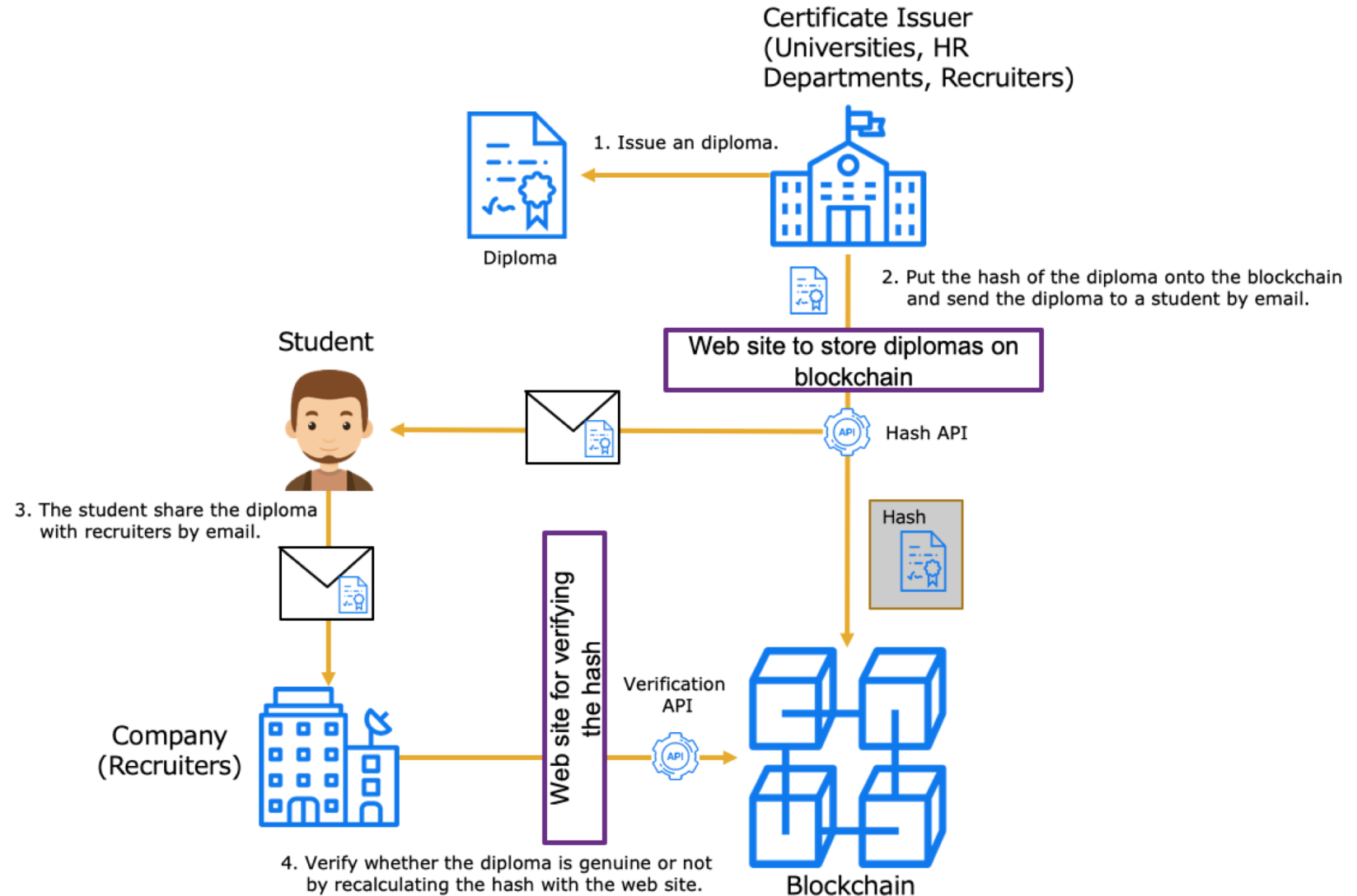
Today, issuing and verifying a diploma/certificate is a slow and complicated process where errors and fraud is a real risk. For employers, to verify an applicant's qualification takes time and has a high cost.

Blockchain provides the technical infrastructure to store and manage certificates reliably. It is a durable, time-stamped, transparent and decentralized technology. By implementing Blockchain as a "Digital Credentials Application":

- We create a certification infrastructure that puts the learner in control of the record of achievements
  - We provide the technical infrastructure to reliably store and manage the certificates
  - We enable the verifier to authenticate a certificate or diploma without having to contact the issuing organization
- 
- The objective is a working POC to showcase "Blockchain-based Digital Credentials Application" powered by SAP Cloud Platform, with:
    - Reusable concepts and components for SAP Leonardo, UX, Blockchain
    - Customer feedback on user flow, design and architecture
    - Reference Customer story
    - Feasibility to Expand Industry Focus to industries with similar requirements, like Workforce development, Government, Public sector eg. Postal services



## Project / Use Case Details







## Project / Use Case Details

**Use case:** “Store and Manage all Digital credentials and Certifications in an open Blockchain App. The solution, based on open industry-standards, enables verifying the truthfulness and validity of certificates, licenses, diplomas or any official document.”

- **Blockchain:** Implementing the blockchain technology provides a **secure** and trustworthy platform by ensuring the **transparency and credibility** of all training & learning achievements.
- **SAP Student Lifecycle Management:** SAP Higher Education Industry solution covers all university processes – from application and enrolment to course management and graduation

By implementing Blockchain as a “**Digital Credentials Application**”,

- We create a *certification infrastructure* that puts the learner in control of the record of achievements and accomplishments
- We provide the *technical infrastructure* to reliably store and manage the certificates
- We enable the *verifier* to authenticate a certificate or diploma without having to contact the issuing organization



# Benefits and Outcomes

## Business / Social

Credibility and Trust between Student/Applicant and Company

Faster and Easier Recruitment Procedure

Lower administrative cost by real-time validation and verification

Value added service to improve HR service

## IT

Enhanced technologies in Digital Credential service:

- SAP Cloud Platform
- Blockchain
- Object Storage
- UX

## Human Empowerment

Enhanced user experience through digitization, enhanced technologies in Digital Credentials and Recruitment

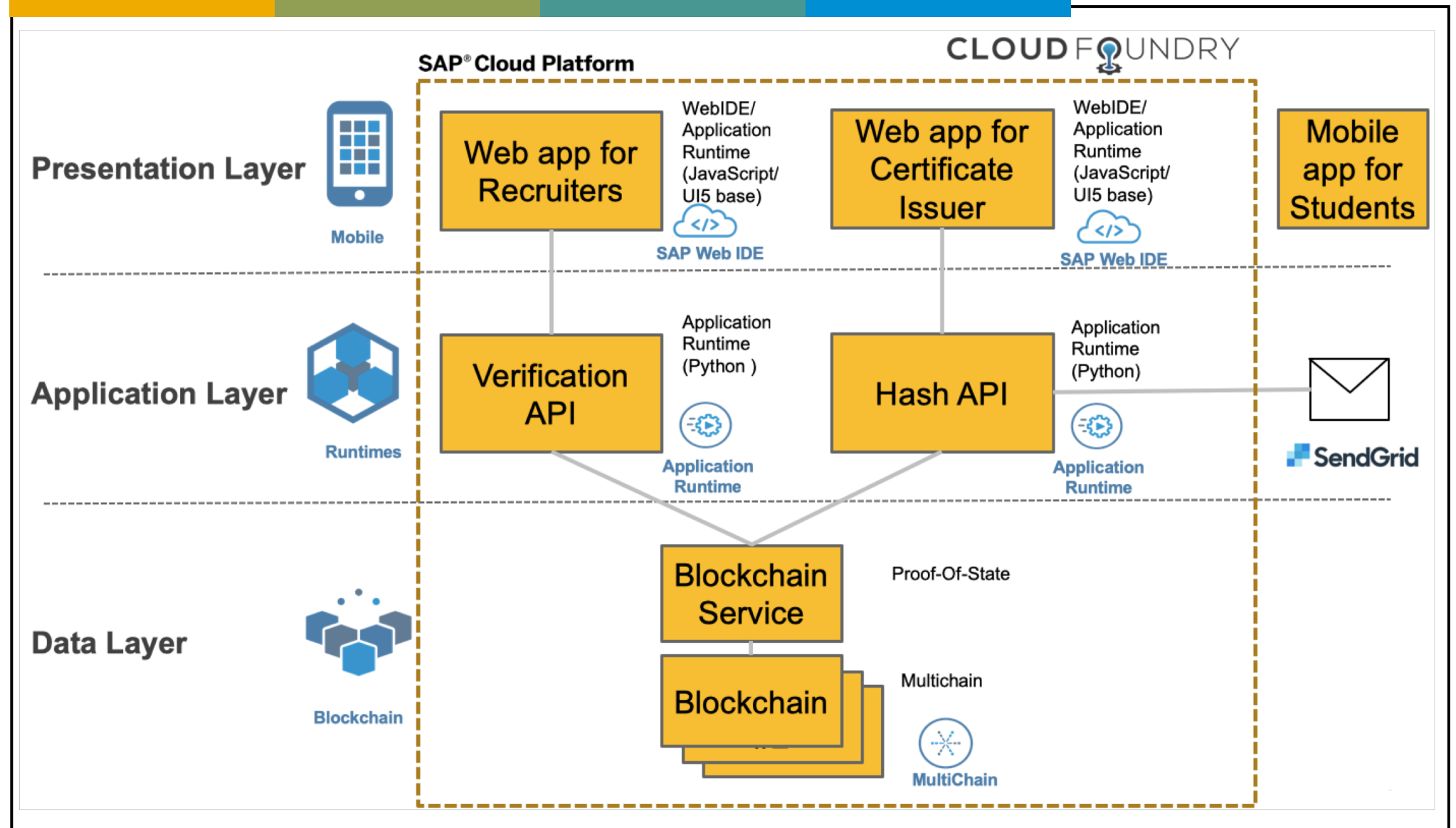
Transparency overall

Learner is in control of degrees, certificates and diplomas

No need for an intermediary to prove or verify credentials



# Architecture







## Deployment

Date of Deployment or POC: 02/2019

Number of live users: POC

### **SAP Technologies Used:**

SAP SCP		POC
SAP Leonardo	Blockchain	POC
SAP UX		POC
SAP SLcM	Student Lifecycle Management	POC

Server Processor: n/a

Linux Distribution: n/a



## Emerging Technologies and Use Cases

The following Emerging Technologies and use-cases are part of the project and describe the contribution

	Technology or Use Case	Yes/No	Contribution to Project
1.	Machine Learning / Artificial Intelligence	No	
2.	IoT	No	
3.	3D printing	No	
4.	Blockchain	Yes	Tamper safe storage of all qualifications to build trust
5.	API Economy / Integrate the Intelligent Enterprise	No	API to integrate Blockchain services and Object Store
6.	Cloud Native / Event Based Architectures	No	
7.	Extending the digital core with SAP CP / ABAP in SAP CP	Yes	SAP CP for UX development and integrating SAP Leonardo services for Blockchain
8.	SAP Leonardo Application ( extending SAP application, using Industry Innovation Kits or result of Design Thinking workshop)	Yes	Design Thinking workshop to define User Flow and UX components