Organization	Phoxel Technologies, India
Product / Service	Dynamic Digital Credentials
Learning Impact Trend	Digital Credentials and Competency-Based Innovation

Challenge:
Eradication of fake credentials and elimination of scope for falsified claims, from the root-level, by addressing at deep tech layers through groundbreaking technological adaptation.

Open Badge standards established improved visibility and portability on the front end. However, the credential verification is still mostly dependent on the legacy SQL or NoSQL systems. Data is held in custody of a single partner, be it issuer, escrow or any other third party. Such systems still leave huge and significant gaps in establishing trust, transparency and sanctity of the credentials issued. They still stand every chance of fudging, manipulation, alterations, faking and falsifying, either for motivated, intended, unintended or mala fide reasons. The problem of background checking in its true sense still costs huge resources, time and money. Portability is addressed, but not authenticity, which is more critical. It raises every concern of trust and the loss of confidence on credential. Millions of such credentials are issued currently by both well known and not so well known issuers. Certainly they all can't be trusted. This is a serious problem taking the scale, time and money into consideration

Building trust, confidence, authenticity, transparency among all participants of the ecosystem is the solution to address the challenge.

Solution:
Phoxel's TruthSystems platform is built on permissioned blockchain technologies to address precisely the challenges mentioned above. Open Badges issued on the Dynamic Digital Credentials (a part of TruthSystems) platform depends on the data written on multiple nodes

- No one party has custody of data
- By definition the Distributed Ledger Technology saves the credential data on multiple nodes only and only when it is consented by the issuer, assessor, signatory and the student, owner
- Every party in the ecosystem is entitled to keep a copy of the data (i.e. node), though not mandated (to keep costs low)
- The data written on such nodes is immutable thanks to mathematical proofs involved
- There is no scope for fudging, manipulation, alterations, faking or falsifying for any reason
- Verification process, includes getting consent from all the parties and not just one party
- Permissioned systems address the privacy issues involved
- High throughput systems address the huge volumes being processed

Eventually, one gets Open Badge which offer excellent portability with total TRUST baked into them

Learning Impact:

- 5B of Global workforce, 2B of mainstream students in 150+ countries[1]
- 60% of world population will move to urban areas by 2030
- Huge impact industrialised advanced countries, more so in developing world
- Motivation for more enrolments for higher education and skill-set learnings
- Access to higher education, employment opportunities from across the globe
- Healthy competition, from all over the globe; Better society
- Facilitates rural and town workforce to migrate for better prospects, with confidence
- Trust based ecosystem connects students, workforce for better employment and growth

The Impact shall be effective in industrialized advanced countries and has more impact in developing world. The rural and town population will access education from trustworthy institutions, and enables migration to urban areas for better prospects.

Platforms like DDC shall influence, impact the progress, growth and movement of people. And the use-case of trust worthy credentials are a plenty. Learning Impact is multifold and world-reach, with Trust and Confidence.

RoI:
By recognizing the potential impact of the Phoxel's solution, at global level:

- Est. direct cost saving per verification of credential is 15-60 (2-hours)
- Est. direct cost saving per issuance of credential is 2-6
- Americas:
  - On conservative assumption of credentials issued per year: 5M badges
  - Cost saving for verification of 10% credentials per year: 30 M
- Global
  - On conservative assumption of credentials issued per year: 0.5B badges
  - Global market potential for verification of 5% credentials per year: 375M
- ROI is very high, as the market in developed countries is evolving and market is expanding to developing countries
- Overall market for digital credentials, use-cases is ever increasing and has potential to grow very rapidly

Phoxel could put the emerging technologies to use for a significant impact on the ecosystem of learning, benefitting all stakeholders namely students, educational institutes and corporates. Pramanak instills confidence in corporates, protects the reputation of educational institutions, and ensures deserved recognition to students.

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Notes:
[1] data retrieved from www.un.org and rounded/approximated
ROI figures are estimates only
Pramanak is Product Name for Dynamic Digital Credentials, for India,. And so may be interchanged