CYBEREUM- AI POWERED DISTRIBUTED PROJECT GOVERNANCE PLATFORM

1.1 MISSION, PHILOSOPHY AND VISION

<u>Mission</u>: To increase the efficiency and accountability of organized human endeavor, and to bring a new, reliable, measurable paradigm to Project and Programme Management.

<u>Philosophy</u>: We strongly believe that megaprojects, and their efficiency and accountability, are central to the issues facing humanity in the coming decades, as they will play a central role in solutions to issues resulting from the enormous populations, depleting resources, climate change, and large-scale deprivation in several parts of the world.

<u>Vision</u>: To become the operating system of projects, and the hub for Markets to trade value to Projects and from Projects and to host at least 15% of Projects and Programs on our Platform by 2030.

<u>Motto</u>: Efficient and responsible execution of projects benefits humanity and the environment.

1.2 THE PROBLEM:

A sizeable portion of the World's GDP is accounted for by formally defined projects and programs with schedules and specified objectives. This amounts to trillions in US Dollar terms and is projected to increase. They include Infrastructure, Renewable energy, Oil & Gas, Big Science, Defense, ICT and so on. It is projected that between 2015 and 2030, US$90 trillion will be required for the basic infrastructure needs for world societies. Low Carbon Infrastructure (LCR) alone will require significant investment in projects that will exceed this large amount of by about US$4 trillion.

However, most of these projects suffer from significant cost and time overruns, and benefit shortfalls, causing trillions of dollars of tangible costs and substantial intangible ones.

The pervasiveness and chronic nature of this issue can be seen by what Oxford Professor Flyvbjerg, one of the world's foremost experts on Megaprojects, calls the "iron law of megaprojects:" overtime and overbudget, all the time. Professor Flyvbjerg has observed that nine out of ten megaprojects experience cost overruns, that another nine out of ten experience schedule overruns, and another nine out of ten experience benefit shortfalls, leading to only about one in a thousand projects that meets all expectations. He further observes that at the planning stage there is an incentive by project promotors to underestimate project related costs, overstate project income, and exaggerate future social and economic benefits due to lack of accountability and risk-sharing mechanisms.[1]

1.3 THE SOLUTION:

A decentralized self-regulating project governance and communications platform to align binding commitments and integrate efforts to activities that add value to complex projects with multiple independent participating agents and provide a shared single-source-of-truth distributed across these

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[1] Bent Flyvbjerg, 2014, "What You Should Know about Megaprojects and Why: An Overview," Project Management Journal, vol. 45, no. 2, April-May, pp. 6-19, DOI: 10.1002/pmj.21409

agents." In short: We will leverage the power of Distributed Ledger Technology and AI to change the way projects or programs are planned and executed.

- A transparent commitment of the project value creators to an execution plan with probity and provenance.
- An immutable baseline during planning, and tracking during execution
- Any changes to a milestone that affects any of the concerned parties will be automatically transmitted to them in a decentralized reliable manner without the need for human involvement.
- Smart contracts with logic built into it to automate value transfer upon milestone achievement with the possibility to code in the rewards for performance allow for the potential for changes etc.

The record of Baseline and Actual Project networks with the properties of Provenance and Immutability also offer a learning dataset for Machine Learning and a reliable source for understanding actual Project Execution issues.

This allows for the creation of improved baseline schedules with improved smart contracts at the milestones incorporating learning from previous experience from the reliable track records.

This virtuous cycle that makes the benefits of blockchain-based project networks better with the track-record growth multiplying an already great value proposition over time.

Furthermore, the Authenticated Project participants have a growing and immutable track record of performance on the Blockchain Project Platform with the properties of Probity, and Provenance, that come from the application of Blockchain technologies. The same is true of Projects themselves and the track record of their promotors.

Several new technologies are being brought together in a novel manner for a compelling value proposition to several parties representing significant portions of the world economy. This can result in a growing dataset of projects to help planning and risk-management for Project Promotors, Executors, and Financiers, if these are planned and executed on the cybereum Platform.

1.4 OUR TECHNICAL MODEL AND IP POSITION

The Blockchain Project Network is fundamentally different from all existing Blockchain Networks as it has several features specific to Project Networks.

- We have developed the Platform Architecture to make this possible.
- We have been granted 2 patents by the USPTO.
- 2 of our papers, one on the blockchain architecture and one on AI for project forecasting, have been published by highly prestigious peer-reviewed journals.
- We have developed a special array representation of Project Networks.
- We have created the code to write out a prototype Blockchain Project Network.
  - This code has been used to write out the first Project Blockchain.
  - The first Project Blockchain Blocks have been created.
- The Project Blockchain has many features that are unique and not represented in any existing realizations of Blockchain Technology.

The same array representation of the Blockchain Project Network also makes it ideal for Data Analytics applications such as Machine Learning. There are several existing libraries for Machine Learning that can be easily adapted for Data Analytics of the Blockchain encoded Project Networks.

- Data analytics algorithms based on our special array representation of Project Networks have been developed for unique and compelling insights into Project Planning.

We have a detailed Whitepaper that explains many of these Technical aspects.

1.5 MARKETS

Megaprojects: Professor Bent Flyvbjerg assessed the global megaproject spending at USD$ 6-9 trillion annually, which accounted for about 8 percent of total global GDP in 2014. As Professor Flyvbjerg states, "Projects in the range of $50-100 billion are now common, and Projects pushing to a Trillion dollars are not unheard of." The McKinsey Global Institute (MGI) stated about global infrastructure needs that, "From 2016 through 2030, the world needs to invest about 3.8 percent of GDP, or an average of $3.3 trillion a year, in economic infrastructure just to support expected rates of growth". Construction projects are estimated to average about US$ 11 Trillion a year, with about US$ 1 Trillion dollars lost due to inefficiencies which is related to inadequate digitization[2].

1.6 SUMMARY OF VALUE PROPOSITIONS

Project Promoters: Meeting scope and time targets. Benefits realization. This can amount to several billion USD each year.

Project Investors: Accountability in Project Selection, Management, & Execution, are key benefits The Blockchain-based schedule incentivizes accuracy in forecasting, and transparency in execution.

Purveyors of Project Inputs Such As Contractors, Vendors, Etc.: Self-enforced notification of changes to the project that can affect them. Tools for learning and data analysis from past projects. Track record of projects. Project Services market.

Project Financiers and Investors: Megaproject Investments are made by consortia of Lenders (Syndicate, with a Lead Arranger). Risk-mitigation comes from self-enforced notification to them of changes to the project plan or execution.

Regulatory Agencies: Several types of Regulatory Agencies serve in key roles in the selection and execution of projects.

Governments: Megaprojects are very important to countries where they are executed beyond the direct costs and benefits. Infrastructure projects have long term benefits to entire economies that are vast and difficult to quantify. The importance to national economies and geopolitical implications make a blockchain based project execution highly beneficial to national governments. Another important benefit in the non-reputable project records of project value creators and beneficiaries that helps with the issue of corruption and crony capitalism. In addition, Blockchain in smaller projects improves efficiencies over much of the economy.

1.7 STRATEGY

Our long-term strategy consists of the following 3 key phases:

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[2] The next normal in construction: How disruption is reshaping the world's largest ecosystem, McKinsey 2020

$\Rightarrow$ Phase 1: Develop and deploy initial viable solution; Free rollout with limited nodes; Validation for enterprise with partners.

$\Rightarrow$ Phase 2: Product rollout and marketing to increase userbase; App-development environment.

$\Rightarrow$ Phase 3: Revenue generation from value capture and platform centrality.

1.8 BUSINESS MODEL

The establishment and the sustainability of a two-sided market is a key objective. The strategy is to prioritize the growth in the userbase. Over the longer term, many models to monetize this market can be tapped. Business models based on two-sided networks involve the company or platform provider enabling the interaction between two user groups and capturing value from the cross-side network effects. We have a detailed Business Plan which includes the explanation of the Business Model.

1.9 VALUE CREATION & CAPTURE

The platform will be at the center of Two 2-sided markets:

a)   Project Execution Team <-> Project Execution Tool Providers

b)   Primary Project Client <-> Project Execution Services

The concept that makes a Blockchain schedule the center of a 2-sided platform is that it is a decentralized, distributed, yet single-source-of truth and an Integrated Master Schedule (IMS).

Value creation comes from net-efficiency gains to project and program execution from blockchain encoded decentralized common-source of truth project networks, Data Analytics applications to these networks, the efficient markets created for trading Project Services, Project value etc.

This created value will be greatly enhanced due to Network Effects with the growth in projects and project participants on the Platform. Value added due to Network Effects are key to platforms and Metcalfe's Law which relates the value added by a network to the square of its nodes (size) has been successfully validated with the valuation of platforms such as Facebook and Tencent[3]. Network effects have been critical in driving adoption of the Internet, smart phones, social media etc.

Revenue potential is from 2 categories:

▪   Direct value to Projects

▪   Network effects from the growing Project and Project Agent network on the Platform.

The direct value can be created and captured as:

▪   Percentage of created efficiency capture from Megaprojects

▪   Percentage of market for Project services from the total Project Market

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[3] Zhang, XZ., Liu, JJ. & Xu, ZW. J. Comput. Sci. Technol. (2015) 30: 246. https://doi.org/10.1007/s11390-015-1518-1

1.10   COMPETITORS

Existing providers of enterprise project management software include Oracle (Primavera) and Microsoft (MS Project); there are numerous smaller and more nimble players based on the cloud as well who follow a freemium model.

These potential competitors will be managed by utilizing the power of our Platform model as a lucrative way to deliver and capture value from the Project Market. Our value-proposition is far more fundamental and game-changing than the functionality currently being offered by any of these. The core functionality offered by these platforms will be available for free from our platform with the further enhancement of blockchain encoding with its numerous benefits. Our value capture comes from the 2-sided markets that we create.

1.11   MANAGEMENT TEAM:

The team is composed of people with key positions in Business and Project Management, and Law. We are currently in the process of gathering a Technical Product Realization Team.

Ananth Natarajan, CEO: over 18 yrs of worldwide megaproject experience in Product Development & Project Management. BEng & MS in Mech Engineering, MBA from IESE, & MSc in Major Programme Management from Oxford University. PE in Texas, PMP with Project Management Institute (PMI) & PMI expert on AI for projects.

Christopher Cass, COO: over 15 yrs leading large-scale technology deployment. Leadership roles in 2 of the largest telecommunication companies, overseeing vast

expansion of technology programs such as $500 million 5G infrastructure. BS (Penn State) & MSc in Major Programme Management (Oxford)

Geetha Gopal, CPO: over 15 yrs project & program management expertise. She is a PMI Future 50 next-generation leader & PMI AI expert. BEng & MSc in Major

Programme Management (Oxford)

Christine Natarajan, CLO: Licensed Attorney, legal & compliance experience in America, Europe & Africa in several industries.

1.12   NEXT STEPS

The key to implementation is Product Development, Product Rollout, and Customer engagement. We are looking for skilled Technology professionals with a deep knowledge of Blockchain, Cryptography, and Platform Product Realization. We are also looking for seed funding, strategic partners, and advisors. Funding will cover the development cycle (approx. 1 year) and building of the user-base (approx. 3 years). These phases will overlap.