

This document presents the business case and main requirements of **In Know Time** (Blockchain Consulting)

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Context

Have you identified that your specialized knowledge could be useful to solve critical problems? but this knowledge is hard to monetize because of the difficulties of payment coordination, marketing, and limited access to the right people at the right times.

Problem statement

Specialized knowledge is a significant piece to innovate and generate solutions in our changing world. However, there is an increasing need of solutions to support the sharing specialized knowledge of different experts around the world. This need requires reducing difficulties related to payment, marketing, and access to people who are looking for this expertise.

Solution

This NFT-based blockchain solution aims to give you a convenient way to sell your time and knowledge services for money, allowing you to influence clients around the world. Set up your meetings including options for one-to-one or group sessions, with controllable privileges, and find naturally incentivize support for the marketing of your consulting services.

This blockchain solution allows creating consult services by a consultant ("host") for one-to-one or group sessions. Once the service is created, the host can assign a slot of time to the session and create one or more NFT tokens. To attend the service, a host can sell/give/transfer NFT tokens to an attendee. The attendee might transfer the token in the ecosystem to another attendee. Before the meeting of the consulting service (e.g., 15 minutes), the NFT token cannot be transfer to any other attendee and the "winner" of the meeting will be determined. The winner can request a link to be admitted to the meeting, once the attendee sings a particular message to demonstrate the control of the relevant private key. If the attendee cannot attend the session, there may be some automatic refund given to the holder of the NFT token for that time slot. Therefore, the host can monetize his knowledge reducing the payment difficulties and increasing the chance of marketing services.

Marketing services can be offered by marketing experts. These experts can acquire the initial supply of NFT tokens of a particular consulting service and promote this service to a group of potential attendees. The marketing expert can transfer the tokens to the interested attendees and receive an additional fee (increasing the price of the token).

As a result, the host will have attendees for the consulting service, marketing experts can receive a profit for their services, and attendees will have the opportunity to attend and receive specialized knowledge in a distributed environment.

Considering the security of the hosts and attendees, the solution will guarantee that sensitive data will be recorded safely in an off-chain application and the information of the transactions will be recorded in the blockchain ledger to have the history per host and attendees.

Benefits

1. **Easy way to sell your time and knowledge services for money allowing you to reach clients around the world.** Thanks to this blockchain solution, you can have complete traceability of every token in a transparent way and you don't require to depend on a centralized institution to

identify the money that you will receive, you will receive the money in the moment that the token is transfer to an attended, you can exchange your tokens for fiat (US\$). You don't need intermediary to receive your payment, you can receive directly your payment

2. **Extended network.** Maybe you don't know how to market your services, to the platform will be connected a group of international marketing experts who can buy your tokens, promote your sessions and knowledge to their networks and transfer the tokens obtaining additional profit for them and help you to be recognize in your area of expertise. As a result, you can increase your visibility in the environment of clients in your knowledge.
3. **Greater Flexible options in setup in meetings.** Your attendees can decide the controls that they want to use during the session. For example, they can decide to activate video, option for speaking or just listening. Depend of the selected controls will be the token that attendees will buy and the price that they will pay.

Measurements

Some of the metrics that can support the achievement of the goal of the solution are:

- Calculate the number of hosts per month
- Calculate the number of attendees per service
- Calculate the number of transactions in the ledger
- Validate and calculate a complete track of the transactions for a host

Stakeholders

Who is involved?

- Host
- Attendee
- Developer of smart contracts

What are the roles that they play?

- Host: A host creates one or more consulting services that will be offered in a particular time slot.
- Attendee: An attendee acquires an NFT token for a time slot with a particular host.
- Developer: a developer is in charge of the design, development and maintenance of the off-line app (Website) and the decentralized application (DAPP).
- Marketing expert: A marketing expert can acquire a set of tokens and transfer to potential clients and received an additional fee for his marketing services.

What are their restrictions?

- Transactions (creation and transference of tokens) cannot be altered/change in the ledger (Immutability).
- No central owner (distributed network).
- Only an individual with an admin role can have access to the sensitive data of the host or attendee.

State data (store data) and off-line chain

State data

In the ledger will be recorded the following attributes for each token:

- Host: blockchain address
- Price: uint256
- Attendee: blockchain address
- StartTime: uint timestamp (seconds since 1/1/1970 UTC)
- EndTime: uint timestamp (seconds since 1/1/1970 UTC)
- CanListen: Boolean participant permission attribute
- CanSeeVideo: Boolean participant permission attribute
- CanSeeScreen: Boolean participant permission attribute
- CanSpeak: Boolean participant permission attribute
- CanShareVideo: Boolean participant permission attribute
- CanShareScreen: Boolean participant permission attribute
- CanControlDevice: Boolean participant permission attribute, for hosts with Net-connected devices like lab equipment. (This may be expandable to multiple devices if desired; controllable cameras might also count as a device, if someone wants to zoom in or pan around to see some specific detail on their own pace).
- CanAccessRecording: Boolean participant permission attribute, indicating if the participant will be allowed to record (or access a recording created by the host, afterward).
- CanAddParallel: Boolean host permission attribute. If false, the host cannot change this attribute or add another NFT with an overlapping time range using the same account and scheduling contract. That may increase the NFT market value.
- HostCheckedIn: Boolean that can be set to true only by the host, only within several minutes of the startTime.
- HostRating: Numeric value which can be set after the start time of the meeting by the NFT token-holder who “won” the meeting. With the host rating, the attendee can leave a recommendation for a specific topic.
- ParticipantRating: Numeric value which can be set after the start time of the meeting by the host.

Off-chain data

The off-chain storage will contain the profile of a host (name, photo, social network links), the data related to the consulting service, and the attendee’s information.

Functional requirements

Functional requirements are divided in two groups: website and DAPP.

Website comprehends the requirements for the off-line application that will interact directly with the hosts and attendees.

- Allows the creation of a host's profile considering name, photo, biography with experience, resume, portfolio, social media (linkedin, github) and special knowledge that offer to the attendees.
- Allows the creation of a consulting service including number of attendees, selected time slots, description of what topics or range of topics are expected/requestable for discussion, describe if the session includes guests (important figures/speakers from the political, economic, scientific, artistic life, etc).
- Allows the use of a calendar to select the time slots of the consulting services.
- Allows to setup each consulting service by the host considering attributes such as CanListen, CanSeeVideo, CanSeeScreen, CanSpeak, CanShareVideo, CanShareScreen, CanControlDevice, CanAccessRecording, CanAddParallel, HostCheckedIn, HostRating, ParticipantRating.
- Allows to register the information of an attendee taking into consideration name, company, and preferences.

DAPP considers the requirements for the decentralized application (ledger) on Solidity.

- DAPP should allow the creation of token(s) (NFT) associated with a consulting service using the ERC-721 Non-Fungible Token Standard.
- DAPP should allow to set up the attributes of a token.
- DAPP should allow to set up the price considering the attributes of a token.
- DAPP should allow the approval of an address (attendee) before transferring a token.
- DAPP should allow transferring a token from the host to an attendee.
- DAPP has the option to list all the available consulting services and the price of the tokens.
- DAPP should allow the transfer of ether between the host and an attendee.
- DAPP should allow the transfer of a token between the host to the attendee or an attendee to another attended. In the second case, the first attendee can change the price of the token before transferring it. The objective is the first attendee can obtain some profit and offer services of marketing for the host.
- DAPP should allow the transference of a token before the time of the meeting (e.g. 5/10 minutes).

Assumptions

Considerations for the solution that are not implemented considering the limited time.

- The exchange of the NFT for any coin is the responsibility of the host.