

MULTI-LEVEL MULTI-DIMENSIONAL DIGITAL CREDIBILITY SYSTEM

TECHNICAL FIELD

[0001] The present disclosure generally relates to data processing systems and methods for online networks, and more particularly to systems and methods for managing digital credibility.

5 BACKGROUND

[0002] Advancement in technology has enabled the generation and collection of massive amounts of data. Without systematic and proper organization, this huge amount of data can result in a lot of noise under which meaningful information is often buried, lost and remain existentially inaccessible. Meaningful information refers to data or information which can
10 serve as the basis for better contextual sensemaking for candidate selection or for further developing individuals, groups, teams, and organizations. In another aspect, while it is possible to assess whether a person has the requisite technical skills and knowledge on a snapshot basis based on examinations, certifications and verbal referrals, there is currently no systematic way to digitally organize and allowing more knowledge into the development of a person's skills
15 and knowledge in between these snapshots and other multi-dimensional aspects of a person's quality such as mindset, attitude, talent, values, emotional engagement or even contextual creative potential. As a result, a lot of resources may need to be invested by individuals, groups, teams or organizations to observe and collate information from disparate sources about such an individual before being able to eventually establish the quality and credibility of a person
20 beyond what is obtainable from taking a snapshot approach. This is so especially when there is non-familiarity at the beginning of a nascent relationship or when certain contexts forbid deeper familiarities due to social distances e.g. in between someone from top leadership and a staff or team many levels down the hierarchy in very large organizations.

SUMMARY

25 [0003] In one aspect, the present disclosure provides a method for managing digital credibility, the method being executable by a system having processor coupled with a memory, the processor being configured to communicate with an external system over a network, the method comprising: detecting event data arising from a first event completed by a first user in an entity, the first event being one of an online event, an offline event, and a hybrid event;
30 performing a backbone blockchain transactional validation for the backbone event data to be

added as a backbone block to a backbone private blockchain owned by the entity; performing a logical validation to determine if the event data is valid in a predefined context of the entity; and performing the following steps in response to the embellishment data being determined by the logical validation to be valid: generating at least one embellishment data relating to the event, the embellishment data originating from the external system or from one of the first user and a first authenticated and/or authorised (ANOA) user; performing a blockchain transactional validation to add an embellishment block, the embellishment block being based on encrypted backbone block data and encrypted embellishment data, the embellishment block being added to at least one embellishment blockchain, the at least one embellishment blockchain being one of a private embellishment blockchain owned by the organization and a public embellishment blockchain associated with the first user, wherein each block of the backbone private blockchain, the private embellishment blockchain, and the public embellishment blockchain is configured to be multi-level and/or multi-dimensional by association with at least one of a workspace level, an activity level, and an event level, and wherein each of the at least one backbone blockchain, and wherein the private embellishment blockchain, and the public embellishment blockchain is concurrently associated with at least one of an individual level, a team level, an organizational level and a supra-organizational level; and interlinking the at least one embellishment blockchain with the backbone blockchain via a node block to form a part of a constellation of blockchains.

[0004] In one aspect, the present disclosure provides a method for managing digital credibility, the method being executable by a system having processor coupled with a memory, the processor being configured to communicate with an external system over a network, the method comprising: detecting event data arising from a first event completed by a first user in an entity, the first event being one or an online event, an offline event, and a hybrid event; receiving multi-dimensional embellishment data relating to the first user, the embellishment data originating from the external system or from one of the first user and a first authenticated and/or authorised (ANOA) user; performing a logical validation, e.g. determining if expeditionary work has been achieved, or to determine if the embellishment data is valid in the context of the event, the logical validation including one or both of a machine learning categorization and a validation originating from an ANOA user, wherein the logical validation includes confirming the first event as a fact or confirming that the first event occurred in reality; performing a backbone blockchain transactional validation for the backbone event data to be added as a backbone block to a backbone private blockchain owned by the entity; and in

response to the event and embellishment data being determined by the logical validation to be valid, performing a blockchain transactional validation to add an embellishment block, the embellishment block being based on encrypted backbone block data and encrypted embellishment data, the embellishment block being added to at least one of a private embellishment blockchain owned by the organization and a public embellishment blockchain associated with the first user, wherein each block of the backbone private blockchain, the private embellishment blockchain, and the public embellishment blockchain is associated with at least one of a workspace level, an activity level, and an event level, i.e. associated to the multi-levelness of an entity, and wherein each of the at least one backbone blockchain, the private embellishment blockchain, and the public embellishment blockchain is concurrently associated with at least one of entity at an individual level, a team level, an organizational level and a supra-organizational level.

[0005] The method above, wherein the backbone event block and the first embellishment block are simultaneously added, or subsequently added, or subsequent embellishment blocks related to an event block are asynchronously added, to different blockchains such that the different blockchains are linked to a common event milestone in respective chronologies of multiple events, the common milestone corresponding to the first event. The method above, wherein the embellishment block added to the public embellishment blockchain is based on one or more embellishment data, and wherein the one or more embellishment data includes one or more recordings.

[0006] The method according to any above, further comprising in response to an external user in an internal or external network using the public embellishment data in a query relating to an authenticity of the embellishment data, the system is configured to provide an indication to the external user of an authenticity of the embellishment data while keeping the backbone blockchain and the private embellishment blockchain hidden from the external user when needed.

[0007] The method according to any above, further comprising: in response to a query based on a profile of the first user, determining if the query has an answer based on data saved to the public embellishment blockchain, wherein selected ones of the data are public embellishment data of the organization; and providing an indicator of credibility of the profile, wherein the indicator of credibility is dependent on an extent to which the data saved to the public

embellishment blockchain has been validated by the private backbone blockchain and/or the private embellishment blockchain of the organization.

[0008] In another aspect, the present disclosure provides an online platform configured to manage digital credibility according to the method of any one described above, wherein the method further comprises: receiving a set of requirements from a party; matching candidate profiles to the set of requirements; creating a credibility report for each candidate profile; sorting the candidate profiles according to the credibility report; and presenting the party with a sorted list of candidate profiles, wherein the credibility report includes one or more indicators of credibility, and wherein the indicator of credibility is dependent on an extent to which data saved to a public embellishment blockchain has been validated by a private backbone blockchain and/or a private embellishment blockchain, and wherein the private backbone blockchain and the private embellishment blockchain remain invisible to the party.

[0009] The online platform according to any above, wherein the method further comprises: monitoring new embellishment blocks in the public embellishment blockchain related to a selected candidate profile; updating the credibility report depending on a quantity or a quality of verification of the new embellishment blocks and existing embellishment blocks, without providing access or visibility to the private backbone blockchains or the private embellishment blockchain; and periodically providing the party with an update on the credibility report of the selected candidate, wherein the selected candidate is one of the first user, a team including a plurality of the first user, and an organization including the team.

[0010] In another aspect, the present disclosure relates to a method of managing digital credibility. The method includes: detecting event data resulting from an event completed over time by one or more users of an organization; detecting embellishment data from one or more internal sources and/or an external sources, the internal sources including the one or more users in the organization; performing logical validation on the event data and the embellishment data to determine whether the embellishment data is valid in context of the event data; performing blockchain transactional validation using distributed peer-to-peer devices to create one or more blocks for updating one or more blockchains, wherein the blockchain transactional validation is a distinct and separate process from the logical validation; and adding the blocks validated by the blockchain transactional validation to one or more selected blockchains, wherein selection of the one or more blockchains is dependent on a nature of the event and on whether the embellishment data is private or public.

[0011] The method according to any above, wherein the blockchain transactional validation is preceded by the logical validation such that the blockchain transactional validation is performed only if the logical validation determines that the embellishment data is valid.

5 [0012] The method according to any above, wherein the one or more selected blockchains comprise a backbone blockchain and/or a private embellishment blockchain, the backbone blockchain and the private embellishment blockchain is hidden from public users outside the organization, and wherein the one or more blocks based on the event data are stored on the backbone blockchain, and wherein the one or more blocks based on private embellishment data are stored on the private embellishment blockchain.

10 [0013] The method according to any above, wherein the one or more selected blockchains comprise a public embellishment blockchain, and wherein the one or more blocks based on public embellishment data are stored on the public embellishment blockchain.

[0014] The method according to any above, wherein the logical validation comprises one or both of a machine learning categorisation and a human-mediated event validation.

15 [0015] The method according to any above, wherein the machine learning categorization is configured to tag the event data and/or the embellishment data with a contextualized meaning based on a narrative described by a plurality of events.

[0016] The method according to any above, wherein the event data can also be validated if the event data and its embellishment data is in accordance with expeditionary emergent learning
20 patterns by the one or more users in the course of performing human-machine-mediated work.

[0017] The method according to any above, wherein the embellishment data is determined to be valid if both of the following conditions are met: (i) the event data is supported by data recorded from expeditionary emergent learning by the one or more users in the course of performing human-machine-mediated work; and (ii) the embellishment data is received from
25 a trusted source.

[0018] The method according to any above, further comprising generating hashes of the event data, the embellishment data related to the event data, and results of the logical validation based on the event data and/or the embellishment data, such that the event data, the embellishment

data related to the event data, and the results of the logical data are encrypted and stored in a first blockchain as hashes of multiple events.

[0019] The method according to any above, wherein the blockchain transactional validation is performed on the hashes of multiple events.

5 [0020] The method according to any above, wherein a plurality of backbone blockchains, a plurality of private embellishment blockchains, and a plurality of public embellishment blockchains are formed in a constellation network configuration by the hashing performed on the hashes of multiple events.

10 [0021] The method according to any above, wherein the event data comprises: data recorded from human-machine-mediated work performed by the one or more users in the organization; and data recorded from expeditionary emergent learning by the one or more users in the course of performing the human-machine-mediated work.

15 [0022] The method according to any above, wherein the expeditionary emergent learning is unstructured and configured to build the organization's capacity to address a VUCA-filled (volatilities, uncertainties, challenges, and ambiguities) environment.

[0023] The method according to any above, wherein the embellishment data comprise data extracted from event-related posts uploaded to public platforms by the one or more users and/or data extracted from derivative posts.

20 [0024] The method according to any above, wherein the derivative posts comprise responses to the event-related posts, the derivative posts originating from public users outside the organization.

[0025] The method according to any above, wherein the embellishment data stored on the public blockchain comprises a credibility indicator to indicate whether the embellishment data is supported by validated data.

25 BRIEF DESCRIPTION OF DRAWINGS

[0026] Fig. 1 is a schematic diagram of a network;

[0027] Fig. 2 is a schematic diagram of one aspect of a blockchain architecture;

[0028] Fig. 3 is a schematic diagram of a constellation blockchain architecture;

[0029] Figs. 4A and 4B illustrate a multi-level and multi-dimensional blockchain architecture;

[0030] Fig. 5A illustrates an exemplary narrative constructed based on meaningful blocks of work memory;

5 [0031] Fig. 5B illustrates a multi-dimensional vector;

[0032] Figs. 6A and 6B illustrate a method according to one embodiment of the present disclosure;

[0033] Fig. 7 is a flowchart of a method to manage embellishment data;

[0034] Fig. 8 is a schematic block diagram showing multi-dimensional values;

10 [0035] Fig. 9 is a flowchart of a method for candidate placement;

[0036] Fig. 10 illustrates an exemplary dashboard according to an embodiment of the present disclosure; and

[0037] Fig. 11 illustrates an exemplary tool according to another embodiment of the present disclosure.

15 DETAILED DESCRIPTION

[0038] It will be readily understood that the components of the embodiments, as generally described and illustrated in the figures herein, may be arranged and designed in a wide variety of different configurations in addition to the described example embodiments. Thus, the following more detailed description of the example embodiments, as represented in
20 conjunction with the figures, is not intended to limit the scope of the embodiments, as claimed, but is merely representative of example embodiments.

[0039] Reference throughout this specification to “one embodiment”, “another embodiment” or “an embodiment” (or the like) means that a particular feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment. Thus, the
25 appearance of the phrases “in one embodiment” or “in an embodiment” or the like in various places throughout this specification are not necessarily all referring to the same embodiment.

[0040] Furthermore, the described features, structures, or characteristics may be combined in any suitable manner in one or more embodiments. In the following description, numerous specific details are provided to give a thorough understanding of embodiments. One skilled in the relevant art will recognize, that the various embodiments be practiced without one or more of the specific details, or with other methods, components, materials, etc. In other instances, some or all known structures, materials, or operations may not be shown or described in detail to avoid obfuscation.

[0041] Fig. 1 is a block diagram of an exemplary network (100). The system (100) includes at least one server (101) having at least one processor (102) and at least one memory (103), the at least one processor being configured to execute a program (stored in a non-transitory data storage medium) and to communicate with user devices (104) over one or more network. Although referred to in the singular form, it can be appreciated that the server (101) may physically take the form of one or more computing devices. The at least one processor (102) may be configured to execute the program to perform a method according to embodiments of the present disclosure. Each of the user devices (104) may be operable with the system via an online app, a downloadable program, or otherwise configured with a user interface. The user device (104) may include but is not limited to a server, a desktop device, or a mobile device, or a smart wearable, etc. A mobile device may also serve as a server (101) and/or a user device (104), etc. In one aspect, there is provided a non-transitory program storage device readable by a computer, tangibly embodying a program of instructions executed by the computer to perform a method for managing lifelong work and learning events and their embellishments on a blockchain. In one aspect, there is provided a non-transitory program storage device readable by a computer, tangibly embodying a program of instructions executed by the computer to perform a method for managing digital credibility for individuals, teams, organizations and/or supra-organizations. For the sake of brevity, the term “entity” may be used to refer to groups of individuals, teams, organizations and/or supra-organizations, and such like. Where the following description refers to a method of the present embodiment being applied to an individual or personal level, it will be understood that it can apply across aggregations of individuals such as groups, teams, organizations, and supra-organizations. The present method structures these entities using a multi-level perspective starting at the personal (individual) level. That is, an entity is managed as a multi-level multi-dimensional data organization. The present method is configured to close the publication gap in current systems and to provide a

way to manage digital credibility in a context where data can be multi-level and multi-dimensional.

[0042] Embodiments of the present disclosure are directed to the management of enduring and meaningful records, using blockchain technology to securely track, maintain and manage these records. The records may include expeditionary emergent learning records, in which these records include disclosable and non-disclosable records. Transactions associated with such records are compiled into a block and stored in a chain of record similar transaction blocks. In one aspect, transactions associated with these disclosable and undisclosable records related to expeditionary emergent learning records are compiled into a chain of record transaction blocks. The chain can be considered a chronicle of record path through time (as shown schematically in Fig. 2). When a transaction occurs, one or more corresponding record parameters of a completed event (both disclosable and non-disclosable), such as completion of work event, completion of coaching session, celebration of contextual positive moments, are sent to one or more validation modules. The modules establish a validity of the transaction (hereinafter referred to as blockchain transactional validation) and generate a new block. Once the new block (202) has been calculated it can be appended to the historic task events blockchain (200), which is also referred to as a backbone blockchain.

[0043] The backbone blockchain (3001) can be defined as a multi-entity and multi-level chronicle of record path through time. The blockchain(s) according to this disclosure takes on an interlocking constellation topology (3000) where each node can trigger the formation other nodes in different dimensions, as shown in Fig. 3. According to embodiments of the present disclosure, the blockchains are configured such that the blockchain topology may be described as a constellation topology. In the constellation topology, at least one block in a blockchain also serves as a node that is connected to another blockchain. In this document, the term “node” refers to a block which serves to link multiple blockchains across multi-dimensions and/or multi-levels. In addition to appending new blocks linearly forward, i.e., sequentially appended according to time of occurrence, selected blocks are used to generate new blockchains in which other dimensions (other than time) are captured. According to the present disclosure, at the logical level, the addition of new blocks can be in accordance with any one of the following: (i) forward beyond the latest block, (ii) backward on a retrospective block, (iii) lateral forward or backward, and/or (iv) multi-dimensional both forward and backward across multiple entities. As the topology of an entity grows, the digital credibility of that entity also improves. Over

time, the individual topologies of each entity will lend weight to the validation of other growing topologies. The resulting architecture may be one or more massive interlocking constellations of topologies. In some examples, the massive interlocking constellation of topologies relate to the various respective contexts of different entities.

5 [0044] A new block in expeditionary learning could be a block representing problem spaces (also referred to as “workspaces”) which can be subordinately broken down into smaller problem spaces representing the challenges that need to be addressed during expeditionary learning. As problem spaces grow, they can also be merged or unmerged to represent the abstract and contextual framing of the expeditionary challenge. This is genesis of an eventual
10 constellation topology of blockchain nodes. As these backbone blocks are being synthesized and appended to the chain, new embellishment blocks can also be appended to these building blocks of the expeditionary learning chain. The embellishment blocks are generated as a result of one or more embellishment processes.

[0045] The blockchain topology (3000) may include one or more backbone blockchains (3001)
15 that are interconnectable with one or more embellishment blockchains (3100, 3200, 3300). An embellishment blockchain may be added to the backbone blockchain at different blocks of the backbone blockchain, and the respective blocks which are used to form at least one block of an embellishment blockchain is referred to as a node (3020, 3030, 3060). An embellishment blockchain may be interconnected to two nodes (3020, 3030) of the same backbone blockchain.
20 An embellishment blockchain may be configured as a private blockchain (3200) or a public blockchain (3100). At a logical level, a new block may be added such that it does not directly link to the last block added. For example, block 3130 may be added after block 3070 is added, but instead of linking block 3130 to 3070, block 3130 may be added such that it is directly linked to an earlier added block such as 3030. For the sake of brevity, two blocks X and Y are
25 said to be directly linked if there are no other blocks between X and Y in the shortest linkage between X and Y. Thus, block 3030 and block 3130 are described as being directly linked or in direct linkage, whereas block 3030 and block 3070 are described as being indirectly linked or in indirect linkage.

[0046] The constellation topology may be in the form of a blockchain having a node that
30 connects different dimensions. For example, referring to Fig. 3, the node 3060 is linked to a block 3070 on the block chain 3000, and the node 3060 concurrently links to a block 3360 on another backbone blockchain 3300. Each of the blockchains 3000, 3300 stores data relating to

different levels and dimensions. One of the advantages of the constellation topology is that it enables one or more dimensions to be captured, in addition to the chronological order in which the blocks are added to a blockchain. For instance, if it is determined that the embellishment data to be stored in block 3130 is related to an existing block 3030 formed at an earlier time, the generation of block 3130 takes into account the hash of block 3030, and in this manner forms a link to the backbone chain 3000 via the node 3030. The embellishment block 3130 may be added after block 3040 and 3050 have been formed, and in this sense, it can be said to be a block added backward on a retrospective block. Besides the conventional way of building a blockchain (e.g., adding a new block forward beyond the latest block), the present method enables the adding of new blocks to an embellishment blockchain. Relative to the backbone blockchain, this provides for the adding of a new block laterally forward or backward, and/or in a multi-dimensional manner, both forward and backward, across multiple entities.

[0047] Some of the data that is generated or used may be treated as confidential or non-disclosable records by the entity (e.g., company confidential information). This may include research discussion, prototype drawings, confidential transcripts of coaching conversations, etc. Some of the data that is generated or used in the emergent work may be available to the public and considered disclosable records. This may include information that is published by individuals or teams with the authorization of the organization, for example, posts to social media to generate publicity for the company's product launch, videos to educate consumers, etc. These posts may generate comments or replies, which are treated as part of the disclosable records relating to the organization's products, activities, branding etc. The entity may therefore configure segments of the backbone blockchain as a private blockchain or public blockchain.

[0048] An embellishment blockchain can be both private or public or it can be a hybrid of both public and private. From an organizational perspective it could be all private where both the backbone chain and embellishments chain are operated within the confines of the organizations and that will not be shared publicly. On the other hand, a hybrid approach could be implementable with domain related information be kept private while less sensitive embellishments data be shared publicly, e.g., on a social media. For example, say individual A and B in Organization C are working on a private project, go through expeditionary learning through to produce results on a journey that were met with more failures than successes. The content of what A and B did in C could be kept private. The embellishments such as values,

e.g., the leadership of B in the instance of keeping A going can even when the chips are down could be made public. For example, in a post where A said that having a leader like B made it worthwhile to stay in C because he felt like he was well supported even if there were many challenges in the job. This allows for a systematic and targeted digital expression not typically available to organizational staff using typical systems. It further allows others to be motivated and/or for Organization C to gain a positive reputation as an employer such that it will be able to attract top talents, for example, if such sharing of values can be made public.

[0049] The public embellishment blockchain is substantiated by the private backbone/embellishment blockchains kept private in Organization C, which accords digital credibility to the public embellishment blockchain. Optionally, A may retain the public embellishment blockchains relating to disclosable aspects of his/her achievements and/or expeditionary learning over the course of his/her career with Organization C. Thus, even when A makes a career move and leaves the organization C, A retains access to the public embellishment blockchain and can use it to substantiate his/her resume with a certain level of trusted digital credibility enabled by this disclosure.

[0050] As schematically represented in Fig. 4A, the blockchain constellation (400) can be interconnected across different levels of events (401), activities (402), and/or workspaces (403). As schematically represented in Fig. 4B, the blockchain constellation (400) can include blockchains of records at the individual level (410), team level (420), and/or organizational level (430); and each comprising within themselves different levels of events (401), activities (402), and/or workspaces (403). As a non-limiting example, different blockchains may be formed on the basis of disclosable records relating to one or more similar or different entities. For example, these blockchains may be interconnected with other blockchains which related to records at a team level, e.g., the teams of which the one or more individuals are team members, or these blockchains may be interconnected with other blockchains which relate to non-disclosable records of the organization within which these teams or individuals work. Other dimensions that may be captured by embellishments and immutably stored in embellishment blockchains may be expressed as a vector. For example, as shown in Fig. 5A, a vector may be allocated to each of a series of events corresponding to an activity or workspace, enabling a higher and more abstract level view of the developments to be plotted out against a selected frame of reference (501, 502) such as impact against time, such that inflexion points (520) or turning points in history may be identified. In other examples, multiple dimensions (550) such

as personal values structured as a pentagon with 5 dimensions may be captured as embellishments to any backbone node.

[0051] According to an embodiment, there is provided a method (600) of managing digital credibility, as illustrated in Fig. 6A. The method (600) includes detecting an event (621) related to a task using a blockchain-enabled digital learning/coaching and task management system of the present disclosure. In one example, the task may be detected upon its completion. Tasks relating to multiple simultaneous events may be detected (610). A task completion may correspond to the completion of an event, an activity, a workspace, and/or a combination of two or more thereof. For example, if a task is simultaneously the last task of an event and the last task of an activity, completion of the task can be taken to mean the completion of the event and the activity. For example, if an activity is the only outstanding uncompleted activity in a workspace, completion of the activity can be taken to correspond to a completion of the workspace. Accordingly, reference to a task, an event, an activity, and/or a workspace may be interchangeable in the context of the method (600) and system (100) of the present disclosure. Broadly, the method (600) includes a stage of configuring or determining a credibility assessment (620) for the task, and contributing one or more embellishment blocks (670, 680) to embellishment blockchains. This adds to the related constellations of blockchains (3000) to create an immutable ledger record of the credibility assessment in a way where the actual tasks/events of the backbone blockchain lends credibility to the more abstract online/offline digital records captured in the embellishment blockchain. Embellishments may include, for example, measuring the value or importance of the event and its associated metadata and documents, generating a list of transactions corresponding to the parameters, and validating the transactions using validating distributed peer-to-peer devices that run one or more chaincodes related to the management of the task events. In this example, the worker's and/or learner's events may include one or more of task activities, application events, and sensor events. In other words, the data detected can include data arising from the worker's or learner's observed behaviour, voice recordings, heart rate, mood, affect, and emotions. That is, the system is configured with sensors that detects the collection of new content based on an output of an event framework. The system also includes a parameter processor that compiles a newly detected data from these detectors into a new worker's or learner's record which could also be appended as part of a completed event in the distributed blockchain repositories, in which the record transaction is associated for a particular entity. In this example, the distributed repository is a blockchain. Optionally, the method includes performing one or more off-blockchain

processing and analytics processes (630, 631, 632), and using the output of the one or more off-blockchain processes and analytics processes as a part of the credibility assessment.

[0052] The method (600) includes embellishing tasks/events with emerging notions and multi-dimensional meanings on a blockchain through artificial learning (A.I.) and human-mediated event validation inputs (622, 630, 631, 632).

[0053] In one embodiment, examples of embellishment may include: detecting a multitude of performed tasks and/or events related to entities such as individuals, teams, and organizations; and associating embellishment data to describe aspects of the tasks/events/entities. The events detected may be in the form of entire events and/or one or more tasks that make up one or more events. The tasks/events can be either or both online and offline tasks /events. This may involve using and A.I.-enabled digital platform through machine learning (631) to determine if a completed task event is of a certain category (631). Non-exhaustive and non-limiting examples of embellishments include: “substantial” or “not substantial” accomplished as part of event, “confidential” or “not confidential” with respect to a certain context of the entity. In another embodiment, non-exhaustive and non-limiting examples of embellishments include: allowing for the instantiation of new focus task areas arising from emerging notions such as ideas and questions as a result of being involved in task events. In another embodiment, non-exhaustive and non-limiting examples of embellishments include: embellishing the task events with other meaning from multiple dimensions, such as affect, emotions, values and their sub-dimensions, etc.

[0054] The method may include, on successful logical validation , a further step of creating a new embellishment block (670) and updating the blockchain (680), such that the transactions associated with the individual, team, or organization in expeditionary emergent learning (all generally referred to as a user) is immutably stored as a chain of the user's event blocks. In other words, the method may further include validating the transactions by receiving validity requirements for events on the blockchain (670), obtaining a validation token indicative of the validity of the task event, and computing a chaincode block for the transaction against the validation requirements (680).

[0055] In one aspect, the method includes automatically changing a rate (of frequency) of updating the distributed repository based on the credibility assessment. In other words, some of the data may be encrypted (622) and stored in a database (640), but not further passed on

(660) for storage in blockchains forming part of the constellation topology. In other words, the rate or frequency of updating the blockchains / distributed repository may vary from time to time (relative to the rate of capturing data (621)), as some data fails the credibility assessment and is therefore not passed on for blockchain storage.

5 [0056] The system may be configured to provide a button on a graphical user interface (GUI) to activate the appending of a record transaction into the distributed repository. The GUI may be configured to enable collection of a chronicle of a user's biometric information (through the life of the task record or for a predetermined period of time). Other examples of information that may be collected (621) by the system from multiple simultaneous events and inputs (610)
10 include, but are not limited to, a chronicle of events, activities and workspaces, one or more on-line task interactions. The data inputs that is collected may include values, i.e., information with respect to the affective or attentive states of an individual, e.g., this may include whether the learner is happy, sad, bored, where the affective or attentive states are self-reported or detected by an intelligent means, ratings of skills, knowledge, progressions attendance, and
15 behavior, etc. Task context information may be collected from sensor events through the life of the task record, where sensors includes one or more of an accelerometer, a heart rate sensor, a microphone, a light sensor, and a GPS, application activity data, and one or more of formative assessment data, behavior data, location data of content usage, and other application activities.

[0057] Expeditionary learning is purpose-centric and focuses on constantly making the
20 unknowns known, as opposed to traditional learning which is knowledge-centric which focuses on the known. In one aspect, expeditionary learning involves individual learning or organizational learning that is undertaken with a purpose beneficial at the organizational, team or individual level. Traditional learning in a school or academic situation is knowledge-centric in the sense that the teaching plan, the contents taught, the examinations, etc. are tailored to
25 meet the student's aptitude, interest, and/or needs. In traditional learning, the teaching plan, the contents taught, the examinations, the gradings, etc., are set by a teacher or facilitator. Even self-learning requires a course developer to write the course materials. That is the say, in traditional learning, there is a specific learning plan and specific learning objectives aimed at imparting specific knowledge that are already known. In these and other ways, expeditionary
30 learning differs from traditional learning.

[0058] Expeditionary learning is characterised by an exploratory approach where the learners themselves frame day-to-day tasks (at work or otherwise) as epistemological and ontological

challenges. Expeditionary learning is characterised by a lack of obvious easy answers and a lack of “model answers” in mostly unknown spaces. One aspect of expeditionary learning involves the leverage on emerging insights through asking better questions and assembling small (and seemingly disparate) pieces of insights, information or data together leading eventually to a reframing of the problem and/or solution. In the real world, learning in work-related contexts and non-work-related contexts are basically emergent in nature, in that the learning is characterized by volatilities, uncertainties, complexities and ambiguities (VUCA). Navigating and surmounting such VUCA contexts require a certain mindset seeing the challenges as adventures or expeditionary in nature. One aspect of this disclosure relates to unstructured and emergent learning being carried out in expeditionary fashion. Although the present disclosure uses the expeditionary emergent learning example, it also lends itself to structured learning ones, i.e., traditional learning. Structured institutional learning is itself undergoing transformation, as they transform themselves to develop students for a VUCA world, and in time to come expeditionary emergent learning would be a strong contender as its replacement learning model in institutions. The exemplary embodiments of the disclosure as described herein generally provide systems and methods for the management of hybrid (i.e., institutional and non-institutional) individual, teams, and organizational expeditionary emergent learning records in work and non-work contexts.

[0059] Expeditionary learning and emergent work are integrated according to embodiments of the present disclosure. Emergent work enables an organizational entity to build capacity and implement changes so as to succeed in an environment fraught with volatilities, uncertainties, challenges, and ambiguities. In the course of defining, scoping, performing, or using emergent work, expeditionary learning may be acquired at the individual level, team level, the organizational level or all of them. Expeditionary emergent work refers to emergent work that involves expeditionary learning.

[0060] The individuals involved in expeditionary learning may belong to the same or different project teams, departments, companies, supply chain, inter-organizational collaboration, etc., and the term “organizational” is to be understood as such. In other words, organizational learning may be acquired with reference to such formal and informal groups within the same organization, the whole organization, or between two organizations, etc. The term “organization” is used loosely and is not limited to commercial entities or businesses. For the

sake of brevity, the term “user” may also be used at the individual level or at the organizational level.

[0061] In this disclosure, expeditionary learning can be configured as at least a part of a logical validation framework. Expeditionary learning may be framed to encourage organizational-wide learning, or learning beyond one’s epistemological and ontological boundaries (at an individual or team level). The method (600) may be configured to include expeditionary work validation 632 as illustrated in Fig. 6B.

[0062] The method may include determining if the event is part of an expeditionary workspace (6221) and/or the event is part of an explorative or investigative activity (6222). If the outcome of the determination is positive, a corresponding embellishment block is generated and added to the respective embellishment blockchain (3100, 3200, 3300) in the related workspace (403) and/or activity (402). Embellishments may also be generated by determining if work done is epistemologically challenging (6224). The method may include a step of validating that the event is expeditionary in nature (6225) based on the outcome of any one or more of the above. Alternatively, if all the conditions are met, it can be deduced that significant conceptual change and epistemological challenges have been encountered, and a corresponding embellishment may be generated and linked to the expeditionary event. Alternatively, if one or more of the above is validated, the outcome may be stored in a database (640) for subsequent retrieval. The method may include determining if substantial work has been done between a predefined start state and a predefined end state (6223). Further, the validation of each event can be fed as training examples for machine learning algorithms that can create models to categorize future events based the models outputted from these algorithms. For example, if it is validated that substantial work has been done, the related work artefact and validation results are processed (6226) and provided to a machine learning module (6227). The machine learning module may be configured to perform cryptographic machine learning categorization (631) to generate embellishments.

[0063] In another embodiment, non-exhaustive and non-limiting examples of embellishments include: other forms of human-mediated validations besides expeditionary learning (632) through peer-to-peer devices of the machine learning categorizations and human-inputs. In another embodiment, non-exhaustive and non-limiting examples of embellishments include: making a distinction between private embellishments and public embellishments in the context of organizations, teams and/or individuals.

[0064] In the present method for managing digital credibility, the method is executable by a system having processor coupled with a memory, in which the processor is configured to communicate with an external system over a network. The method as illustrated by Fig. 6A may alternatively described as including: detecting event data arising from a first event
5 completed by a first user (621) and the event data may serve as backbone event data to be stored in a backbone blockchain. The first user may be one of many in an entity (e.g. in an organization) and the system may detect multiple simultaneous events (610). The method (600) may include receiving embellishment data (620). For example, embellishment data may relate to the first user and/or to the first event. The embellishment data may originate from the
10 external system or from one of the first user. Alternatively, the embellishment data may originate from a first ANOA user (e.g., a cryptographically authorized user). The method (600) further includes performing a logical validation, e.g. expeditionary learning logic validation, to determine if the embellishment data is valid in a context of the event, the logical validation including one or both of a machine learning categorization and a validation originating from a
15 second ANOA user, wherein the logical validation includes confirming the first event as a fact or confirming that the first event occurred in reality; performing a backbone blockchain transactional validation for the backbone event data to add a backbone block to a backbone private blockchain owned by the organization; and in response to the embellishment data being determined by the logical validation to be valid, performing a blockchain transactional
20 validation to add an embellishment block, the embellishment block being based on encrypted backbone block data and encrypted embellishment data, the embellishment block being added to at least one of a private embellishment blockchain owned by the organization and a public embellishment blockchain associated with the first user, wherein each of the backbone private blockchain, the private embellishment blockchain, and the public embellishment blockchain is
25 associated with at least one of a workspace level, an activity level, and an event level, and wherein each of the at least one backbone blockchain, the private embellishment blockchain, and the public embellishment blockchain is concurrently associated with at least one of an individual level, a team level, and an organizational level. The method may be performed such that the backbone block and the embellishment block are simultaneously added to different
30 blockchains such that the different blockchains share a common milestone in respective chronologies of multiple events, the common milestone corresponding to the first event.

[0065] Fig. 7 is a schematic flowchart showing details of cryptographic event embellishment – which can be both human and machine learning capable - (622) for multiple and iterative

embellishments. The embellishments may capture values or less quantifiable aspects generated over time by the work done in/by the organization (or at a team level or individual level). The embellishments are cryptographically secured against tampering, such that in some instances, the system may be described as a blockchain-on-blockchain system. At the end of an event, activity, and/or workspace, the system is configured to determine (720) whether the data detected or received is disclosable (public) or non-disclosable (private). Private data is fed into a channel in which the context of the task is reviewed (731), for example, in the context of the event, activity, and/or workspace). The review may generate coaching and mentoring needs and/or opportunities (732) to develop instrumental and/or terminal values.

[0066] Fig. 8 illustrates examples of terminal values (920) and instrumental values (930). Examples of terminal values include but are not limited to excellence (921), equality (922), breakthrough (923), accomplishment (924), recognition (925), and wisdom (926). Examples of instrumental values include but are not limited to teamwork (930), honesty (932), leadership (933), imagination (934), integrity (935), and innovation (936). As can be appreciated, the term “values” refer to positive mental, emotional, social, etc., types of abstract traits or states that drive, motivates and determine how entities react and behave in their peculiar contexts. The lists given here are for illustration and are not intended to be exhaustive. The system may be configured by the user to include more or different values. Values are used in the system to describe abstract aspects of candidates (individuals, teams, or organizations) and enable such abstract aspects to be taken into account, manipulated with the other data, and stored.

[0067] Referring again to Fig. 7 and continuing with the private channel, learning may be applied with internal and external links, texts, videos, images, and/or audio recordings (733) such that a new event, new activity and/or new workspace is created (734). This may be iteratively fed to the review process (731) and/or form an output (790) of the cryptographic event embellishment. Referring to the public channel, the data is reviewed and added to terminal values and/or instrumental values to embellish the data (751). The embellished data may be used as a basis to create one or more recordings (752) as a form of embellishments. The term “recordings” is used here to refer loosely to content that can be recorded (752). Examples of the embellishments or recordings that may be created include, but are not limited to, cartoons, comics, memes, artistic works, musical works, literary works, texts, images, videos, audios, and/or a combination of thereof in the form of a mixed media. The one or more embellishments created (752) may be used in increasing motivation of members of a team, an

organization, or others external to the organization. For example, selected ones of such embellishment can be published such that others may be motivated thereby (753). In other words, the data received from the end of a workspace, activity or event can be used to determine parameters to generate a chain-code transaction related to the entity-based task events

5 embellishments.

[0068] As a whole, the system provides a traceable chain of emergence notions and meanings that the development of individuals, teams and organizations can be based on recorded and substantive evidence. Delineated into private and public blockchains, the richness of these embellishments can further “transform” platforms for (i) organizational applications, (ii) individual and team coaching applications, (iii) groups applications, and/or (iv) candidates matching, or more specifically (i) job placements, or (ii) start-up funding applications) organizational, team and individual applications within organizational contexts.

10

[0069] The above is just one instance. If such instances are stored and accessible through the expeditionary learning blockchain network, then one would have access to all the organizational memories of their journeys, e.g., expeditionary journeys. The notion of an immutable organizational ledger backbone chronicles memory system including their embellishments can result in many applications for all sub-organizations of an organization downwards, such departments, teams and even down to the individuals. First, getting an awareness of how each block of time spent is moving towards a goal or an event, activity or workspace allows a one glance of whether time and resources invested for each day’s work is well invested. It will allow, for example, organizations to track the return on investments in coaching and learning for their staff. That is to say for the staff that needed coaching, one could trace if those coaching investments have positive returns by displaying the momentum of how those that received coaching move towards goals at the event, activity and workspace level or even becoming expeditionary learners eventually. That is also to say, the disclosure can become a baseline platform to allow organizations to testbed all organizational change and development methodologies and concepts. Potentially, the disclosure can also transform how organizations remunerate their employees, first by having evidential audits for the rewards and allowing organizations to reward based on values displayed and the pervasiveness of contributions beyond taking a snapshot approach to awarding remunerations. Additionally, this disclosure allows entities a faster and more efficient way to identify talents in organizations and to coach and train them.

15

20

25

30

[0070] Many individuals and teams take on very challenging personal journeys and document the journeys on social media. Individuals often go through psychological highs when they hit targets and psychological lows when what they are doing seem to hit a plateau. And once a plateau is hit, the lack of motivation kicks in and if unchecked could lead to one giving up on the journey unless someone came and supported their journey or the found ways to overcome it. Such journeys can also be framed as expeditionary learning where the search for and creation of new knowledge continues, and the present system can be used to not just document but also help individuals keep motivated. Fig 10 shows a dashboard display (1200) which may be displayed at a selected frequency, e.g., daily, weekly, fortnightly, etc. In this example, a team has clocked 278 hours in expeditionary workspaces, with a larger proportion of positive events than negative events or neutral events. In addition, the dashboard (1200) can be configured to display the values of the team (reflected by the embellishments generated at step 622) in terms of whether the values were demonstrated in the course of positive events, negative events, or neutral events. This is only one example of how the events may be categorised by the machine learning categorisation module (631). From the dashboard, it can be ascertained that the team was able to demonstrate values such as teamwork, imagination, integrity, innovation, and perseverance in the course of completing the positive events, and these were captured as embellishments to the related events. The team encountered some negative events and was able to demonstrate positive values such as reflection, concern, gratitude, and communication. At cross-roads or points of inflexion, the team was able to demonstrate values such as reflection, concern, recovery, and inspiration. The system not only enable additional aspects to be captured (e.g., values of the team) but also provide a degree of credibility to accrediting the team with such values. That is, the digital credibility of the achievements have been assessed (632) so that there is a greater degree of assurance or digital credibility. The dashboard (1200) may be configured to permit the user to drill down into details of each category of events and their details captured within the contexts of specific workspaces and activities. The system may be configured to generate a version of the dashboard (1200) so that it can be posted to social media, e.g., to generate curiosity, to build a corporate identity, to develop a brand awareness, to generate greater following, etc. The system therefore enables regular postings of digitally credible events as individuals, teams, and/or organizations face challenges in their respective journeys without having to disclose any confidential entity data.

[0071] Fig. 11, also shows a possible tool (1300) that can be developed with this disclosure where the vectors in Fig. 5 become the framework for generating other social media content

such as a video, audio recording, etc. The embellishments of each event can become the finer content that could be incorporated into the content being produced. This above notion can also be expanded to a platform that allow pairing of individuals requiring assistance with communities of coaches whom themselves are authenticated and/or authorized to coach and mentor with digital credibility of their own. This way, matching between coach and coachee (learner) can be made more efficient.

[0072] The method according to this disclosure allows new matching applications where the middleman can be made redundant. Through the immutable ledger adopting private and public blockchains of event chronicles and their embellishments, it allows for any combination of entities at different levels to be matched without a middleman and with a higher trust level. The following are a few examples.

[0073] Current job placement exercises rely heavily on a digital resume that contains a summary of the major achievements of the candidate. Abstract values are often separated from the task achievements and are difficult to assess. Some resort to using a character reference to validate such values. The system of the present disclosure can change that. Those embellishments that are made public and shared on the social media can be contained in the resume-wallet of users and when they need to be placed, users can grant access to these public embellishments. Thus, the resumes and abstract values of the job seeker can be verified without disclosing non-disclosable information of the previous or current employer. The current and/or past employer organization can grant validation checks for the achievements of the job seeker during their tenure. As a result, job placements could potentially be done without an intermediary tier and could become a potentially automated process.

[0074] Fig. 9 is a schematic flowchart of how various embodiments of the present method and system can be applied in a platform context and used in different applications. For example, a hiring system can be configured to enable a hiring entity to select or define a focus (1101) by creating a job description. The job description can be sent to the platform of the present embodiment and a search conducted according to the defined focus (1102). Job applicants may create or submit their own profiles (candidate profiles) to the platform (1001). The platform is configured to match the job description with the candidate profiles (1103) and shortlist those that satisfy the traditional quantifiable criteria (e.g., number of years of work experience, certified or not, etc.). The platform is further configured to sort or rank the candidate profiles according to values, which in this case may correspond to difficult to quantify abstract aspects

that influence the candidates' leadership qualities, care of people, etc. If the job candidates have at least some of their expeditionary learning at their current or past jobs documented in one of the ways described above, the platform is configured to verify the values of the candidates. It is not necessary for the platform to access the blocks of the backbone blockchain or the blocks of the private embellishment blockchains. The platform is configured to determine if the public embellishment blockchain (of the candidate) can be substantiated by the fact that the public embellishment block is or is not linked to a node on another (backbone) blockchain. Different job candidates may have different number of resume items that can be substantiated in this manner. Different job candidates may have public embellishments that correspond to positive values that resonates with the hirer. The platform may be configured to take into account such factors and sort or rank the job candidates by their respective digital credibility (1104) and thus recommend (1105) profiles of suitable candidates to the hiring entity. The hiring entity may choose to deep dive into the candidate's credibility history (1107) by following the links to the relevant public blockchains or pay for sanctioned information retrieval on the private blockchain before making a decision to hire (1002). The platform may be configured to monitor developments in the career of the candidates of interest (1107) before making a decision (1002) to hire. In another example, a platform according to embodiments of the present disclosure may be utilised to seek multiple individuals to form a "dream team".

[0075] In another example, the platform according to embodiments of the present disclosure may be configured to match venture capitalists (VCs) or investors with promising candidate start-ups or entrepreneurs. Instead of a job description, the focus areas of investment can be defined by the investors. Similarly, the platform is configured to assess the digital credibility of the start-ups and/or entrepreneurs based on more abstract and less easily quantifiable values, which are nonetheless often critical to the eventual success or failure of the start-up.

[0076] The platform may be configured such that, in response to an external user in the external network using the embellishment data in a query relating to an authenticity of the embellishment data, the platform is configured to provide an indication to the external user of an authenticity of the embellishment data while keeping the backbone blockchain and the private embellishment blockchain hidden from the external user unless they have been sanctioned for release, for example by paying a fee. In response to a query based on a profile of the first user, the platform may be configured to determine if the query has an answer based on data saved to the public embellishment blockchain, wherein selected ones of the data are

public embellishment data of the organization; and to provide an indicator of credibility of the profile, wherein the indicator of credibility is dependent on an extent to which (1) the data saved to the public embellishment blockchain has been validated by the private backbone blockchain and/or the private embellishment blockchain of the organization, and (2) the extensiveness of the constellation topologies of the ANOA users that validated the work of the candidate in question . The platform online may be configured to manage digital credibility by receiving a set of requirements from a party; matching candidate profiles to the set of requirements; creating a credibility report for each candidate profile; sorting the candidate profiles according to the credibility report; and presenting the party with a sorted list of candidate profiles, wherein the credibility report includes one or more indicators of credibility, and wherein the indicator of credibility is dependent on an extent to which data saved to a public embellishment blockchain has been validated by a private backbone blockchain and/or a private embellishment blockchain, and wherein the private backbone blockchain and the private embellishment blockchain remain invisible to the party. The online platform may be configured such that it can monitor new embellishment blocks in the public embellishment blockchain related to a selected candidate profile; update the credibility report depending on a quantity or a quality of verification of the new embellishment blocks and existing embellishment blocks, without providing access or visibility to the private backbone blockchains or the private embellishment blockchain unless they have been sanctioned for a paid fee; and periodically provide the party with an update on the credibility report of the selected candidate, wherein the selected candidate is one of the first user, a team including a plurality of the first user, and an organization including the team.

[0077] This disclosure has been presented for purposes of illustration and description but is not intended to be exhaustive or limiting. Many modifications and variations will be apparent to those of ordinary skill in the art. The example embodiments have been chosen and described in order to explain principles and practical application, and to enable others of ordinary skill in the art to understand the disclosure for various embodiments with various modifications as are suited to the particular use contemplated.

[0078] Thus, although illustrative example embodiments have been described herein with reference to the accompanying figures, it is to be understood that this description is not limiting and that various other changes and modifications may be effected therein by one of ordinary skill in the art without departing from the scope of the disclosure.

CLAIMS

1. A method for managing digital credibility, the method being executable by a system having processor coupled with a memory, the processor being configured to communicate with an external system over a network, the method comprising:

5 detecting event data arising from a first event completed by a first user in an entity, the first event being one of an online event, an offline event, and a hybrid event;

 performing a backbone blockchain transactional validation for the backbone event data to be added as a backbone block to a backbone private blockchain owned by the entity;

10 performing a logical validation to determine if the event data is valid in a predefined context of the entity; and

 performing the following steps in response to the embellishment data being determined by the logical validation to be valid:

15 generating at least one embellishment data relating to the event, the embellishment data originating from the external system or from one of the first user and a first authenticated and/or authorised (ANOA) user;

 performing a blockchain transactional validation to add an embellishment block, the embellishment block being based on encrypted backbone block data and encrypted embellishment data, the embellishment block being added to at least one embellishment blockchain, the at least one embellishment blockchain being one of a private embellishment blockchain owned by the organization and a public embellishment blockchain associated with the first user, wherein each block of the backbone private blockchain, the private embellishment blockchain, and the public embellishment blockchain is configured to be multi-level and/or multi-dimensional by association with at least one of a workspace level, an activity level, and an event level, and wherein each of the at least one backbone blockchain, and wherein the private embellishment blockchain, and the public embellishment blockchain is concurrently associated with at least one of an individual level, a team level, an organizational level and a supra-organizational level; and

20

25

30

 interlinking the at least one embellishment blockchain with the backbone blockchain via a node block to form a part of a constellation of blockchains.

2. The method of claim 1, wherein the backbone event block and a first embellishment block are added to different blockchains such that the different blockchains are linked to a common event milestone in respective chronologies of multiple events, the common milestone corresponding to the first event, and wherein the first embellishment block is added simultaneously, asynchronously or subsequently relative to the backbone event block.
3. The method of claim 2, further comprising:
in response to an external user in the network using the embellishment data in a query relating to an authenticity of the embellishment data, the system is configured to provide an indication to the external user of an authenticity of the embellishment data while keeping the backbone blockchain and the private embellishment blockchain hidden from the external user, wherein the network is one of an external network, an internal network or both.
4. The method of claim 3, further comprising:
in response to a query based on a profile of the first user, determining if the query has an answer based on data saved to the public embellishment blockchain, wherein selected ones of the data are public embellishment data of the organization; and
providing an indicator of credibility of the profile, wherein the indicator of credibility is dependent on an extent to which the data saved to the public embellishment blockchain has been validated by the private backbone blockchain and/or the private embellishment blockchain of the organization.
5. The method of claim 2, wherein the embellishment block added to the public embellishment blockchain is based on one or more embellishment data, and wherein the one or more embellishment data includes one or more recordings.
6. An online platform configured to manage digital credibility according to the method of any one of claims 1 to 5, wherein the method further comprises:
receiving a set of requirements from a party;
matching candidate profiles to the set of requirements;
creating a credibility report for each candidate profile;
sorting the candidate profiles according to the credibility report; and

presenting the party with a sorted list of candidate profiles, wherein the credibility report includes one or more indicators of credibility, and wherein the indicator of credibility is dependent on an extent to which data saved to a public embellishment blockchain has been validated by a private backbone blockchain and/or a private embellishment blockchain, and wherein the private backbone blockchain and the private embellishment blockchain remain invisible to the party.

7. The online platform according to claim 6, wherein the method further comprises:
- monitoring new embellishment blocks in the public embellishment blockchain related to a selected candidate profile;
 - updating the credibility report depending on a quantity or a quality of verification of the new embellishment blocks and existing embellishment blocks, without providing access or visibility to the private backbone blockchains or the private embellishment blockchain; and
 - periodically providing the party with an update on the credibility report of the selected candidate, wherein the selected candidate is one of the first user, a team including a plurality of the first user, and an organization including the team.