What is claimed is

1. A knowledge distribution system for controlling rights related to digital knowledge, the system comprising:

an input system configured to receive an instance of digital knowledge from a user;

a tokenization system configured to tokenize the digital knowledge such that the instance of digital knowledge can be manipulated as a token;

a ledger management system configured to:

create and manage a distributed ledger; and

store the tokenized digital knowledge via the distributed ledger; and

a smart contract system in communication with the distributed ledger, the smart contract system configured to:

implement a smart contract via the distributed ledger, wherein the smart contract comprises tokenized digital knowledge, a triggering event, and a corresponding smart contract action;

perform a smart contract action with respect to the tokenized digital knowledge in response to an occurrence of the triggering event;

process commitments of a plurality of parties to the smart contract;

manage rights of control of and access to the tokenized digital knowledge according to the smart contract; and

manage the smart contract action in response to the triggering event,

wherein the distributed ledger comprises a plurality of cryptographically linked blocks distributed over a plurality of nodes of a network.

2. The knowledge distribution system of claim 1, wherein the tokenized digital knowledge comprises intellectual property of an intellectual property rights holder, wherein the smart contract system is further configured to:

embed intellectual property licensing terms for the intellectual property in the distributed ledger, and

execute, in response to the triggering event, an operation on the distributed ledger to: i) provide access to the intellectual property; or 2) process a commitment of one party of the plurality of parties to the smart contract and corresponding intellectual property licensing terms.

3. The knowledge distribution system of claim 1, wherein the smart contract further comprises a smart contract wrapper configured to add intellectual property to an aggregate stack of intellectual property.

4. The knowledge distribution system of claim 3, wherein the smart contract further comprises a smart contract wrapper configured to perform an operation on the distributed ledger to add intellectual property, and to commit parties in the distributed ledger to an apportionment of royalties for the added intellectual property.

5. The knowledge distribution system of claim 4, wherein the smart contract wrapper is further configured to add the added intellectual property to an aggregate stack of intellectual property in the distributed ledger, and to commit parties in the distributed ledger to an apportionment of royalties for the aggregate stack of intellectual property.

6. The knowledge distribution system of claim 1, wherein the smart contract further comprises a smart contract wrapper configured to process a commitment of a party to a contract term on the distributed ledger.

7. The knowledge distribution system of claim 1, wherein the tokenized digital knowledge comprises an instruction set.

8. The knowledge distribution system of claim 7, wherein the ledger management system is further configured to:

provide provable access to the instruction set; and

execute the instruction set on a system,

wherein providing provable access comprises recording an access transaction in the distributed ledger.

9. The knowledge distribution system of claim 1, wherein the tokenized digital knowledge comprises executable algorithmic logic.

10. The knowledge distribution system of claim 1, wherein the tokenized digital knowledge comprises a three-dimensional (3D) printer instruction set.

11. The knowledge distribution system of claim 1, wherein the tokenized digital knowledge comprises an instruction set for a coating process.

12. The knowledge distribution system of claim 1, wherein the tokenized digital knowledge comprises an instruction set for a semiconductor fabrication process.

13. The knowledge distribution system of claim 1, wherein the tokenized digital knowledge comprises a firmware program.

14. The knowledge distribution system of claim 1, wherein the tokenized digital knowledge comprises an instruction set for a field-programmable gate array.

15. The knowledge distribution system of claim 1, wherein the tokenized digital knowledge comprises serverless code logic.

16. The knowledge distribution system of claim 1, wherein the tokenized digital knowledge comprises an instruction set for a crystal fabrication system.

17. The knowledge distribution system of claim 1, wherein the tokenized digital knowledge comprises an instruction set for a food preparation process.

18. The knowledge distribution system of claim 1, wherein the tokenized digital knowledge comprises an instruction set for a polymer production process.

19. The knowledge distribution system of claim 1, wherein the tokenized digital knowledge comprises an instruction set for a chemical synthesis process.

20. The knowledge distribution system of claim 1, wherein the tokenized digital knowledge comprises an instruction set for a biological production process.

21. The knowledge distribution system of claim 1, wherein the tokenized digital knowledge comprises a data set for a digital twin.

22. The knowledge distribution system of claim 1, wherein the tokenized digital knowledge comprises an instruction set to perform a trade secret.

23. The knowledge distribution system of claim 1, wherein the ledger management system is further configured to aggregate views of a trade secret into a chain that records which knowledge recipients of the plurality of parties have viewed the trade secret.

24. The knowledge distribution system of claim 1, further comprising a reporting system configured to report an analytic result based on a plurality of operations performed on the distributed ledger, or on the tokenized digital knowledge.

25. The knowledge distribution system of claim 1, wherein the smart contract system is further configured to aggregate a set of instructions, and wherein an operation on the distributed ledger comprises adding at least one instruction to a pre-existing set of instructions to provide a modified set of instructions.

26. The knowledge distribution system of claim 25, wherein the smart contract system is further configured to:

manage allocation of instruction subsets to the distributed ledger; and

manage access to the instruction subsets.

27. The knowledge distribution system of claim 1, wherein the ledger management system is further configured to log at least one of the plurality of parties who have contributed to the digital knowledge, and wherein logging the at least one of the plurality of parties comprises storing data related to the at least one of the plurality of parties in at least one of the plurality of cryptographically linked blocks of the distributed ledger.

28. The knowledge distribution system of claim 1, wherein the smart contract system is further configured to log a source of an instance of the digital knowledge by storing data related to the source in at least one of the plurality of cryptographically linked blocks.

29. The knowledge distribution system of claim 1, wherein the distributed ledger is further configured to enable a private network of authorized participants to establish a cryptography-based consensus requirement for verification of new cryptographically linked blocks to be added to the plurality of cryptographically linked blocks.

30. The knowledge distribution system of claim 1, wherein the ledger management system further comprises a crowdsourcing module configured to obtain crowdsourced information to be added to a block of the plurality of cryptographically linked blocks.

31. The knowledge distribution system of claim 30, wherein the crowdsourced information comprises a review of an instance of the digital knowledge; and wherein the distributed ledger is further configured to store the review in the block of the plurality of cryptographically linked blocks.

32. The knowledge distribution system of claim 30, wherein the crowdsourced information further comprises a signature related to an instance of crowdsourced information; and wherein the ledger management system is further configured to store the signature in a block of the plurality of cryptographically linked blocks.

33. The knowledge distribution system of claim 30, wherein the crowdsourced information comprises a verification of an instance of the digital knowledge; and wherein the distributed ledger is further configured to store the verification in a block of the plurality of cryptographically linked blocks.

34. The knowledge distribution system of claim 1, wherein the ledger management system is further configured to establish a plurality of cryptographic currency tokens configured to be tradeable among users of the distributed ledger.

35. The knowledge distribution system of claim 1, further comprising an account management system in communication with the distributed ledger, the account management system configured to facilitate creation and management of a plurality of user accounts corresponding to a plurality of users of the knowledge distribution system.

36. The knowledge distribution system of claim 35, further comprising a user interface system in communication with the distributed ledger, the user interface system configured to present a user interface to a user of the knowledge distribution system, wherein the user interface enables the user to view data related to an instance of the digital knowledge.

37. The knowledge distribution system of claim 1, further comprising a marketplace system in communication with the distributed ledger, the marketplace system configured to:

establish and maintain a digital marketplace; and

visually present data corresponding to an instance of the digital knowledge to a user of the knowledge distribution system.

38. The knowledge distribution system of claim 1, further comprising a knowledge datastore in communication with the distributed ledger, the knowledge datastore configured to store data related to the digital knowledge.

39. The knowledge distribution system of claim 1, further comprising a client datastore in communication with the distributed ledger, wherein the client datastore is configured to store data related to a plurality of users of the knowledge distribution system.

40. The knowledge distribution system of claim 1, further comprising a smart contract datastore in communication with the distributed ledger, wherein the smart contract datastore is configured to store data related to the smart contract.

41. The knowledge distribution system of claim 1, further comprising a reporting system in communication with the distributed ledger, the reporting system configured to:

analyze the tokenized digital knowledge, resulting in an analytic result; and

report the analytic result.

42. The knowledge distribution system of claim 1, wherein implementing the smart contract comprises using a parameterizable smart contract template to generate the smart contract.

43. The knowledge distribution system of claim 1, wherein the smart contract comprises a parameter based on a type of digital knowledge to be tokenized.

44. The knowledge distribution system of claim 43, wherein the parameter comprises: a financial parameter, a royalty parameter, a usage parameter, and output produced parameter, and allocation of consideration parameter, an identity parameter, or an access condition parameter.

45. A computer-implemented method for controlling rights related to digital knowledge, the computer-implemented method comprising:

creating and managing a distributed ledger, wherein the distributed ledger comprises a plurality of blocks linked via cryptography distributed over a plurality of nodes of a network;

implementing and managing a smart contract, wherein the smart contract comprises a triggering event and corresponding smart contract action and is stored in the distributed ledger;

receiving an instance of the digital knowledge;

tokenizing the digital knowledge;

storing the tokenized digital knowledge via the distributed ledger;

processing commitments of a plurality of parties to the smart contract;

managing, according to the smart contract, rights of control of and access to the tokenized digital knowledge; and

performing, in response to an occurrence of the triggering event, the corresponding smart contract action with respect to the tokenized digital knowledge.

46. The computer-implemented method of claim 45, further comprising orchestrating, based on the smart contract, an exchange of new digital knowledge for the tokenized digital knowledge.

47. The computer-implemented method of claim 46, further comprising integrating the knowledge exchange with a separate exchange, wherein the knowledge exchange facilitates an exchange of at least one of valuable and sensitive knowledge related to a subject matter of the separate exchange.

48. A knowledge distribution system for controlling rights related to digital knowledge, the system comprising:

an input system configured to receive, from a knowledge provider device, an instance of digital knowledge comprising a three-dimensional (3D) printer instruction set for 3D printing an object;

a tokenization system configured to tokenize the digital knowledge such that the instance of digital knowledge is manipulable as a token;

a ledger management system configured to:

create and manage a distributed ledger;

store smart contracts via the distributed ledger; and

store the tokenized digital knowledge via the distributed ledger;

a smart contract system in communication with the distributed ledger and configured to:

implement and manage a smart contract, wherein the smart contract comprises a triggering event and a corresponding smart contract action;

perform a smart contract action with respect to the digital knowledge in response to an occurrence of the triggering event,

process commitments of the knowledge provider and a knowledge recipient of the 3D printer instruction set to the smart contract;

manage rights of control of and access to the tokenized digital knowledge according to the smart contract; and

manage the smart contract action according to a condition and the triggering event,

wherein the distributed ledger comprises a plurality of cryptographically linked blocks distributed over a plurality of nodes of a network.

49. The knowledge distribution system of claim 48, wherein the 3D printer instruction set comprises a 3D printing schematic.

50. The knowledge distribution system of claim 48, wherein the object comprises a custom part, a custom product, a manufacturing part, a replacement part, a toy, a medical device, or a tool.

51. The knowledge distribution system of claim 48, wherein the smart contract action comprises providing the 3D printer instruction set to a knowledge recipient device configured to download and use the 3D printer instruction set, wherein the knowledge recipient device is a computing device, a server, a 3D printer, or a manufacturing device.

52. The knowledge distribution system of claim 48, wherein the smart contract action comprises: receiving a purchase request from a knowledge recipient device or fulfilling a purchase request from a knowledge recipient device, wherein the purchase request comprises a request to purchase the tokenized digital knowledge corresponding to the 3D printer instruction set.

53. The knowledge distribution system of claim 48, further comprising an event monitoring module configured to monitor an application programming interface (API) configured to provide a connection between the knowledge distribution system and a knowledge recipient device of the knowledge recipient.

54. The knowledge distribution system of claim 48, wherein the triggering event comprises a transfer of the 3D printer instructions, or a use of the 3D instructions; and wherein, based on the rights of control of and access to the tokenized digital knowledge, the smart contract action comprises generating a payment request of the knowledge recipient.

55. The knowledge distribution system of claim 48, wherein the rights of control of and access to the tokenized digital knowledge comprise a permission for a user to 3D print using multiple instances of the 3D printer instruction set.

56. The knowledge distribution system of claim 48, wherein the rights of control of and access to the tokenized digital knowledge comprise: a 3D printer requirement, a time period during which the object can be 3D printed, whether the tokenized digital knowledge is transferred to a downstream knowledge recipient, a warranty, a disclaimer, an indemnification, or a certification with respect to the object.

57. The knowledge distribution system of claim 48, wherein the triggering event is a transfer of the 3D printer instructions, or a use of the 3D instructions; and wherein, based on the rights of control of and access to the tokenized digital knowledge, the smart contract action modifies, on the distributed ledger, when the 3D printer instruction set is purchased, downloaded, or used.

58. The knowledge distribution system of claim 48, wherein the 3D printer instruction set comprises: an origin, a date of creation, a name of a contributing individual, a group, or a company, a price, a market trend for a related schematic, a serial number, or a part identifier.

59. The knowledge distribution system of claim 48, wherein the smart contract action comprises: assigning a serial number to the object that is 3D printed, monitoring for the triggering event, verifying fulfillment of an obligation based on the condition, verifying payment or transfer of the tokenized digital knowledge, transferring the tokenized digital knowledge, logging one or more transactions in the distributed ledger, performing one or more operations with respect to the distributed ledger, or creating one or more new blocks in the distributed ledger.

60. The knowledge distribution system of claim 48, wherein the smart contract action comprises verifying that the condition is met, wherein the condition is: a printer requirement, a payment received, a currency transferred from a knowledge recipient device of the knowledge recipient, or a transfer of the tokenized digital knowledge to the knowledge recipient device.

61. The knowledge distribution system of claim 48, further comprising a smart contract generator configured to parametrize a smart contract template based on: information provided by the knowledge provider, the condition, or the triggering event.

62. A computer-implemented method for controlling rights related to digital knowledge comprising:

creating and managing a distributed ledger, wherein the digital ledger comprises a plurality of blocks linked via cryptography distributed over a plurality of nodes of a network;

implementing and managing a smart contract, wherein the smart contract comprises a triggering event;

performing a smart contract action with respect to the digital knowledge in response to an occurrence of the triggering event;

receiving, from a knowledge provider device, an instance of the digital knowledge that comprises a three-dimensional (3D) printer instruction set for 3D printing an object;

tokenizing the digital knowledge such that the instance of the digital knowledge is manipulable as a token on the distributed ledger;

storing the tokenized digital knowledge on the distributed ledger;

processing commitments of the knowledge provider and a knowledge recipient of the 3D printer instruction set to the smart contract;

managing rights of control of and access to the tokenized digital knowledge according to the smart contract; and

managing the smart contract action according to a condition and the triggering event.

63. The computer-implemented method of claim 62 further comprising crowdsourcing an element of the instance of the digital knowledge via the smart contract, wherein the element of the instance of the digital knowledge is managed by a smart contract system according to the smart contract.

64. The computer-implemented method of claim 62, further comprising:

crowdsourcing information regarding: an element of the instance of the digital knowledge, the knowledge provider, or a knowledge recipient; and

updating the smart contract in response to the crowdsourced information.

65. The computer-implemented method of claim 64, further comprising updating a condition, or a smart contract action based, at least in part, on the crowdsourced information.

What is claimed is

·1~~66~~. A knowledge distribution system for controlling rights related to digital knowledge, the system comprising:

an input system configured to receive an instance of digital knowledge from a user;

a tokenization system configured to tokenize the digital knowledge such that the instance of digital knowledge can be manipulated as a token;

a ledger management system configured to:

create and manage a distributed ledger;

store the tokenized digital knowledge via the distributed ledger; and

provide provable access to the digital knowledge, wherein providing provable access comprises recording an access transaction in the distributed ledger; and

a smart contract system in communication with the distributed ledger, the smart contract system configured to:

implement a smart contract via the distributed ledger, wherein the smart contract comprises tokenized digital knowledge, and a triggering event;

perform a smart contract action with respect to the tokenized digital knowledge in response to an occurrence of the triggering event;

manage the smart contract action in response to the triggering event, process commitments of a plurality of parties to the smart contract; and

manage rights of control of and access to the tokenized digital knowledge according to the smart contract.

2~~67~~. The knowledge distribution system of claim 1~~66~~, wherein the smart contract further comprises:

a smart contract wrapper configured to add intellectual property to an aggregate stack of intellectual property, or

a smart contract wrapper configured to:

perform an operation on the distributed ledger to add intellectual property;

commit parties in the distributed ledger to an apportionment of royalties for the added intellectual property; and

process a commitment of a party to a contract term on the distributed ledger.

~~68. The knowledge distribution system of claim 66, wherein the smart contract further comprises a smart contract wrapper configured to:~~

~~perform an operation on the distributed ledger to add intellectual property;~~

~~commit parties in the distributed ledger to an apportionment of royalties for the added intellectual property; and~~

~~process a commitment of a party to a contract term on the distributed ledger.~~

3~~69~~. The knowledge distribution system of claim 1~~66~~, further comprising:

an account management system in communication with the distributed ledger, the account management system configured to facilitate creation and management of a plurality of user accounts corresponding to a plurality of users of the knowledge distribution system, or

a user interface system in communication with the distributed ledger, the user interface system configured to present a user interface to a user of the knowledge distribution system, wherein the user interface enables the user to view data related to an instance of the digital knowledge.

~~70. The knowledge distribution system of claim 66, further comprising a user interface system in communication with the distributed ledger, the user interface system configured to present a user interface to a user of the knowledge distribution system, wherein the user interface enables the user to view data related to an instance of the digital knowledge.~~

4~~71~~. The knowledge distribution system of claim ~~66~~1, further comprising a marketplace system in communication with the distributed ledger, the marketplace system configured to:

establish and maintain a digital marketplace; and

visually present data corresponding to an instance of the digital knowledge to a user of the knowledge distribution system.

~~72~~5. The knowledge distribution system of claim ~~66~~1, further comprising:

a knowledge datastore in communication with the distributed ledger, the knowledge datastore configured to store data related to the digital knowledge,

a client datastore in communication with the distributed ledger, wherein the client datastore is configured to store data related to a plurality of users of the knowledge distribution system, or

a smart contract datastore in communication with the distributed ledger, wherein the smart contract datastore is configured to store data related to the smart contract.

~~73. The knowledge distribution system of claim 66, further comprising a client datastore in communication with the distributed ledger, wherein the client datastore is configured to store data related to a plurality of users of the knowledge distribution system.~~

~~74. The knowledge distribution system of claim 66, further comprising a smart contract datastore in communication with the distributed ledger, wherein the smart contract datastore is configured to store data related to the smart contract.~~

~~75~~6. The knowledge distribution system of claim ~~66~~1, further comprising a reporting system in communication with the distributed ledger, the reporting system configured to:

analyze the tokenized digital knowledge, resulting in an analytic result; and

report the analytic result.

~~76~~7. The knowledge distribution system of claim ~~66~~1, wherein implementing the smart contract comprises using a parameterizable smart contract template to generate the smart contract.

~~77~~8. The knowledge distribution system of claim ~~76~~7, wherein the smart contract comprises a parameter based on a type of the digital knowledge to be tokenized.

~~78~~9. A computer-implemented method for controlling rights related to digital knowledge, the computer-implemented method comprising:

creating and managing a distributed ledger, wherein the distributed ledger comprises a plurality of blocks linked via cryptography distributed over a plurality of nodes of a network;

tokenizing the digital knowledge;

storing the tokenized digital knowledge via the distributed ledger;

implementing and managing a smart contract, wherein the smart contract comprises a triggering event, the tokenized knowledge, and a corresponding smart contract action and is stored in the distributed ledger;

receiving an instance of the digital knowledge;

processing commitments of a plurality of parties to the smart contract;

managing, according to the smart contract, rights of control of and access to the tokenized digital knowledge;

performing, in response to an occurrence of the triggering event, the corresponding smart contract action with respect to the tokenized digital knowledge; and

managing the smart contract action in response to the triggering event.

~~79~~10. The computer-implemented method of claim ~~78~~9, further comprising:

crowdsourcing information regarding an element of the instance of the digital knowledge; and

updating the smart contract in response to the crowdsourced information.

~~80~~11. The computer-implemented method of claim ~~79~~10, wherein the crowdsourced information comprises information regarding: a knowledge provider, or a knowledge recipient.

~~81~~12. The computer-implemented method of claim ~~78~~9, further comprising:

adding intellectual property to the distributed ledger;

committing parties to an apportionment of royalties for the added intellectual property; and

processing a commitment of a party to a contract term.

~~82~~13. The computer-implemented method of claim ~~78~~9, further comprising:

creating a user account;

receiving a request from a user account to display data related to an instance of the digital knowledge;

confirming access to the instance of the digital knowledge allowed for the user account; and

presenting a user interface configured to display the data related to an instance of the digital knowledge.

~~83~~14. The computer-implemented method of claim ~~82~~13, further comprising:

creating a user account; and

issuing a public access key and a private access key to the user account, wherein the access keys correspond to a respective level of access.

~~84~~15. The computer-implemented method of claim ~~78~~9, further comprising:

buying or selling the digital knowledge, or

creating and issuing a currency token associated with the distributed ledger.

~~85. The computer-implemented method of claim 78, further comprising creating and issuing a currency token associated with the distributed ledger.~~