

# The Blockchain and Kudos

A distributed system for educational  
record, reputation and reward

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Mike Sharples, Institute of Educational Technology  
John Domingue, Knowledge Media Institute

# The opportunity

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To combine

trusted distributed records of educational achievement

with

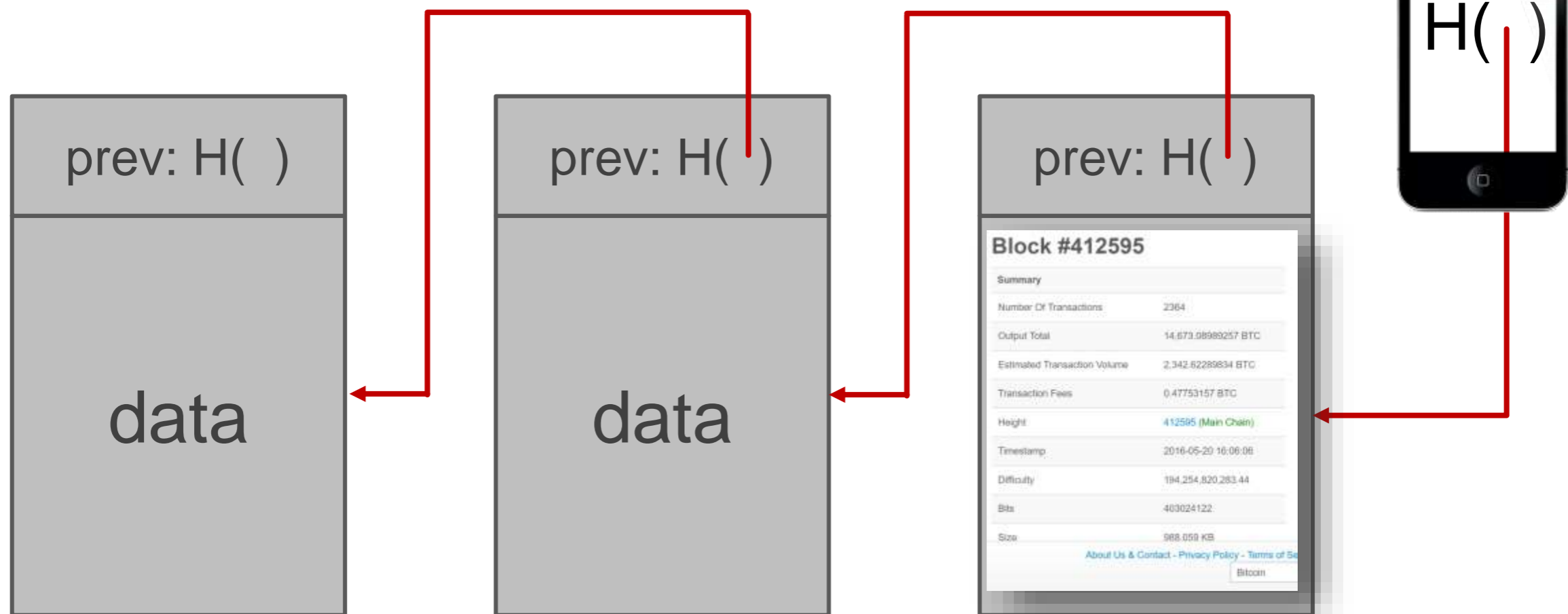
a system of tradeable educational reputation to recognise and reward intellectual achievement

to

open up education, while assuring quality of achievement



# The blockchain



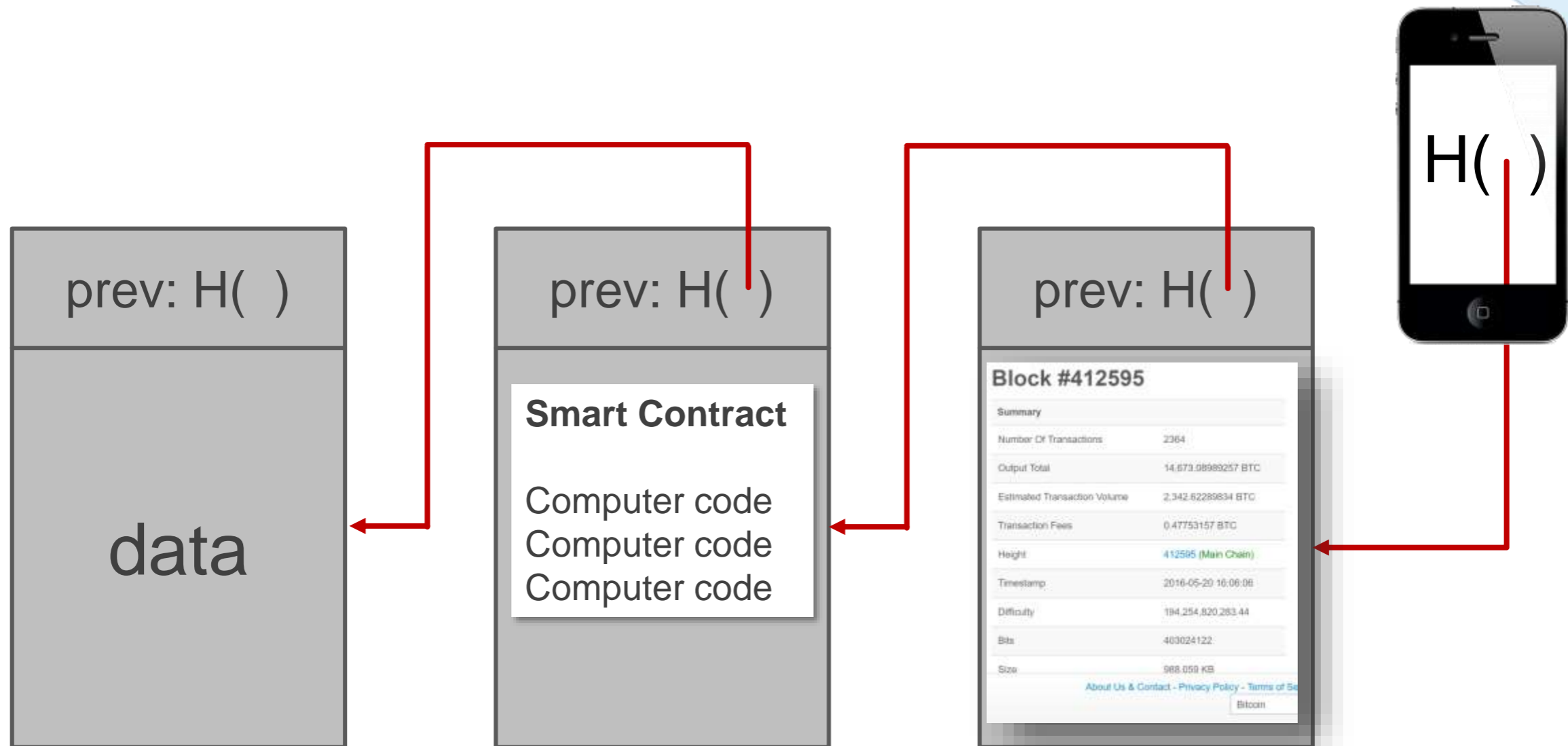
*A public distributed* linked list with hash pointers

A user can easily and quickly retrieve information from the list

The hash function verifies that the data hasn't been changed

Core mechanism for Bitcoin transactions, but can be adapted for other uses

# The blockchain



Blockchain can contain Smart Contracts: computer code to carry out transactions, such as sending an invoice

# Educational blockchain



Stores records of achievement  
Public evidence of an award

# Educational blockchain



Stores records of achievement

Public evidence of an award

Once stored, these cannot be altered, even by the original issuer

# Blockchain as proof of intellectual work

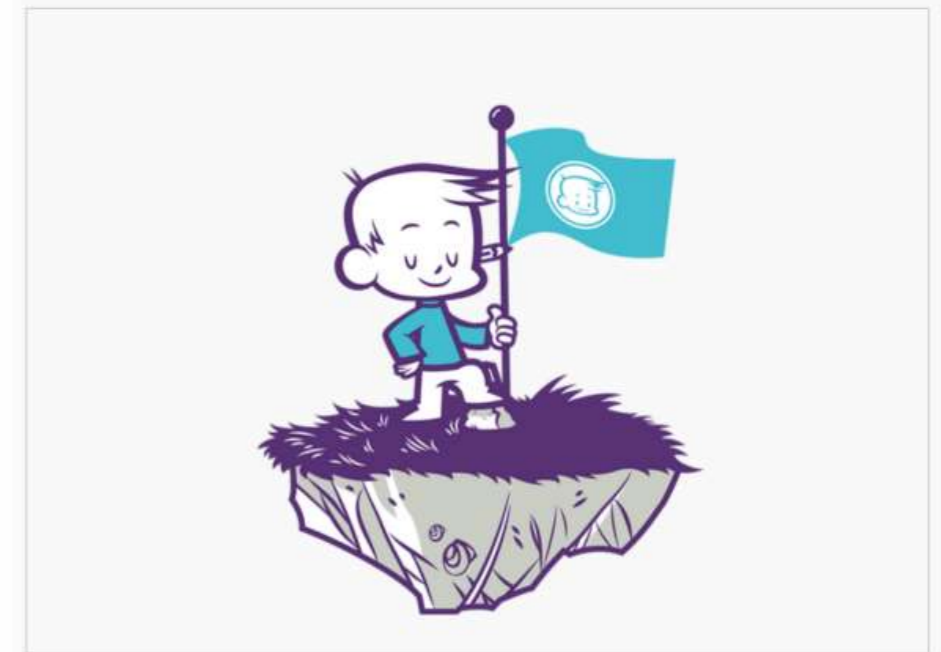
- Public blockchain for education
- Any person can lodge a public record of a 'big idea'
  - Such as an invention, academic paper, poem, artwork
- Each big idea is identified with the author(s) and time-stamped
- One or more people could add their digital signatures to the record
- Permanent e-portfolio of intellectual achievement, visible to anyone
- Crowd-sourced method of patenting

## Blockai uses the blockchain to help artists protect their intellectual property

Posted Mar 14, 2016 by Anthony Ha (@anthonyha)



Next Story



While most of the discussions around blockchain have focused on its possible uses in finance, startup **Blockai** is looking at something different — helping artists, photographers and other creators register their work so that they can protect it from potential copyright infringement.

<https://techcrunch.com/2016/03/14/blockai-launch/>

# Blockchain for intellectual currency



- Reputation has a tradeable value (e.g., Uber, AirBnB)
- Reputation is already traded among academics (e.g. H-index of publication impact)
- Now imagine open trading of intellectual reputation
- Each recognized educational institution is given an initial award of an intellectual currency (the Kudos)

Based on e.g. THE World Ranking, or H-index, or Amazon author rank

- Each institution allocates amounts of Kudos to employees it wishes to recognise
- Each institution and person stores its fund of reputation in a virtual 'wallet' on the educational blockchain



# Trading in intellectual currency

- Educational institution awards small amounts of Kudos to students who graduate
- Student may pay a tutor in Bitcoin currency, and receive Kudos in return for passing a test or completing a tutorial
- Any individual can post an item of note on the educational Blockchain
  - e.g., idea, presentation, paper, story, poem, artwork
- People can associate Kudos with that item to indicate its value
- Or can transfer small amounts of Kudos to the author to boost author's reputation
- Similar to Kickstarter, but with a currency of reputation
- Amount of Kudos associated with a work or author is an indication of their intellectual value



Reputation on iSpot  
<http://www.ispotnature.org/>

# OpenBlockchain



Blockchain-based e-portfolios, feedback and accreditation

[blockchain.open.ac.uk](http://blockchain.open.ac.uk)

Collaboration with APPII ([appii.iio](http://appii.iio)) on trusted open profiles and CVs

Adding OpenLearn badges and course portfolios onto to the OpenBlockchain

The screenshot displays the 'Open Blockchain Peer Reputation DApp Demo' interface. It features three user profiles, each with a 'My Reputation' bar and an 'Assign Reputation' form. The profiles are:

- Michelle Bachler**: Reputation bar shows Communication: 14, Collaboration: 0, Organisation: 2, Ethics: 2, Problem Solving: 6, Engagement: 2. Assign Reputation form: No. Tokens: 0, To: James Green, For: Communication, transfer button.
- James Green**: Reputation bar shows Communication: 2, Collaboration: 16, Organisation: 4, Ethics: 5, Problem Solving: 5, Engagement: 2. Balance of Reputation Tokens: 71. Assign Reputation form: No. Tokens: 0, To: Kevin Quick, For: Communication, transfer button.
- Kevin Quick**: Reputation bar shows Communication: 19, Collaboration: 3, Organisation: 1, Ethics: 3, Problem Solving: 1, Engagement: 1. Balance of Reputation Tokens: 80. Assign Reputation form: No. Tokens: 0, To: James Green, For: Communication, transfer button.

At the bottom, there is a row of course identifiers: 506943, 506942, 506941, 506940, 506939, 506938, 506937 (highlighted), and 506936. Below these are labels: ouKMi01 mined 25, ouKMi02 mined 23, and ouKMi03 mined 29.

Two inset boxes provide details for a badge and its issuer:

**Badge**  
Badge Blockchain address: 0x5c76d957a25a074202444ba5e570c3893db347  
Badge Contract Owner: 0x4e475617795c4b2e50952a795ab7350bec8  
Name: English skills for learning  
Description: This badge has been issued for participating in the activities in the free non-accredited course English: skills for learning. This course supported demonstration of the following learning outcomes: follow an active reading method to help you read academic texts and make notes, critically read source texts and appropriately use the information they contain in your writing, link ideas in your writing so that your readers can easily understand your ideas, make use of vocabulary and grammatical structures to express yourself more formally, make the most of online  
Image:   
Issuer Contract Address: 0x1ae0a0298b70a3431515bd0a0e1757830d7  
Criteria Contract Address: 0x00  
Alignment Contract Address: 0x00

**Issuer**  
Issuer Blockchain address: 0x1ae0a0298b70a3431515bd0a0e1757830d7  
Issuer Contract Owner: 0x4e475617795c4b2e50952a795ab7350bec8  
Name: OpenLearn  
Description: The home of free learning from The Open University  
Image:   
Email: <http://www.open.ac.uk>  
Url: [openlearn@open.ac.uk](mailto:openlearn@open.ac.uk)

# What if?

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- A single universal record of intellectual works and awards, each associated with reputational credit
- Extends academic practices of reputation and review to anyone
- Conversion rate between reputation and money?
- What is the value of scholarship?
- Do we want education to be (further) commodified?
- Marketplace for knowledge, or opening up education?