Will Blockchain Disrupt the Scholarly Publishing Industry?

NFAIS Blockchain for Scholarly Publishing
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Agenda

• Challenges facing Scholarly Publishing in 2018
• How can Blockchain help?
• Emerging Blockchain-based solutions (some released just in the past two months)
Who Are We?

Technologists and Publishing Industry Veterans
Michael Puscar, Founder of Oiga

- Data Scientist and entrepreneur with more than 25 years of experience in the publishing industry

- Two U.S. patents for the development of groundbreaking Big Data technology

- Former founder of Yuxi Pacific, a 150 person international software firm acquired by Blue Loop Capital in 2013

- Frequent speaker at international conferences, guest columnist, and subject area expert in Big Data, security and scalability
Neville Mehra, Founder of Nampora

- Serve clients as a trusted advisor, helping them navigate the fast-changing technology landscape.

- My job is to understand business needs and the technologies available and create a strategy.

Challenges Facing Scholarly Publishing
Challenges Facing Publishers

• Protecting intellectual property (SciHub, ResearchGate)

• Remaining relevant in the face of rapidly changing technology

• Publishers want to see emerging trends in order to properly set agendas for their conferences

• Challenges facing peer review

• Shrinking library budgets
Challenges Facing Researchers

- Researchers are only recognized for publishing positive results.
- Publishing research is becoming cost prohibitive; Open Access are charged APCs that can range up to $6,500.
- Race to publish before another researcher scoops the discovery.
- Takes average of 6 years for a researcher to receive first citation.
- The reproducibility crisis in academia.
What Is Blockchain?

Hint: We are not here to talk about cryptocurrencies
What Blockchain Is NOT

• Blockchain is not a cryptocurrency

• Blockchain is not a content repository

• Blockchain is not software

• Blockchain is not owned by any one organization

• Blockchain should not be a solution seeking a problem
What Is Blockchain?

A digital ledger that is

- Immutable
- Decentralized
- Distributed
- Secure
- Timestamped
What If...

..there was an immutable, time stamped registry (ledger) that recorded every artifact of a researcher’s work?

...with nodes dispersed among research institutions, universities, publishers and funders

A shared ledger pointing to every piece of research produced in the world.
That Would Mean That...

• Researchers could protect their IP and conclusively prove ownership with a timestamp

• Researchers could selectively share their work products with others in the research community, their funders and publishers

• Funders could monitor the progress of their researchers

• Other researchers could reproduce experiments more easily

• Nodes would be distributed throughout universities, research and publishing organizations and funders
Use Cases for Blockchain in the Research Community

How Blockchain can make researchers more efficient and productive while promoting their work
Protecting the IP of Researchers

Problem:
- Researchers cannot share discoveries until after publication due to risk of IP theft
- *Other researchers publish their discoveries before me, even though I made the discovery first*

Solution:
- Blockchain ledger confirms discoveries with an immutable time and date stamp
- Researcher controls what parts of discovery are public or private and with whom they are shared
Improve and Encourage Collaboration

Problem:
• Many artifacts of a discovery are not published
• “Failed experiments” are discarded, and therefore needlessly repeated by other researchers
• It is difficult for researchers to reproduce other researchers’ experiments

Solution:
• Every experiment, lab note, formula, etc logged on the Blockchain ledger along with all versions
• This encourages more collaboration in the community
Problem:
• Organizations fund research and need to monitor the progress of researchers and their work
• Researchers spend time updating funders with the status of their research and justifying current and future grants
• Funders want to promote the work of their researchers

Solution:
• Researcher output logged on the Blockchain ledger before publication
• Granular permissioning allows for funders to have instantaneous access to research as it evolves
• Activity reports can show new discoveries
Improve Discoverability of Research In Progress

Problem:
• Publishers need to know what research areas are emerging well in advance of planned conferences
• Researchers want to collaborate with others in the community
• Funders want to promote the work of their researchers

Solution:
• Discoverability of in-progress research provides a window for publishers to analyze emerging trends
• Publishers can find researchers and solicit them to publish in their journals
Confirm Authenticity of Purchases

Problem:
• Confirm authenticity of each piece of content created
• Track content lifecycle from authorship to purchase
• Improve discoverability of content within the platform

Solution:
• Each purchase is a smart contract on the ledger
• Pirated versions outside the platform traced to original buyer
• Ledger is the glue to every content and media asset
Emerging Blockchain-based Solutions
Artifacts.Ai

• “Building the ledger of record for research”
• Focused specifically on researchers and scholarly publishing
• All artifacts of research to be linked and searchable
• Allow researchers to prove ownership and existence of work
• Aim to improve discoverability throughout the research process
• Permissioned nodes at institutions
Creating the “World’s Catalog for Content Attribution” - a universal ledger designed to record metadata and ownership information for digital creative assets

- Allow content creators to issue licenses Blockchain ledger

- Compatible with all types of content (blog posts, videos, etc)

- Initial focus seems to be on media. CEO is Jarrod Dicker, former VP of WaPo
Blockchain For Peer Review

• “Make the peer review process more transparent, recognizable and trustworthy.”


• Announced in March 2018 and still in the pilot phase

• Other publishers are embracing this technology – are you?
Summary

Where Do We Go From Here?
And in summary...

• Blockchain technology provides a very practical opportunity to overcome challenges facing the industry

• There are valid use cases for both publishers and researchers

• It is better to embrace new technology and be a part of its evolution than to adopt to it after it has become an essential part of doing business

• The future is now
Questions?
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Thank You!