Fixing the Broken System of Scientific Publications
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An Alternative Approach

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Introduction

The Value Chain of Scientific Publishing

1. Documentation
2. Communication
3. Reputation
4. Moderation

Motivation

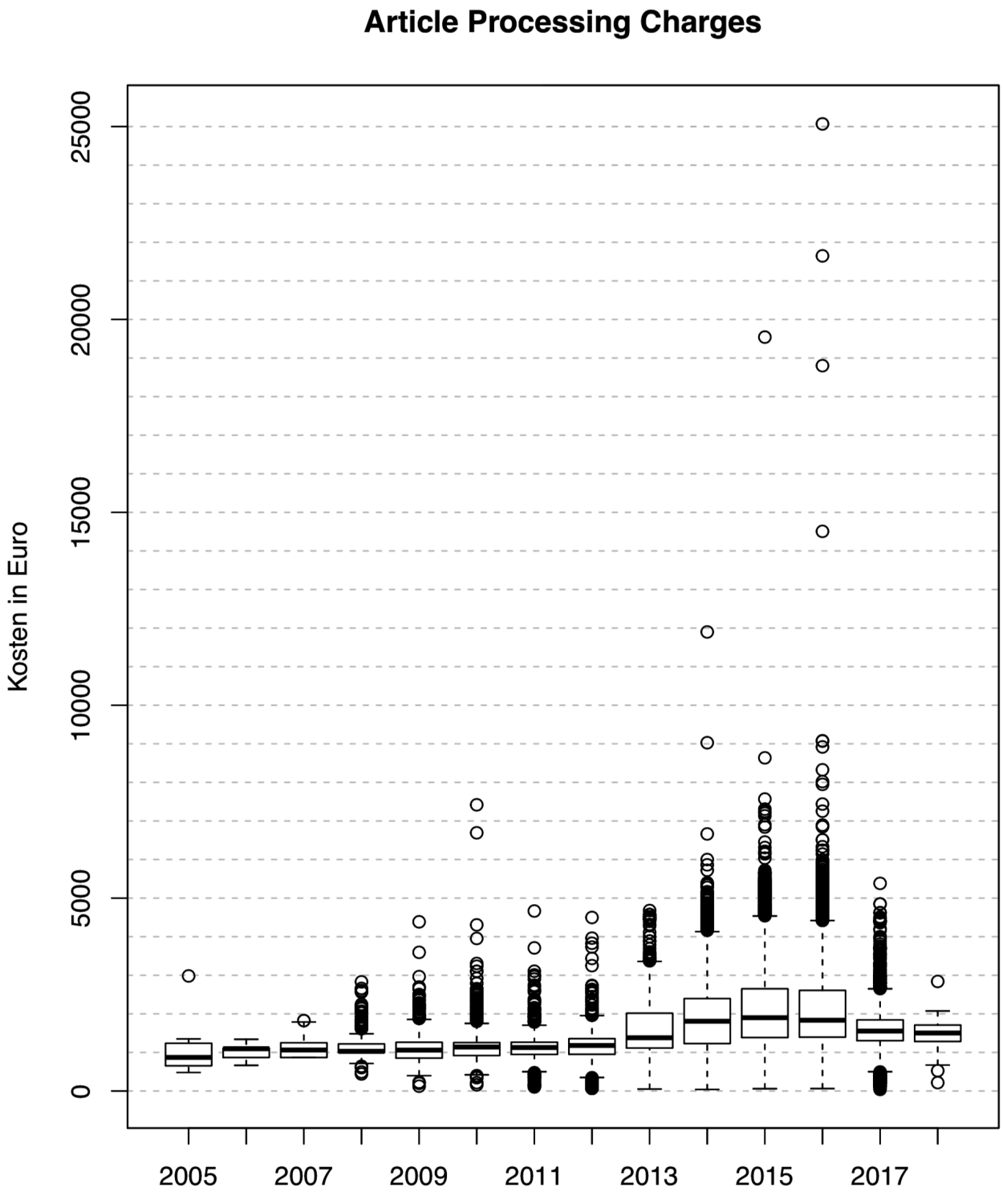
Intrinsic Issues of the Academic Publication System

- Inertia of the review system (especially Elsevier)
- Replication crisis
- Pressure to publish
- Encourages publication based on hype, impact factor, journal reputation, etc.
- No accountability, no quality assurance

Motivation - Economic Issues

Return on Sales

- Elsevier 2016 $\rightarrow$ 36.8%
- Taylor & Francis and Routledge 2016 $\rightarrow$ 38%
- In comparison to German retail 3% and German construction sector 6%
- Even Apple only achieved a ROS of 37.16% in 2016


Article Processing Charges
Kosten in Euro
0
5000
10000
15000
20000
25000
2005
2007
2009
2011
2013
2015
2017

Motivation

Problem

- What are we actually paying for?
- How do we fix the structural issues of the system?
- Is there a better model available?

3 Stages of Digital Disruption

Stage 1 - Realization and Discovery

- Mostly observation
- Simple utilization of new technology to speed up existing processes
- Advanced use of technology is either not know, not implemented or not widely accepted yet

Example

- Use email to distribute learning material
- No use of technology for advanced improvements of digital learning platforms or tools (e.g., VR)

Stage 2 - Remodeling Process, or the Formation of Intermediaries

- (Centralized) Intermediaries remodel existing processes
- At scale and global availability/usage
- Lock-in and monopolies

Example

- Paper letters are replaced by communication models such as social networks (Facebook), messengers (Whatsapp) and collaboration platforms (GoogleDocs)
- AirBnB, Tinder, Slack, Github
- Elsevier, Springer, etc.

Stage 2 - Do we need Intermediaries?

From a technical perspective $\Rightarrow$ No (Diaspora, Mastodon, etc.)

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- Problems reside more on the economical/sociological level:
  - Sustainable source of income for maintenance, development, etc.
  - Lack of stable mechanisms to develop and enforce community standards
  - Establishing trust among involved entities and global-scale decision processes often lead to partitioned communities

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$\Rightarrow$ But, Bitcoin (or blockchain technology in general) somehow solved those issues.

Stage 3 - Democratization

- Blockchain technology allows for decentralized and distributed added value without a trusted central authority
- Direct P2P value exchange via crypo-tokens
- Establishing and enforcing community standards via consensus algorithms (PoS, PoW)
- No manipulation by minorities

How can we use this to change the academic publication system?

BlogChain - A New form of Scientific Publications

BlogChain - Example

BlogChain Characteristics

- Document-centric approach
- Not "one" process, rather a meta-model for a new form of publication
- Blockchain technology to prevent manipulations, allow timestamping, decentralized governance and organization as well as reputation
- Not incompatible with existing systems
- Publisher become attention moderators
- Funded via a monthly/annual fee of all members (not necessarily researchers, rather universities or similar organizations but of course also individuals)

Discussion

Questions, opinions, suggestions, ideas?