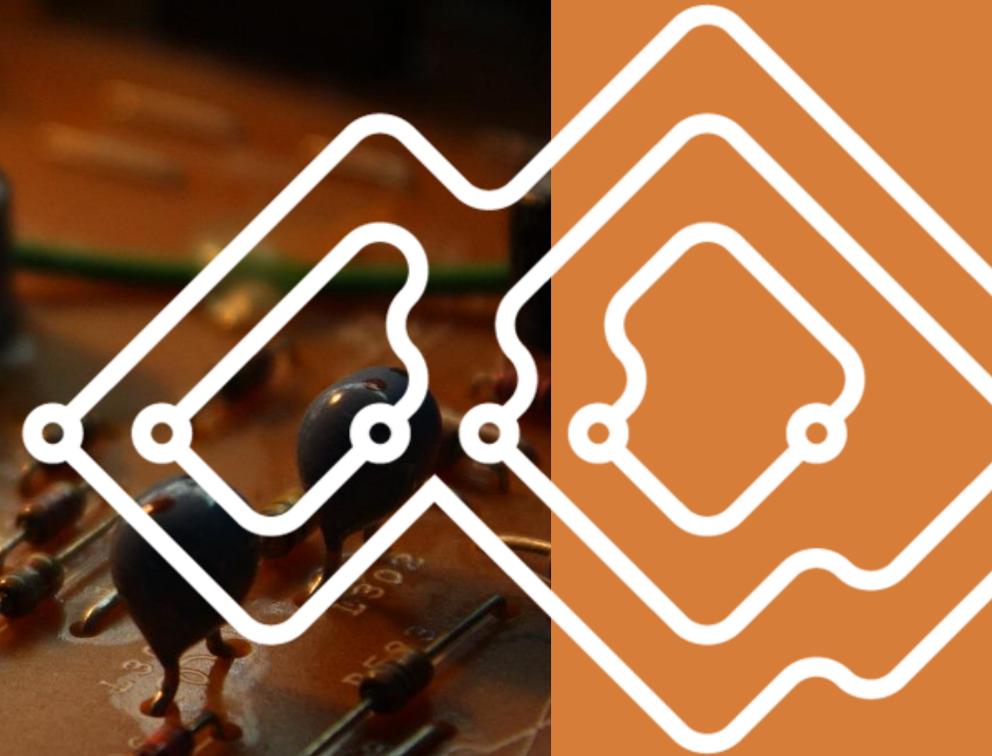


PATTERNS OF PEER INNOVATION

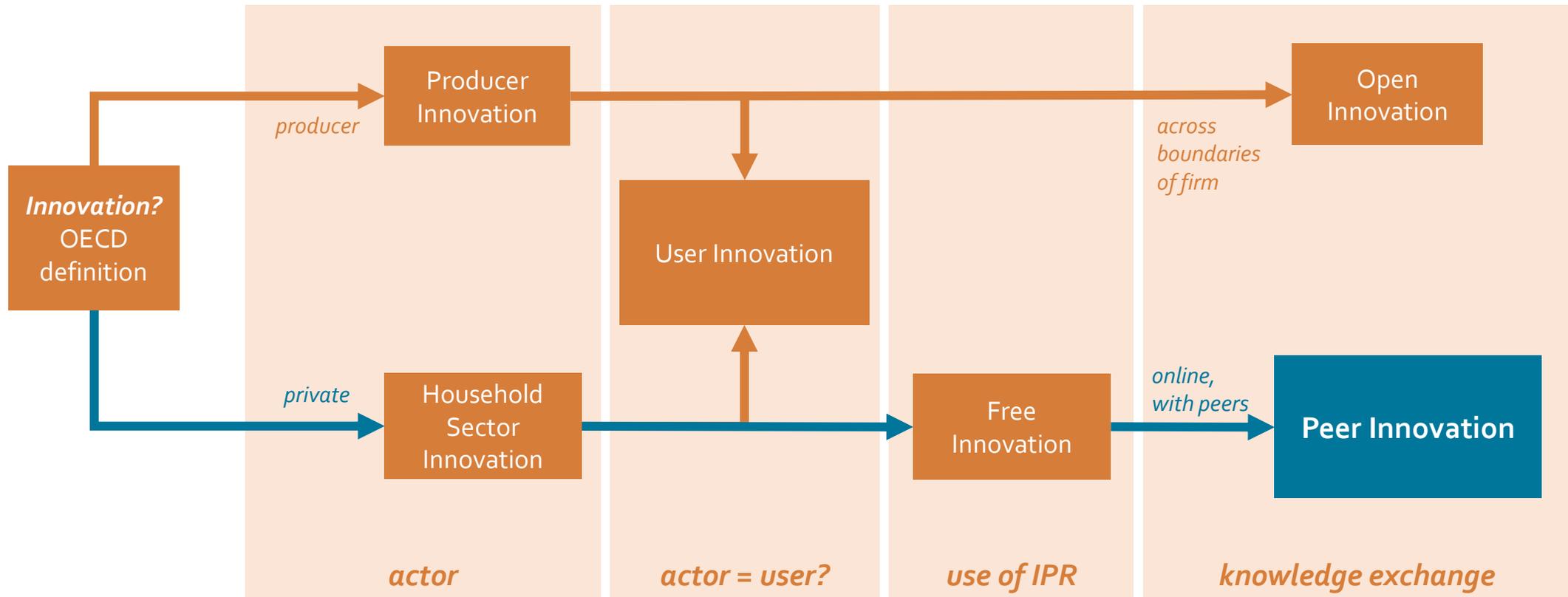
A mixed-method approach to investigating sustainable household sector innovation in collaborative online communities

Philipp Heß (TU Berlin), Jan Peuckert (IÖW), Jan-Philipp Mesenbrock (IÖW)

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Peer Innovation



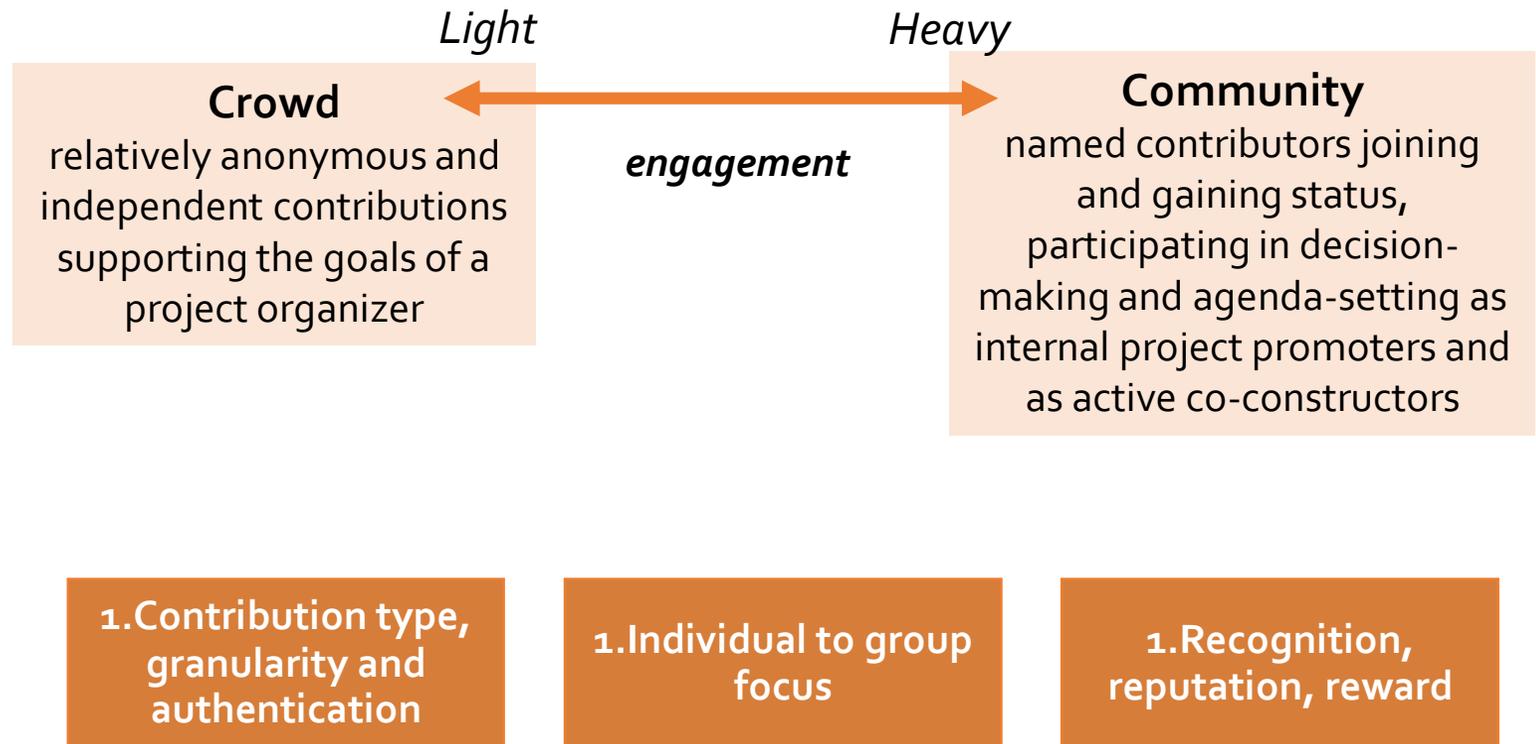


Mapping peer innovation communities

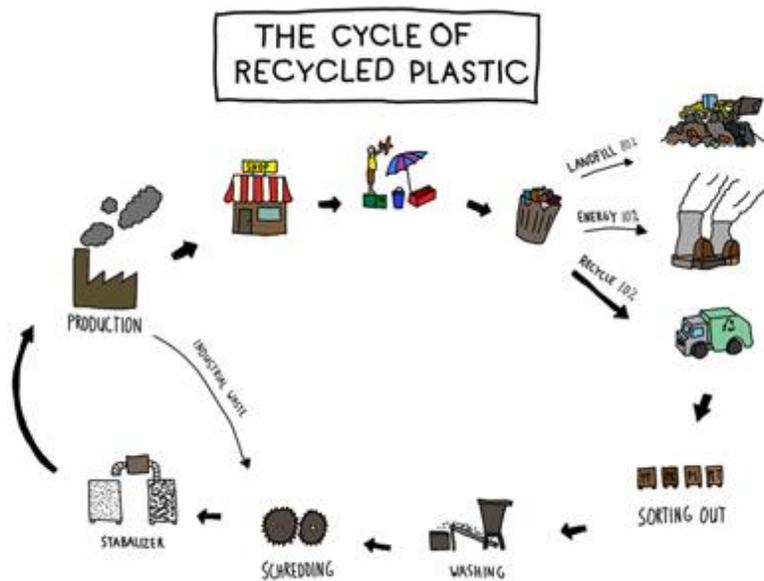
- What determines the emergence, dynamics and impacts of peer innovation?
- Aim: contribute to the development of peer innovation indicators
- Explore the space of peer innovation (communities)
- Identify relevant communities and explore their underlying structures, relationships, and interactions in in-depth case studies
- Map / discover patterns that are related to potential determinants

Patterns of peer contribution

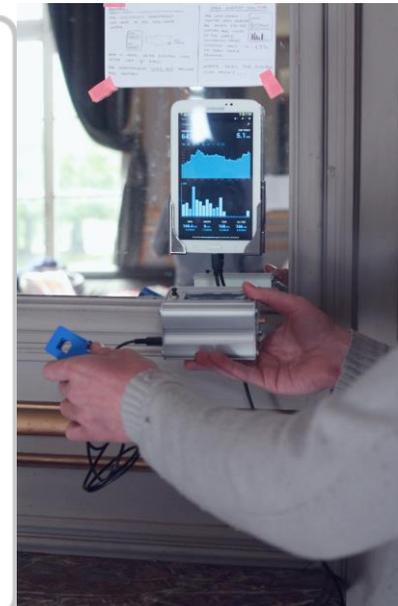
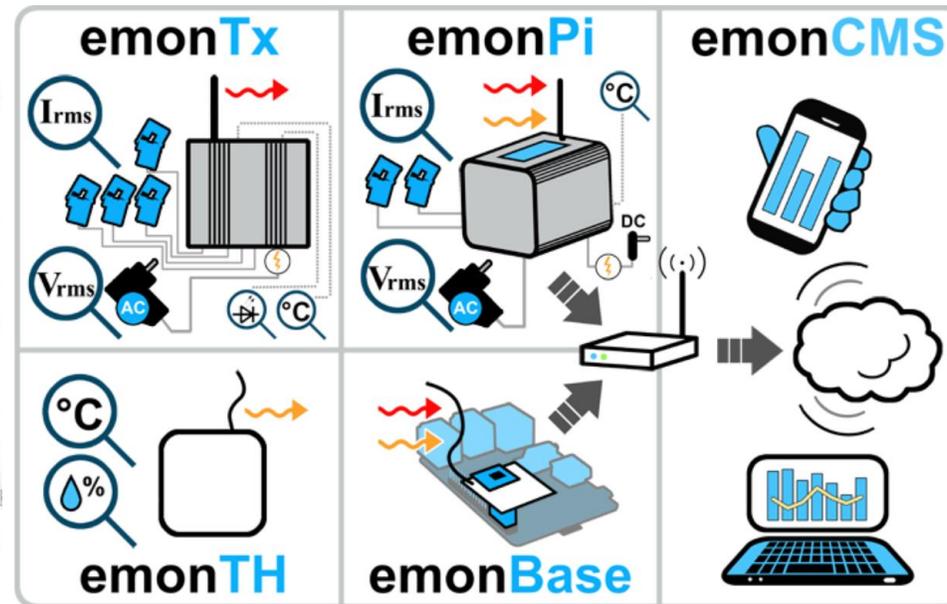
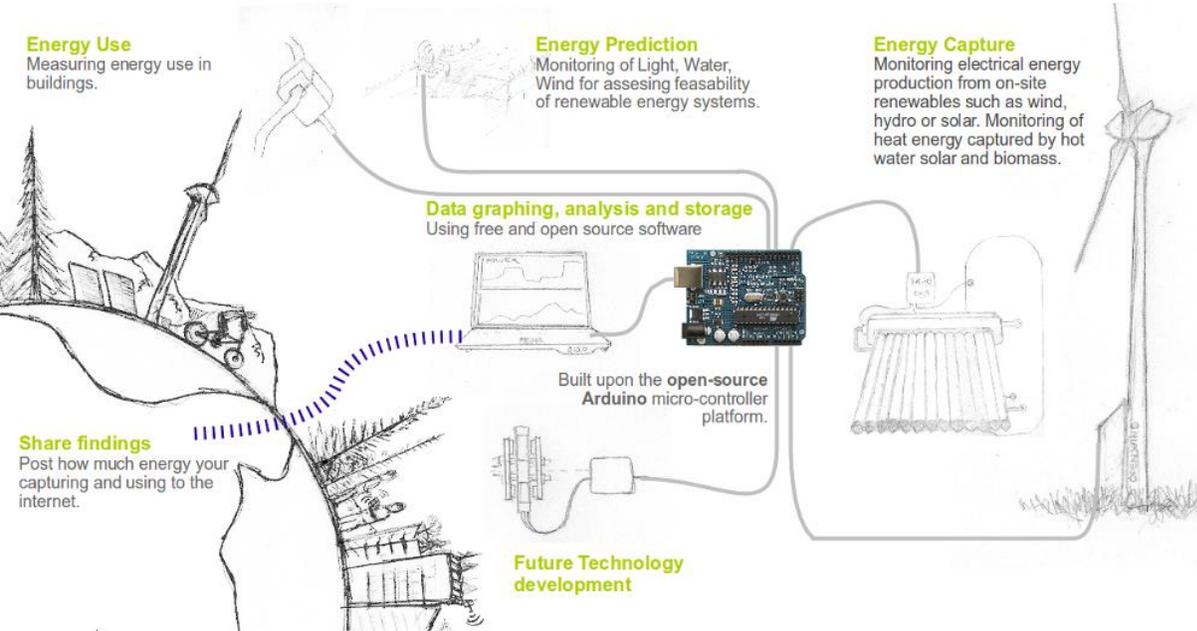
- **Two patterns of engagement in peer production** (Haythornthwaite 2009)
- patterns overlap: lightweight and heavyweight practices may co-exist in collaborative production systems (behavioural spectrum)
- many peer production enterprises entail both a crowd and a community



Cases: Precious Plastic



Cases: OpenEnergyMonitor (OEM)



Preliminary Results

- 14 semi-structured interviews (so far), stakeholder workshops
 - Scraped contributions and user profiles from the communities' online forums (3 year span)
 - Networks based on co-contributions in thread (topic)
 - Topic models of contributions
- Pattern of community vs. crowd / lightweight vs. heavyweight contribution reflected in interviews and forums

Discussion

- Precious plastic → more heavyweight
 1. **Two components - strong core community, plus heterogeneous, geographically distributed crowd**
 2. High relevance of local interactions to exchange uncodified/tacit knowledge (focus: processes/hardware)
- OpenEnergyMonitor → more lightweight
 1. More homogeneous crowd-community mix
 2. More granular & “standardized” contributions / high level of codification possible (focus: software/hardware)



Conclusion

- Crowd vs. community / light vs. heavy engagement can be a relevant factor for the dynamics in peer innovation communities
- Patterns reflect motivation, type of contributions and relevant knowledge

Further research: mapping dimensions

- Local vs. online exchange
- Volunteers vs. professionals
- Open source software vs. open hardware / codifiability of knowledge

References

- Haithonthwaite, C (2009). Crowds and Communities: Light and Heavyweight Model of Peer Production. Proceedings of the 42nd Hawaii International Conference on System Sciences.
- Peuckert, J., Kern, F., Pohlisch, Jakob, & Blind, Knut. (2020). Peer Innovation: Conceptualizing and assessing the role of peer networks for sustainable innovation. *Proceedings of the 11th International Sustainability Transitions Conference*. 11th International Sustainability Transitions Conference, Vienna, Austria.

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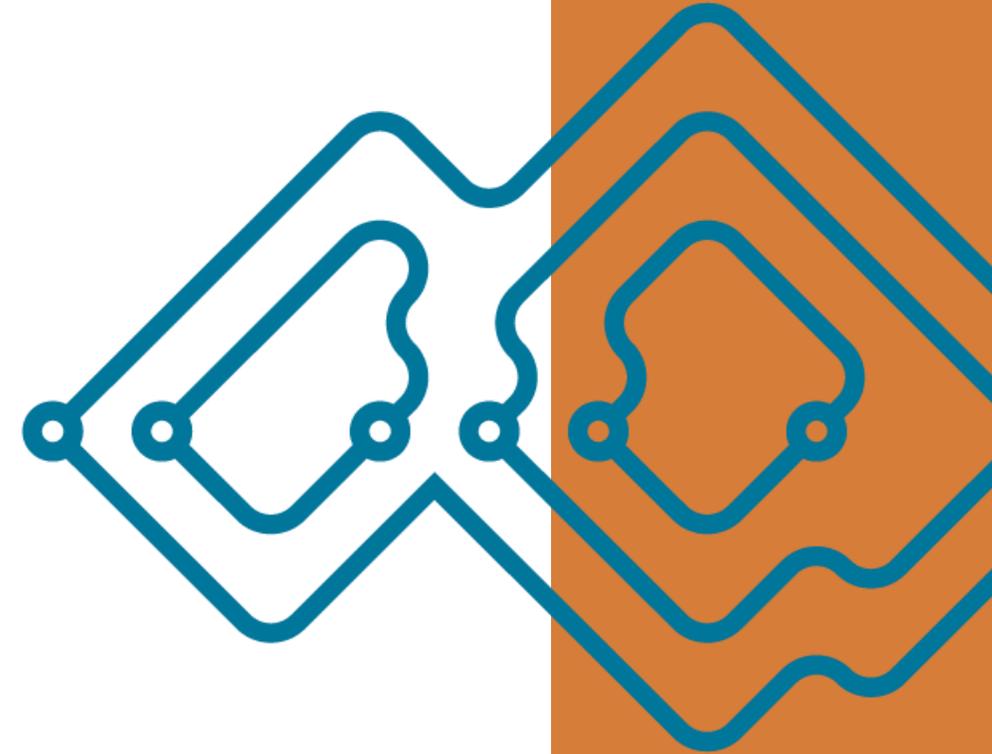
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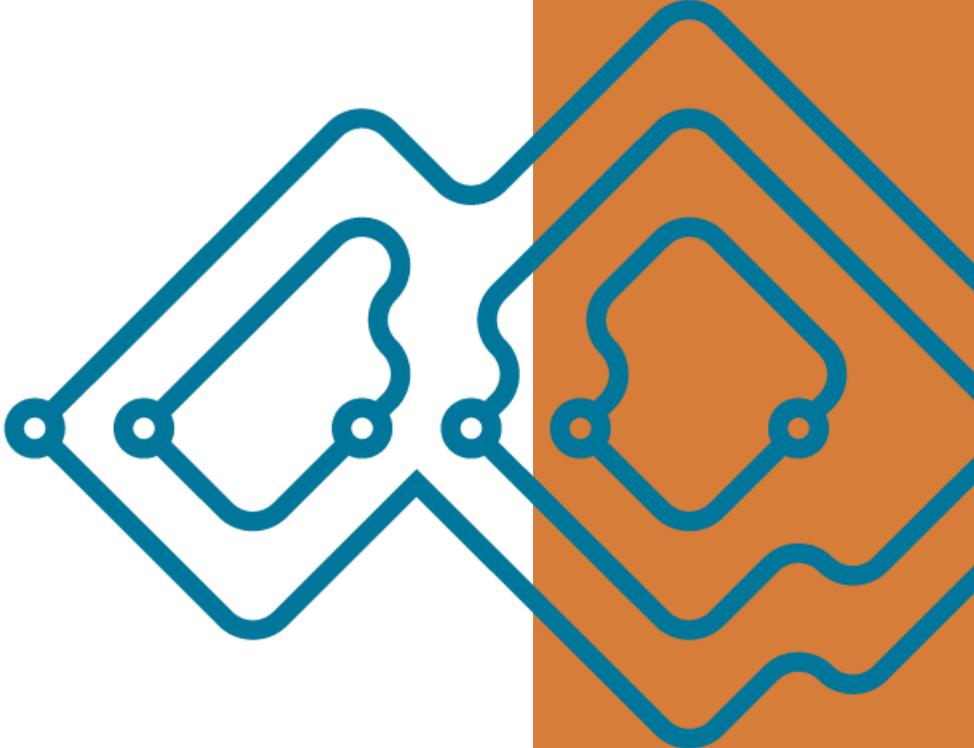
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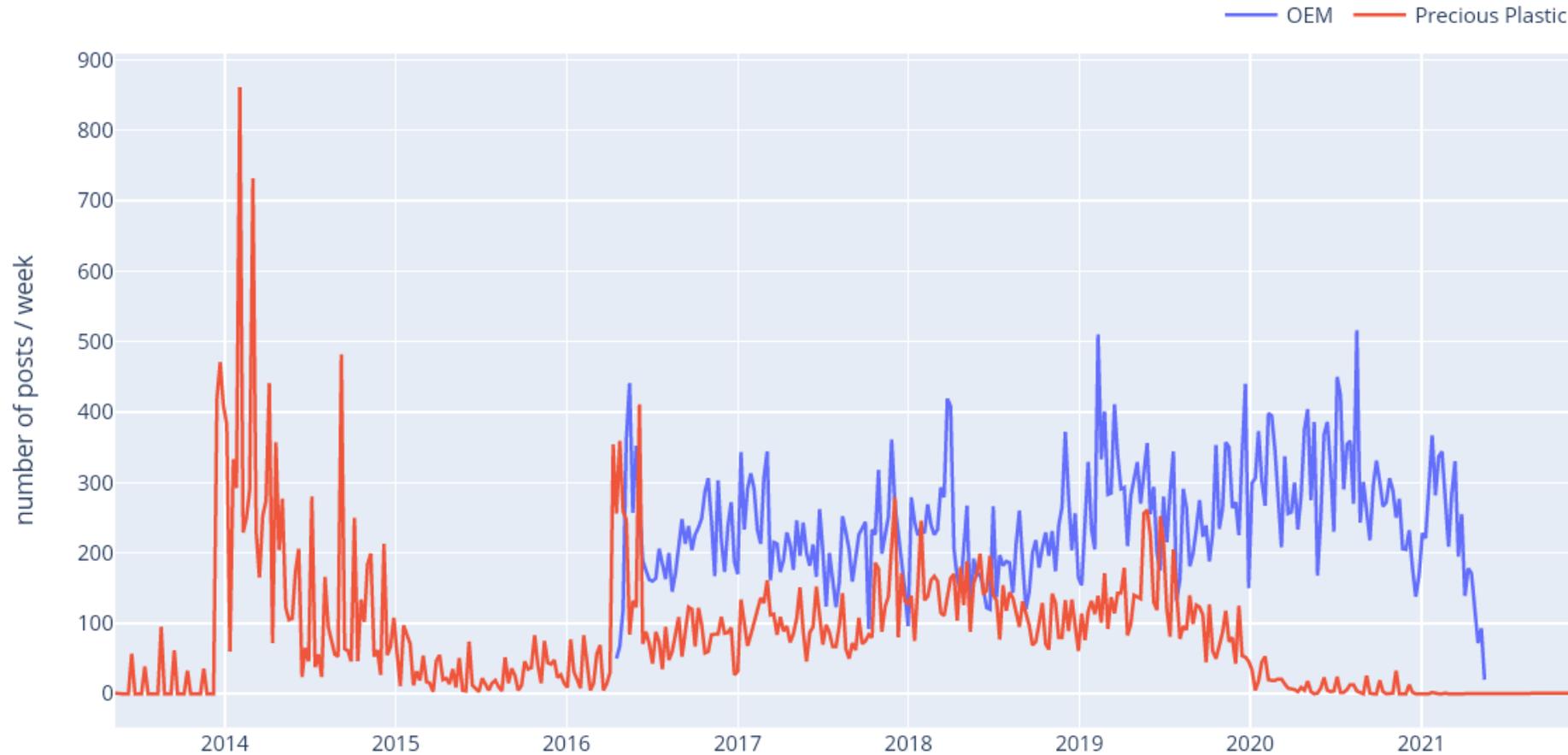
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BACKUP



Contributions per week



posts/user

3 year period: 2017-2019

	oem	pp
count	2058.000000	3497.000000
mean	17.998056	5.315413
std	148.492080	36.841756
min	1.000000	1.000000
25%	2.000000	1.000000
50%	3.000000	1.000000
75%	8.000000	3.000000
max	4254.000000	1629.000000

"serious contributors"

$\mu + 2\sigma$ 315 79