Understanding Software Community Formation

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- Software is built and used in overlapping communities (disciplinary, technology, etc.)
- When thinking about new software, communities and their members (implicitly) consider:
  - Adding to existing software vs. creating new software, competition, funding, career path & incentives

- Want to understand
  - How/why does/can a community form in a field to advance the software in the field?
  - What is needed to succeed?
  - What problems can occur, and be overcome?
  - What lessons can be learned? (for another community)
- by looking at High Energy Physics (HEP) Software Foundation (HSF), Community Infrastructure for Geodynamics (CIG), ELIXIR Tools Platform Best Practices group, Science Gateways, Molecular Science

- Early analysis: community formation initially depend on leadership, vision, community engagement
- Fits models like Educopia Community Cultivation Framework

- To succeed, community must be sustained over time
  - Strengthen vision & engagement, expand governance, consider infrastructure & finances
  - May need multiple tries & changes to initial ideas
  - It's a full time technical, social, cultural job
- Coming work on this project: more analysis, test, paper
- Please contact me with more data/ideas/examples