Exploring sustainability

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Part I. MorphoSource
• Current funding
• Estimated operating costs
• Guiding principles
• Sustainability model (?)

Part II. Sustainability consultants
• Sustainability solutions by Phoenix Bioinformatics
NSF
2017-21: ABI development grant (co-institution: Penn State)
  • Refactor MorphoSource to Hyrax (MS 2.0) + data storage
2017-21: oVert TCN (subaward from UF)
  • Data storage and feature support for oVert
2018-21: ABI development grant (collaborator: U. Washington)
  • API & data management features on MS 2.0

Duke
5 year commitment starting 2021
Operating costs

Current Staff (during refactor)
• 3.5 FTE/year ~$350k

Current storage
• 40 Tb/year ~$11k

Future Staff (maintenance)
• 2-2.25 FTE/year ~$200k-$235k

Annual storage increases
+$2,500/year (over 10 years)
• +25% of previous year
• -12% per Tb/year
Projections for 2040

- 2 FTE ($307,000)
- 5.0 Pb ($76,000)
1) NSF and other agencies should not be relied on long term
2) Access to data cannot require annual/periodic payments from depositors
3) Data must live on even if repository closes
1) Revenue for data separate from revenue for staff/infrastructure

2) Develop a data fee structure that assumes onetime cost for long term storage ***

Storage
- eCommerce transactions for data allocations
- Pricing based on
  - Annual cost projection
  - Expected endowment returns

Staff & infrastructure
- ???
Potential models:
• voluntary subscription
• freemium
• licensing technology (or data?)

Many models excluded:
• compulsory user/downloader fees
• extra data contributor fees
• long term foundation support
Staff/infrastructure (lines of defense)

1. Licensing technology (commercial contracts)
2. Freemium (???)
3. Voluntary subscription/consortium
Path forward

Licensing
In discussions with industry partners
Freemium (???)
No specific plans
Voluntary subscription/consortium
Potential administrative partners (Part II)

-Duke backstop
-Charitable donations
Resources
Still a long road and we anticipate needing significant additional help from NSF before we are self-sustaining

Tools
Creation of non-profit, 501c(3) MorphoSource entity to interface with various partners including Duke MorphoSource Repository

Success requirements
-Duke backstop
-charitable donations
Phoenix Bioinformatics
Dr. Eva Huala - CEO