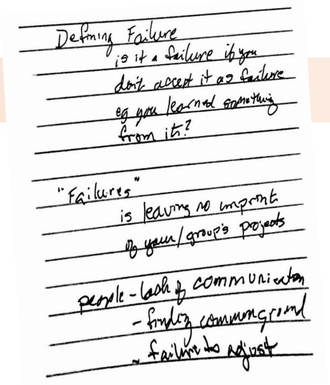
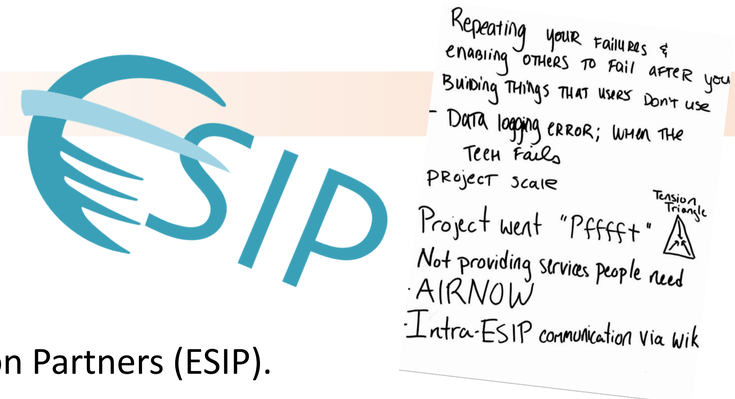


Epic Fails: Learning from the Past to Do Better in the Future



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In research we tend to only present on and/or publish our successes as they are so integral to our career progression. Yet not everything we attempt is successful: no matter how hard we try, some of our research and developments fails. Projects that develop research data infrastructure are often prone to a higher risk of failure, as technology is changing so rapidly and unpredictably, whilst the change of research culture is slow. Edwards et al. (2007) emphasized the value of honestly reporting failures "*to supporting long-term and comparative learning across the varieties of cyberinfrastructural experience*" and recommended that "through the disciplined and even-handed study of failure, funders and proponents of cyberinfrastructure must learn to stop hiding the bodies". New trends in biochemical research and publishing show increased attention to sharing of negative results from early clinical trials (Kevin Kelly, "Speculations on the Future of Science").

What we need is a free and blameless environment that encourages honest reporting of where things went wrong. It is time to bring the skeletons out of the closet and showcase Epic Fails that you know about (particularly your own) in software, data infrastructures, samples, software delivery, services, etc. and build a portfolio of lessons learned from these stories that will inform the future, and ultimately contribute to accelerating progress in the development of research data infrastructures.

At the Earth Sciences Information Partners (ESIP) 2019 Summer meeting we held an 'Epic Fails Session' to provide a free and blameless environment to encourage people to bring their skeletons out of the closet and showcase their Epic Fails in software, data infrastructures, samples, software delivery, services, etc. The session was well attended and lively: the 67 Post-it notes collected are summarised below and can be accessed here.

What are your Epic Fails that you are willing to "confess" to. Please add them to the topics below, or start a new topic, or add them to this Google doc here or as a last resort email them to lesley.wyborn@anu.edu.au

Why report failures?

- EPIC fails are important: they accelerate science
- Failures can still make a difference
- Failures must be documented, publicised and discussed. It is a failure to allow others to fail in the same way (wasted resources)
- Failure is fun if we learn from it and apply it to prevent repetition of same/similar failures

What is failure vs what is success?

- What are the key drivers of success ⇔ failure?
  - ✓ Extent of shared vision
  - ✓ Leadership quality
  - ✓ Communications robustness
  - ✓ Incentives
  - ✓ Degree of exploitation of evolutionary forces.

Resources

- Track project budget religiously, at least monthly, regardless of the internal financial tracking system involved or the effort required personally to do this.
- Even if you created something successful, if your funding ends before you go into production, it will fail. Make sure there is a plan for sustainable funding.
- Keeping the project sustainably moving forward.

Project management

- Defining objectives that are not achievable ⇒ set up for failure
- Don't create heavy systems with many dependencies
- Document what people do. I have been on projects where people leave a project suddenly and it is difficult to recover knowledge
- Scope the project to be achievable, accounting for the fact that there are unknowns and risks to mitigate
- Strive to include the communities impacted by your work/effort to ensure input, design/development, input/adopt ⇒ BUY IN

Progressing within ESIP

- Keep this conversation going
- ✓ Organise a Failure cluster in ESIP
- ✓ Intra-ESIP communication via WIKI
- ✓ Continue sessions with goals:
- ✓ Develop goals for ongoing 'Lessons Learned' sessions
- ✓ Develop "Introspection" protocol or recommend existing protocol
- ✓ Develop list of best practices for avoiding ending a project with epic failure
- ✓ Do this session over beer

Communication

- Communicate, communicate, communicate! Bring people 'onboard' early, let them feel heard and that their opinions are welcome and respected, even if you do reject most of them. A spoonful of sugar…
- Effective communication about expectations, goals, priorities, approaches, goals within a project
- Get all necessary parties in the discussion from the beginning. Make sure you are spending your time on things people want and will use.
- A Common thread to MANY failures is to failure to communicate effectively, and clearly to the right people at all

Progressing Externally

- What is far more important is to change the whole academic "ethos" to ensure that scientists are rewarded/credited for accelerating science by helping show that a path was already followed but was found to be incorrect
- I like the idea of a failure "CV". We should be more tolerant of the failure. If we never fail we are not taking risks and we are not growing or learning.
- There can be a ack of interest in the idea after a failure.

Any other topic

- Add your ideas here

Any other topic

- Add your ideas here