

ELN Working Routines

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Introduction to Me

- CTO & Co-founder of Amphora Research Systems
- Working on ELNs since 1996
- A number of our customers are here & speaking



Why me?

- We do the Patent Evidence problem
 - Keep the lawyers happy
- You still need to make the scientists happy
 - So we get a ring-side seat on some of these problems

This Presentation

- Adapted from an all-day workshop given every year at the Association for Lab Automation in Palm Springs
- Come and join us in January!
 - Hot, Sunny, and informative...

So....

- You've decided to get an ELN
- Do you
 - Buy a tool, and fit your work to the tool?
 - Find out how you work, and buy/build a tool to fit?

The “ELN” Word

- Very ambiguous
- Probably best if you didn't use it
- Say what you mean

What do you mean?

- The term “ELN” means different things to different people
- Somewhere the scientists will work
- A Patent Evidence system (& long term record)

Patent Evidence

- Typically this is a broad, thin layer
- Consistently applied across the whole company

Differences that make a Difference

- There are 2 key aspects which impact the character of your ELN implementation
 - Regulated Vs Unregulated
 - Industry

Regulated or not?

- If you are regulated, chances you are talking about process automation, enforcement, and compliance
- This isn't easy, but it is
 - Relatively unambiguous
 - Fairly well mapped already

Industry/Company Type

- Life Sciences
 - Biotech or Pharma
 - Biology Vs Chemistry
- Multi-national Chemicals

Chemistry Vs Biology

- In Life Sciences, the biggest distinction is between Chemists and Biologists

Chemistry

- Chemistry is pretty structured
- Buy (or build) them a Chemistry-centric ELN and let them get on with it
- The selection process is detailed but at least the work relatively consistently

Sources of Chemistry ELNs

- If you're a big pharma, you're probably already set
 - With varying success - this isn't easy
- Solutions
 - Buy off the shelf
 - Build from what you have
 - Vendor capture

Sources of Chemistry

- In Biotechs, you probably can't afford to build or do vendor capture
- Unless Cheminformatics is a core strength
- So you're going to have to do as much as you can with off-the-shelf (customised as needed)
- Nice selection of vendors, have fun!

Biology

- Massive diversity
- Lots of Microsoft Office and other “non ELN” applications
- Best approach is to get out of their way

Examples

- Nadine's talk about J&J earlier
 - Really good example of in-depth analysis of process
 - 98% approval rate on a project that size is pretty stunning

Large Chemicals

- Somewhat boring places you may or may not have heard of
- But employ 1,000 of scientists and make most of the fun stuff in your house and car
- e.g. companies like Kodak, BASF, PPG, Milliken, USG, etc.

Large Chemicals

- Massive diversity
- R&D is typically very close to the customer
 - Tight timescales
 - Low tolerance for “non-value add” activities

Large Chemicals

- The ELN project will “Open the can of worms” in terms of
 - The tools people are using
 - The records they are creating
 - The patent evidence that is generated

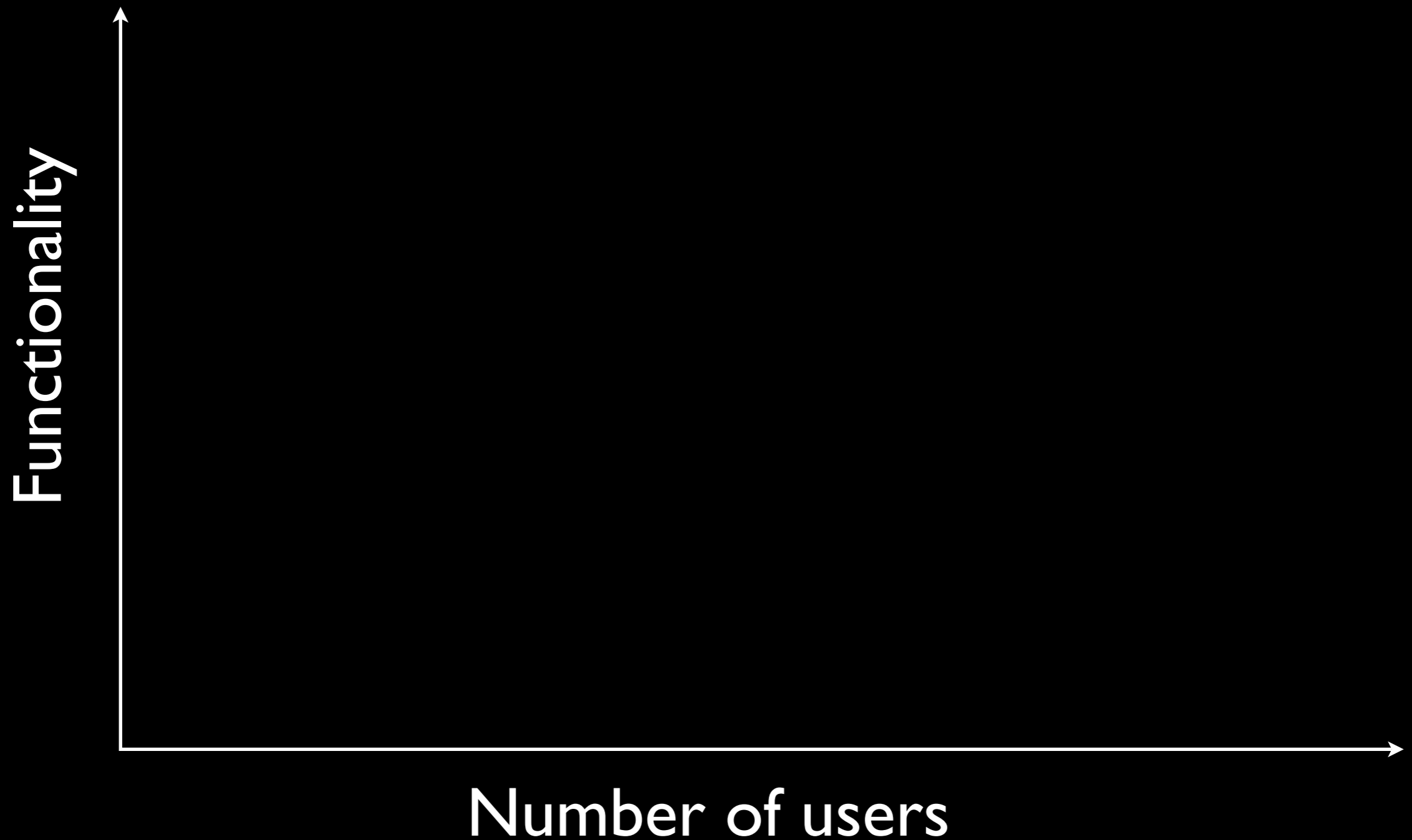
General Purpose ELNs

- “You all use the same *Paper* notebook don’t you?”
- “So surely you can all use the same *Electronic* notebook?”

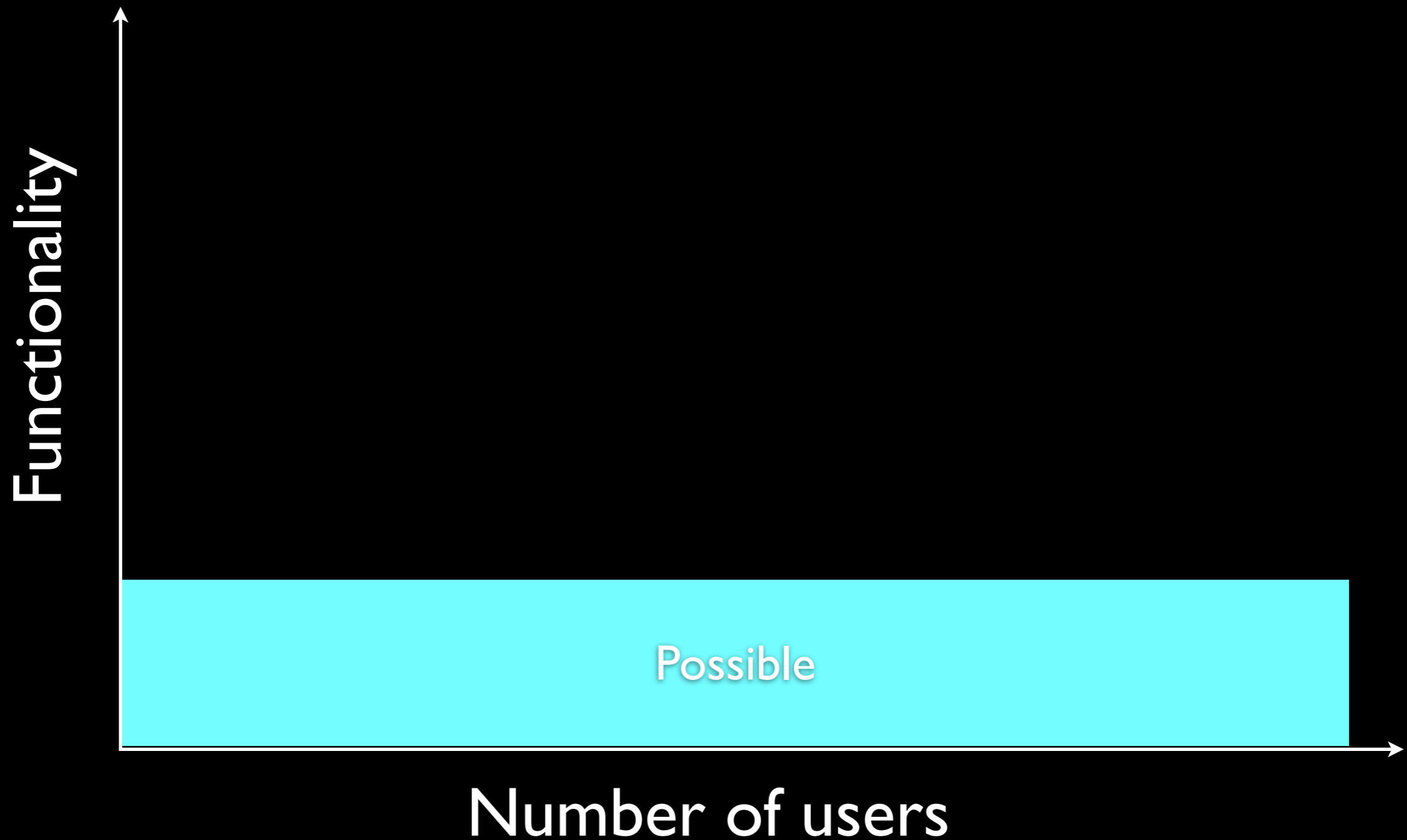
General Purpose ELNs

- You can do it for small numbers of users and certain styles of work (e.g. e2v)
- Where workflow is important
- For large numbers of users
 - The diversity in process will kill you
 - You end up building an expensive version of Word & Excel

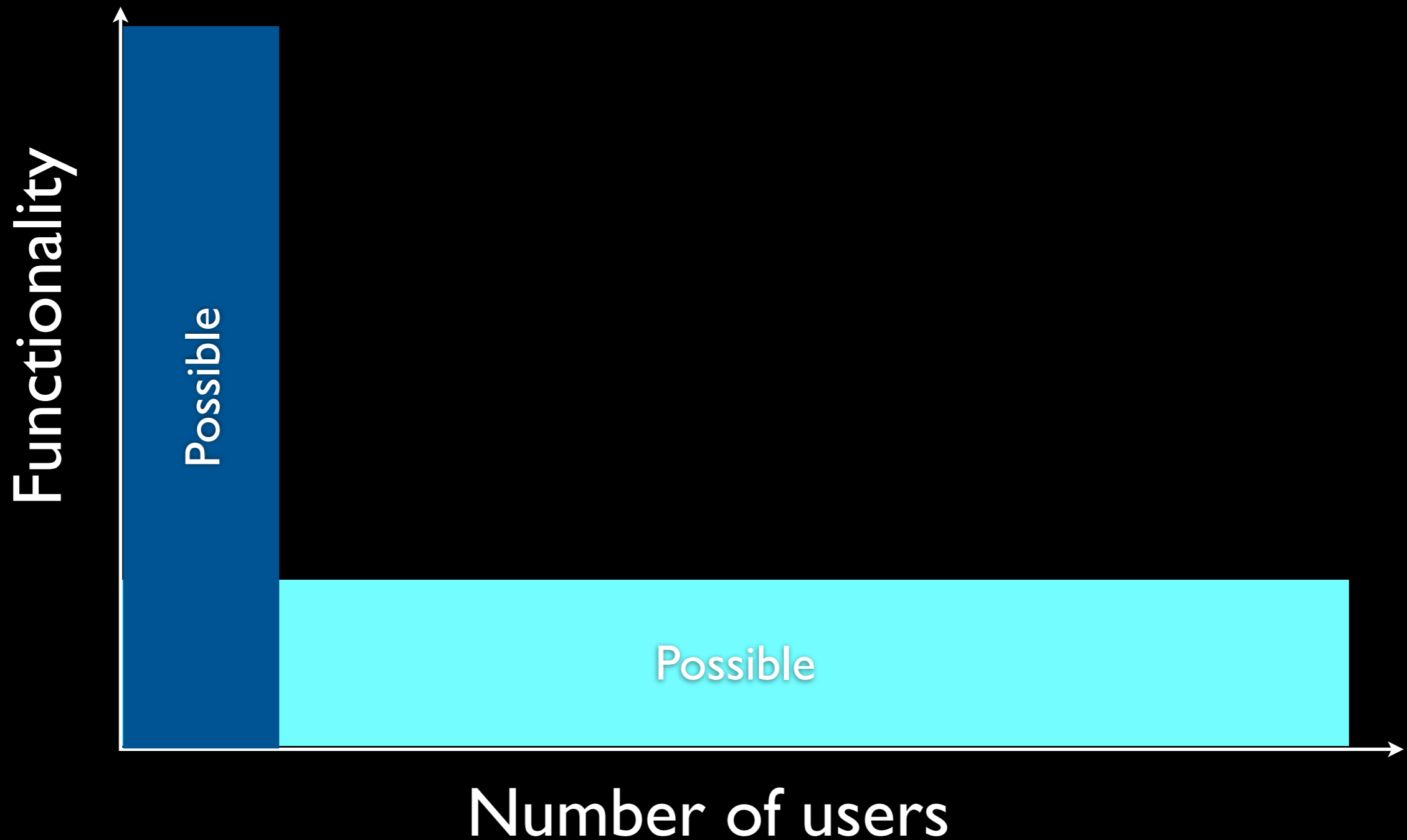
General Purpose ELNs



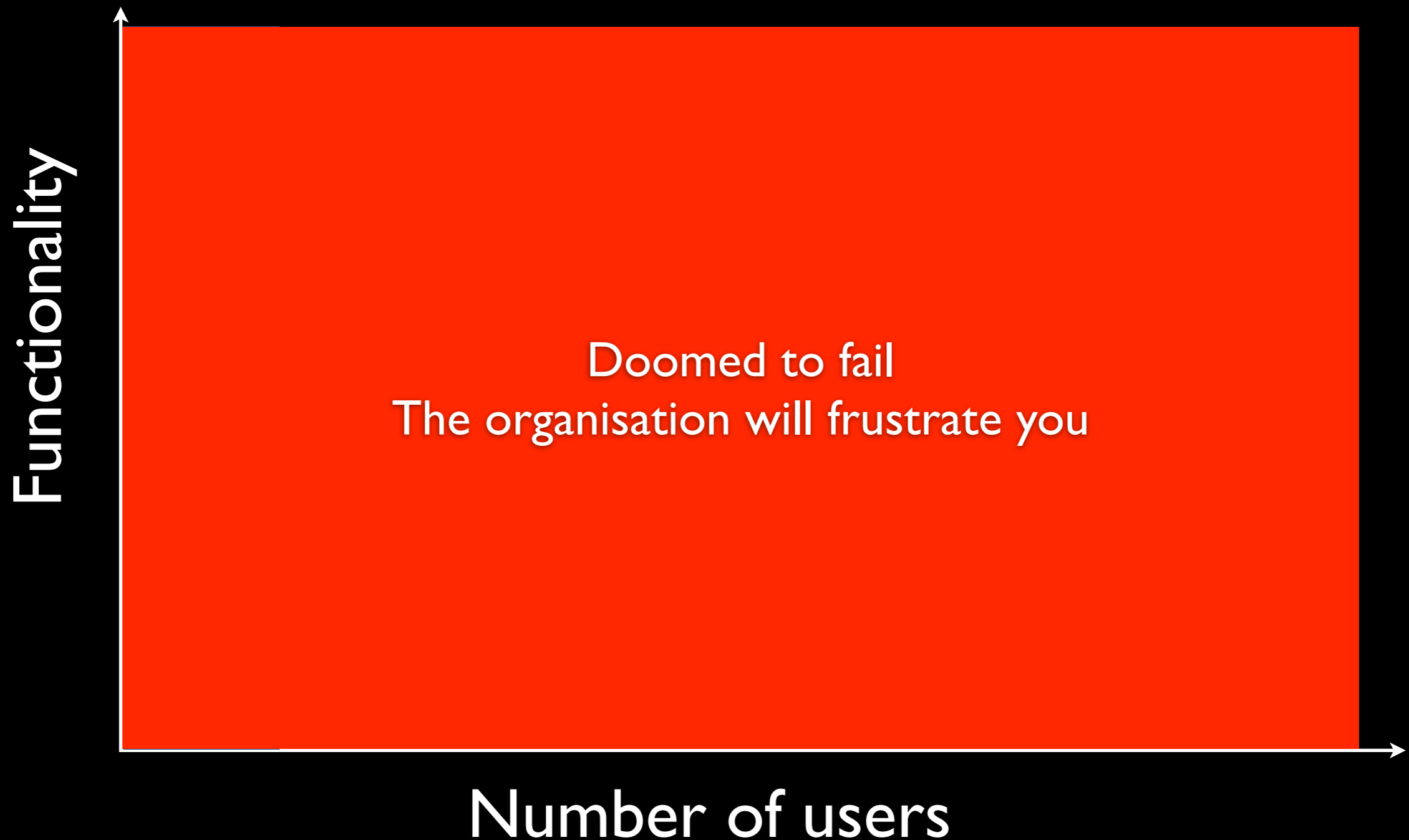
General Purpose ELNs



General Purpose ELNs



General Purpose ELNs



Front end tools

- Most organisations will end up providing different front ends to different users
- Examples
 - BMS, Solvay, all the other large companies

Patents

- As a rule, what you need to do from a Patent perspective is pretty generic
- You might have some specific needs, but 95% of what you need can be done off the shelf
- This is one area where you want to stick with convention

Security

- In Life Sciences things are relatively sane
- In Large Chemicals, you get all the fun of “Chinese Walls” created by Commercial agreements

Security

- This is another whole can of worms
- That didn't really exist until the ELN came along
- No one could find anything in the paper notebook anyway

Security

- Ultimately you have to do what the organisation requires
- But you need to avoid massively complex regimes
- If you do NDA-related Chinese walls, you need to have that tagged into the record at creation

Records Management

- The Cinderella of ELN projects
- Desperately important
- Clearly something that's dependent on your own processes

Conclusions

- Our original question
- Some thoughts

Our Questions

- Do you
 - Buy a tool, and fit your work to the tool?
 - Find out how you work, and buy/build a tool to fit?

Conclusion

- Unless you have been specifically charged with changing the workflow
- Don't pick the fight
- You're there to support the science
 - Today and in the future

Conclusions

- They've probably already got what they need anyway
- Or a very good idea of what they need
- That's why they asked for an ELN in the first place

Conclusion

- If you are charged with changing the workflow
 - *That's your project, not "ELN" or whatever*
 - Try to keep the scope as small as possible
 - Size and diversity will kill you

Patent

- Stick with best practice unless you really know what you are doing

Security

- Do what you have to do
- But try to keep it simple

Conclusion

- Chemistry - buy, or build, the best you can
- Biology - get out of their way
- Large chemicals - you'll never fully understand everything in detail