

# Are ELN projects Doomed?

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# Are ELNs Doomed

- A little bit about me
- Are ELN Projects Doomed? Why?
- How we might increase success

# About us

- Been working on commercial ELNs since 1996 – consultants on the Kodak ELN project
- Now focus on the “Patent Evidence” problem
- Might be all you need from an ELN
- Might be a part of an overall informatics system

# Our Experience

- Europe/US/Asia
- Sectors
  - Biotech (small, medium, large)
  - Big Pharma
  - Chemicals companies
  - University research groups

# Some people we work with

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# Oh, one more thing

- In common with all vendors, our success is tied to our customer's success
- Once you get past the hype, we all need successful projects
- And we need to engage with end users in a way that benefits all

# Are ELN projects doomed?

- Clearly there are successes – as evidenced by the case studies
- You rarely hear about the failures in public



# Failures?

- Shelfware
- Reduced scope of deployment
- Deeply unhappy users
- Failed pilots
- Failed suppliers
- Dead end products
- Early replacement
- Near disasters

# What you hear instead

- Happy success stories from vendors and their delighted customers
- Projects portrayed in the most glowing terms
- Suppliers putting a brave face on mergers/partnerships
  
- Marketing is a wonderful/terrible thing!

# What you don't hear about

- The success stories based on software which isn't an "ELN"
  - They just did it
  - Sometimes they don't even realised they've done the "ELN" thing
- In house software
  - People running it are too busy to talk
  - Proprietary/Confidential

# The result

- A lot of learning is lost
- A 45 minute presentation slot forces projects to be summarised in simplistic terms

I hope we, as a  
community, can do  
better

As a community we need  
a more accurate picture  
of what's really going on

**As a community we  
owe it to the projects  
just starting out**

**As a community we owe it to  
the people putting their  
savings into vendor companies**



# How can we Improve?

- Develop a greater awareness of the problems as well as the success
- Adopt tools which allow us to communicate more effectively about what's really going on
- Use frameworks which allow us to understand the relevance of any one company's experience to another's circumstance

# Sources of Doom

- The dreaded “ELN” word
- Project complexity

# That dreaded word

- Internally, the term “ELN” means a lot of different things to different people
  - Different kinds of scientist
  - IT
  - Legal
  - Records
  - Management

# That dreaded term

- This in itself is the source of many problems
- Massively complex requirements (often internally inconsistent!)
- Tricks you in to thinking if you just buy the right one, all is well
- And that you might only need one

# That dreaded word

- “ELN” has also become a marketing term
- Slapped on all sorts of products
- “Whatever you want, we can do”
- “The other guys can’t do what we can do”
- “We can make everyone happy!”

# That dreaded word

- Attempts to segment the market based on the term fall into chasms of complexity

# Solution: Ban the word

- The best thing you can do is ignore the “ELN” word
- Say what you really mean
- Encourage vendors to describe their products in other terms
- It'll force them to tell you what they really do
- Banning “ELN” will be the single best thing you do

# Project Complexity

- With the best will in the world ELN projects can be massively complex
  - Diversity of scientific activity
  - Straightforward technical complexity
    - Lots of integration
    - Sometimes widescale deployment



# The need to simplify

- It takes guts to say no
- It takes humility to reduce the scope of the project
- But therein lies success
- There are some simple frameworks which can help navigate your way around

# Some tools for dealing with diversity

- Many projects get stuck on the sheer complexity of the scientific process
  - Especially in larger firms
  - With many different spheres of activity
- Two frameworks which might help
  - Look at the diversity of activity and where to put your attention
  - Tease out what data is important and what isn't

# Dealing with Diversity

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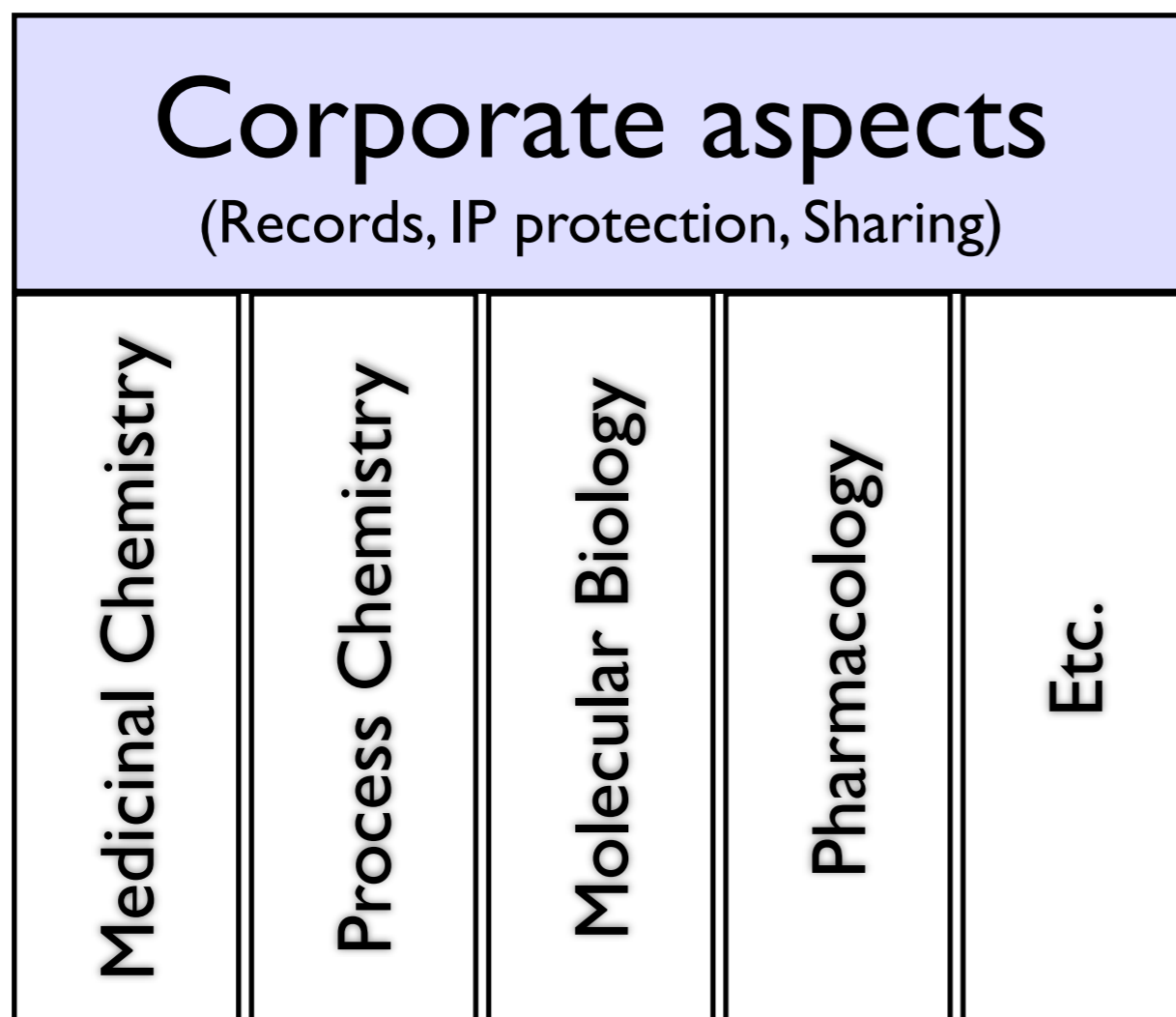
# Dealing with Diversity

Medicinal Chemistry	Process Chemistry	Molecular Biology	Pharmacology	Etc.
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# Dealing with Diversity

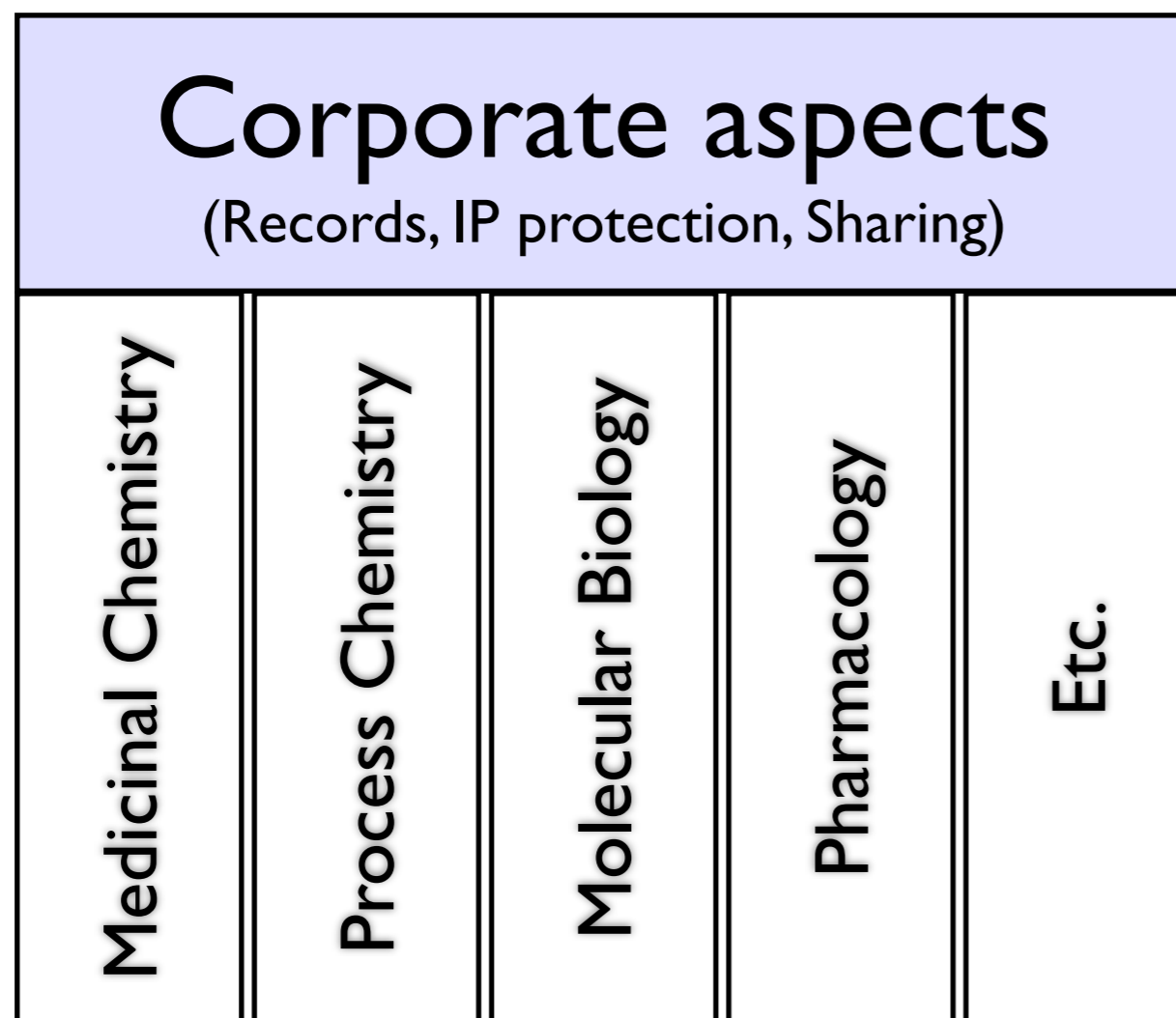
Corporate aspects (Records, IP protection, Sharing)				
Medicinal Chemistry	Process Chemistry	Molecular Biology	Pharmacology	Etc.

# Dealing with Diversity



Let them use whatever systems they want here (because they will anyway)

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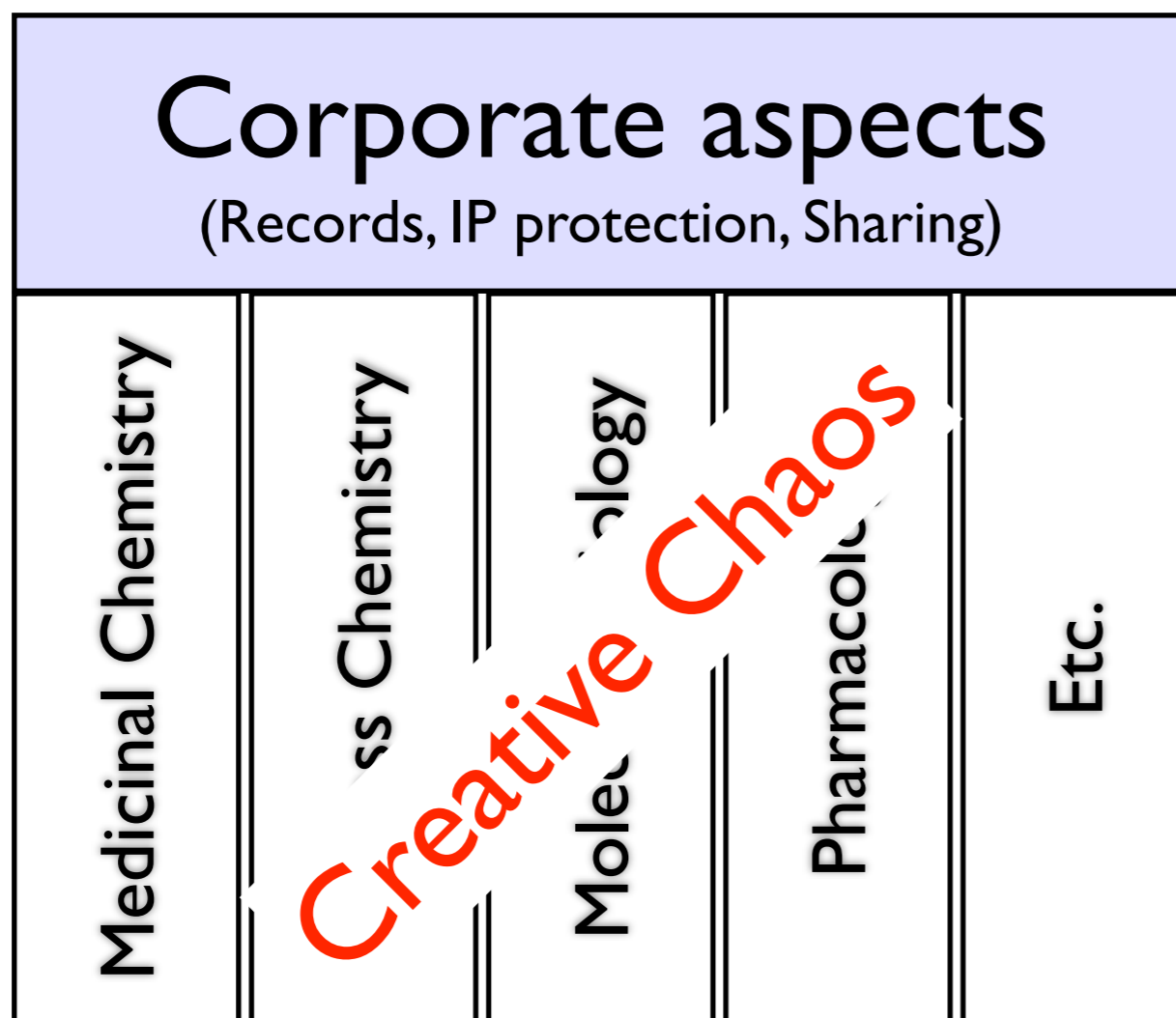


Focus IP concerns here



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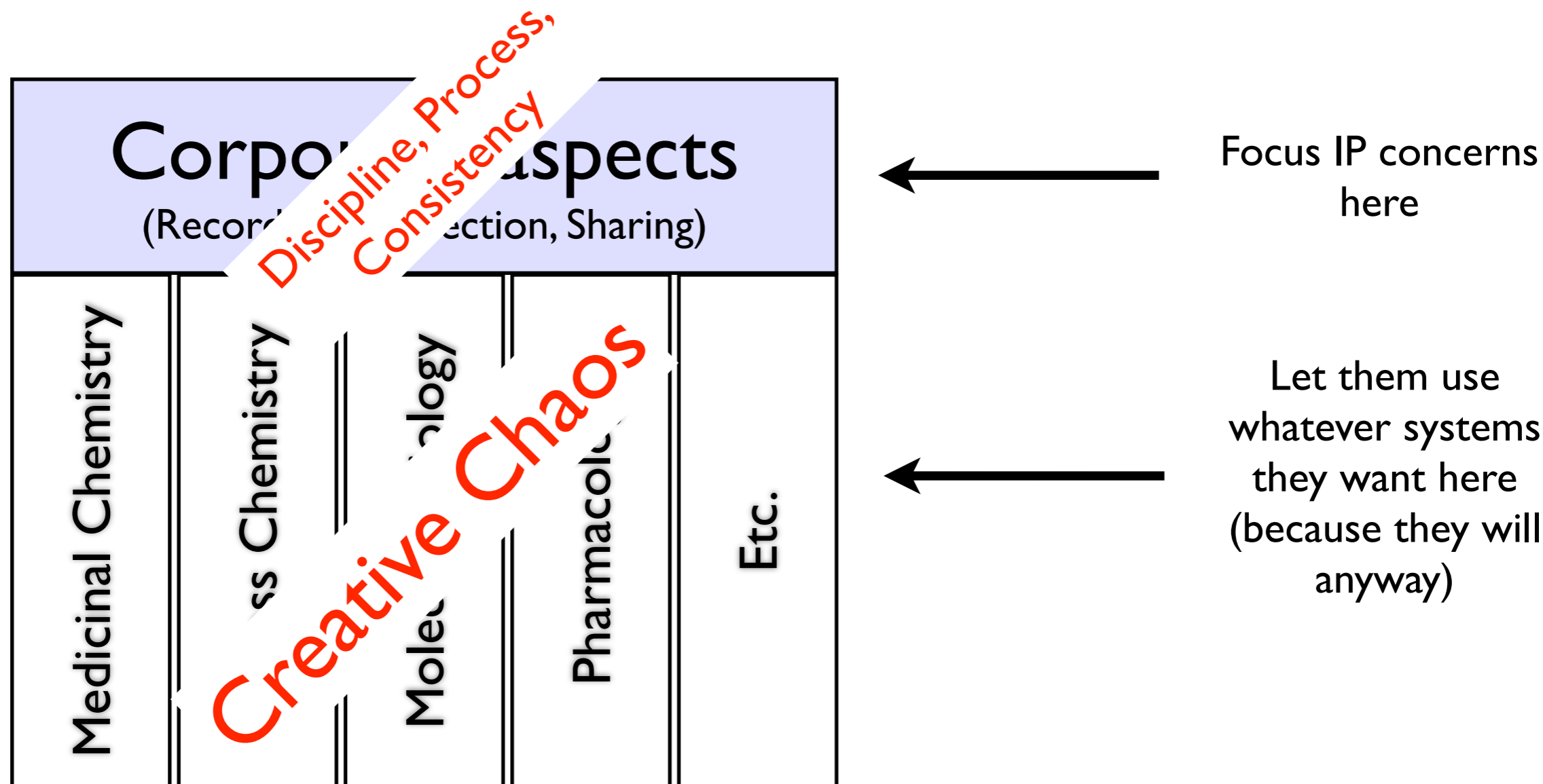


← Focus IP concerns here

← Let them use whatever systems they want here (because they will anyway)



# Dealing with Diversity

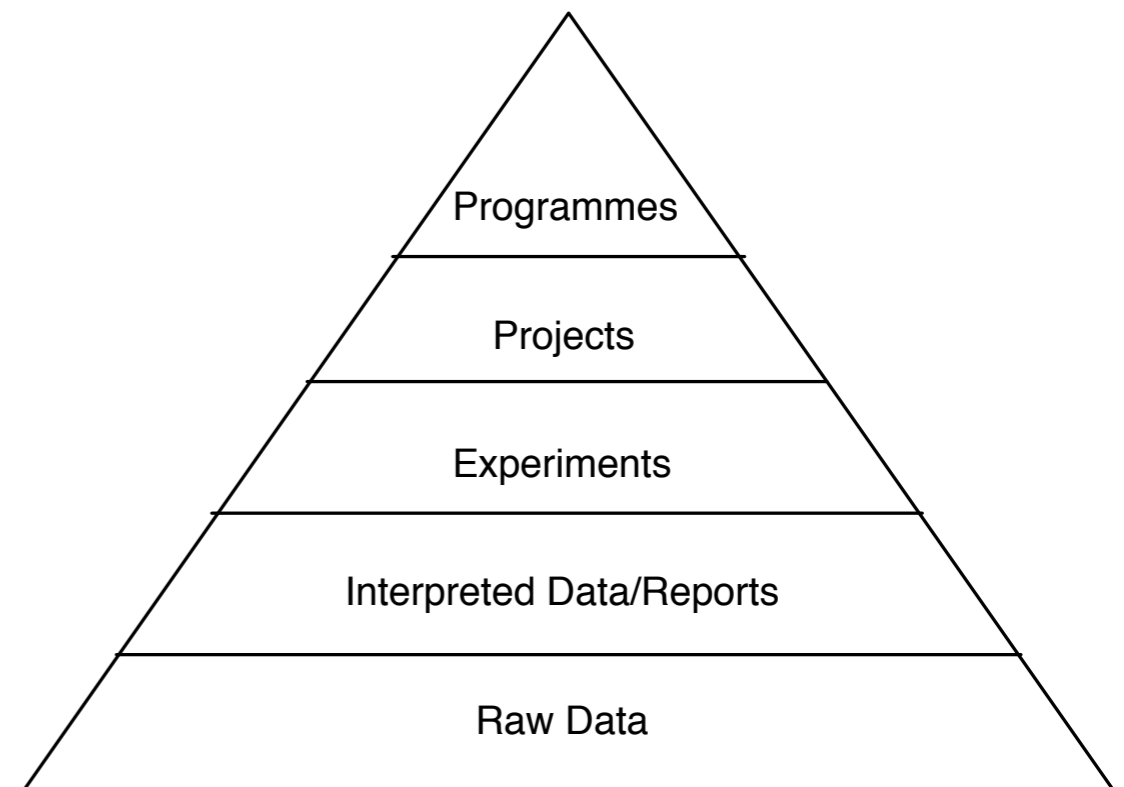


# Don't be tempted

- Don't be tempted to mix where the scientists work, and the record keeping system
  - We tried that with the paper notebook and that didn't work out well for anyone
- Creates lots of issues for introduction & ownership
- Also, don't mix systems for IP protection and Regulatory Compliance
  - Different problems
  - Very hard (impossible?) to do in one place

# What's Important

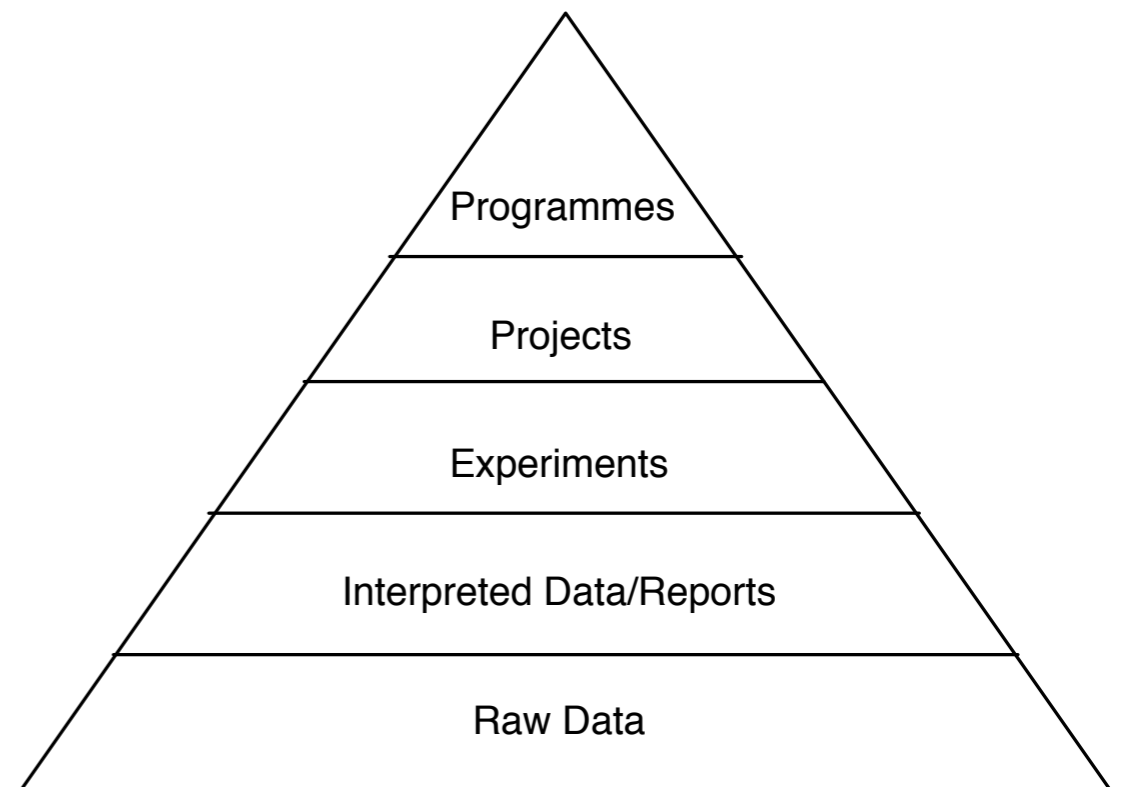
- Most scientific activity creates electronic “Stuff”
- Some of this is more useful than others
- Useful to look at things as a pyramid



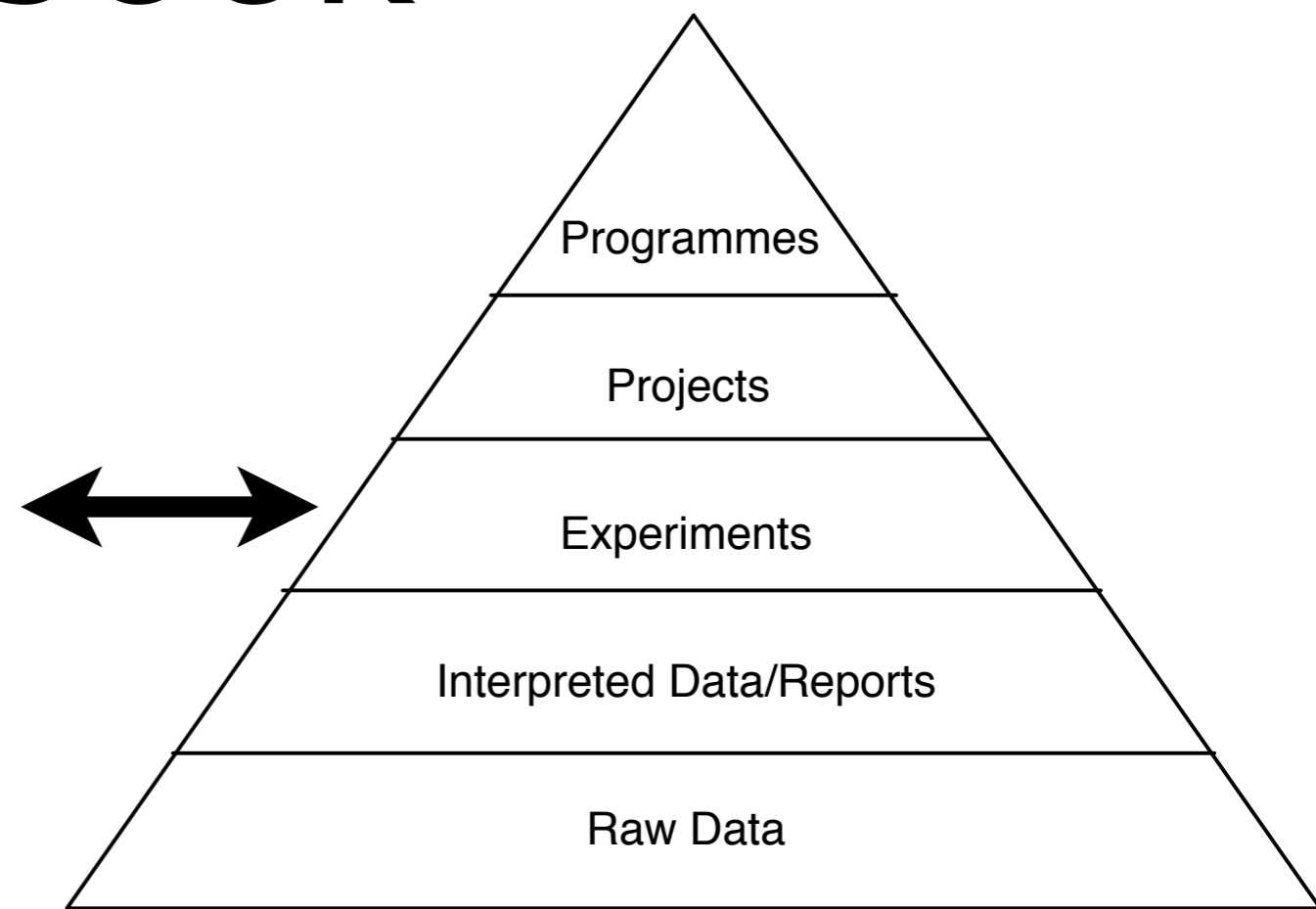
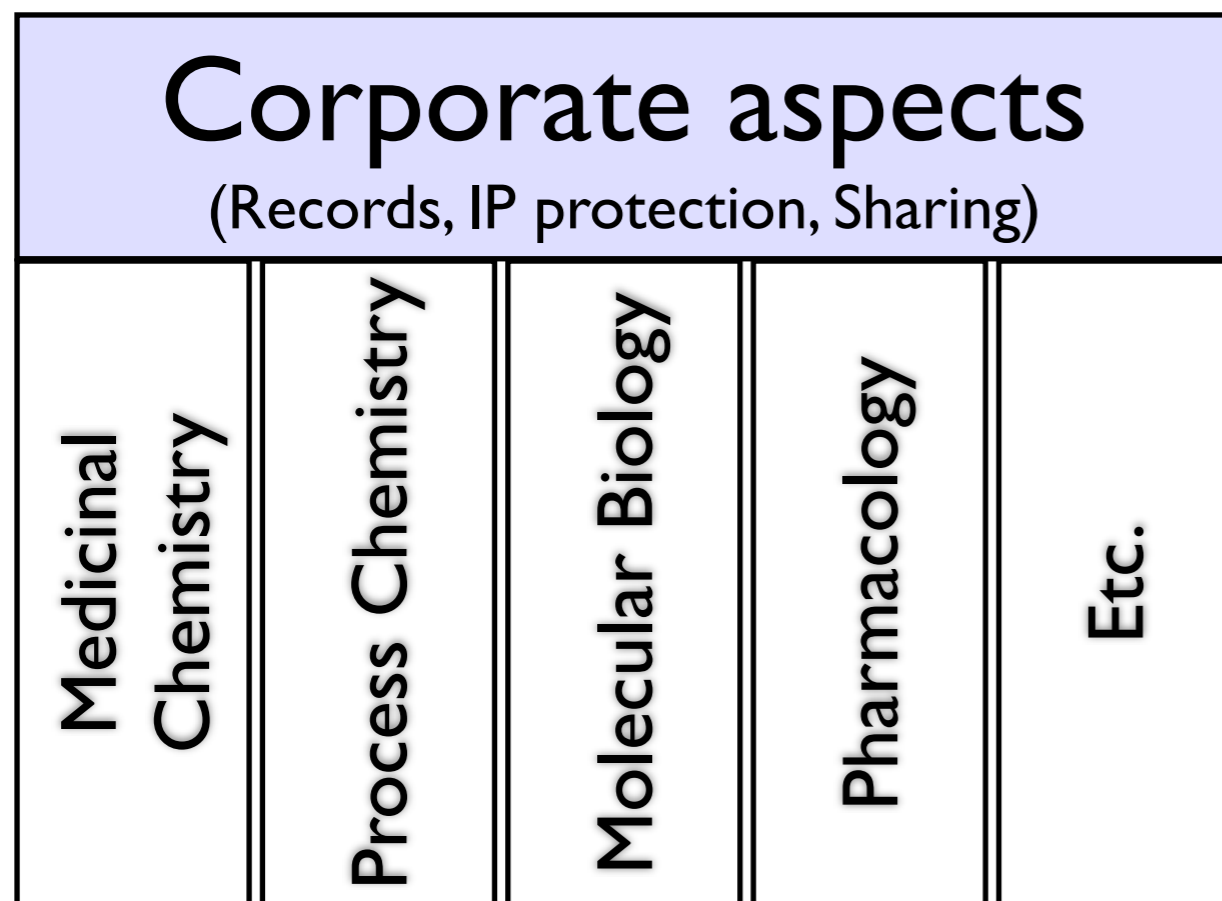
# What's Important

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- Some of this is more useful than others
- Useful to look at things as a pyramid

Not so interesting, Long Term  
Harder to preserve anyway



# What goes in the notebook



# What goes in the notebook

- Nothing need change from the paper notebook process
- Just because you can dump loads of raw data in, doesn't mean you need to
- Scientists will often need specific guidance on what to put in for different circumstances
  - Often what's currently happening isn't what you need
  - One advantage of an electronic system is you can sample what they're doing and offer gentle assistance

# Diversity

- Doesn't have to be a killer problem
- Moving to an electronic system will make things a lot easier
- However you will uncover issues which have remained hidden

# The toaster problem

- Most ELNs are specified and designed by committee
- Committee members tend to be volunteers
- Volunteers are generally self-selecting
  - Committed to the concept of an ELN
  - Enthused about the improvements it can bring
  - Can envision the potential
- Unfortunately, the committee process creates complex systems, reflecting the inevitable compromises
- In addition, we also need to build systems for people who don't volunteer for ELN committees



# The toaster problem

- This results in what we call “The Toaster Problem”
- Which is best explained initially by an analogy

# The toaster problem

- What is this?
- The Toaster Geeks Toaster!
  - It toasts
  - It warms
  - It can be adjusted to the unique character of the individual slice of bread, based on the operator's expert eye
- Unfortunately, I am not a toaster geek
- I am just hungry, hassled, and in a rush

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# The problem

- The essential problem is that people have enough complexity in their lives
- Peripheral activities need to be simple - we really don't have the "brain space" to handle too much complexity in non-core areas
- People are quite literally turned off as soon as they see lots of options
  - "It must be complicated to use"
  - "I don't have time to look at this right now"
- Those of us that are passionate about ELNs and their potential need to understand a very real, and very hard truth

# No one cares as much as you do

- At best they'll give you 5 minutes to capture their attention
- You must either complete your "sale" in that time, or give them enough benefit to earn their attention for another 5 minutes
- You won't get more than 10 minutes before they decide if this is relevant or not
- So we need to focus on the functions that really deliver a return on financial (& brain space) investment

# Complexity is a two-edged sword

- Can give you lots of power, but comes at a price
  - Training time
  - Extra effort in use to consider all those new options
- I thought the solution was a UI that gently “revealed” itself
  - Complexity was hidden unless needed
  - 80% of cases were handled automatically
- Turns out, some people still perceived the system as “Complicated”
- This led them to avoid using the ELN unless they had a definite need
- Solution: Two ELNs, broad & deep

# Buying a toaster

- Unfortunately the people who buy toasters are the people who are interested in toasters
- Generally, they form a committee of toaster buyers
- This leads them to purchase the “best” toaster
- Unfortunately their family members want to concentrate on the eating, not on the toasting

# Buying a toaster

- Keep things simple
- Where you need complexity, make sure
  - It is optional
  - It brings benefit to the user
- “Market test” soon and often
- Be suspicious of ornate requirements
- A good design is when there’s nothing left to take out



# Practical tips

- A good diagnostic question:
  - “Do you have this functionality already?”
  - If yes - then why does it matter to the ELN?
  - If no - why does it need to be part of the ELN project?

# Practical tips

- If it is relevant to the ELN
  - Is it needed by all users - in which case core ELN
  - Is it specific to a group - in which case this is a “deep” function which should be part of a separate but related project
  - If it is unrelated but enabled by ELN, then separate project and integrate
- There is a great danger that lots of activities that should/could be justified on their own merits, but haven't been able to be justified, are crammed into the ELN as “essential”

# Blogs

- For some reason there's not much blogging going on in this industry
  - Which is a huge loss
  - Works well for lots of other industries
- I have a blog, you should get a blog too
  - In making a contribution, you learn so much
  - Lots of really interesting things going on
    - Academic work, Open Source etc.
- This is how we'll learn as a community

# Summary

- ELN projects are hard
- What you hear in public forums isn't the whole story
- You can deconstruct an ELN project into useful bits
- We can work together as a community very effectively

# Thank you

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# Thank you

- I hope this has been thought provoking

# Thank you

- I hope this has been thought provoking
- I hope you don't agree with everything I've said, but that you might consider some of it

# Thank you

- Amphora make our money helping people replace their paper lab notebooks with our products and assistance
- We work with all the suppliers here, a number of the end user companies
- Jo or I would be delighted to chat with you further