

Are ELN projects Doomed?

Simon Coles
CTO, Amphora Research Systems

<http://www.amphora-research.com/>
<http://elnblog.com>



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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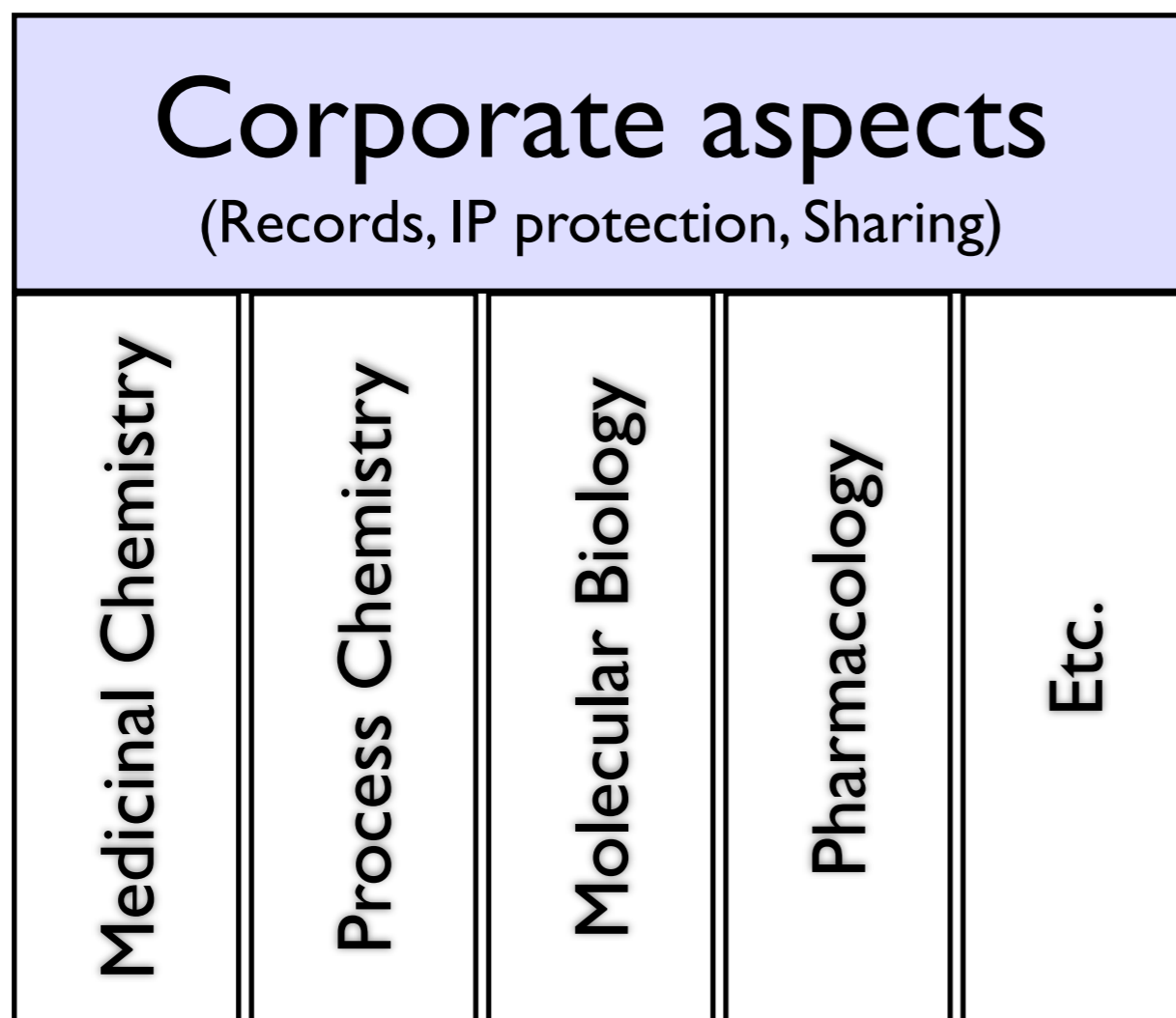
Dealing with Diversity

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

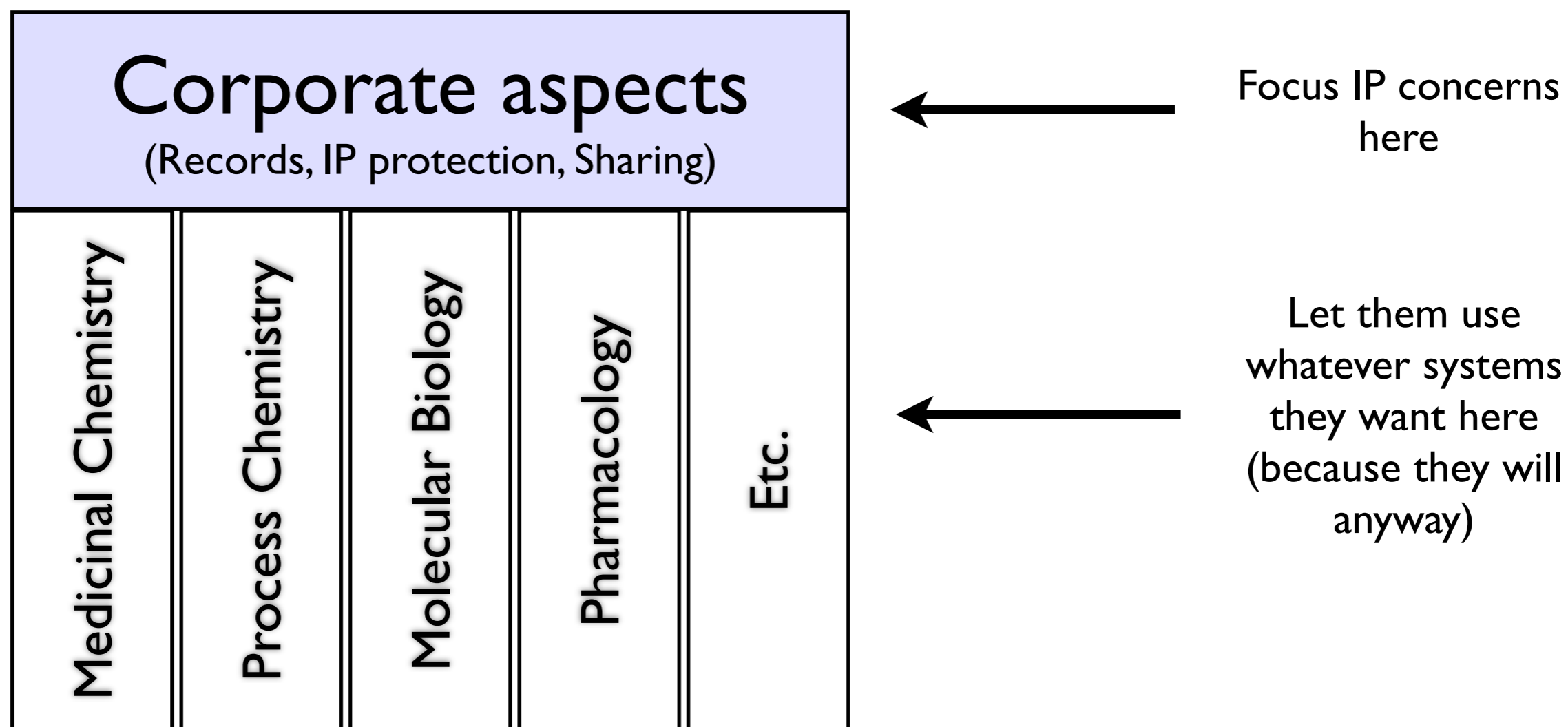
Corporate aspects (Records, IP protection, Sharing)				
Medicinal Chemistry	Process Chemistry	Molecular Biology	Pharmacology	Etc.

Dealing with Diversity

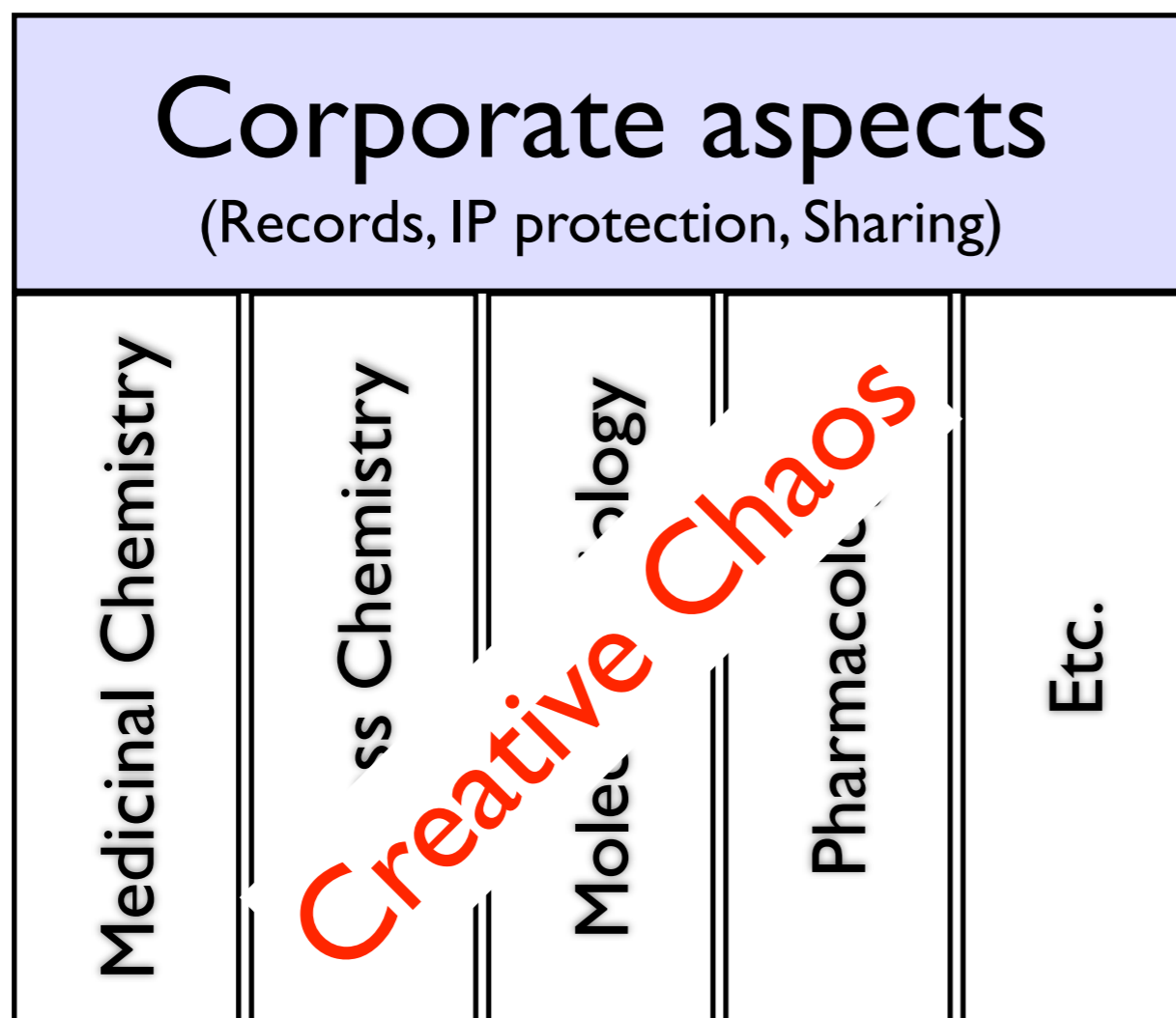


Let them use whatever systems they want here (because they will anyway)

Dealing with Diversity



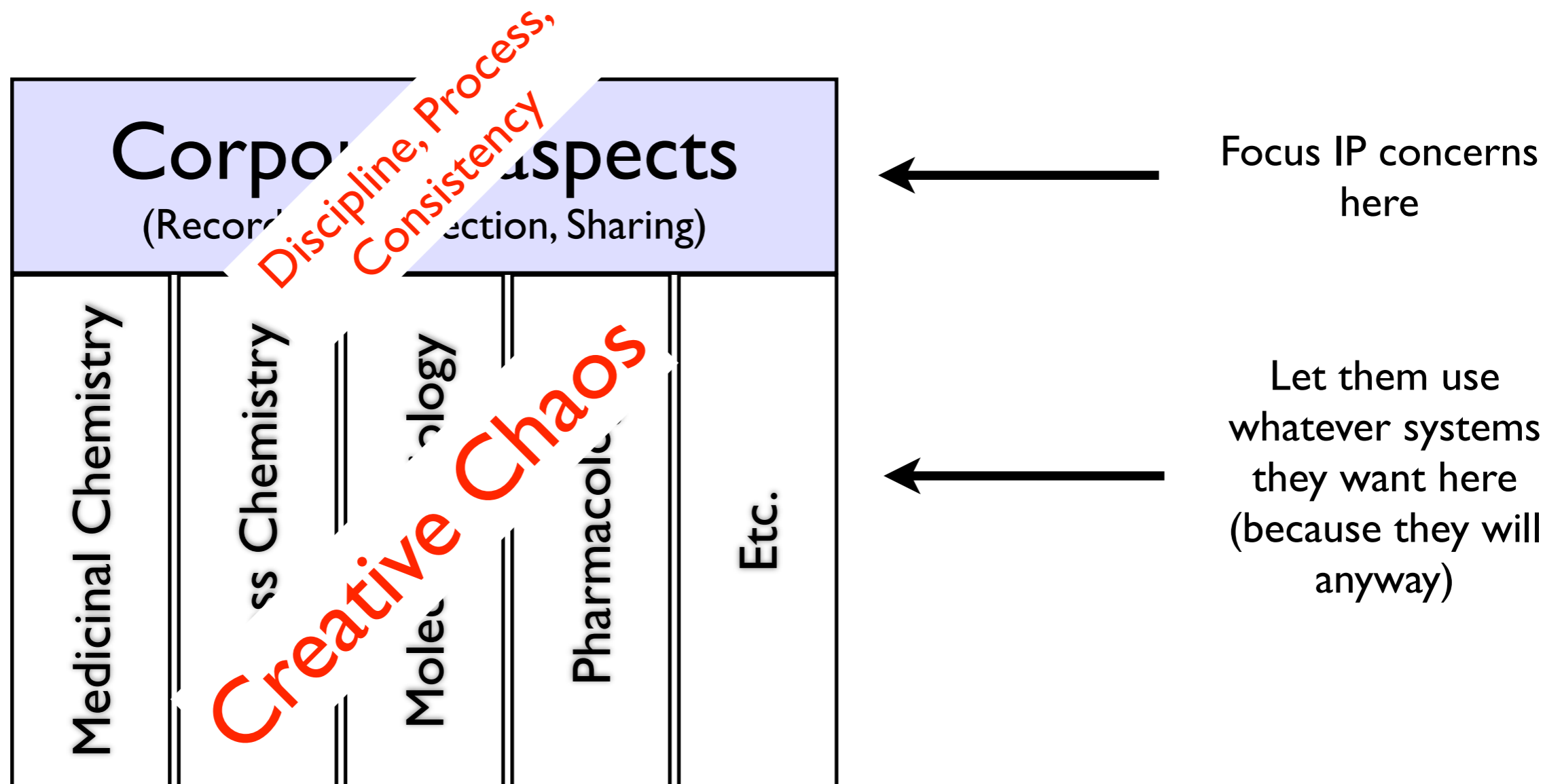
Dealing with Diversity



← Focus IP concerns here

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

Dealing with Diversity

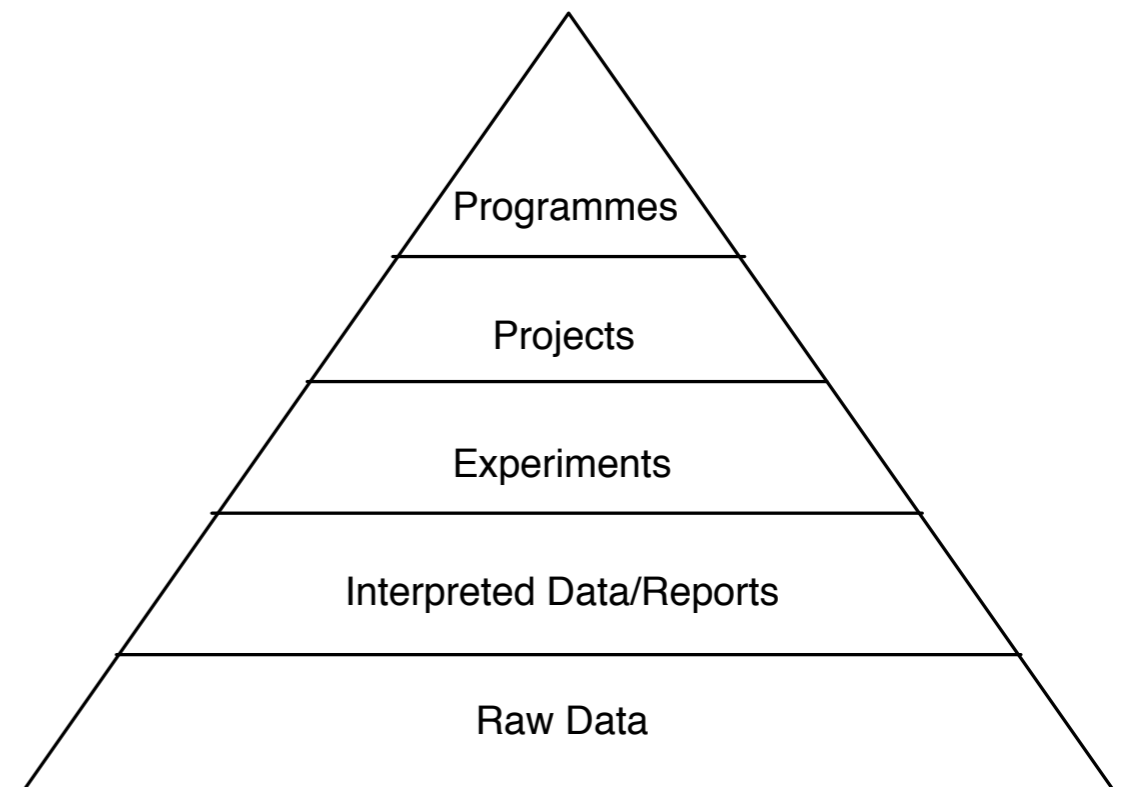


Don't be tempted

- 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

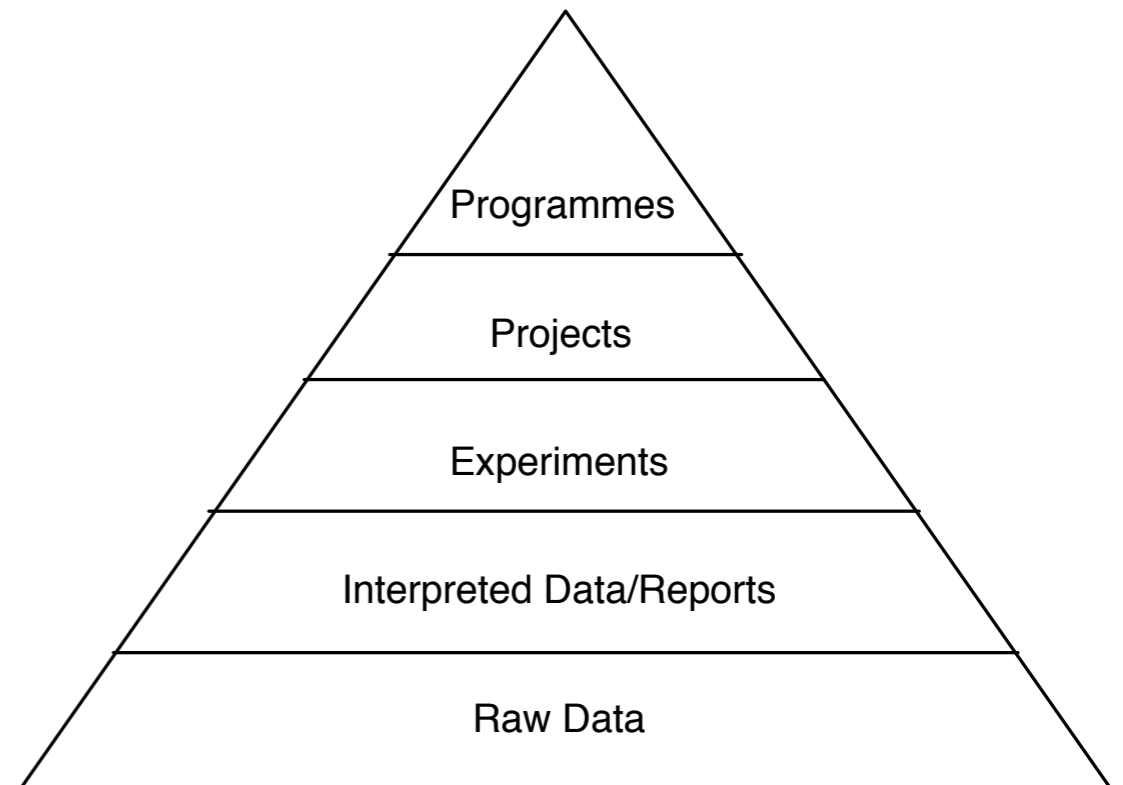
- Most scientific activity creates electronic “Stuff”
- Some of this is more useful than others
- Useful to look at things as a pyramid



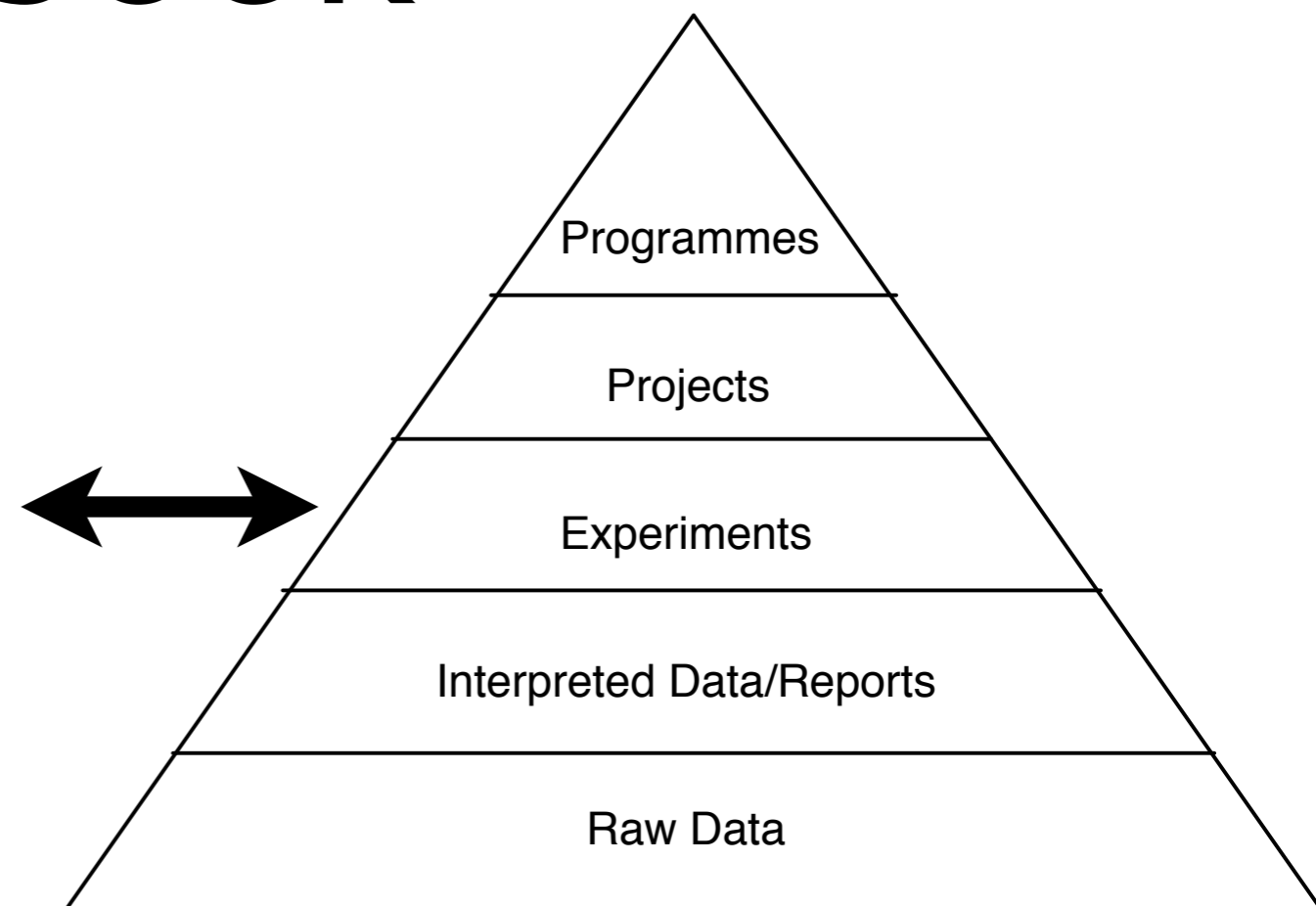
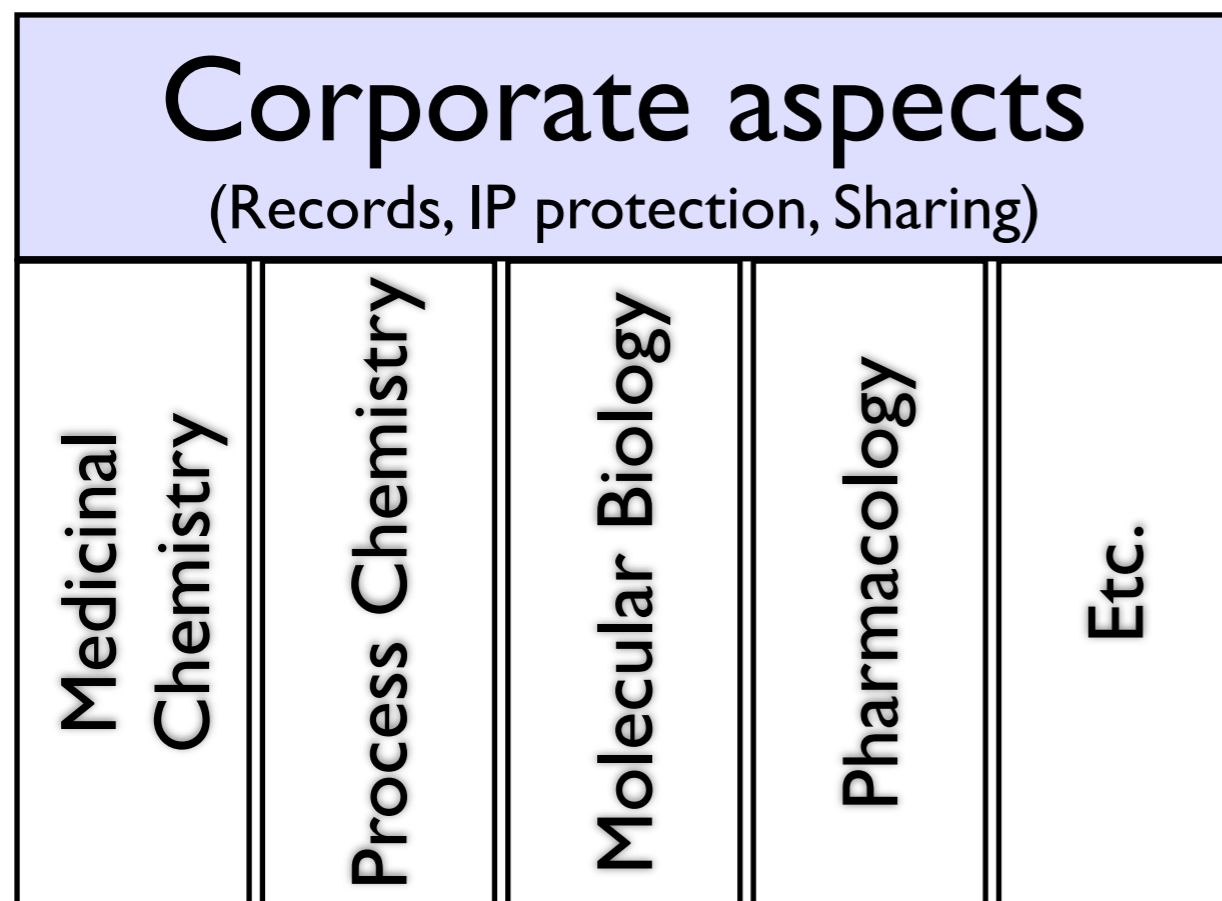
What's Important

- Most scientific activity creates electronic “Stuff”
- 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