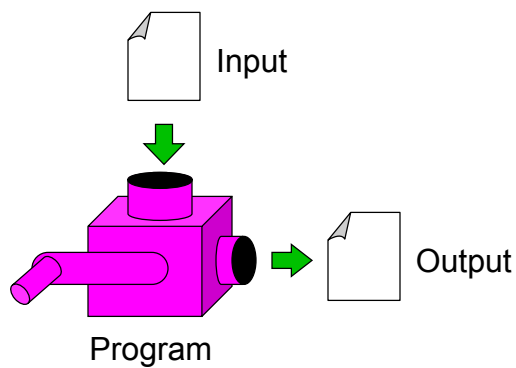
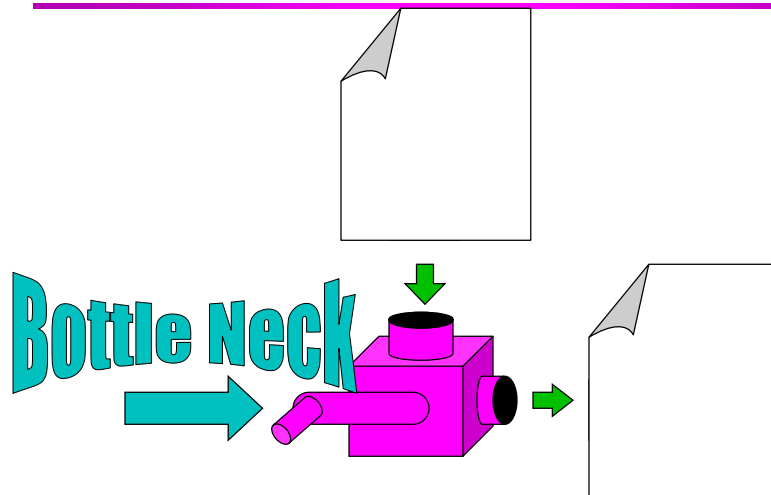


A Pictorial Introduction to Components in Scientific Computing

Once upon a time...

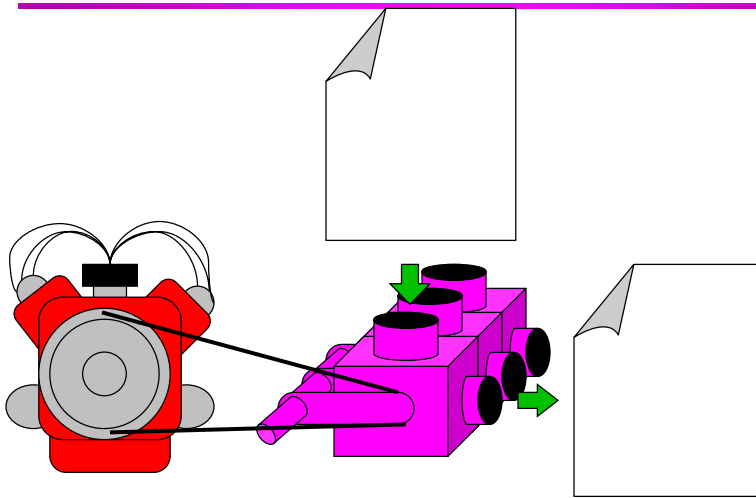


As Scientific Computing grew...



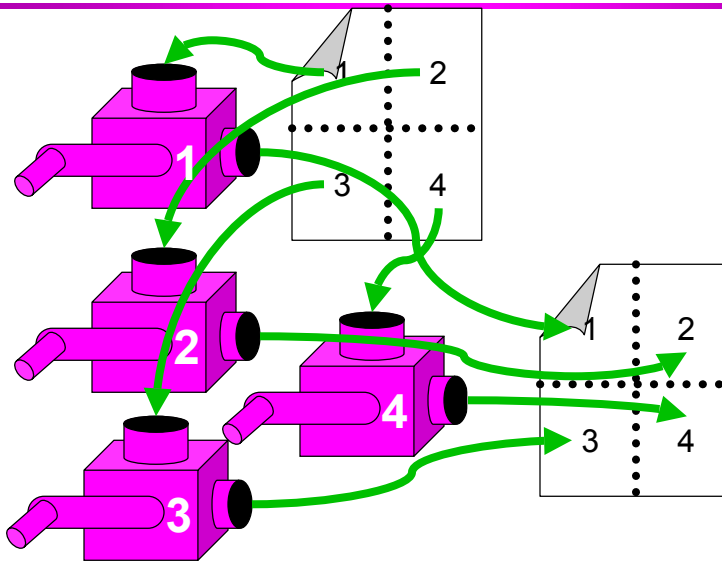
3

Tried to ease the bottle neck



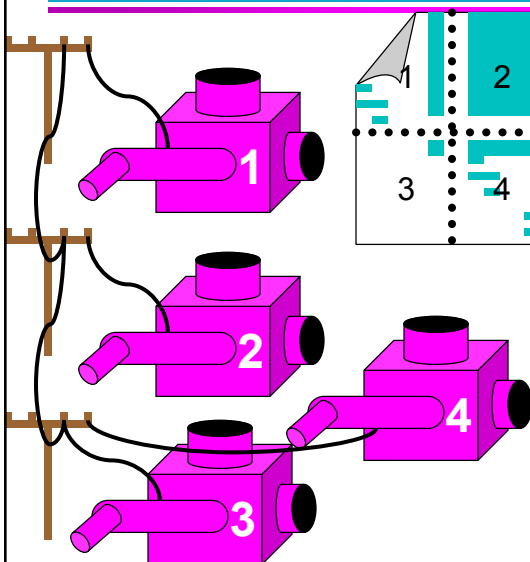
4

SPMD was born.



5

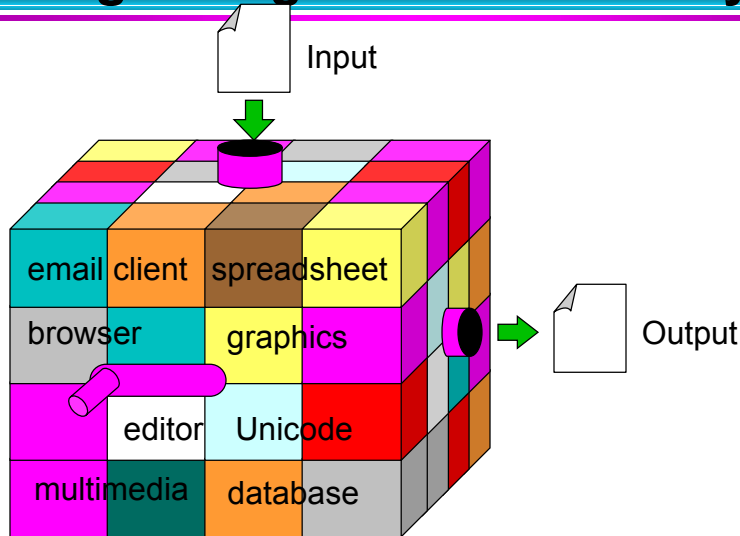
SPMD worked.



**But it
isn't
easy!!!**

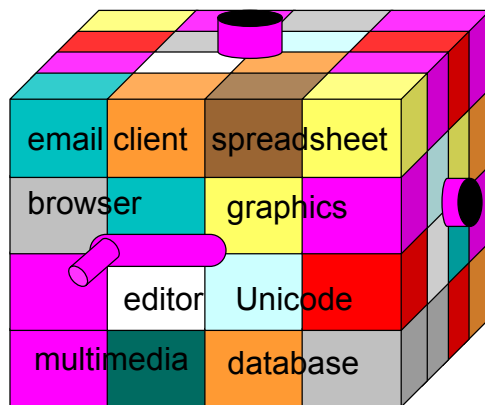
6

Meanwhile, corporate computing was growing in a different way



7

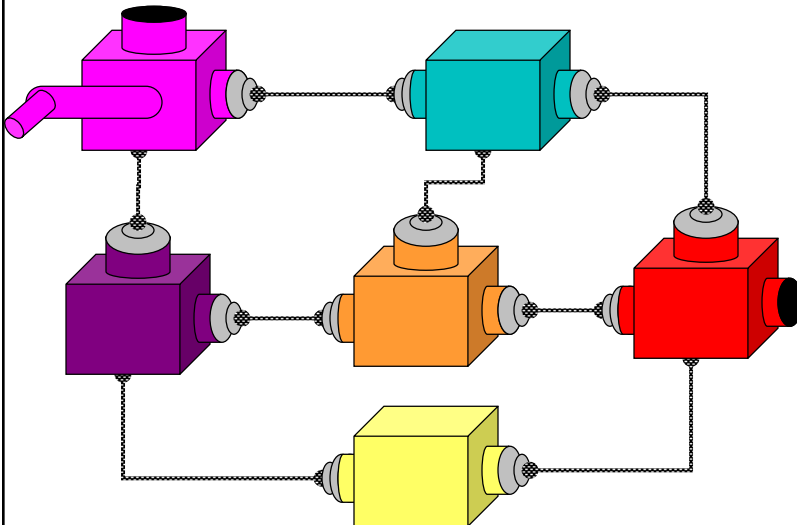
This created a whole new set of problems → complexity



- Interoperability across multiple languages
- Interoperability across multiple platforms
- Incremental evolution of large legacy systems (esp. w/ multiple 3rd party software)

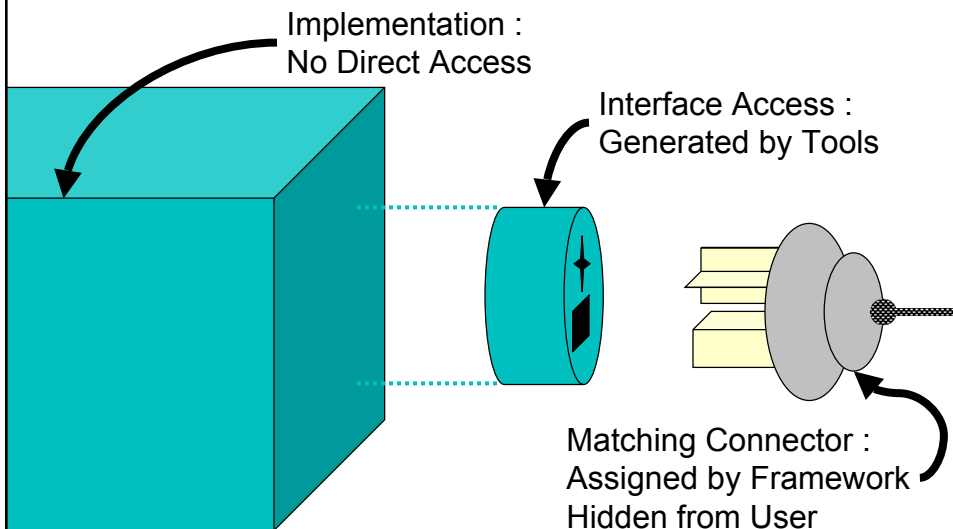
8

Component Technology addresses these problems



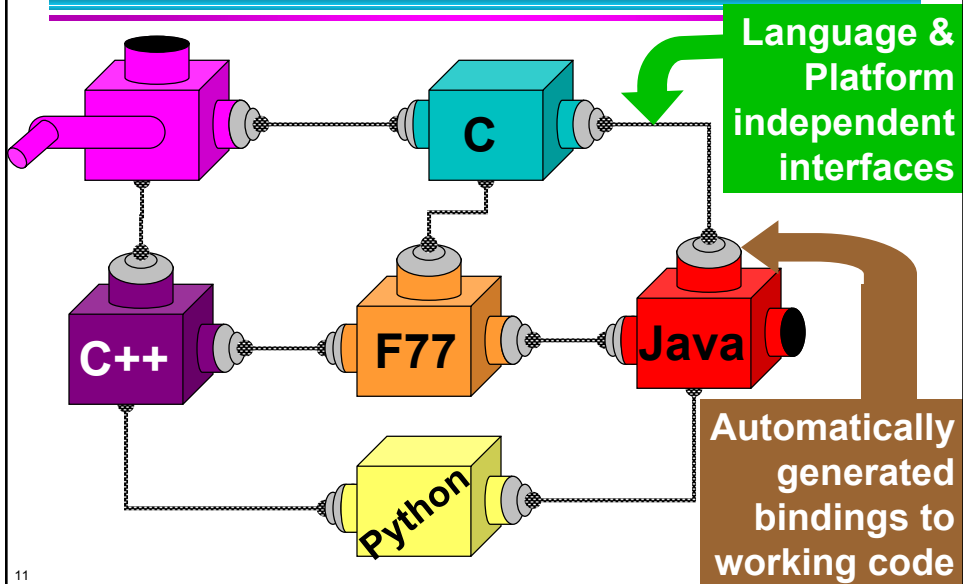
9

So what's a component ???

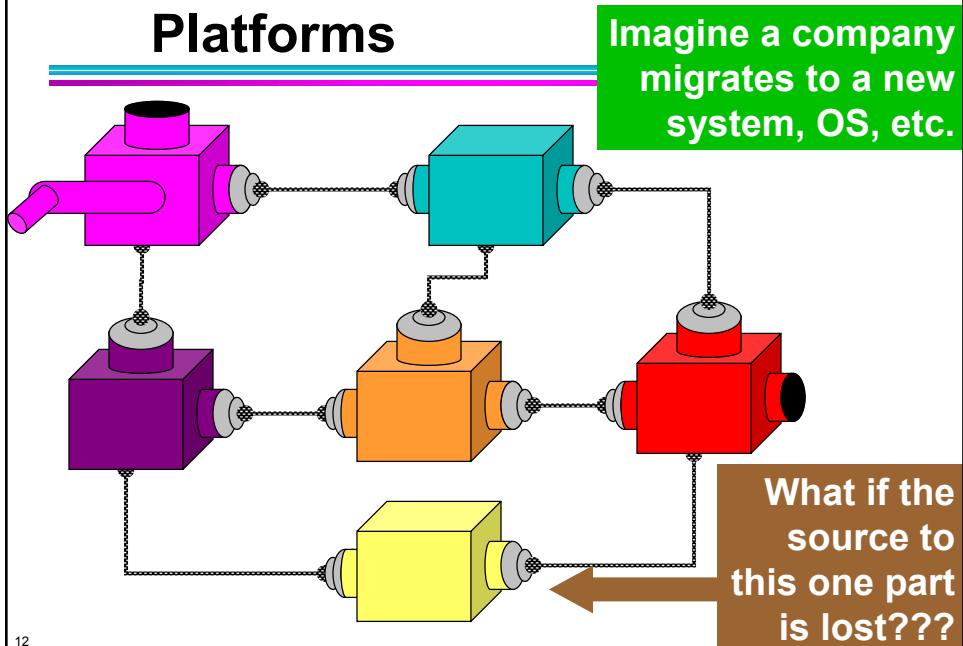


10

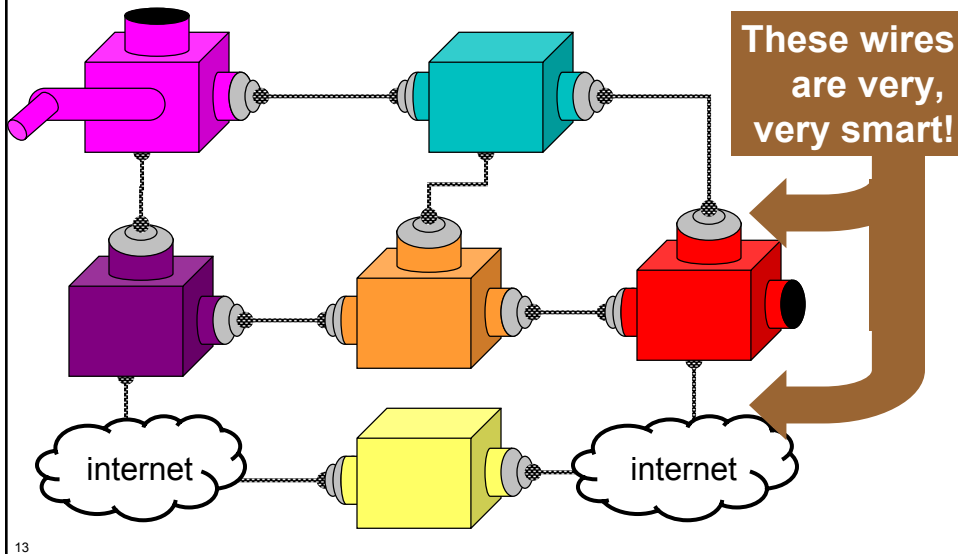
1. Interoperability across multiple languages



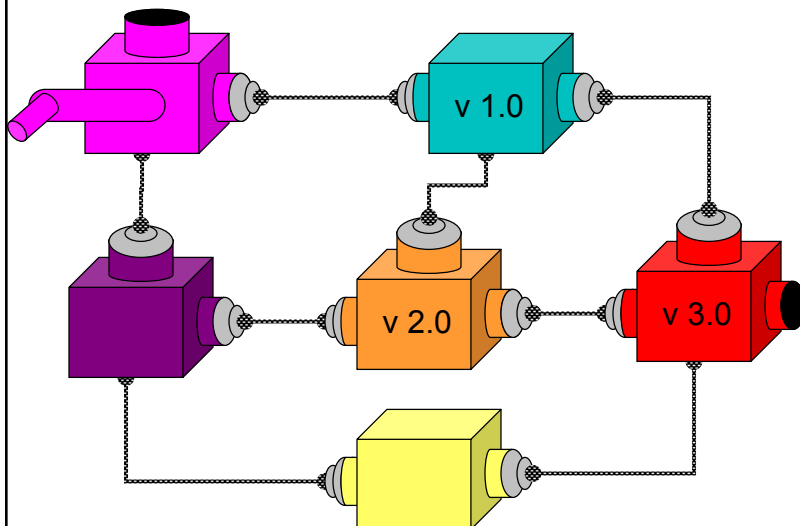
2. Interoperability Across Multiple Platforms



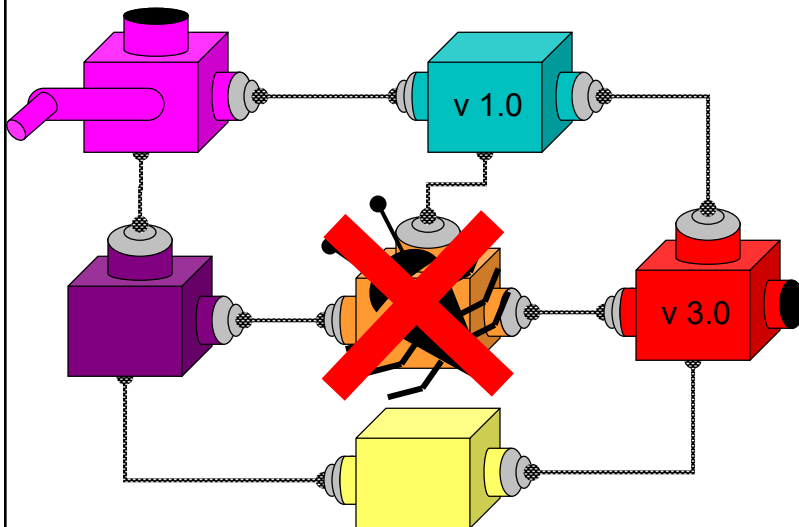
Transparent Distributed Computing



3. Incremental Evolution With Multiple 3rd party software

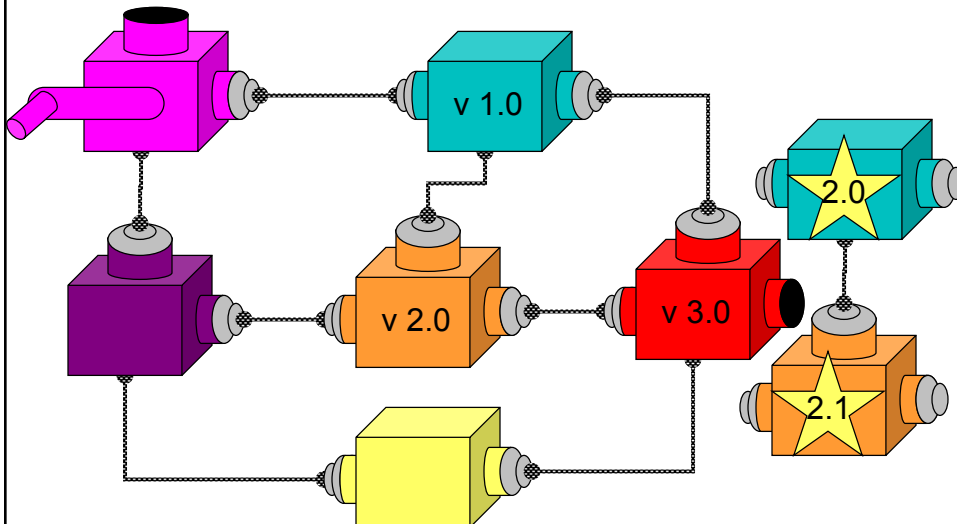


Now suppose you find this bug...



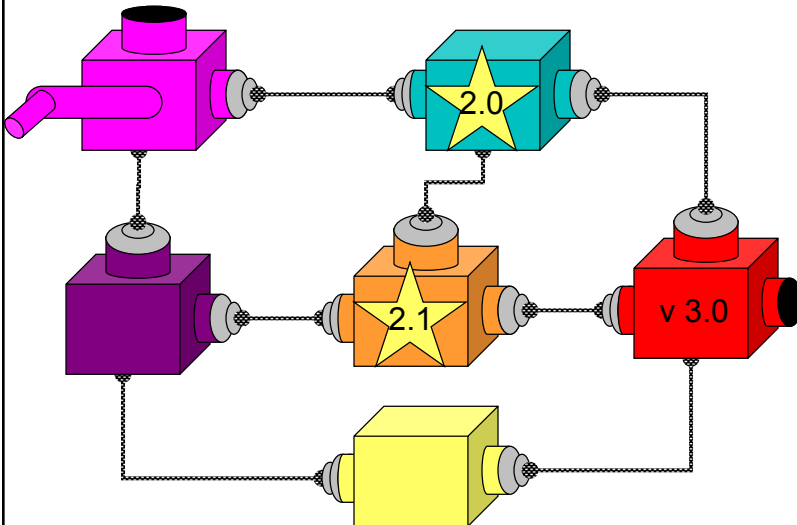
15

Good news: an upgrade available
Bad news: there's a dependency



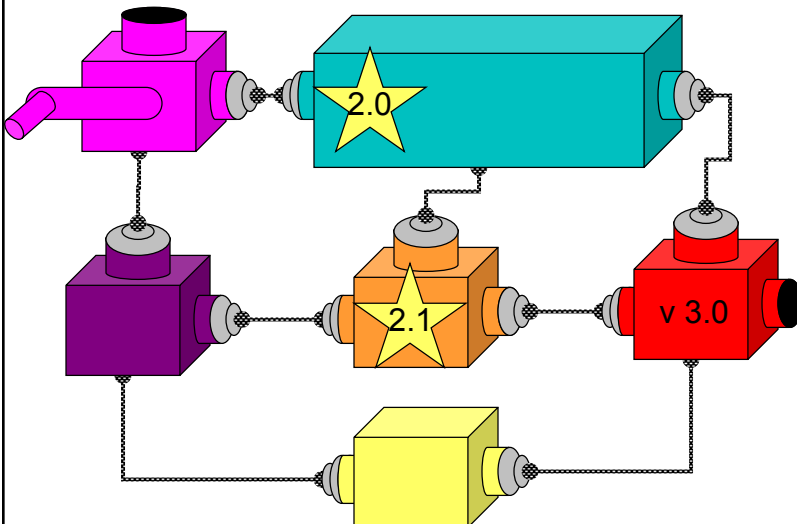
16

Great News: Solvable with Components



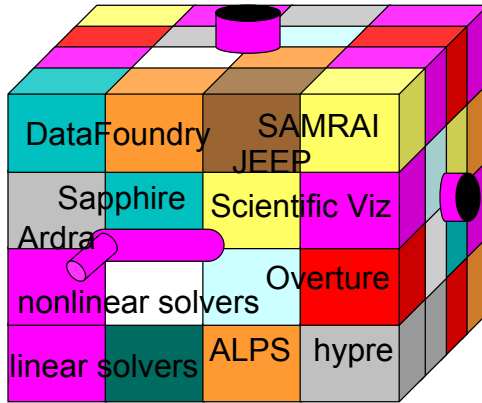
17

Great News: Solvable with Components



18

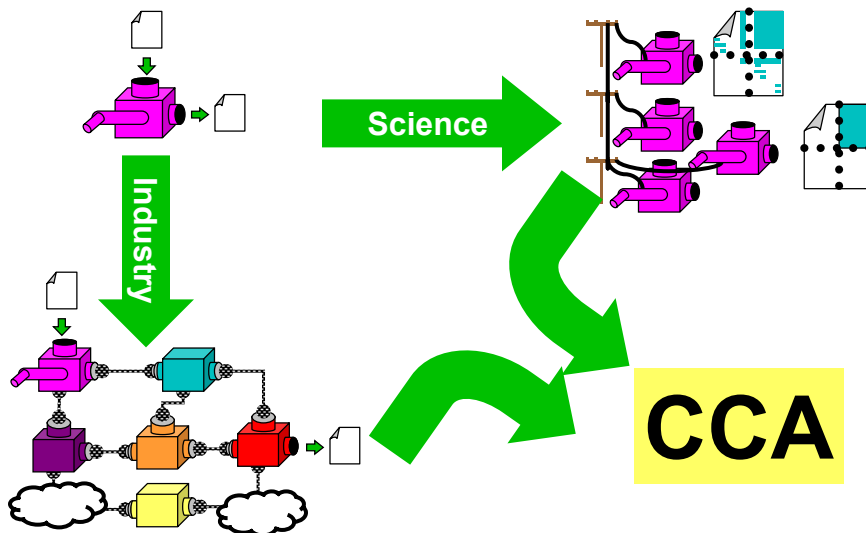
Why Components for Scientific Computing → Complexity



- Interoperability across multiple languages
- Interoperability across multiple platforms
- Incremental evolution of large legacy systems (esp. w/ multiple 3rd party software)

19

The Model for Scientific Component Programming



20



The End