

R Adoption & Change Management – a Large CRO Perspective

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Running the Open-Source Marathon!

“Like a marathon, the change to using R and other open-source languages is a challenge that requires preparation, pacing and perseverance”



My Running + R Journey

MARTIN BROWN

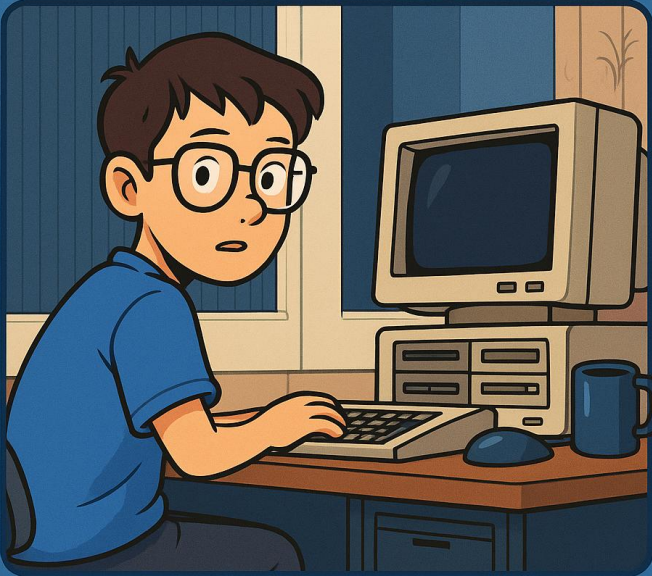
CASUAL RUNNER



| | | |
|---|---------------------|-----|
| SPECIAL POWER | Bib Number | 739 |
| 'RUNNER'S HIGH' Gains bonus motivation boost when near finish lines or cheering crowds | Endurance | 92 |
| | Speed | 85 |
| | Recovery Time | 78 |
| | Style Points | 96 |
| | (Blue coordination) | 88 |
| MARATHON | Smile Power | 99 |
| 1! | | |

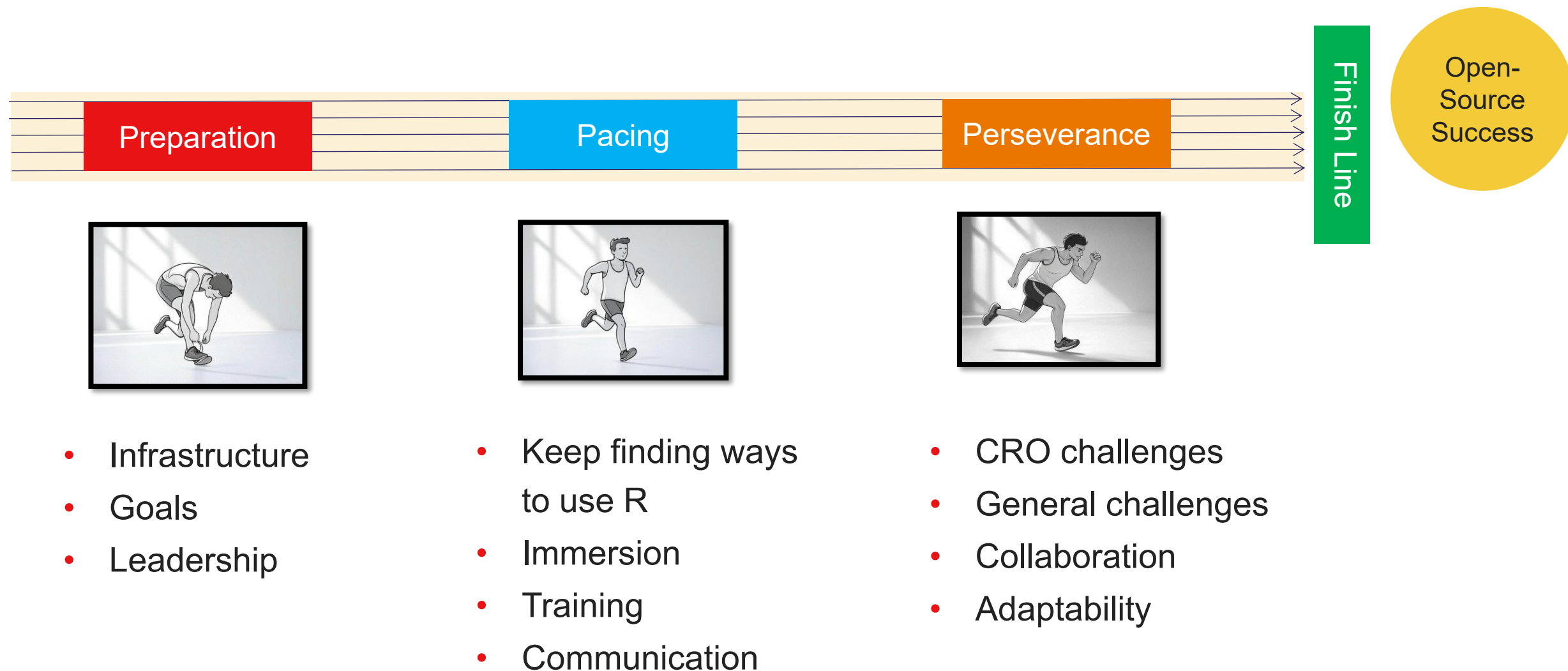
MARTIN BROWN

STATISTICAL SCIENTIST



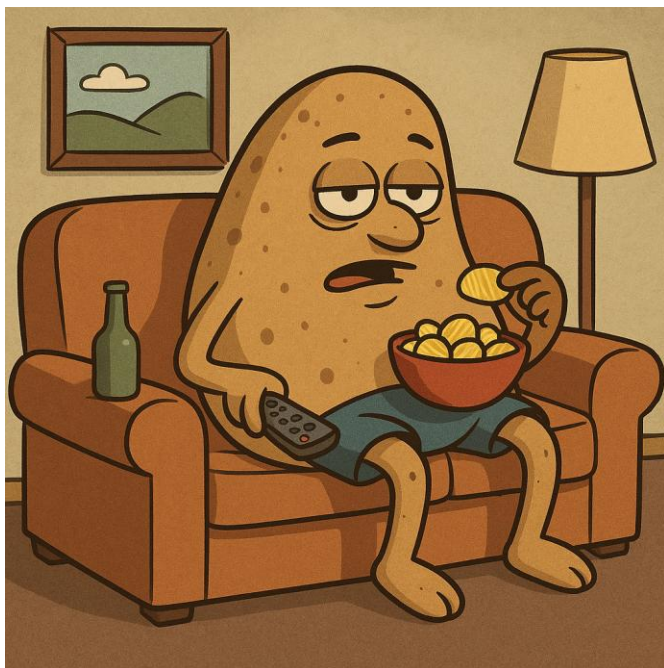
| | |
|----------------|----|
| CODING IN R | 85 |
| SAS EXPERIENCE | 70 |
| ELEGANT SYNTAX | 90 |
| DATA ANALYSIS | 80 |

Running the Open-Source Marathon!



Pause! – Where are you starting from?

The Couch?



As an Olympic Triathlon Gold Medalist?

Infrastructure

- What infrastructure do you have available?
 - Shared Computing Environment
- What are your processes?
- Assess
 - What do we have already?
 - What do we need?
 - What do we need to repurpose?
 - What do we need to create?

Goals

- Need to know where we are headed (distance, time)
- Set clear and achievable goals – Be SMART
 - Specific, Measurable, Achievable, Relevant, Time-bound
- Set for different levels
 - Individual
 - Keep on top of what's going on
 - How do I carry out this particular analysis in R?
 - Group
 - X% of department will be familiar with the tidyverse, admiral
 - Be able to respond to client requests
- Strengths and weaknesses

Remember!

Doesn't
need to be
complex

Lots of low
hanging
fruit

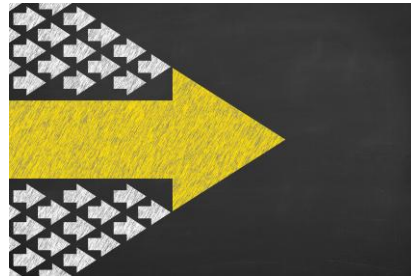
Small
quick wins

What are
you
interested
in?

Leadership

Effective change requires strong leadership to:

- ⇒ drive the process
- ⇒ motivate employees,
- ⇒ address resistance

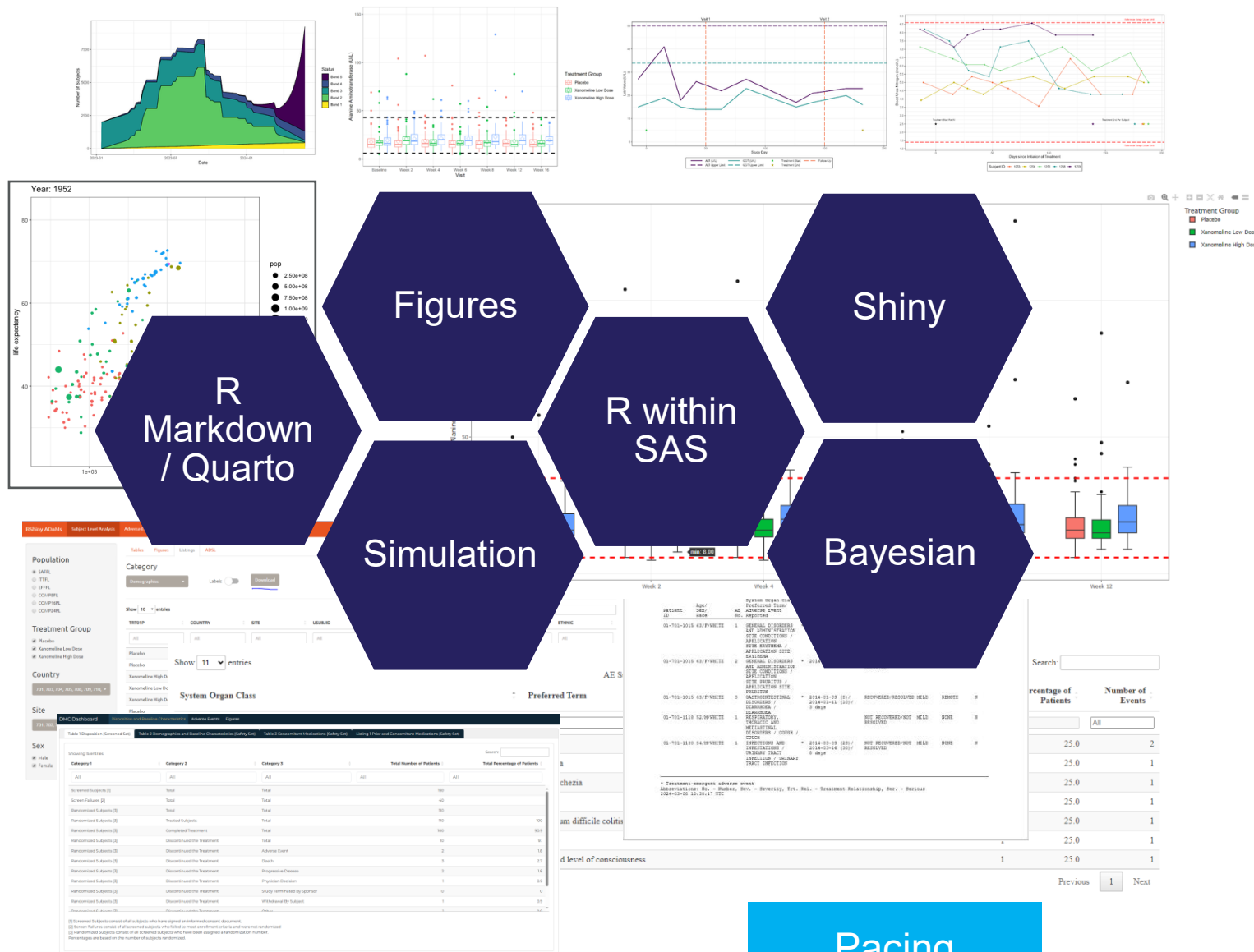
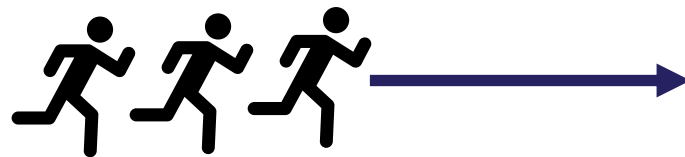


Important Points

- ✓ Clear support from the top
- ✓ Building a large set of experts / champions
- ✓ Passion
- ✓ Feedback loop



Keep the Pace Up!



- What is your pace?! 1 particular aspect up to multiple – look for solutions
- Use R as driver for new innovative solutions
 - Dealing with lots of data, more interactive solutions, more efficiency
- Create opportunities so training is effective
- Look to drive different areas if possible
 - Create working groups

Pacing

ppd



Pacing

Training as you Go

- Easy with training to do it, never use it and need to be trained again later
 - Pick up a data science course or internal course, go through it
 - Some value but going to be a lot slower and inefficient
 - Graduate statistician and SAS
- Line up projects, work to do afterwards
- Carry out specific training just-in-time
 - Admiral

Good Communication is Vital

"Communication is the bridge between confusion and clarity."
– Nat Turner

Regularity + Effectiveness

- Sharing vision and ideas
- Demonstrations
- Support
- Resources



Pacing

ppd

CRO Challenges

Multiple projects / processes in SAS
Meet deadlines!
Stay highly utilized!

- Use R and SAS together
- Make R billable

Many clashing priorities

- Be specific
- Fight for it – stress importance

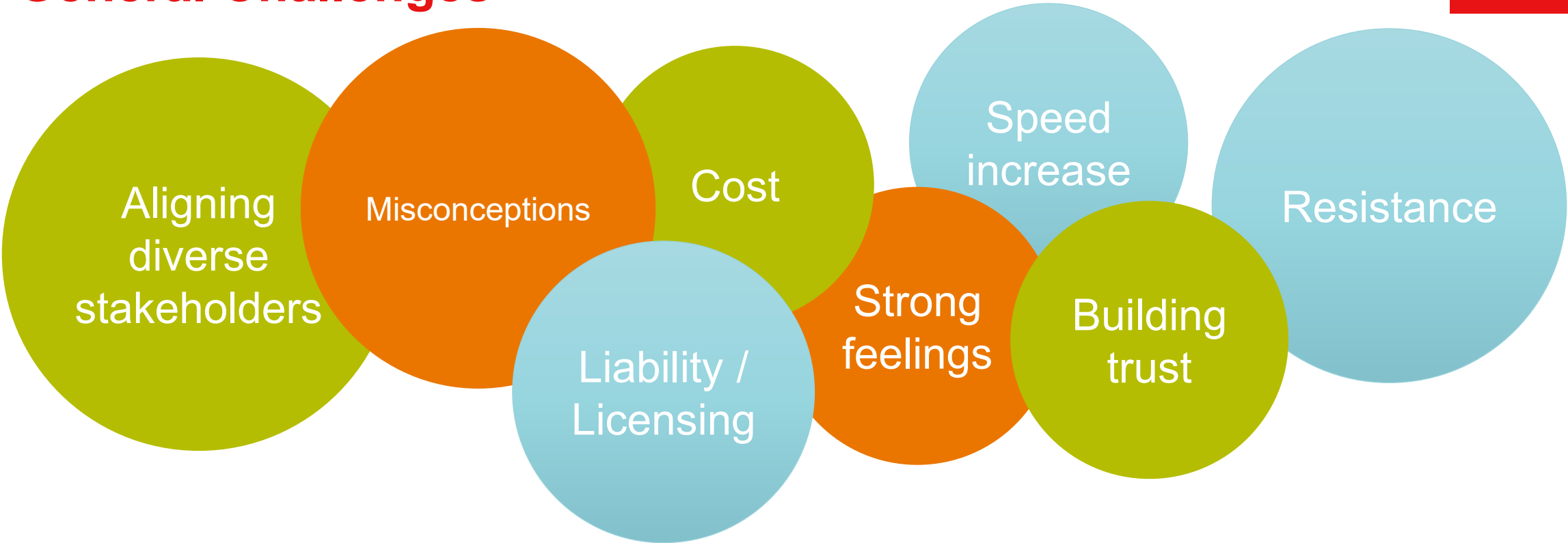
Multiple solutions
being developed by clients

- Explore!
- Stay as flexible as possible
- Make a choice!

Perseverance

ppd

General Challenges

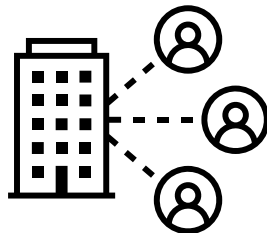


Collaborate

Stay Adaptable

Perseverance

Collaborate

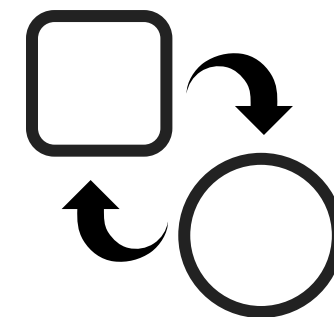


- It is hard – we need each other
 - Similarities of the running and open-source communities!
- Cross-functional
 - Biostatisticians, programmers, IT, regulatory affairs, data management, PK, RWE
- Pooling resources
- Knowledge sharing
- Building solutions, packages
- Keep on asking questions
- Phuse Q&A online book



Stay Adaptable

- Be flexible and willing to adjust plans
 - Working groups
 - Project execution
- Experiment
- Monitor and evaluate



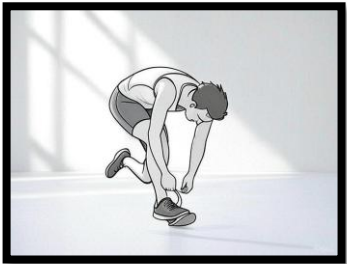
Perseverance

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Conclusion and Next Steps

“Adopting R and open-source tools is a marathon, not a sprint. With preparation, pacing, and perseverance, we can cross the finish line together and achieve open-source success and multilingual confidence”

Preparation



- Set clear goals
- Leadership commitment
- Assess infrastructure

Pacing



- Keep the pace up
- Immerse yourself
- Keep training as you go
- Communicate

Perseverance



- Face and overcome challenges
- Foster collaboration
- Stay adaptable

Just a taster! Come to our 1-day event! For free!



One-day Event: Change Management for Moving to R/Open-Source

Thursday 3rd July
AZ Cambridge, UK



Speakers



Mike Smith
Senior Director
Statistics of Pfizer
[Read Bio](#)



Andy Nicholls
Senior Director, Head of
Data Science at GSK
[Read Bio](#)



Martin Brown
Associate Statistical
Science Director of PPD
[Read Bio](#)



Stuart Malcolm
Head of Standards,
Efficiency and
Automation at Veramed



Yannick Vandendijck
Principle Statistician at
Johnson & Johnson
[Read Bio](#)



Ruhul Amin
Director, Specialist
Programming in Data
Automation, Clinical
Data and Insights of
Astrazeneca
[Read Bio](#)



Kieran Martin
R Enablement Lead: PD
Data Sciences at Roche



Colin Gillespie
Co-Founder of Jumping
Rivers
[Read Bio](#)



**Sebastia
Barcelobauza**
Associate Director,
Statistical Programming
of Cytel
[Read Bio](#)

Presentations

Introducing Change Management

From Training to Practice: A shift to Just in Time User Support

Change management in a large CRO; investing for the future

Planning on R? Risks, Resources and Realism

SAIL.R – Journey Towards R Software for Statisticians in Johnson & Johnson

R in Biometrics - AstraZeneca approach to enable R Shiny apps for Drug Project activities

Getting Ready for submission with R

Can I trust this package?

Navigating Change in a CRO – What I Wish I Knew 5 Years Ago About Transitioning to R





Questions?