



Project management for research

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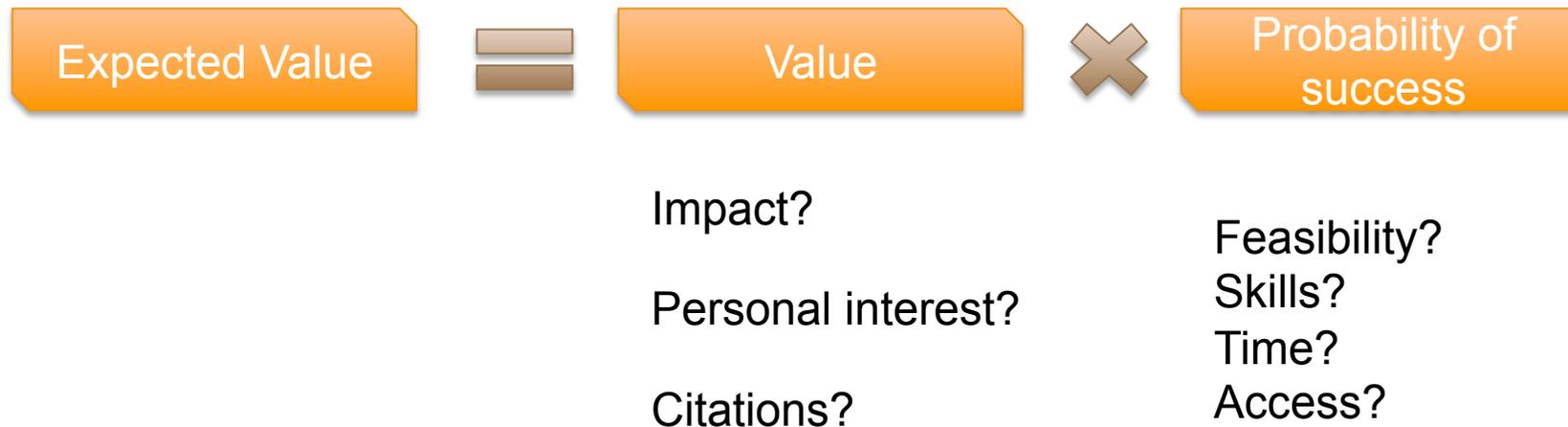
NICTA Funding and Supporting Members and Partners



What are you trying to do?



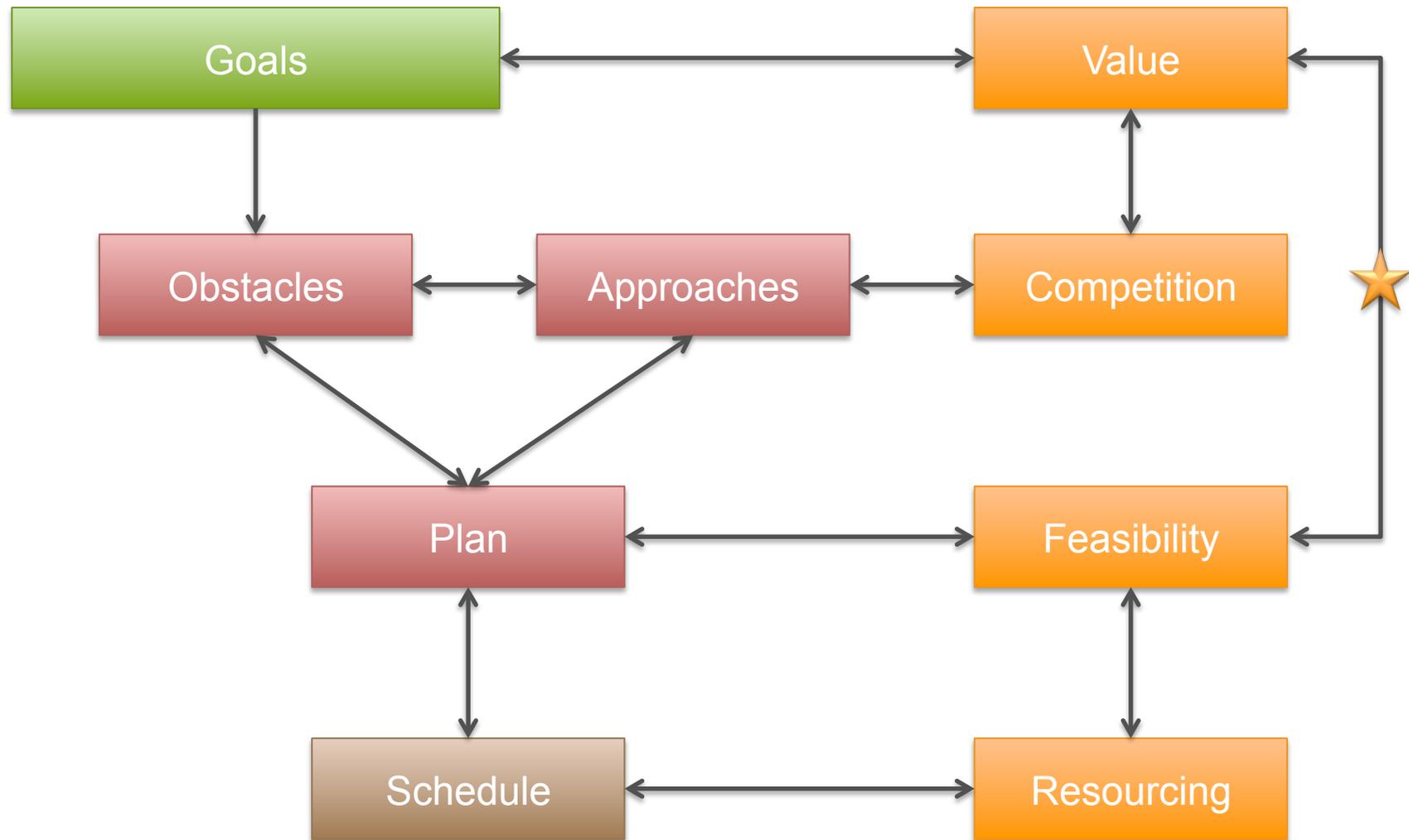
Maximise the value of your work
– but **you** have to decide what you value...



$$\langle V \rangle = \int p(\mathbf{o}) V(\mathbf{o}) d\mathbf{o}$$

Shape of this is shows your appetite for risk

So you have the right project...

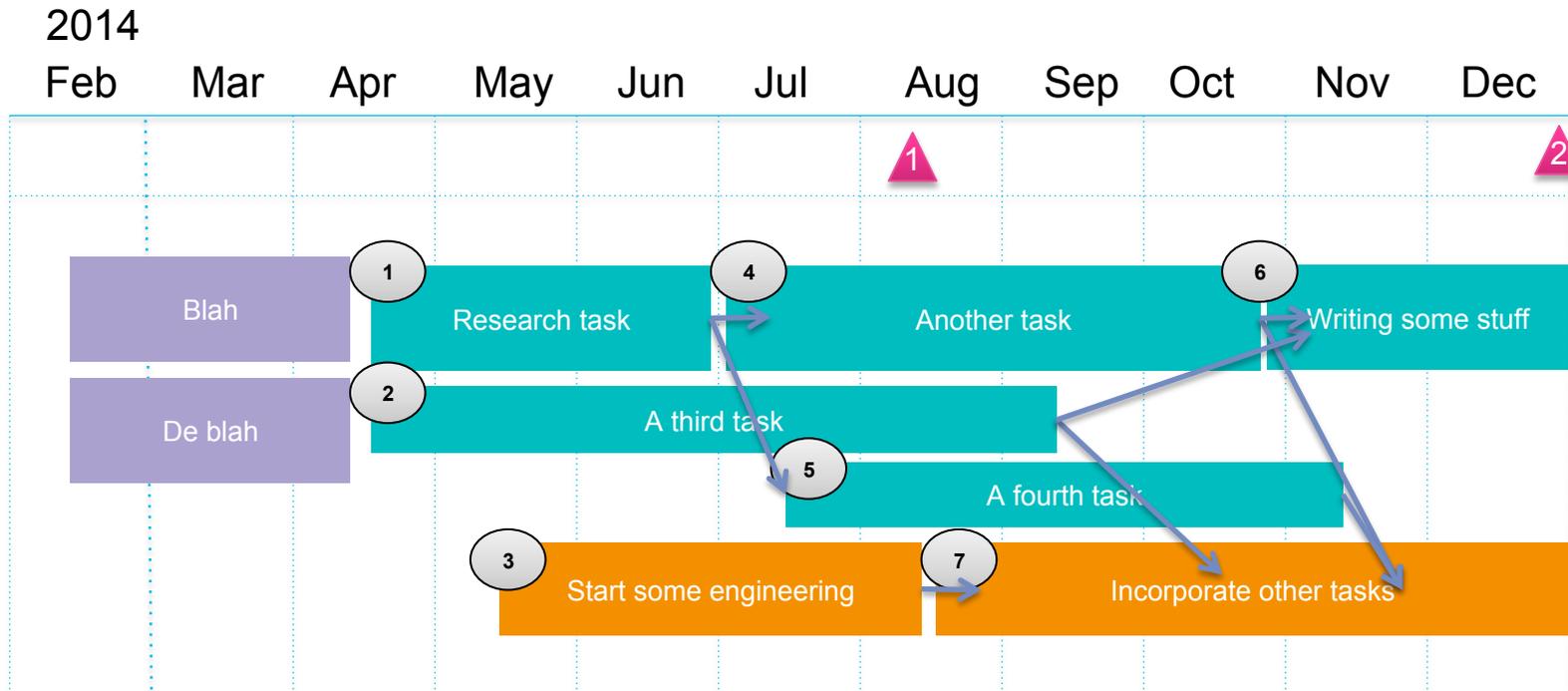


Project planning - traditional



- Set some milestones – where you expect to be in the future – a baseline!
- Examine dependencies
- Consider risks and how you might respond to them – write this down!
- This is where you can draw a top level Gantt chart...
- Top level project view + next 3 months of detailed task breakdown

Top level plan



1 Validate approach – presentation to peers

2 Submit papers and release code

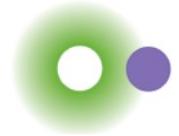
N Task number

Problems with this approach?



- Somewhat fictional
- Doesn't take into account what happens in real projects:
 - Changing external factors
 - Events
 - Requirements
 - Changing internal factors
 - Breakthroughs
 - Brick walls
 - Staffing
- Still worthwhile, because
 - It gives a baseline to measure your progress against
 - It makes it look like you know what you are doing...

Scrum



The Agile: Scrum Framework at a glance

Inputs from Executives,
Team, Stakeholders,
Customers, Users



Burndown/up
Charts



Every
24 Hours

1-4 Week
Sprint



Product Backlog



Sprint Planning Meeting



Sprint end date and team deliverable do not change



Finished Work



Sprint Retrospective



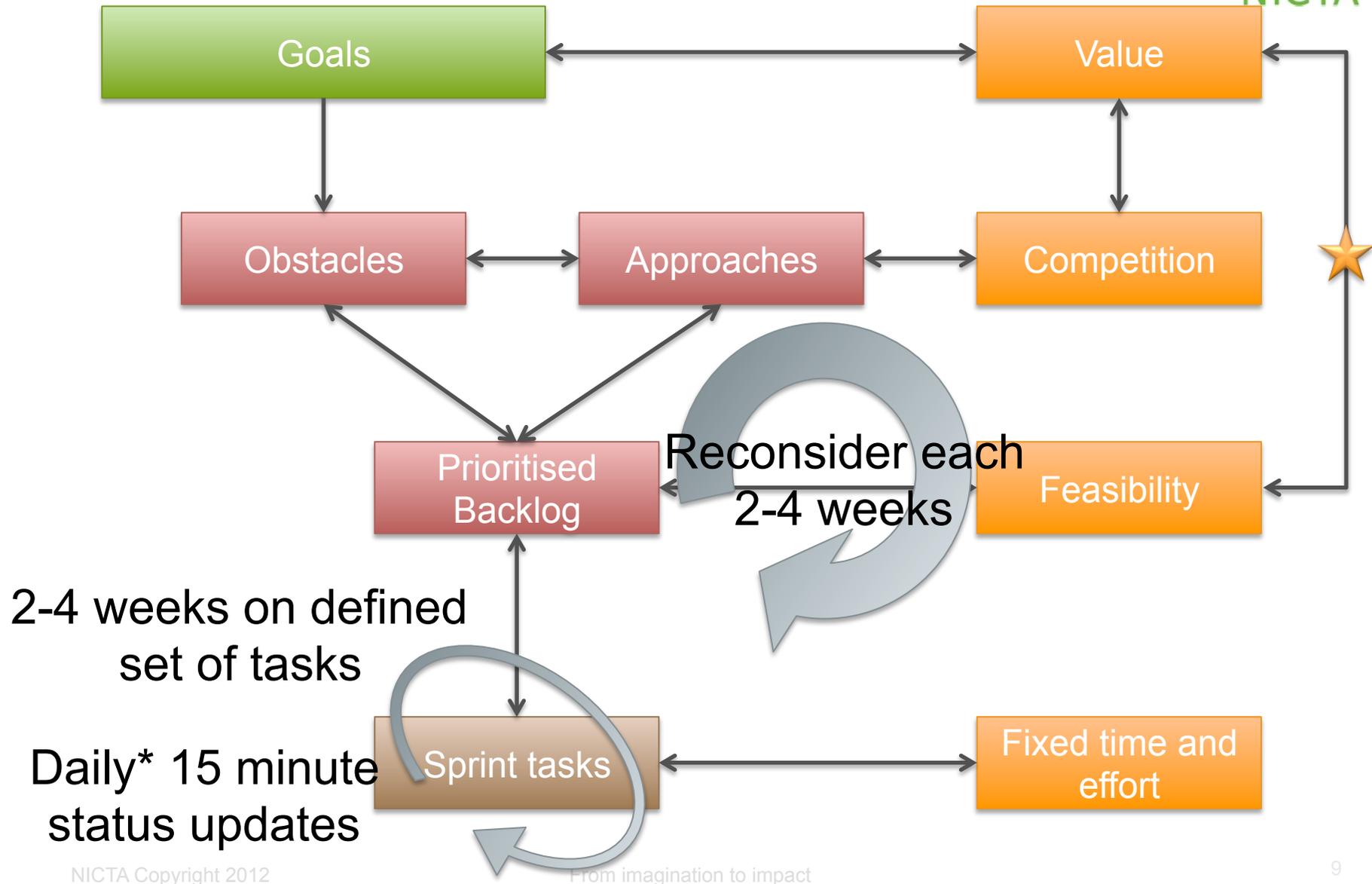
From <http://www.neonrain.com>

Agile methods for science



- Scientific research is iterative and often has changing requirements and external influences.
- Methods like Scrum were designed to deal with these issues in software development
 - Good for 3-10 person projects (larger project versions exist)
 - Continually and explicitly reevaluate project directions based on changing requirements and circumstances
 - For software, process delivers functional software increments
 - Promotes test driven development – can be recast into the idea of hypothesis driven research

Making a research plan agile



More information



- <http://imgtfy.com/?q=scrum>
- Essential Scrum: A Practical Guide to the Most Popular Agile Process- [amazon](#)
- “Agile Methods in Research” - <http://xavier.amatriain.net/docs/SeminarAgileScience.pdf>
- “Adapting Scrum to Managing a Research Group” - <http://www.cs.umd.edu/~mwh/papers/score.pdf>