Make haste slowly ...

... from antiquity to AI



Seb Rose
Mastodon: @sebrose@mastodon.scot
Bluesky: @sebrose.bsky.social
Blog: https://claysnow.co.uk
E-mail: seb@claysnow.co.uk

Agenda

Disclaimers

Etymology

Why slowly?

From antiquity onwards

Who needs estimates?

Modern software engineering

AI - disruption or continuity?

Takeaways

Disclaimers

Disclaimers

- I’m not an archaeologist, historian, or AI expert

Disclaimers

- I’m not an archaeologist, historian, or AI expert
- I’ve been very wrong before

Disclaimers

- I’m not an archaeologist, historian, or AI expert
- I’ve been very wrong before
- This is a new talk, written for
  The Living Documentation Event in Eindhoven on October 1st
  https://www.living-documentation-event.com/

Agenda

Disclaimers

Etymology

Why slowly?

From antiquity onwards

Who needs estimates?

Modern software engineering

AI - disruption or continuity?

Takeaways

Greek

σπεῦδε βραδέως

@sebrose@mastodon.scot

seb@claysnow.co.uk

Shpay-noot bad-ey-oss

Latin

Festina lente

@sebrose@mastodon.scot

seb@claysnow.co.uk

It has been adopted as a motto numerous times, particularly by the emperors Augustus and Titus, then later by the Medicis and others.
Augustus: "That which has been done well has been done quickly enough."

English

Make haste slowly

@sebrose@mastodon.scot

seb@claysnow.co.uk

Aesop: hare & tortoise

Plenty of imagery









@sebrose@mastodon.scot

seb@claysnow.co.uk

Shakespeare: In Love's Labour's Lost, he copied the crab and butterfly imagery with the characters Moth and Armado

- William Congreve in his comedy of manners The Old Batchelour, 1693: Thus grief still treads upon the heels of pleasure: Married in haste, we may repent at leisure.

Agenda

Disclaimers

Etymology

Why slowly?

From antiquity onwards

Who needs estimates?

Modern software engineering

AI - disruption or continuity?

Takeaways



Construction: shovel ready
Kevlin Henney: … before hands on keyboard

Undelivered outcomes



@sebrose@mastodon.scot

seb@claysnow.co.uk

Desire paths
King Midas
M25
Pet flea treatments, DDT/Silent Spring (Rachel Carson), Thalidomide

Waste



seb@claysnow.co.uk

Rework
Gold plating
Misundertandings

Delays



@sebrose@mastodon.scot

seb@claysnow.co.uk

Edinburgh trams, large s/w projects

Harm



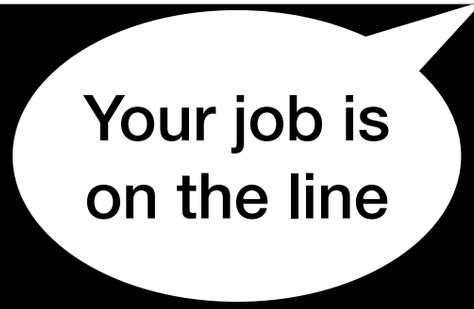
@sebrose@mastodon.scot

seb@claysnow.co.uk

Horizon project, Grenfell, Tacoma narrows, RAAC

Why hurry?

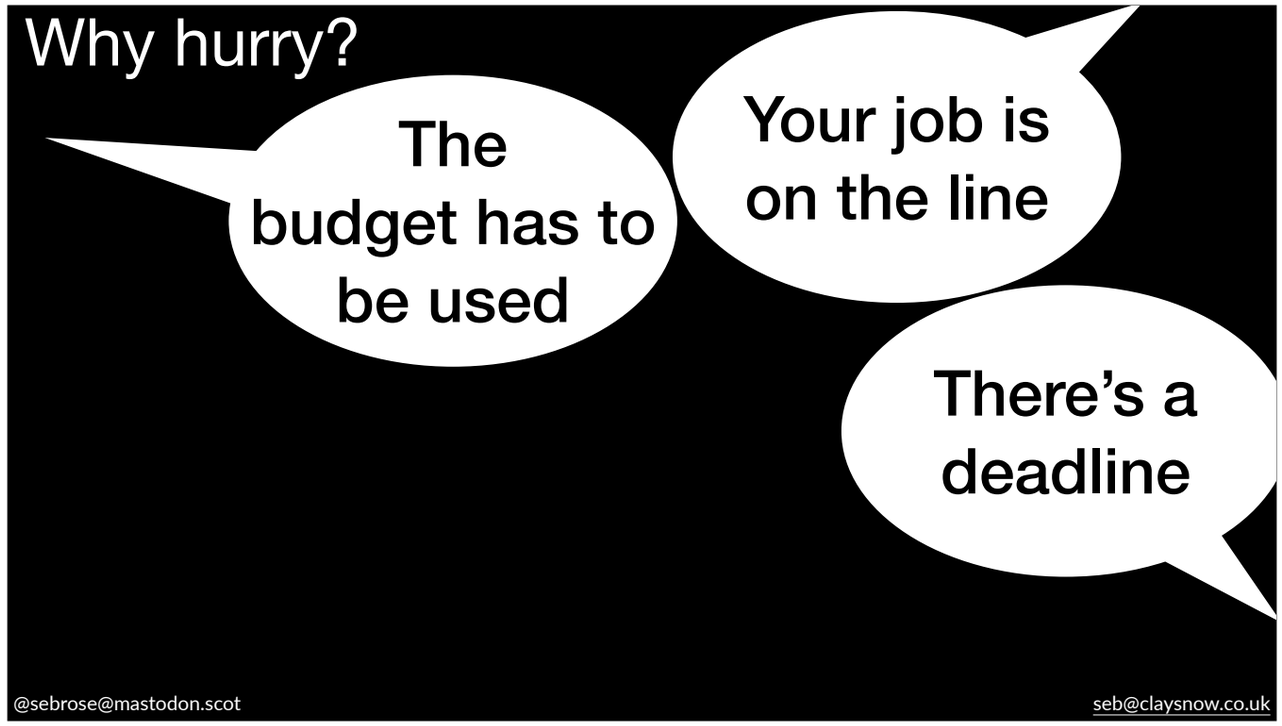
Why hurry?

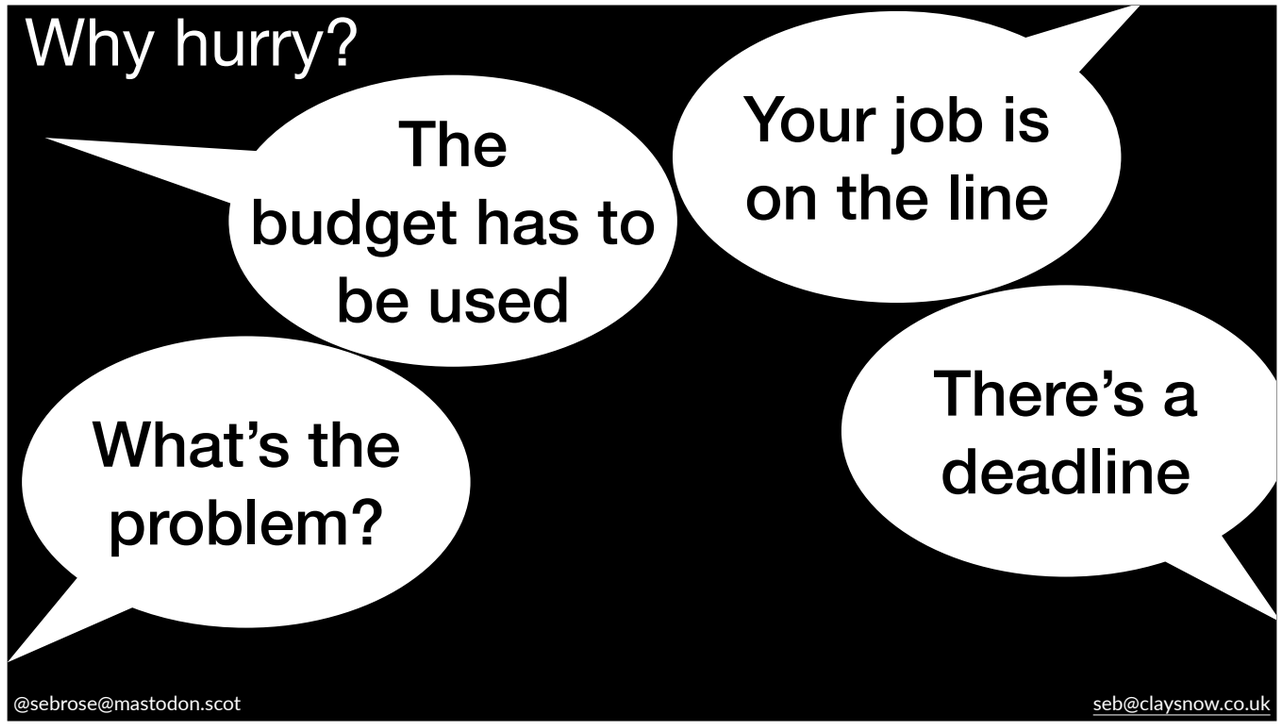


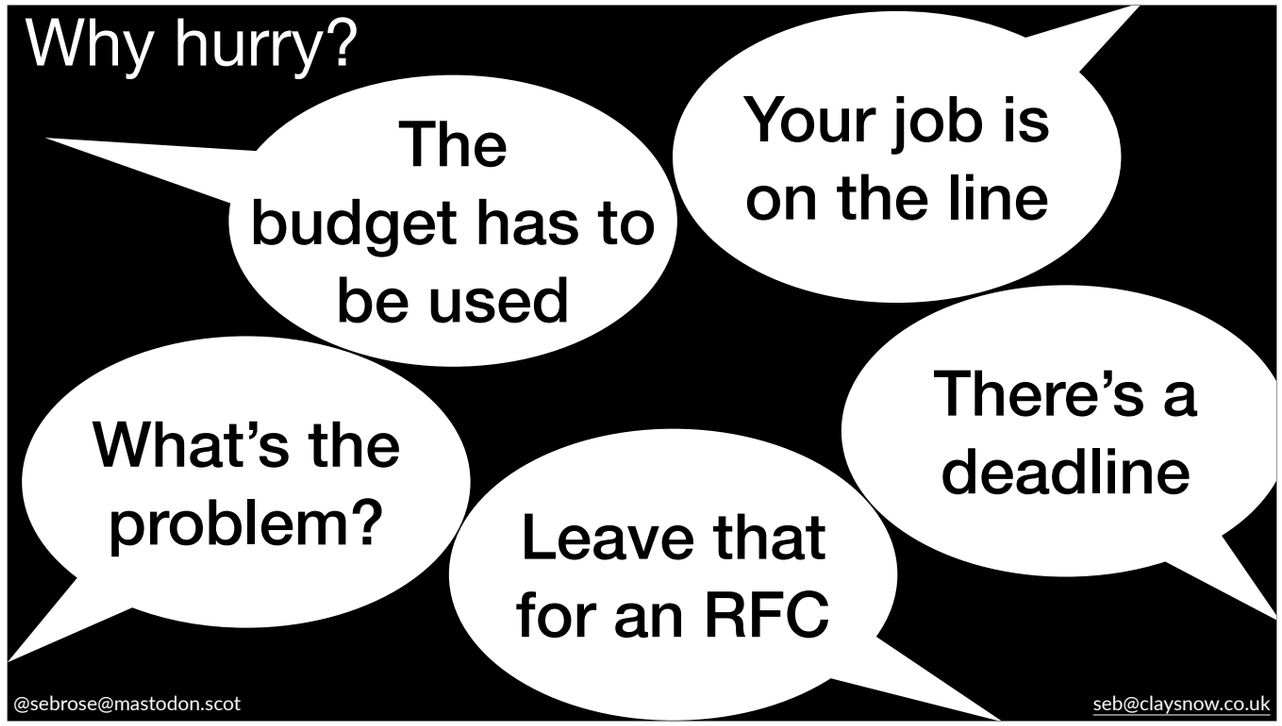
Why hurry?

The budget has to be used

Your job is on the line


Why hurry?
The budget has to be used
Your job is on the line
There’s a deadline
@sebrose@mastodon.scot
seb@claysnow.co.uk


Why hurry?
The budget has to be used
Your job is on the line
What's the problem?
There's a deadline
@sebrose@mastodon.scot
seb@claysnow.co.uk


Why hurry?
The budget has to be used
Your job is on the line
What's the problem?
Leave that for an RFC
There's a deadline
@sebrose@mastodon.scot
seb@claysnow.co.uk

Agenda

Disclaimers
Etymology
Why slowly?
From antiquity onwards
Who needs estimates?
Modern software engineering
AI - disruption or continuity?
Takeaways

Exhibit 1: Stonehenge



@sebrose@mastodon.scot

seb@claysnow.co.uk

Prototype?

18 June 2026

Archaeologists believe they have discovered an earlier, much simpler version of Stonehenge about 3 miles (5km) away from the prehistoric monument.

All that remains of the older structure is two holes in the ground, but the team says they held wooden posts that lined up with the Sun on the summer and winter solstices - the longest and shortest days of the year - in the same way as Stonehenge.

The site has been dated to about 5,000 years old, which predates Stonehenge by 500 years.

https://www.bbc.co.uk/news/articles/clyxw8550y8o

Platform upgrade?

12 February 2021

One of Britain's biggest and oldest stone circles has been found in Wales - and could be the original building blocks of Stonehenge.

Archaeologists uncovered the remains of the Waun Mawn site in Pembrokeshire's Preseli Hills.

They believe the stones could have been dismantled and rebuilt 150 miles (240 km) away on Salisbury Plain, Wiltshire.

https://www.bbc.co.uk/news/uk-wales-56029203

Collaboration or outsourcing?

14 August 2024

The six-tonne Altar Stone at the heart of Stonehenge came from the far north of Scotland rather than south-west Wales as previously thought, new analysis has found.

The discovery shows the construction of Stonehenge was a far greater collaborative effort than scientists realised.

It also means that the ancient monument, near Salisbury in south-west England, was built with stones from all parts of Great Britain.

https://www.bbc.co.uk/news/articles/c207lqdn755o

@sebrose@mastodon.scot

seb@claysnow.co.uk

Exhibit 2: European cathedrals



Köln - 632 years

Milan - 579 years





St Vitus
585 years

@sebrose@mastodon.scot https://architizer.com/blog/inspiration/stories/cathedrals-longer-construction-than-sagrada-familia/ seb@claysnow.co.uk

Köln - 1248-1880 3 wise men relics led to demolition of romanesque precursor. Construction ran for over 200 years, early usage. Ceased 16th century budget. Completed during Gothic revival 19th century.

St Vitus 1344-1929 Demo of romanesque for relics. 70 years construction until Hussite wars, only half built. Fire 1541. Completed using Renaissance & Baroque elements.

Milan 1386-1965 continuous. Lineage of architects & engineers - evolving ideas. The soft marble required/s constant maintenance.

Pre-modern construction techniques

@sebrose@mastodon.scot

seb@claysnow.co.uk

Pre-modern construction techniques

Deliberate discovery

Hundreds or thousands of years of experience

seb@claysnow.co.uk

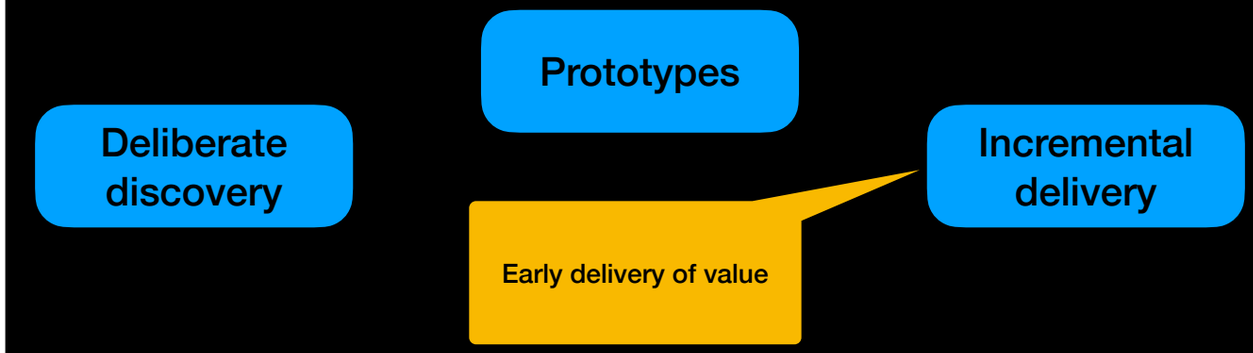
Pre-modern construction techniques

Prototypes

Deliberate discovery

seb@claysnow.co.uk

Pre-modern construction techniques



Pre-modern construction techniques

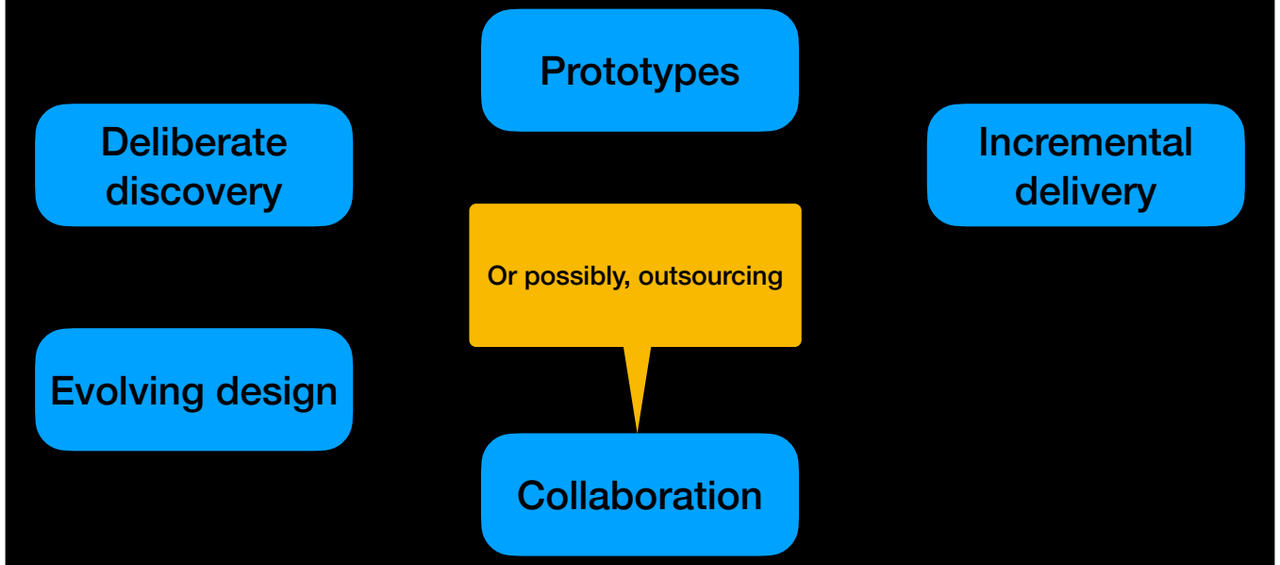
Prototypes

Deliberate discovery

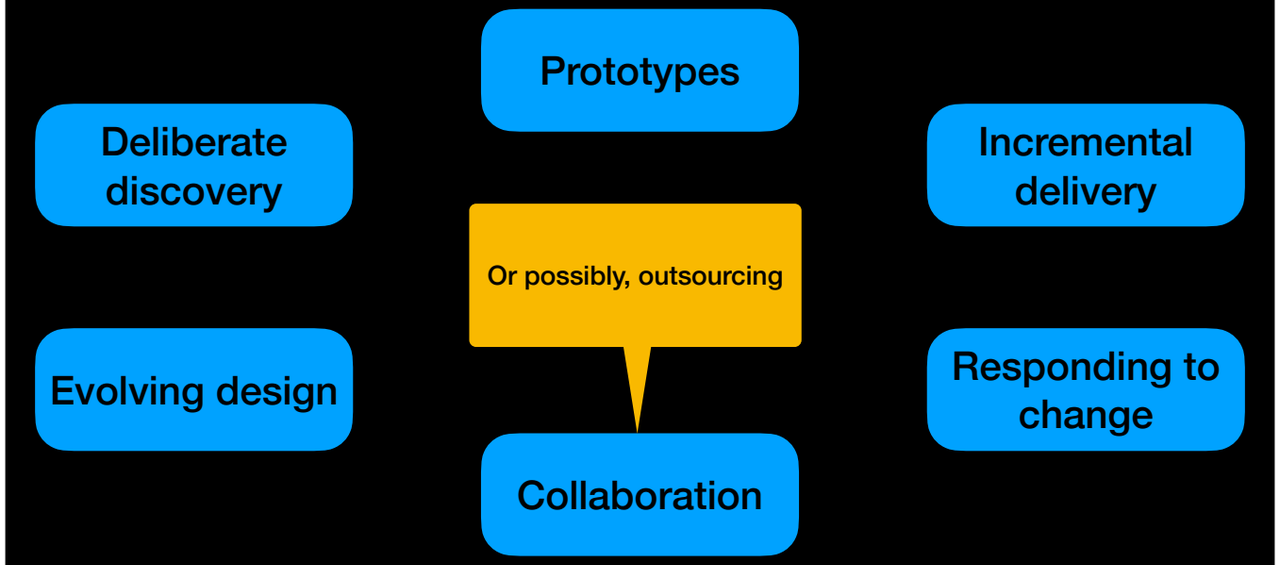
Incremental delivery

Evolving design

Pre-modern construction techniques



Pre-modern construction techniques



Agenda

Disclaimers
Etymology
Why slowly?
From antiquity onwards
Who needs estimates?
Modern software engineering
AI - disruption or continuity?
Takeaways

Why are we asked to estimate?

Budgeting	Targets (aspiration) Forecasts (expectation) Resource allocation (optimisation)
Prioritisation	ROI (viability) Cost of delay (timing) Capacity planning (scheduling)

@sebrose@mastodon.scot
seb@claysnow.co.uk

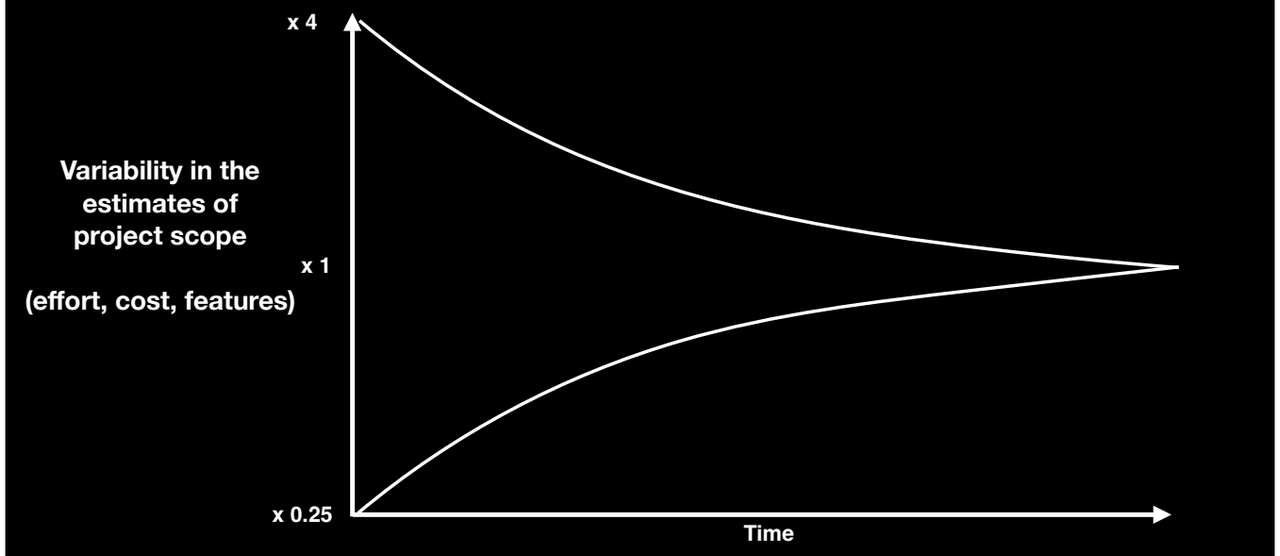
Bjarte Bogsnes - Beyond Budgeting

How **confident**
should we be in our estimates?

@sebrose@mastodon.scot
seb@claysnow.co.uk

Estimates are often taken as commitments
Sometimes they are forced upon us, some times we are complicit.
They can be no more than (educated) guesses.

Cone of Uncertainty (theoretical)



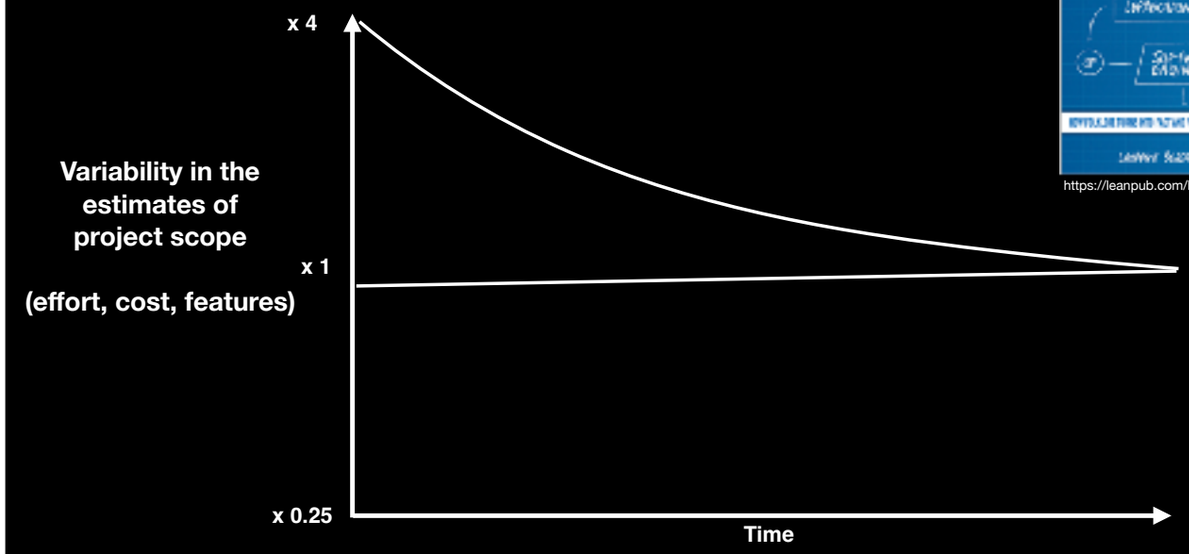
@sebrose@mastodon.scot
seb@claysnow.co.uk

Originates from Boehm. Documented & popularised by McConnell

Cone of Uncertainty (empirical)



https://leanpub.com/leprechauns



@sebrose@mastodon.scot

seb@claysnow.co.uk

Debunked by Bossavit

The primary purpose of an estimate is **not** to **predict** a project's outcome;

it is to determine whether a project's targets are **realistic enough** to allow the project to be controlled to meet them.

Steve McConnell, Software Estimation (2006)

@sebrose@mastodon.scot

seb@claysnow.co.uk

Often the predictions of ROI are ridiculously optimistic … and they aren't followed up after delivery anyway.

Deliberate discovery

"... during an inception, when we are **most ignorant** about most aspects of the project, the **best** use we can possibly make of the time available is to attempt to **identify** and **reduce** our **ignorance**"

Daniel Terhorst-North (2010)

http://dannorth.net/2010/08/30/introducing-deliberate-discovery/

@sebrose@mastodon.scot

seb@claysnow.co.uk

When do we estimate?

We are usually asked to provide
estimates when we are the
most ignorant
about the project we are estimating.

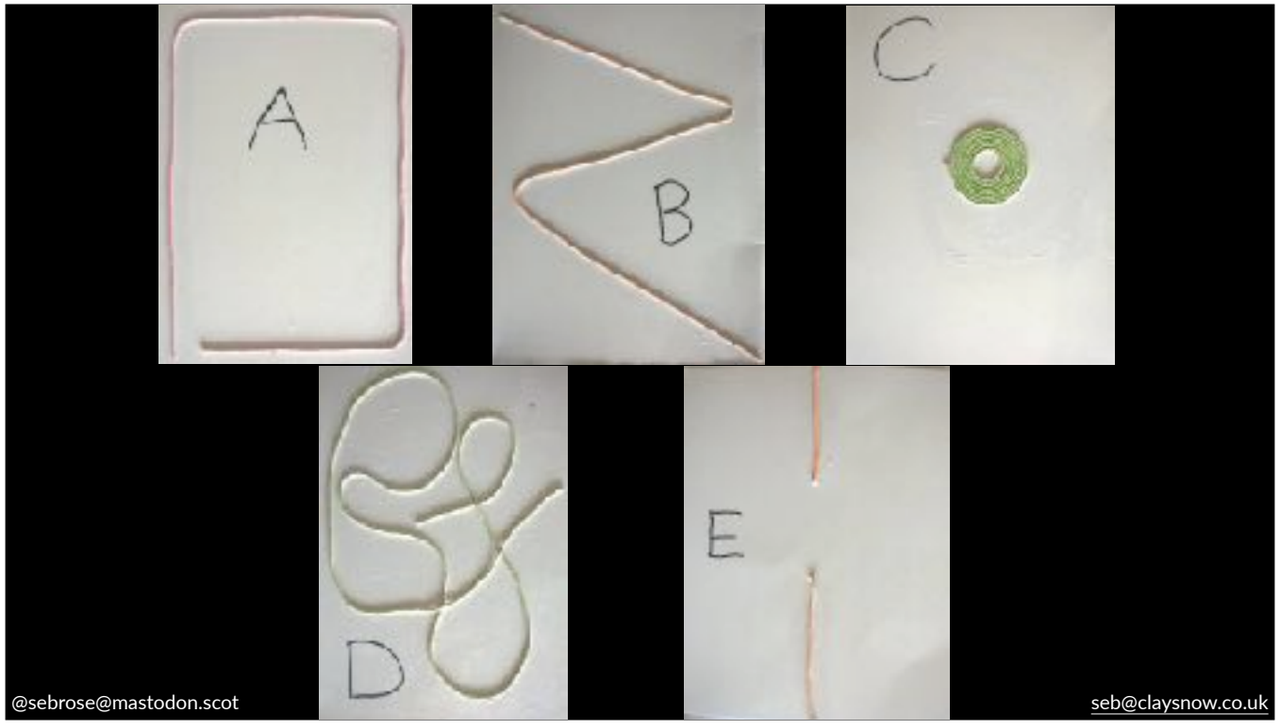
Estimates are often taken as commitments
Sometimes they are forced upon us, some times we are complicit.

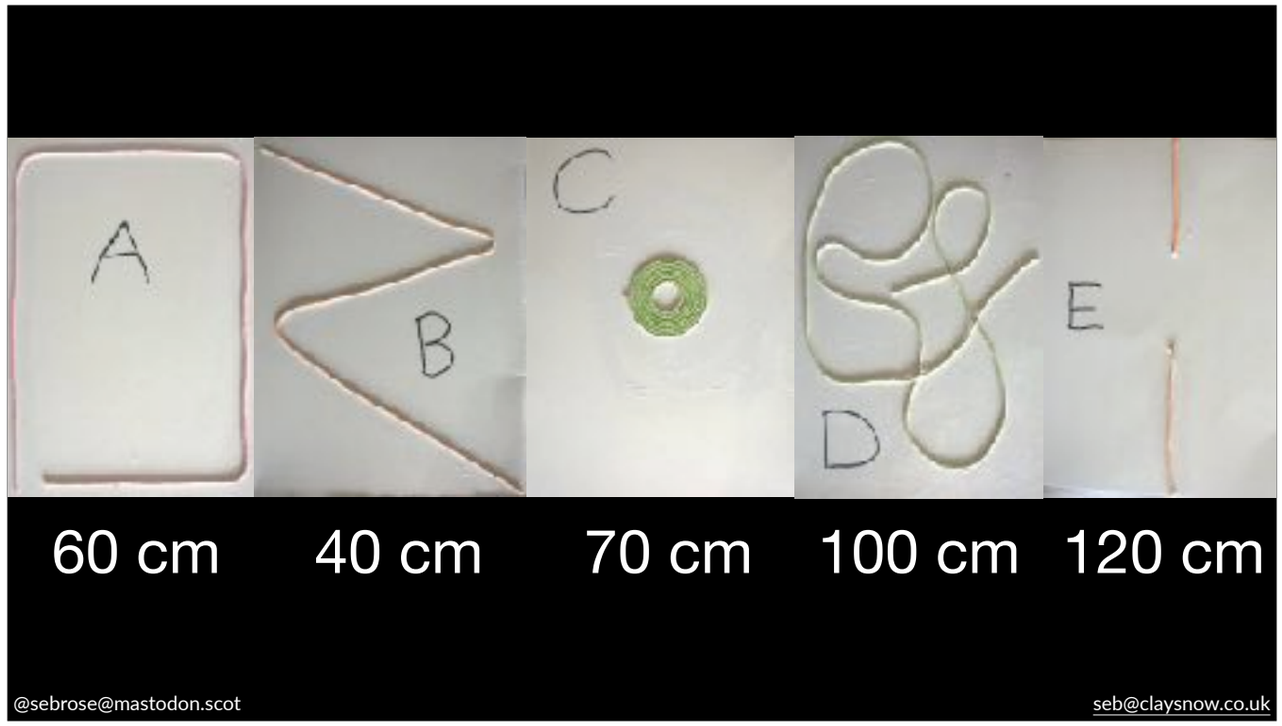
How long is a piece of string?



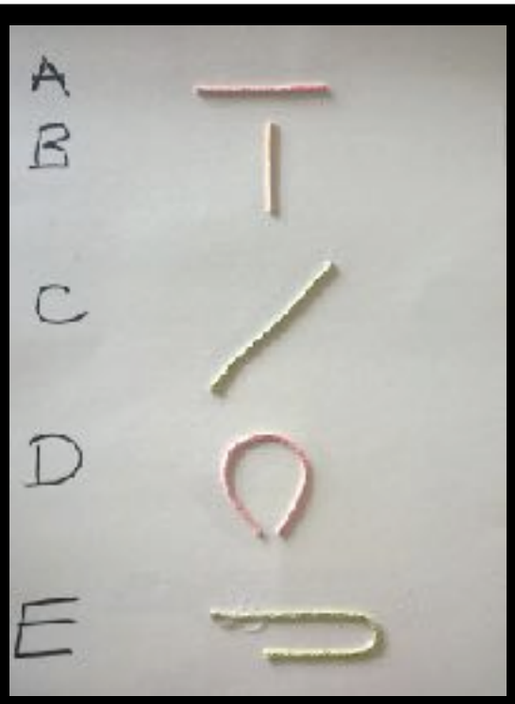
@sebrose@mastodon.scot

seb@claysnow.co.uk


A
B
C
D
E
@sebrose@mastodon.scot
seb@claysnow.co.uk


A
B
C
D
E
60 cm
40 cm
70 cm
100 cm
120 cm
@sebrose@mastodon.scot
seb@claysnow.co.uk


@sebrose@mastodon.scot
seb@claysnow.co.uk



E. 12 cm
D. 10 cm
C. 7 cm
A. 6 cm
B. 4 cm

@sebrose@mastodon.scot

seb@claysnow.co.uk



Smaller things easier to understand and estimate

Did the **builders** of
Stonehenge or the cathedrals
make estimates?

@sebrose@mastodon.scot

seb@claysnow.co.uk

Probably not. But they did build prototypes, seek help, set goals, measure outcomes, deliver value early, work incrementally, adjust direction

Agenda

Disclaimers
Etymology
Why slowly?
From antiquity onwards
Who needs estimates?
Modern software engineering
AI - disruption or continuity?
Takeaways

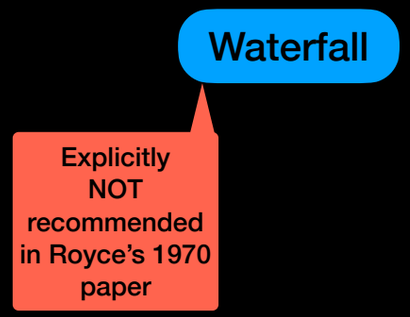
Early commercial software process

seb@claysnow.co.uk

Early commercial software process

Waterfall

Early commercial software process



Early commercial software process

Waterfall

Explicitly NOT recommended in Royce's 1970 paper

Requirements phase up-front

seb@claysnow.co.uk

Early commercial software process

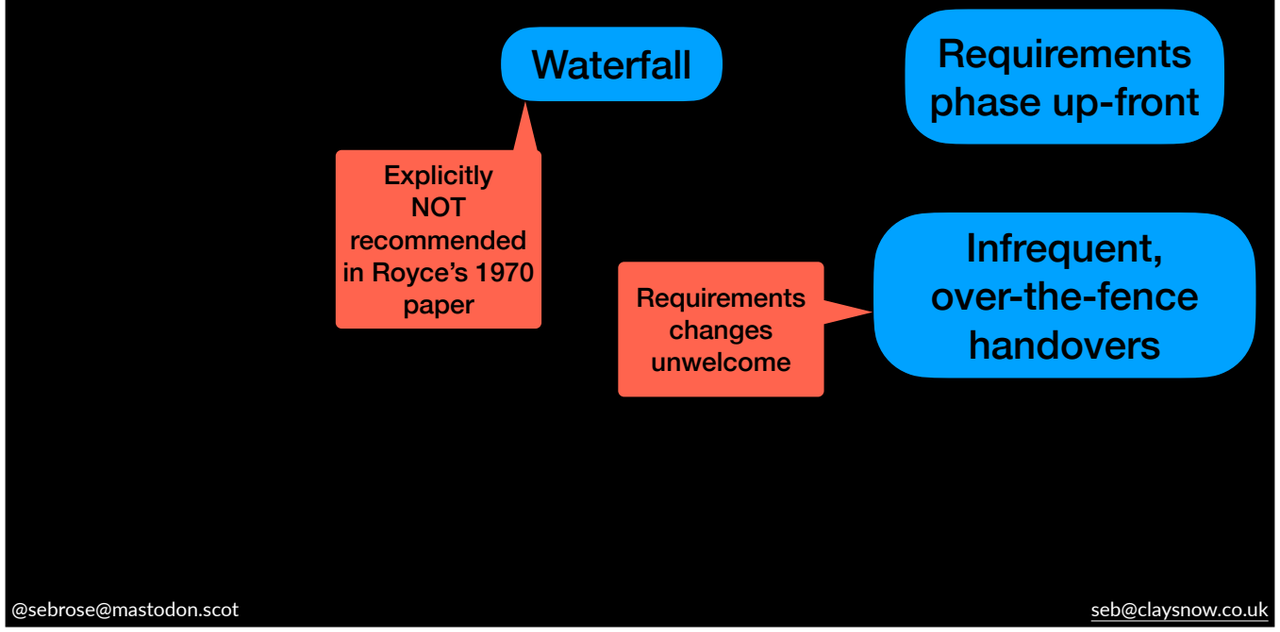
Waterfall

Explicitly NOT recommended in Royce's 1970 paper

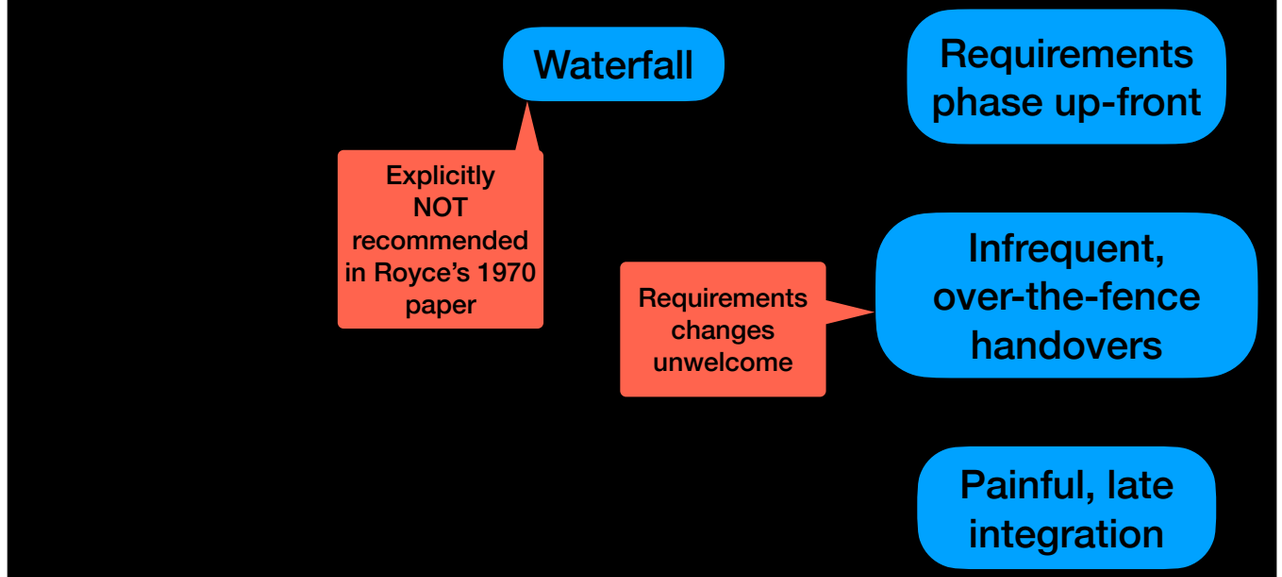
Requirements phase up-front

Infrequent, over-the-fence handovers

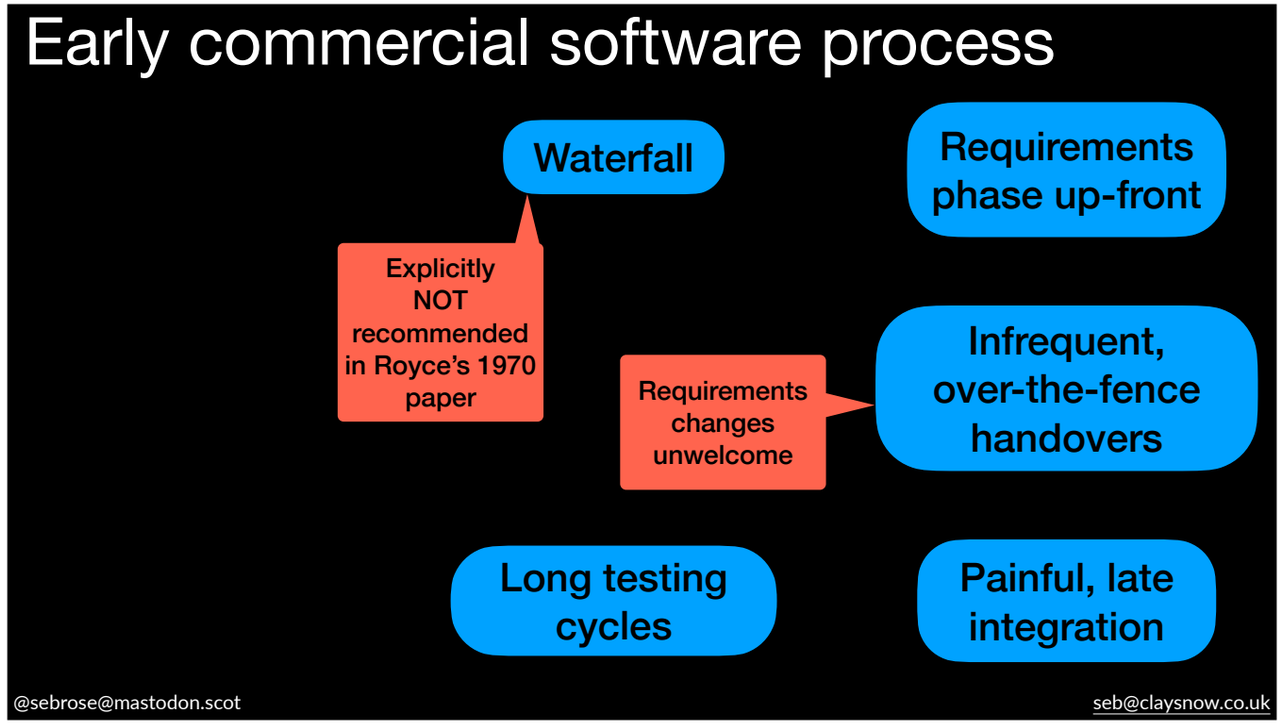
Early commercial software process



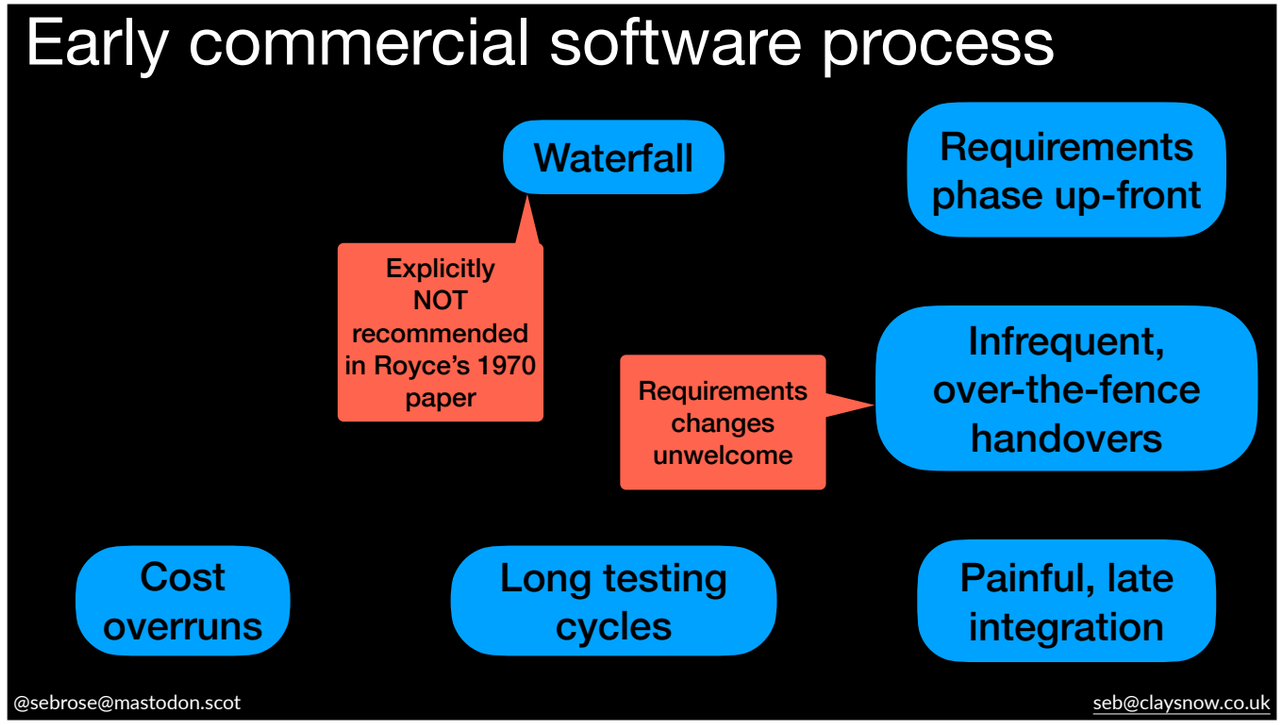
Early commercial software process



Early commercial software process

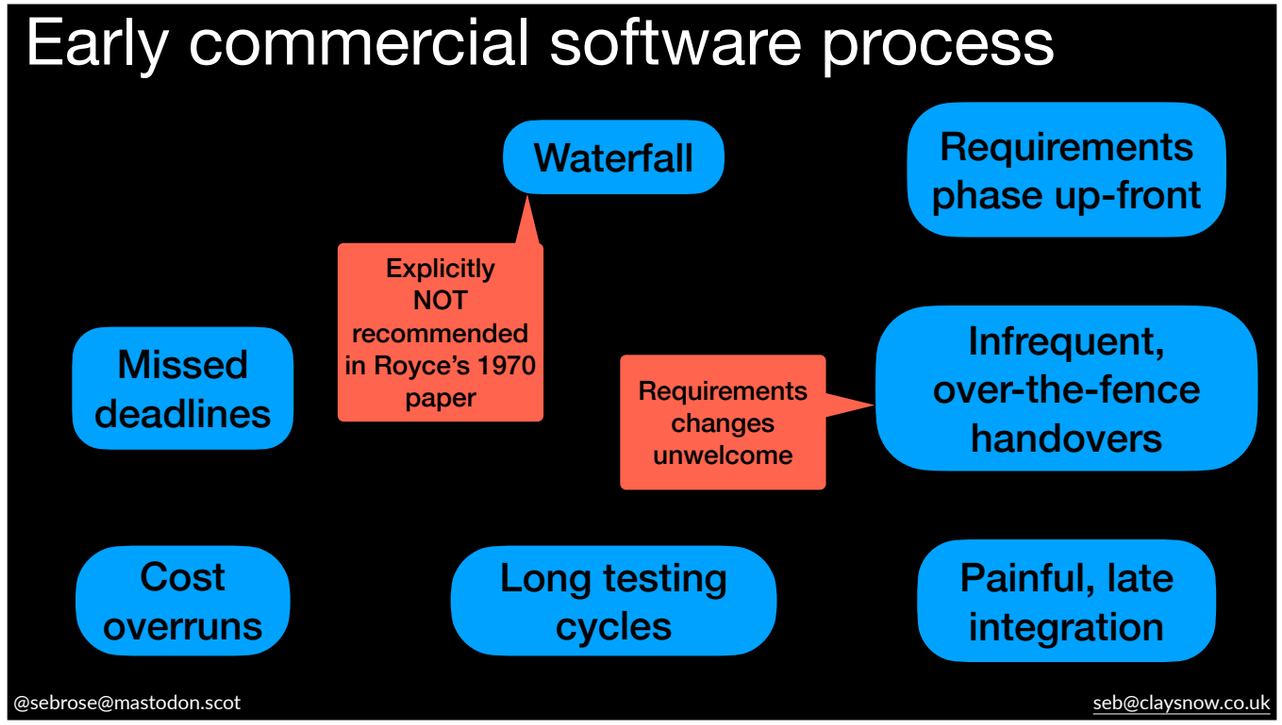


Early commercial software process



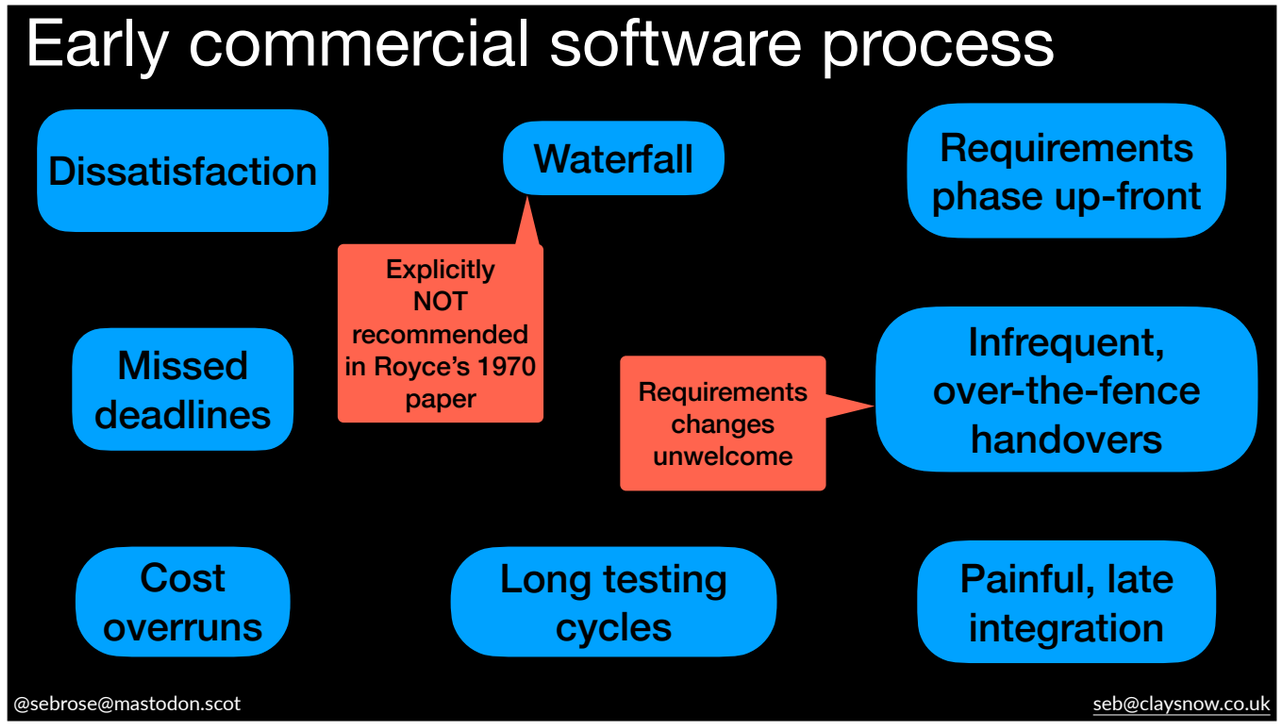
@sebrose@mastodon.scot
seb@claysnow.co.uk

Early commercial software process



@sebrose@mastodon.scot
seb@claysnow.co.uk

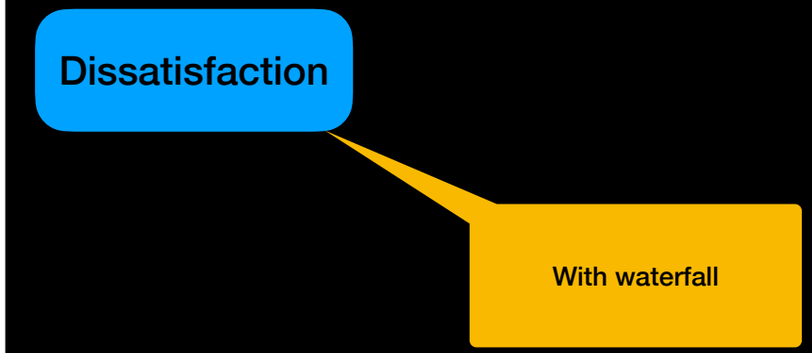
Early commercial software process



Lightweight methodologies

XP/Scrum/Crystal/DSDM etc
Small increments, fast feedback, technical excellence, onsite customer, decisions made at LRM (XP)
Technical excellence - test-driven specification, continuous integration, frequent delivery
Agile Manifesto 2001- lowest common denominator, excluded anything technical. Adoption by sheep-dip certification.

Lightweight methodologies

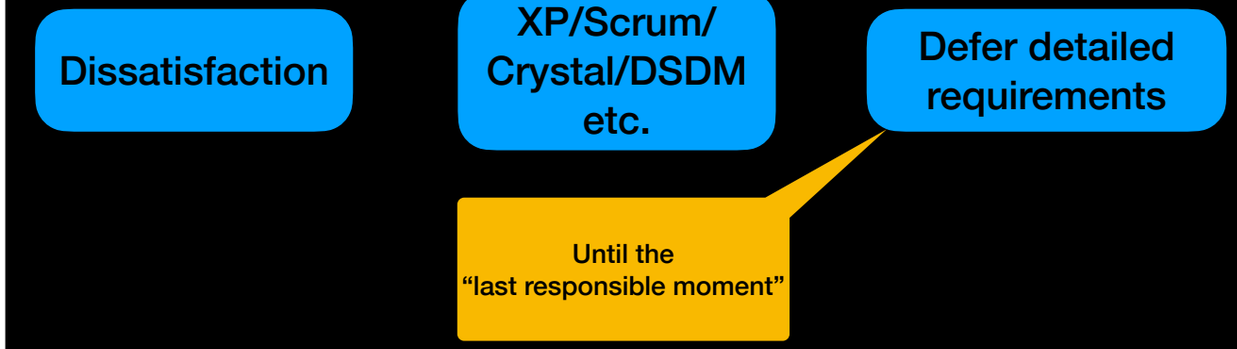


Lightweight methodologies

Dissatisfaction

XP/Scrum/
Crystal/DSDM
etc.

Lightweight methodologies



Lightweight methodologies

Dissatisfaction

XP/Scrum/ Crystal/DSDM etc.

Defer detailed requirements

Small increments

Lightweight methodologies

Dissatisfaction

XP/Scrum/ Crystal/DSDM etc.

Defer detailed requirements

Small increments

Fast feedback

seb@claysnow.co.uk

Lightweight methodologies

Dissatisfaction

XP/Scrum/ Crystal/DSDM etc.

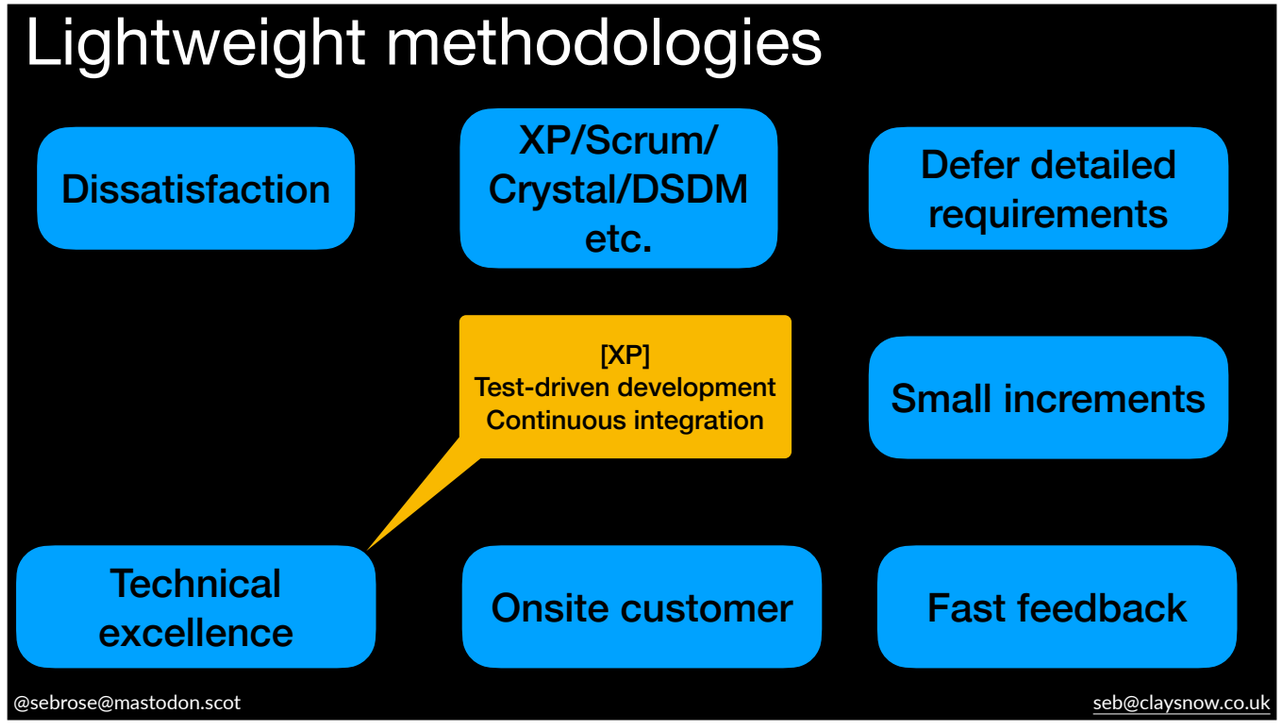
Defer detailed requirements

Small increments

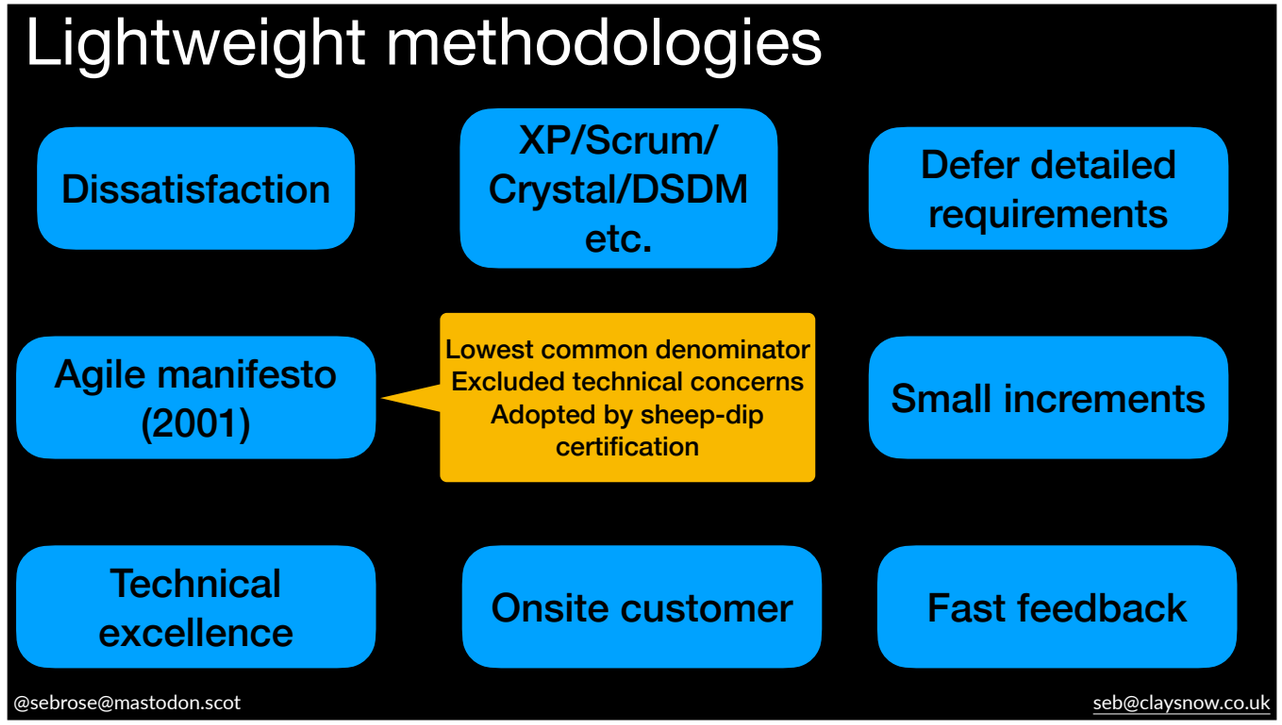
Onsite customer

Fast feedback

Lightweight methodologies

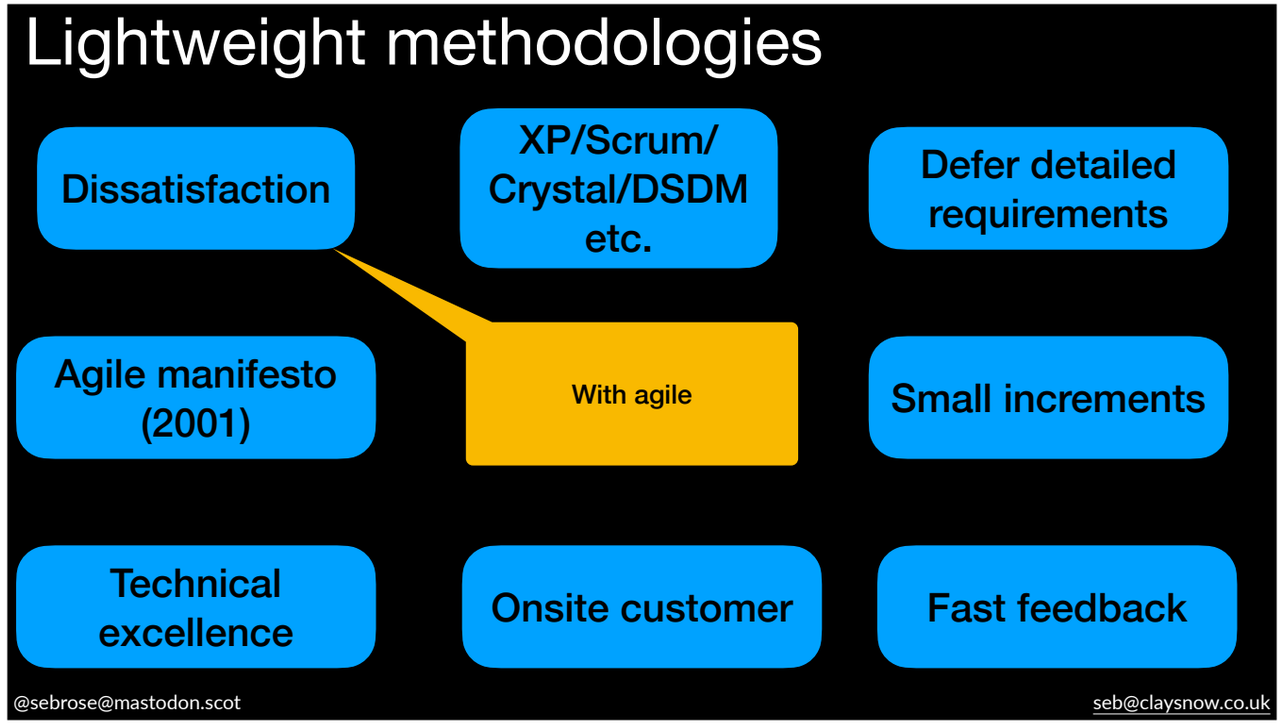


Lightweight methodologies



@sebrose@mastodon.scot
seb@claysnow.co.uk

Lightweight methodologies



Requirement requirements (sic)

Requirement requirements (sic)

Unambiguous

Requirement requirements (sic)

Unambiguous

Precise

Requirement requirements (sic)

Unambiguous

Precise

Long-lived

Requirement requirements (sic)

Unambiguous

Precise

Long-lived

Prevent terminology translation

seb@claysnow.co.uk

Requirement requirements (sic)

Unambiguous

Precise

Long-lived

Prevent terminology translation

Continuously validated

Requirement requirements (sic)

Unambiguous

Precise

Long-lived

Prevent terminology translation

Continuously validated

Evolve incrementally with solution

Requirement requirements (sic)

Unambiguous

Precise

Long-lived

Prevent terminology translation

Continuously validated

Evolve incrementally with solution

Shared understanding

@sebrose@mastodon.scot

seb@claysnow.co.uk

Requirement requirements (sic)

Unambiguous

Precise

Long-lived

Prevent terminology translation

Continuously validated

Evolve incrementally with solution

Shared understanding

Living documentation

@sebrose@mastodon.scot

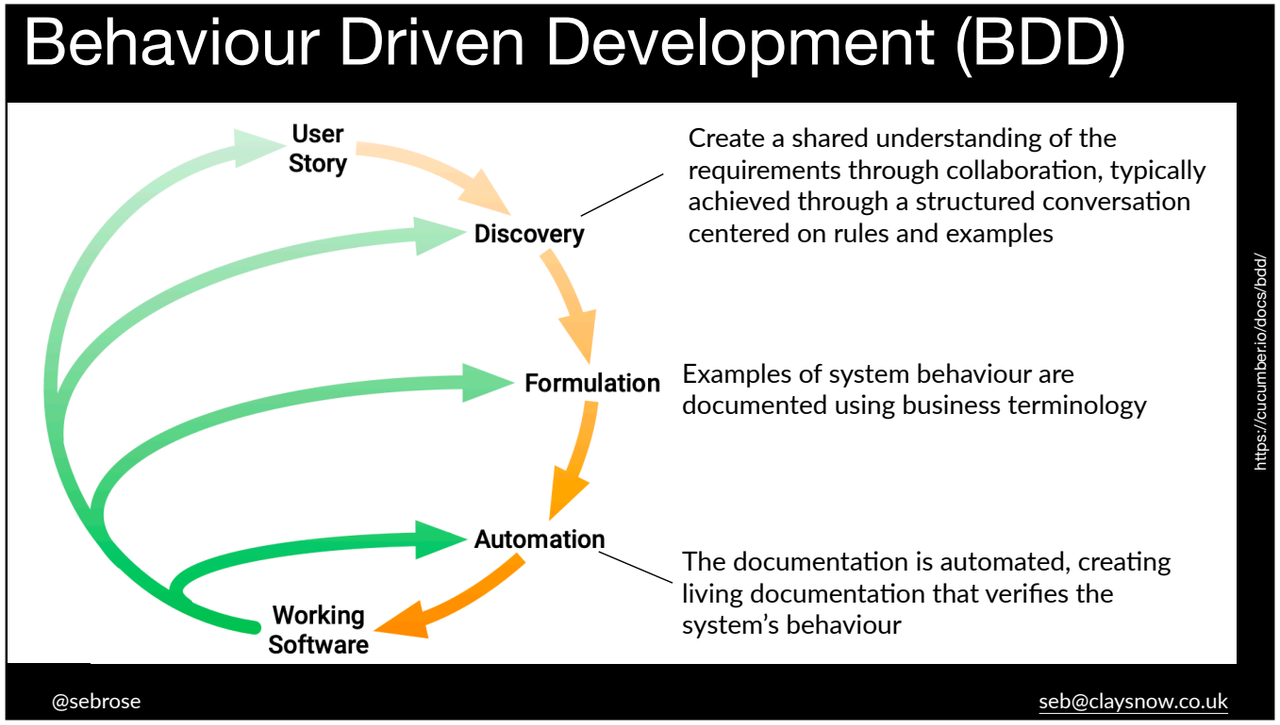
seb@claysnow.co.uk

Requirement requirements (sic)

Unambiguous	Precise	Long-lived
Prevent terminology translation	Continuously validated	Evolve incrementally with solution
Shared understanding	Living documentation	Embrace change

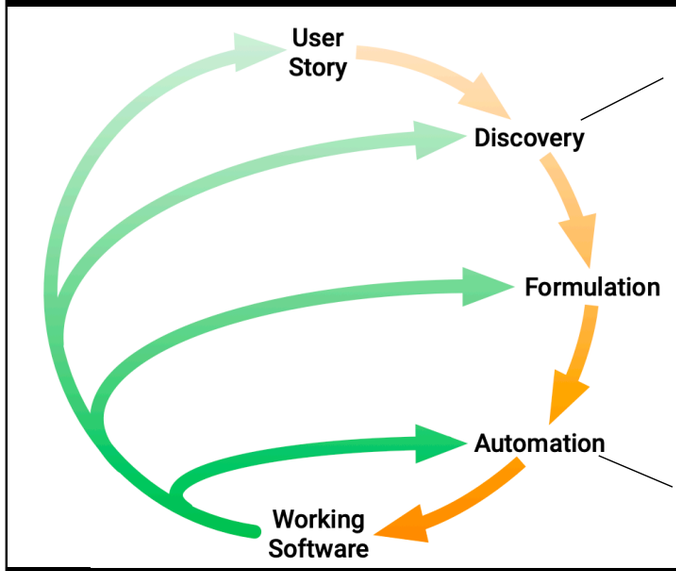
@sebrose@mastodon.scot

seb@claysnow.co.uk



How BDD is intended to work.
Regular small iterations, not big-bang phases.
An extension of TDD.

Behaviour Driven Development (BDD)



Create a shared understanding of the requirements through collaboration, typically achieved through a structured conversation centered on rules and examples

Examples of system behaviour are documented using business terminology

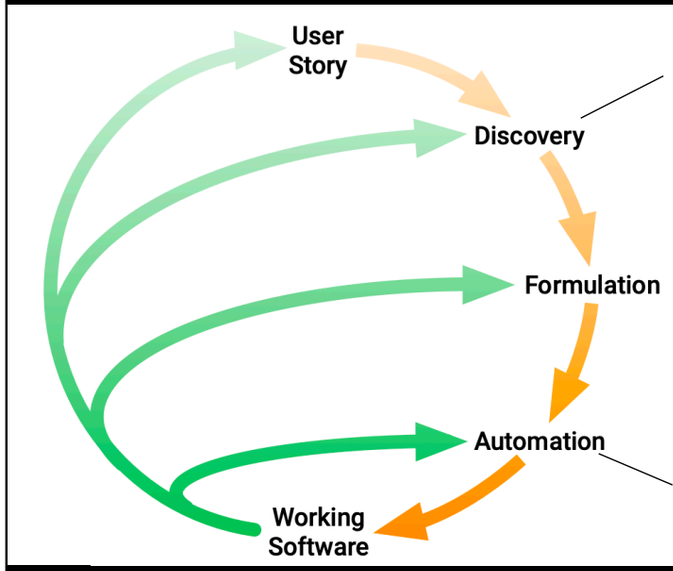
The documentation is automated, creating living documentation that verifies the system's behaviour

https://cucumber.io/docs/bdd/

@sebrose

seb@claysnow.co.uk

Behaviour Driven Development (BDD)



Create a shared understanding of the requirements through collaboration, typically achieved through a structured conversation centered on rules and examples

Examples of system behaviour are documented using business terminology

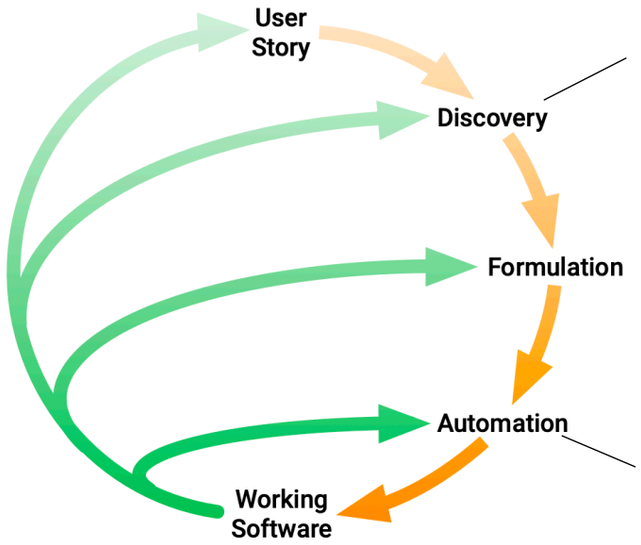
The documentation is automated, creating living documentation that verifies the system's behaviour

https://cucumber.io/docs/bdd/

@sebrose

seb@claysnow.co.uk

Behaviour Driven Development (BDD)



Create a shared understanding of the requirements through collaboration, typically achieved through a structured conversation centered on rules and examples

Examples of system behaviour are documented using business terminology

The documentation is automated, creating living documentation that verifies the system's behaviour

https://cucumber.io/docs/bdd/

@sebrose

seb@claysnow.co.uk

Agenda

Disclaimers
Etymology
Why slowly?
From antiquity onwards
Who needs estimates?
Modern software engineering
AI - disruption or continuity?
Takeaways

Terminology (again)

Terminology (again)

AI - systems endowed with the intellectual processes characteristic of humans

Terminology (again)

AI - systems endowed with the intellectual processes characteristic of humans

LLM - a deep-learning algorithm that uses massive amounts of parameters and training data to understand and predict text

Terminology (again)

AI - systems endowed with the intellectual processes characteristic of humans

LLM - a deep-learning algorithm that uses massive amounts of parameters and training data to understand and predict text

Expert system - a computer program that solves problems within a specialised domain that ordinarily requires human expertise

Citizen developer

Business users … can now use **natural language prompts** to help create applications, tools, automations, agents and workflows.

The barrier has shifted from "Who can code?" to "Who **understands the problem well enough** to describe what should be built?"

Describing the problem is a collaborative effort. Developers, architects, testers all play a significant role.

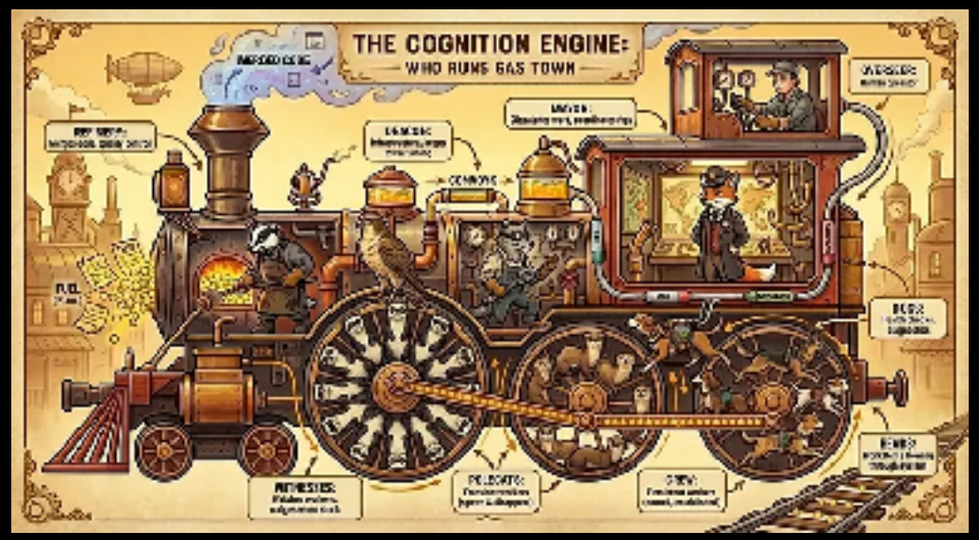
Trust-optimized, augmented development

How you go **faster**:

- Slow development to ensure that the damn stuff **actually works**.
- Slow development to include **structural improvements** that expand options.
- Slow development to encourage **frequent person-to-person interaction**.
- Slow development to reinforce & update **long-term purpose**.

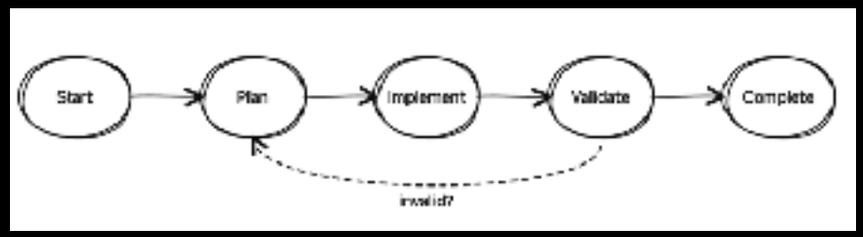
Kent Beck (2026)

Gastown



Steve Yegge (2026)

Don't fear the Dark Factory



Each of the nodes is an agent session. By putting them into a loop like this, with a **well-designed validation harness**, and a good quality seed as input, you facilitate these non-deterministic agents to naturally converge on the solution you want.

Matt Wynne (2026)

I Stopped Coding and Started Architecting Agents

You need to **own your harness** and treat it as an important part of your codebase, like you would the shared build scripts or tests.

[Don't] just download someone else's harness and start using it. [You] won't know what's in it and will be afraid to change it.

Emily Bache (2026)

https://coding-is-like-cooking.info/2026/06/i-stopped-coding-and-started-architecting-agents-and-why-you-should-too/

@sebrose@mastodon.scot

seb@claysnow.co.uk

Taming Claude Code, One Agentic-Test at a Time

When agent guidance isn't producing the behaviour I want, I **don't just change the guidance**.

I **write a test first** — a scenario that exposes exactly what's wrong. I watch it fail.

Then I make the **smallest possible change** to the guidance until the scenario passes.

Antony Marcano (2026)

AI needs a harness



https://external-content.duckduckgo.com/iu/?u=https://tse4.mm.bing.net/th/id/OIP.cEKrBAxF814TExEnbQesvQHaH5

@sebrose@mastodon.scot

seb@claysnow.co.uk

The People Who Will Thrive in the AI Age

Productive Passengers. People with a low need for cognition will tend to use AI to think less. AI will diminish their mental capacities because it makes tasks so easy.

Reluctant Optimizers. People with a medium need for cognition will understand that AI might hollow them out. Their resolve will fail and they'll become overreliant on the bots.

Mental Marathoners. People with a high need for cognition people … will fare … kind of like marathoners, I suspect. They want to find ways to use AI to increase their agency, rather than diminish it.

David Brooks, The Atlantic (2026)

https://www.theatlantic.com/ideas/2026/06/ai-open-ai-anthropic/687689/?gift=AH83VMg7qAXwzQ_m9DH-PUw7uGCTxBxBmk9jVPm9pV8

@sebrose@mastodon.scot
seb@claysnow.co.uk

Techniques to avoid AI harm

Ask for **hints**, not answers.

Ask AI to **challenge** your own analysis and conclusions.

Alternate between doing a task with AI and one that doesn't.

Use bots that function as personal trainers whose job is to **build mental muscles**.

Make a sharp distinction between **rote** work and **creative** work.

Ask for **thinkers**, not thinking.

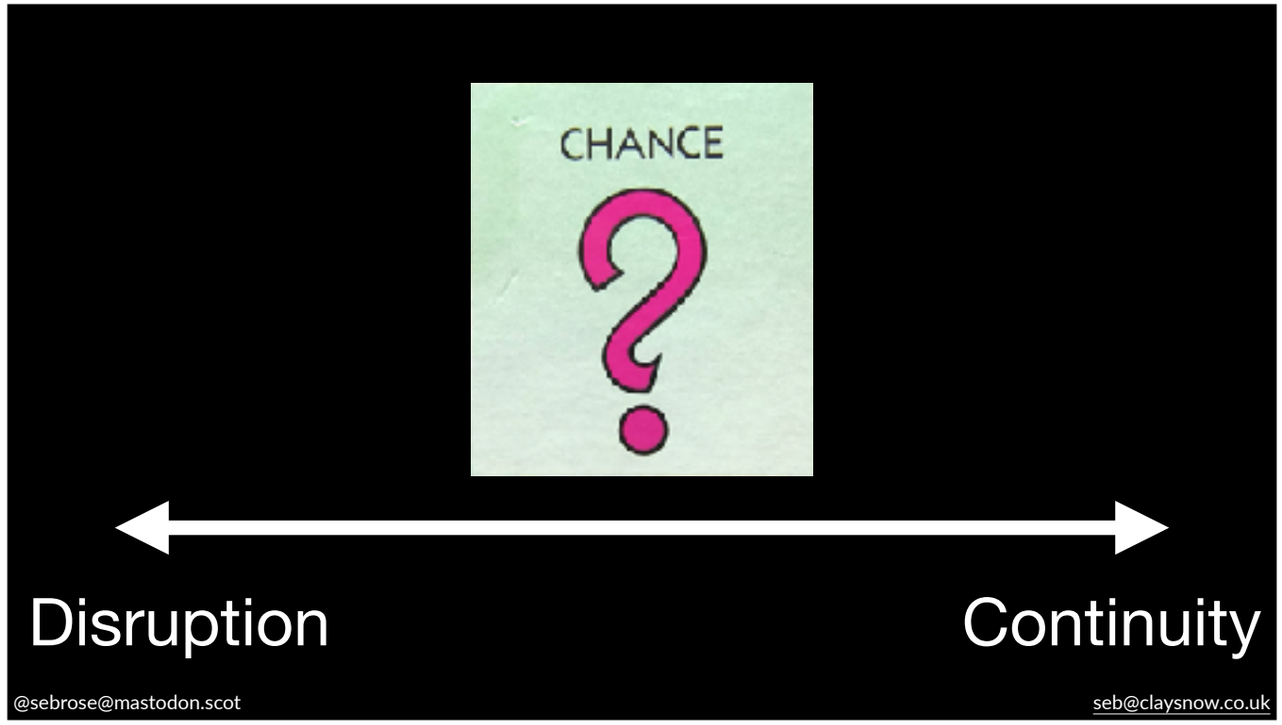
David Brooks, The Atlantic (2026)

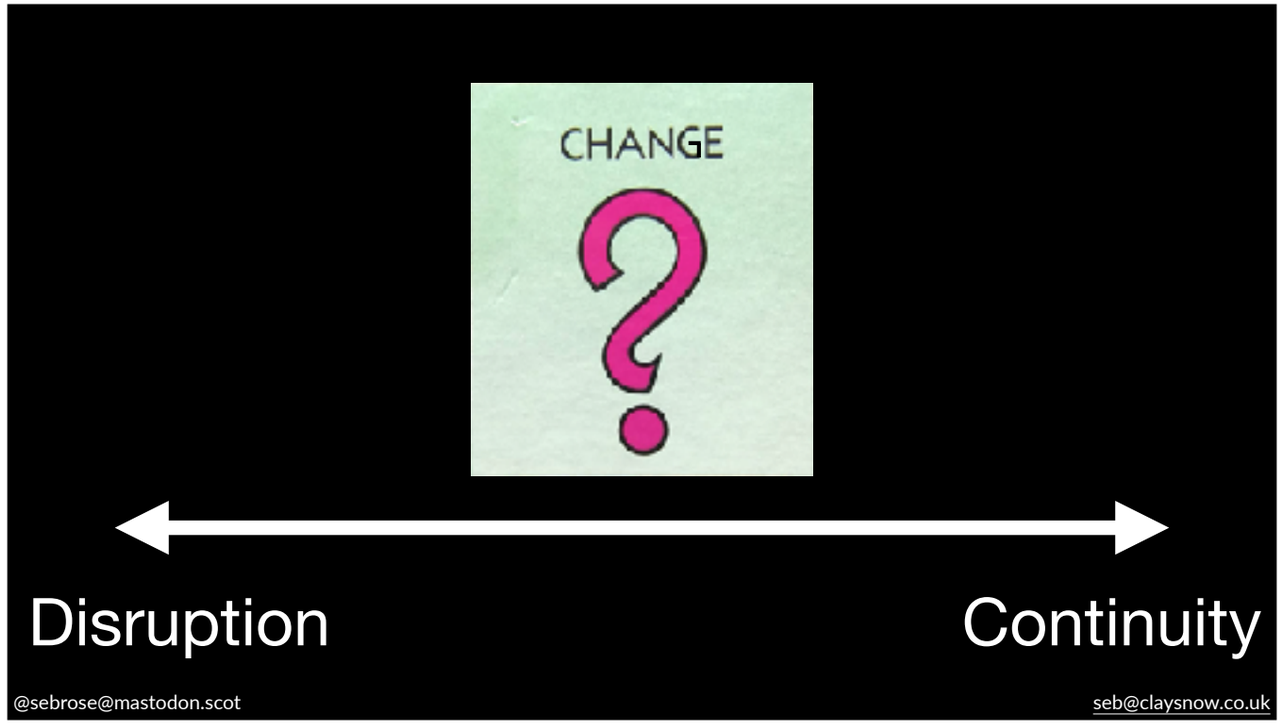
https://www.theatlantic.com/ideas/2026/06/ai-open-ai-anthropic/687689/?gift=AH83VMg7qAXwzQ_m9DH-PUw7uGCTxBxBmk9jVPm9pV8

Out of time, out of scope …



@sebrose@mastodon.scot
seb@claysnow.co.uk


CHANCE
Disruption
Continuity
@sebrose@mastodon.scot
seb@claysnow.co.uk


CHANGE
Disruption
Continuity
@sebrose@mastodon.scot
seb@claysnow.co.uk

Takeaways

Takeaways

Credible, evolving goals validated regularly

@sebrose@mastodon.scot

seb@claysnow.co.uk

Takeaways

Ensure your requirements are living documentation

Credible, evolving goals validated regularly

@sebrose@mastodon.scot

seb@claysnow.co.uk

Takeaways

Deliver small increments

Ensure your requirements are living documentation

Credible, evolving goals validated regularly

@sebrose@mastodon.scot

seb@claysnow.co.uk

Takeaways

Deliver small increments

Expect surprises

Ensure your requirements are living documentation

Credible, evolving goals validated regularly

@sebrose@mastodon.scot

seb@claysnow.co.uk

Takeaways

Deliver small increments

Expect surprises

Collaborate effectively

Ensure your requirements are living documentation

Credible, evolving goals validated regularly

@sebrose@mastodon.scot

seb@claysnow.co.uk

Takeaways

Deliver small increments

Expect surprises

Collaborate effectively

Harness AI, but don't become its prisoner

Ensure your requirements are living documentation

Credible, evolving goals validated regularly

@sebrose@mastodon.scot

seb@claysnow.co.uk



FAST FLOW, STRONG FOUNDATIONS

The Living Documentation Event (LDE) is a unique gathering focused on Living Documentation and Behavior-Driven Development. Developed by the community for the community, we believe that continuous learning is essential for staying ahead.

@sebrose@mastodon.scot https://www.living-documentation-event.com/ seb@claysnow.co.uk

QUESTIONS?

Seb Rose
Mastodon: @sebrose@mastodon.scot
Bluesky: @sebrose.bsky.social
Blog: https://claysnow.co.uk
E-mail: seb@claysnow.co.uk



https://bddbooks.com

