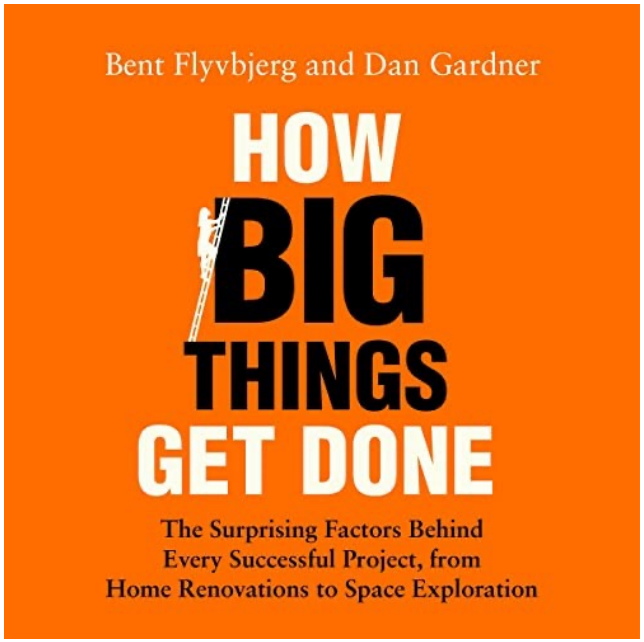
The Book



https://www.amazon.com/How-Big-Things-Get-Done/dp/0593239512

Bent Flyvbjerg

- The most cited scholar in the world in project management
- Awarded two Fulbright Scholarships & the Project Management Institute Research Achievement Award (the "Nobel" of project management)
- Professor at the University of Oxford's Saïd Business School & the IT University of Copenhagen

Dan Gardner

- New York Times best-selling author of books about psychology and decision-making
- Lectures on forecasting, risk, & decision-making

The Problems

- Database of 16,000 projects from 20+ fields in 136 countries shows that:
  - 52.1% of projects go over budget
  - 91.5% of projects go over budget, over schedule, or both
  - 99.5% of projects go over budget, over schedule, do not deliver promised benefits, or some combination

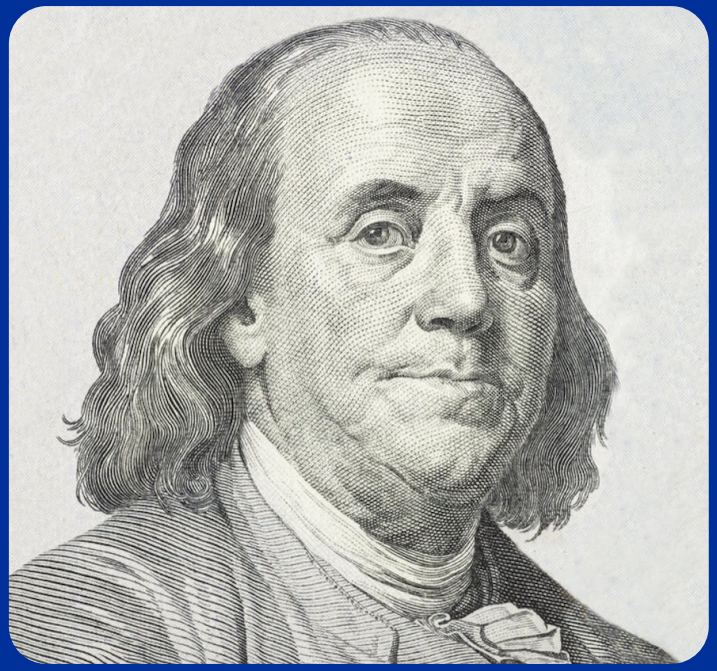
- Project cost overruns for many project types are “fat-tailed” as opposed to a “normal distribution” so the likelihood of an extreme outcome is much higher

- Any ‘big’ project (big, complex, ambitious, risky) can suffer from optimism bias & political considerations

- ‘Strategic misrepresentation’ leads to optimistic forecasts, poorly defined goals, disregarding better option to get project approved/committed so that it is already locked-in *(supported by the sunk cost fallacy)* when more realistic information comes to light

- An overrun in implementation time tends to be associated with increased complexities & project failure

Even small issues can have large impacts



“For the want of a nail the shoe was lost,
For the want of a shoe the horse was lost,
For the want of a horse the rider was lost,
For the want of a rider the battle was lost,
For the want of a battle the kingdom was lost,
And all for the want of a horseshoe-nail.”

— Benjamin Franklin

The Solutions (Part 1)

Heuristics *(rules of thumb)* **for Better Project Leadership:**

Hire a Masterbuilder & their great team – where possible hire those with deep domain experience

Ask "why?" – what is the true purpose? Are you addressing the right problem? Is it the right solution?

Build with Lego – use modular components to allow assembly instead of construction

Think slow, act fast - spend more time in holistic planning/iterating/experimentation to produce a 'maximum virtual product' so you can reduce the inherent risks during the execution phase

Take the outside view – a project never truly unique. Use 'reference-class forecasting' *(see page 6)* & identify the risks relevant to the class so they can be mitigated

Watch your downside – Focus on mitigating fat-tailed risk while keeping the purpose front-of-mind

The Solutions (Part 2)

Say no and walk away – Is it really addressing the purpose? Is it using untested technology? Does it have sufficient expertise, funding & contingencies? If not, do not do it

Make friends and keep them friendly – cultivate the understanding & support of stakeholders who could significantly influence the project i.*e. build your bridges before you need them*

Build climate mitigation into your project – as it is a known imperative

Know that your biggest risk is you – projects do no fail because of surprises but due to factors such as behaviour biases & not leveraging reference-class insights

Reference Class Forecasting (RCF)

- See your project as one in a class of similar projects already done
- Use data from the class – cost, time, benefits, to anchor your expectations
- The RCF average & an anchor captures complexity & unknowns
- Avoid the bias of seeing your project as unique. Instead ensure you define the class broadly to capture more information. Unless there is a compelling reason do not make bespoke adjustments
- RCF is on average 30% more accurate than conventional bottom-up forecasting

Base Rates for Cost Risk

PROJECT TYPE	(A) MEAN COST OVERRUN (%)*	(B) % OF PROJECTS IN TAIL (≥ 50% OVERRUN)	(C) MEAN OVERRUN OF PROJECTS IN TAIL (%)
Nuclear storage	238	48	427
Olympic Games	157	76	200
Nuclear power	120	55	204
Hydroelectric dams	75	37	186
IT	73	18	447
Nonhydroelectric dams	71	33	202
Buildings	62	39	206
Aerospace	60	42	119
Defense	53	21	253
Bus rapid transit	40	43	69
Rail	39	28	116
Airports	39	43	88
Tunnels	37	28	103
Oil and gas	34	19	121
Ports	32	17	183
Hospitals, health	29	13	167
Mining	27	17	129
Bridges	26	21	107
Water	20	13	124
Fossil thermal power	16	14	109
Roads	16	11	102
Pipelines	14	9	110
Wind power	13	7	97
Energy transmission	8	4	166
Solar power	1	2	50