



Whitepaper

# The scheduling debate

Truth-based planning versus top-down targets

## Planning & portfolio series.

Why participatory scheduling consistently outperforms imposed timelines — and how to bridge the gap between aspiration and reality.

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## The scheduling debate

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**Core thesis.** The debate between aggressive and realistic scheduling is a false dichotomy. The real question is who owns the plan. When the people doing the work own the schedule, they fight to deliver it. When leadership imposes the schedule as a fait accompli, the gap between target and reality goes underground — and underground gaps surface late, expensively, and without warning.

## Overview

# Abstract

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**Every development organization faces the same conflict.** Leadership wants aggressive timelines that satisfy investors, boards, and market windows. The subject matter experts doing the work know those timelines are often disconnected from reality. The two camps are not arguing about the same artifact. One is arguing about the target. The other is arguing about the plan. The paper that follows is about why that distinction matters and what happens to organizations that confuse the two.

The position is straightforward. Aggressive targets are healthy. They create urgency, define ambition, and align the organization with the market. But targets must sit alongside honest plans built by the people who will execute them. The gap between target and plan is the strategic challenge of program management — not a failure of will, not a discipline problem, not a morale issue. Surfaced and managed, the gap can be closed. Hidden or denied, it surfaces on its own schedule and at a cost no one budgeted for.

The argument draws on three streams of evidence. The first is forty years of organizational behavior research — Locke and Latham on goal-setting [1, 2], Deci and Ryan on autonomy and intrinsic motivation [3], Edmondson on psychological safety [4], McGregor on the assumptions managers make about the people they manage [5]. The second is the planning-fallacy literature — Kahneman and Tversky's inside view [6], Buehler's empirical work [7], Flyvbjerg's iron law of megaprojects [8]. The third is the lateralworks Fast-Time-to-Market (FTTM) research database, built since 1990 across more than two hundred development programs [9].

These streams converge. Participation produces ownership; ownership produces optimization; optimization compresses schedule. The same pattern repeats whether the program is a Silicon Valley software release or a semiconductor tape-out at an advanced node. The mechanism is the same. The organizations that win are not the ones that demand more aggressive schedules. They are the ones that surface the gap earlier and close it together.

**Read this if.** You are a founder, CEO, or senior leader balancing investor pressure against engineering reality. You are a program manager whose schedule is being pushed below what the team believes is feasible. You are a director of engineering watching a fabricated schedule become the official plan of record. The pattern this paper describes is recoverable. It is not recoverable by demanding more aggression.

# 01

## Section one

# The core tension

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Every development organization faces the same conflict. Leadership wants to be in market by a specific date. The subject matter experts know what it will take to get there. The two answers rarely match. They are not supposed to. One is an aspiration; the other is a forecast. The trouble starts when the aspiration is mistaken for the forecast — when the desired date is written down as the planned date, the gap is buried, and the conversation about how to close it never happens.

The question is not whether a gap exists between aspiration and reality. It almost always does. The question is whether you want to know the gap so you can manage it, or whether you want to hide the gap and discover it too late.

# 02

## Section two

# **The case for aggressive targets**

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Proponents of top-down scheduling argue from a position that is not without merit. Before dismantling the argument, the paper steelmans it. There are real cases where speed beats precision and real evidence that ambition lifts performance. The problem is not ambition. The problem is what happens when ambition is presented as a forecast.

## Section two, continued

# The arguments in favor

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**Market windows are real.** If a competitor ships in Q3 and the organization ships in Q1 of the following year, the schedule that "got it right" may have cost the company the market. There are genuine cases where the cost of being late vastly exceeds the cost of cutting corners. Reinertsen [10] formalized this trade-off as the cost of delay — every week of slip carries an economic price tag, and that price tag often justifies aggressive resourcing, scope reduction, or technical compromise.

**People are conservative by nature.** Engineers, scientists, and technical professionals tend to pad estimates. They account for worst cases. Left entirely to their own devices, the argument goes, they will produce a schedule that is comfortable rather than ambitious. A degree of external pressure is necessary to push the organization past its comfort zone. Goldratt named the underlying mechanism: when generous estimates are given, work expands to fill the time available, and tasks start late even when contingency was already built in [11]. Parkinson's law and student syndrome are not theoretical — they are observable in almost every untreated schedule.

**Vision drives momentum.** CEOs who spend time raising money and selling a future develop a sense of urgency the development team does not share. That urgency, channeled properly, becomes a forcing function that drives innovation, motivates trade-off decisions, and clarifies what matters when everything competes for resources.

**Stretch goals produce stretch results.** Locke and Latham's goal-setting theory, the most cited body of work in organizational psychology, established that specific, difficult goals reliably produce higher performance than easy goals or vague exhortations to "do your best" [1, 2]. Aiming at 100 and reaching 80 is, on average, better than aiming at 60 and reaching 60.

**Where this argument breaks down.** Each of the four claims above is at least partially correct, and the paper does not dispute them. The error is not in valuing ambition. The error is in confusing the target with the plan.

**Target vs. plan.** A target says: "We need to be in the market by September." A plan says: "Here is the sequence of work, the dependencies, the resources, and the durations that will get us to market — and based on what we know today, that date is December." Both are valid. Neither should be hidden. Only one of them is a forecast.

## Section two, continued

# When the target becomes the plan

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When leadership writes the target into the schedule as the plan of record, nothing has been accelerated. The gap between September and December has not been closed — it has been hidden. And once the gap is hidden, something predictable happens underground.

The SMEs, having been told that their honest assessment is unwelcome, begin to fabricate. They reverse-engineer schedules to fit the time they have been given. They strip out contingency. They assume best-case durations on every task. They stop raising risks because raising risks gets the messenger labeled as "not a team player." The schedule looks aggressive and impressive on paper. It is also fiction.

This is the same failure mode that the planning fallacy literature has been documenting for four decades. Kahneman and Tversky named it [6]: people forecasting their own work adopt an inside view, imagine the specific steps, and construct a best-case scenario. Buehler's longitudinal studies of student theses [7] confirmed the bias is durable — even when students were told their estimates were typically wrong, their next estimates were still optimistic. Flyvbjerg's cross-sector dataset of more than 16,000 megaprojects shows the same pattern at industrial scale: roughly nine in ten programs overrun, with cost overruns averaging 62% and schedule slip running 45% or more on infrastructure projects [8].

*The moment the schedule becomes fiction, leadership loses its most important tool: the ability to see what is actually happening and intervene strategically. A gap that is not visible cannot be managed.*

Failure mode

## **The schedule goes underground**

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**The moment the schedule becomes fiction, leadership loses its most important tool — the ability to see what is actually happening and intervene.**

The scouts stop reporting.  
The army walks into the ambush.

# 03

## Section three

# Truth-based participatory scheduling

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The alternative is not to accept whatever the SMEs say without question. It is to build a process that surfaces truth, then works strategically to close the gap between truth and aspiration. lateralworks calls this process schedule innovation — applying the same creative discipline to the schedule that engineers apply to the technology [9]. The four steps below have been refined across more than two hundred FTTM programs since 1990.

## Section three, continued

# A four-step method

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### 1. Let people speak without constraints.

The only way to get the truth from people is to ask them to describe what they are doing without putting constraints on the answer. Listen and let them talk. Challenging assumptions before the team has finished explaining them is the surest way to stifle honest communication. People who feel challenged stop sharing their reasoning; they shorten their answers, or they repeat what they think the questioner wants to hear. Edmondson's psychological safety research [4] documents the mechanism precisely: in teams where speaking up carries social cost, learning behaviors decline measurably, and the team's ability to surface risk collapses with them.

*A military commander who punishes scouts for reporting bad news will soon be surrounded by scouts who report only good news — and will walk straight into an ambush.*

### 2. Understand the gap.

Once the honest assessment is in hand — the real durations, the real dependencies, the real risks — the gap becomes visible. The team says December. The market says September. There is a three-month gap. That gap is the strategic challenge. It is not a morale problem. It is not a discipline problem. It is a planning problem, and planning problems have solutions.

### 3. Close the gap strategically.

With a truthful schedule in hand, leadership and the team can have the conversations that actually accelerate programs. The questions worth asking are concrete:

- Can sequential work be parallelized?
- Can a feature drop from V1 and ship in V1.1?
- Can a resource land on the critical path? On the second or third critical path that has been hiding underneath it [12]?
- Can a technical approach trade elegance for speed?
- Can an external partner take a specific subsystem off the critical path?
- Can the team's environment — the host — remove an interrupt that the team itself cannot resolve [9]?

These are strategic conversations that can only happen when everyone is looking at the same truthful picture. When the schedule is fabricated, these conversations never occur — on paper, there is no gap to close.

### 4. Use the weekly refresh to pull time out.

As the program progresses and more becomes known — scope clarifies, risks retire or materialize, velocity becomes measurable — the schedule should be refreshed regularly. Each refresh is an opportunity to pull time out. Early estimates are always the least accurate. As work begins and reality emerges, the team naturally finds ways to be more efficient. If they own the plan, they are motivated to find those efficiencies

and bring them forward. If someone else owns the plan, they have no reason to volunteer them. lateralworks uses a tool called the wigglechart to make this compression visible week over week [9, 13]; the predicted-finish line walks backward in time as the team pulls margin out of the schedule. The pattern is visible in Appendix A.

# 04

## Section four

# The psychology of ownership

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The four-step method works because it is consistent with how humans actually respond to commitments they have helped to author. The result is not a quirk of one industry or one decade. It is a finding that organizational psychology has documented from multiple angles since the 1950s — and it is the same mechanism the FTTM research database has observed program after program for thirty years.

## Section four, continued

# What the literature says

**Goal-setting theory.** Locke and Latham’s thirty-five-year program of research [1, 2] established that specific, difficult goals outperform easy goals or vague exhortations. The same body of work also documented an important moderator: when goals are set participatively rather than imposed, the goal-performance relationship strengthens, commitment rises, and self-efficacy increases. Goals work even when assigned, but they work better when shared.

**Self-determination theory.** Deci and Ryan [3] identify three basic psychological needs that drive intrinsic motivation: autonomy, competence, and relatedness. Autonomy — the sense of authoring one’s own actions — is the hallmark of intrinsic motivation. Imposed schedules directly undermine autonomy; participative schedules support it. The mechanism is consistent across thousands of empirical studies in workplaces, schools, healthcare settings, and sports.

**Psychological safety.** Edmondson’s 1999 study of forty-seven work teams [4] introduced the construct of team psychological safety and showed it predicts learning behavior — surfacing errors, asking for help, questioning assumptions. Teams without it learn slowly, hide problems, and are surprised when those problems surface. A schedule built without psychological safety is a schedule whose risks have not been spoken aloud.

**Theory X and theory Y.** McGregor’s 1960 framing [5] remains the clearest description of the assumption an imposed schedule makes about the people who will execute it. Theory X assumes employees are lazy, untrustworthy, and need external pressure to perform. Theory Y assumes they are self-motivated, capable, and ready to take responsibility when given the chance. Imposed schedules are Theory X artifacts. Participatory schedules are Theory Y artifacts. Sixty-five years of research has not been kind to Theory X.

### Ownership versus imposition

When the literature is collapsed into observable behavior, the contrast between teams that own their schedule and teams that have been handed one is stark. lateralworks has observed this contrast on hundreds of programs across thirty years of consulting practice [9]; the comparison table below summarizes the pattern.

When people own the plan	When people are told the plan
Personal commitment tied to professional reputation.	Executing someone else’s plan with no personal stake.
When obstacles arise, the team problem-solves creatively.	If it fails, the failure belongs to whoever set the expectation.
The team actively seeks ways to pull the schedule forward.	The team stops optimizing — the schedule is already fiction.
Professional pride and creativity are fully engaged.	The team becomes passive order-takers.

Improvement ideas come up from the team unsolicited.

Efficiencies and innovations never surface.

*The paradox of imposed schedules: they are intended to produce faster results, but reliably produce slower results than participatory schedules. The act of imposition destroys the motivation to beat the schedule.*

Core principle

## **Ownership versus imposition**

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**When people own  
the plan, they  
optimize it.**

**When people are  
given the plan,  
they abandon it.**

An observable pattern — not a theory.  
Refined across 200+ FTTM programs since 1990.

# 05

## Section five

# **Evidence from hardware programs**

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The argument so far has been framed in general terms — leadership, SMEs, the gap. The pattern holds across industries, but the consequences are most visible where iteration is expensive. Nowhere is iteration more expensive than in semiconductor development. A respin at an advanced node costs months of calendar time and millions of dollars in mask sets alone [14, 15]. The cost of an unmanaged schedule gap on a chip program is not theoretical. It is a number the CFO will eventually see.

## Section five, continued

# The economics of getting it wrong

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**First-silicon success has collapsed.** The 2024 Siemens EDA and Wilson Research Group functional verification study found that only 14% of ASIC/SoC projects achieve first-silicon success — the lowest figure in more than twenty years of tracking and a sharp decline from 24% in 2022 [14]. The same study reports that the share of projects behind schedule has risen from roughly two-thirds historically to 75% today. The decline is industry-wide, with the steepest drops among system companies — automotive OEMs, hyperscalers, and consumer brands that once bought chips and now design them.

**Mask sets are not getting cheaper.** At 5nm a full mask set runs in the high tens of millions of dollars; at 3nm, estimates push into the \$40M range and 5nm/3nm chip production uses more than eighty individual photomask layers per die, up from roughly thirty at older nodes [15]. Each respin recurs that cost, plus the cycle time through the fab — typically eight to fourteen weeks of calendar before silicon is back on the bench. The economic penalty of a hidden schedule gap on a semiconductor program is measured in tens of millions of dollars and a full quarter of lost market window per respin.

**Why this matters for scheduling.** When first-silicon success rates are this low and respins are this expensive, the value of a truthful schedule rises sharply. A fabricated schedule that says "tape-out in June, samples in August" when the real plan would say "tape-out in August, samples in November" is not just a project-management problem. It is an investment decision being made on bad data. The CEO who took June to investors will get neither the June outcome nor the development velocity their team is capable of when the team has lost faith that honest reporting will be heard.

**The Wilson Research finding.** 14% of ASIC/SoC projects hit first silicon. 75% are behind schedule. The industry's answer cannot be more aggressive top-down dates — it has been trying that for twenty years and the numbers have moved the wrong way. The answer is truthful schedules, surfaced early, with the gap to market managed strategically before the mask set is committed.

## The Fab8 trend chart

The Fab8 program — a memory development program lateralworks supported in the early 2010s — illustrates what schedule innovation looks like in practice. The wigglechart in Appendix A plots the predicted-finish date for First Silicon Starts on every weekly update through the life of the program. Each point is the team's honest estimate, refreshed against real progress, with the gap to the market target visible in the same plot. The story the chart tells is the same one the four-step method predicts.

**Early gap, openly surfaced.** In the first months of the program the predicted finish was well past the target. The team did not hide it. They argued for it, defended the assumptions, and used the visibility to negotiate scope and resourcing. **Sustained pull-in.** Over the following two years the predicted finish walked backward in time — week after week, the team found ways to compress the plan. Risks retired. Sequential work parallelized. The wigglechart trace is the visible signature of schedule innovation. **Beat the target.** First silicon started ten days ahead of the most recent prediction and two weeks ahead of the original target. The

pull-in was earned by the team that owned the schedule — not handed to them by a leader who declared a date.

## Section six

# A practical framework

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For organizations wrestling with the target-versus-plan tension, the six steps below collapse the argument into a workable framework. None of them require new tooling. All of them require a leader willing to separate the role of advocate from the role of forecaster — and to act consistently on the difference.

**1. Separate targets from plans.** The target is what the market or the board demands. The plan is what the SMEs believe is achievable. Both are valid. Neither should be hidden. Write them both down, side by side, in the same document.

**2. Surface the gap openly.** When the target is September and the plan says December, put both dates on the wall. The gap is not a failure. It is a known challenge to be managed.

**3. Let the SMEs identify where the time is.** The people doing the work are in the best position to see where time can be pulled out. They should not be told where to cut. They should be asked: "Given this gap, where do you see opportunities?" The answers will surprise leadership more often than they will disappoint.

**4. Challenge assumptions only after listening.** There is a time to push back on estimates. It comes after the team has fully explained its thinking, not before. Challenge too early and the response is compliance, not truth. The cost of compliance is paid later.

**5. Use the weekly cadence to close the gap.** Each week, review progress against the real plan. As risks retire, as scope clarifies, as the team hits its stride, time naturally comes out of the schedule. If the team owns the plan, they actively look for these savings. The wiggles chart makes the compression visible week over week.

**6. Ask how well the current method has been working.** If the imposed-schedule approach has been in use, ask a simple question: how many times has the first product shipped on time using that method? If the answer is "never" or "rarely," the evidence speaks for itself. A method that has not produced an on-time program is not a method.

## The two worlds principle

There is a specific version of the target-versus-plan problem common in venture-backed startups. The CEO spends significant time raising capital. The VC world rewards vision, ambition, and confidence. It rewards people who paint a compelling picture of the future. This is not dishonest. It is the nature of the fundraising process.

The trouble arrives when the CEO cannot shift out of fundraiser mode when walking back into the development organization. The skills that make a great fundraiser — bold claims, aggressive timelines, unwavering confidence — are the same skills that destroy honest communication in a development team. The CEO who insists the investor pitch is also the development plan gets neither the investment outcome (because the dates will be missed) nor the development velocity (because the team has stopped telling the truth).

**The two-worlds principle.** The CEO must learn to create two separate frames and shift between them depending on the audience. When talking to investors, be visionary. When talking to the development team, be realistic. These are not contradictory. They are complementary. The vision tells the team where they are going. The realistic plan tells them how they will get there.

## Conclusion

# Informed ambition wins

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The debate between aggressive and realistic scheduling is, in many ways, a false dichotomy. The real question is not whether to be aggressive. It is who owns the plan.

Aggressive targets set by leadership are healthy. They create urgency and ambition. But those targets must sit alongside honest plans built by the people doing the work. The gap between target and plan is not a problem to be hidden — it is the central strategic challenge of program management, and the work the organization must do together.

The physiology of participation is straightforward. People who build the plan will fight to deliver it. People who are handed the plan will watch it fail. The choice is not between ambition and realism. The choice is between informed ambition — where the gap is known and worked closed — and blind ambition, where the gap is denied and surfaces on its own schedule.

Trust the SMEs to tell the truth. Trust the strategic process to close the gap. Trust that ownership produces results that imposition never will. This is not theory. It is what forty years of organizational research, four decades of planning-fallacy literature, and thirty years of FTTM field data converge on.

*When people own their schedules, they optimize them. When people are given their schedules, they abandon them.*

## Appendix A

# Schedule innovation in practice

When the truth-based method works, the signature is visible in a single chart: the wigglechart. Each point on the trace is the team’s predicted-finish date for First Silicon Starts, refreshed weekly. The chart below is from the Fab8 program. The early gap is honest; the sustained pull-in is earned; the finish lands two weeks ahead of the original target. This is what schedule innovation looks like when the team owns the plan [9, 13].

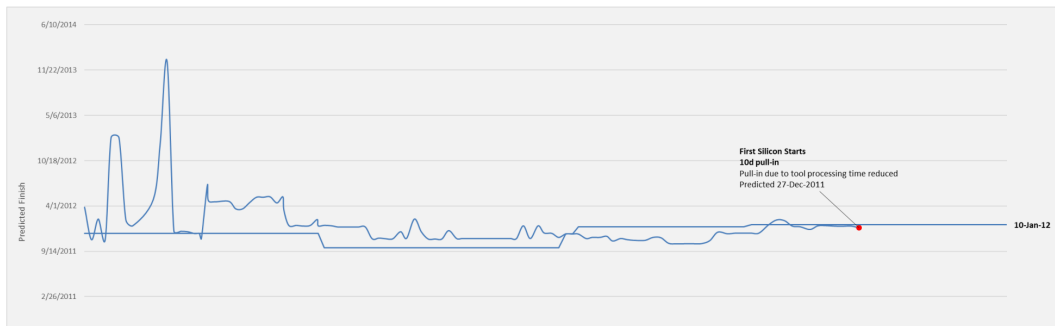


Figure A1. Fab8 wigglechart. Each point is the team’s predicted-finish date for First Silicon Starts, refreshed weekly across the life of the program. The trace walks backward in time as the team pulls margin out of the plan. First silicon started 10 days ahead of the most recent prediction and two weeks ahead of the original target. This is schedule innovation made visible.

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