

From Engineer to Technical Manager: A Survival Guide

FRANK KANE

COPYRIGHT © 2022 SUNDOG SOFTWARE LLC ALL RIGHTS
RESERVED WORLDWIDE

STOCK IMAGES LICENSED FROM ISTOCK.COM



sundog-education.com

Introduction

Why should I listen to you?

- Went from Sr. Software Engineer -> Manager -> Senior Manager at Amazon.com in Seattle
- Managed IMDb's technical team
- Consistently received highest ratings as a manager, with very low turnover
- Learned directly from Jeff Bezos and his "S-Team," in addition to formal leadership training





What you'll learn to do

Not just “how to be a good manager”

Thrive, and not just survive, in your transition from managing machines to managing people

We focus on aspects of management that are particularly challenging for software engineers

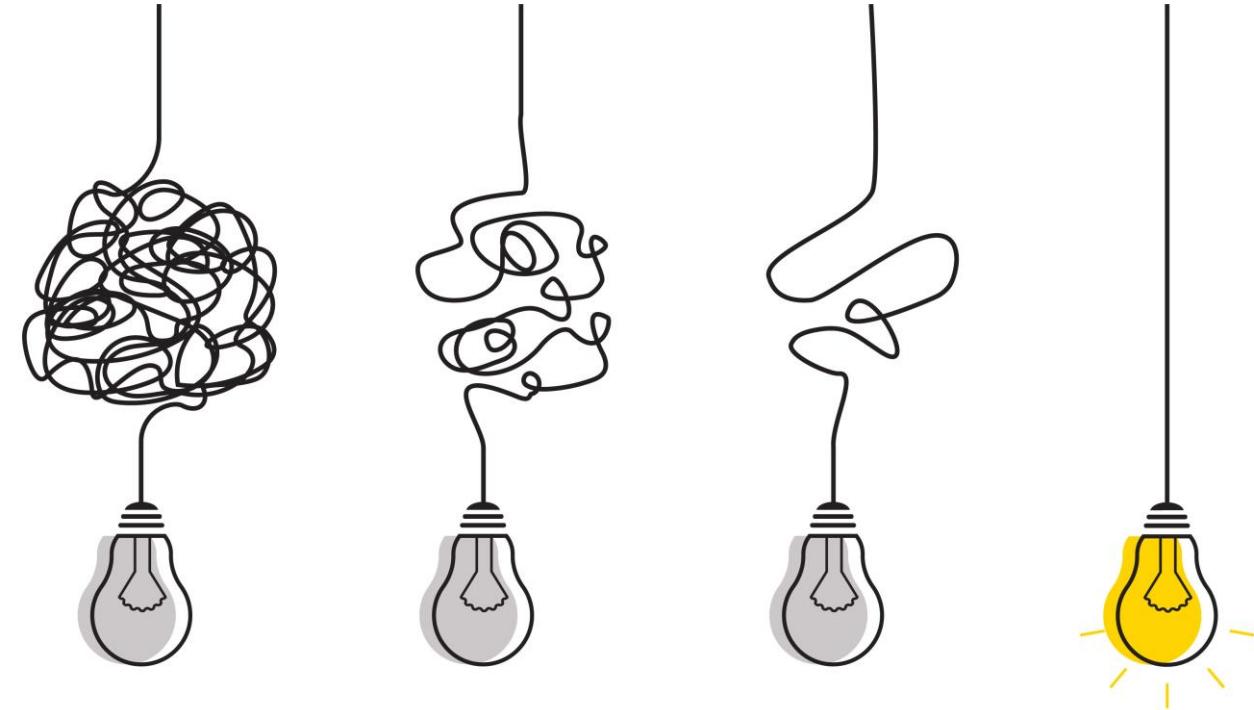
- People, not machines
- Amplifying the work of others, not your own work

How you'll learn

Lecture videos

Practical exercises

Mock conversations





Course Outline

New technical manager survival tips

Delivering results

People management basics

Hiring and firing

Working with upper management

Building and maintaining morale

Your continued growth



The TL;DR version

Stop writing code! That's not your job anymore!

Get stuff done – bigger stuff than you could do before

Be honest, blunt, and direct

Don't be a jerk – remember your team is probably smarter than you.

New technical manager survival tips

The importance of letting go

Your immediate instinct is to stick to what you're good at: writing code! Building things!

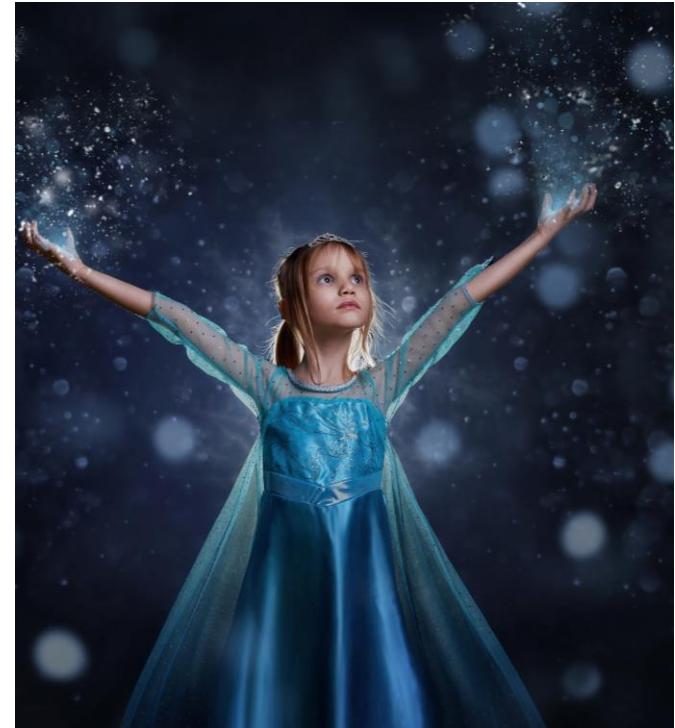
THAT IS NOT YOUR JOB NOW

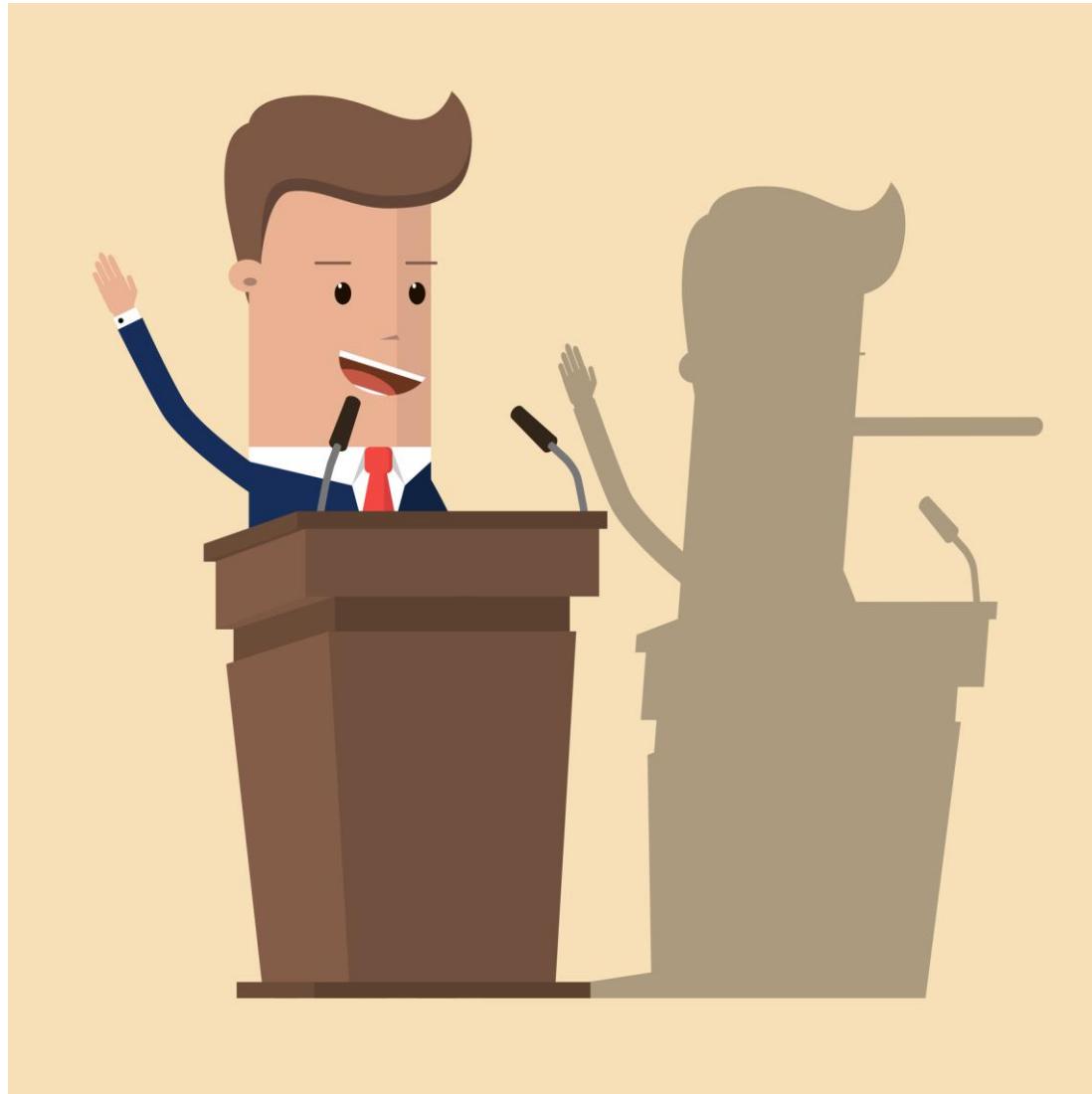
Your job is to keep your larger team productive!

You exist to AMPLIFY THE TALENTS OF YOUR TEAM MEMBERS

You will achieve much bigger things than you could as an individual.

THIS IS THE MOST COMMON PITFALL FOR NEW TECHNICAL MANAGERS





Don't steal credit

Give credit where credit is due

- “Brett did an exceptionally good job with the design of this system”

You SHOULD be helping to guide your team in design decisions and architecture

- But IT'S NOT ABOUT YOU



Listen to their ideas

Ideally your company tries to hire smart people – so listen to them!

Don't shut down ideas that aren't your own

You're there to nurture their career development

Leading by Example

Your team will emulate the leadership skills you demonstrate

Be honest, be productive, and focus on results.
Strive to always improve.

- ...and they will too.

Remember: your team will emulate negative behaviors as well as positive behaviors

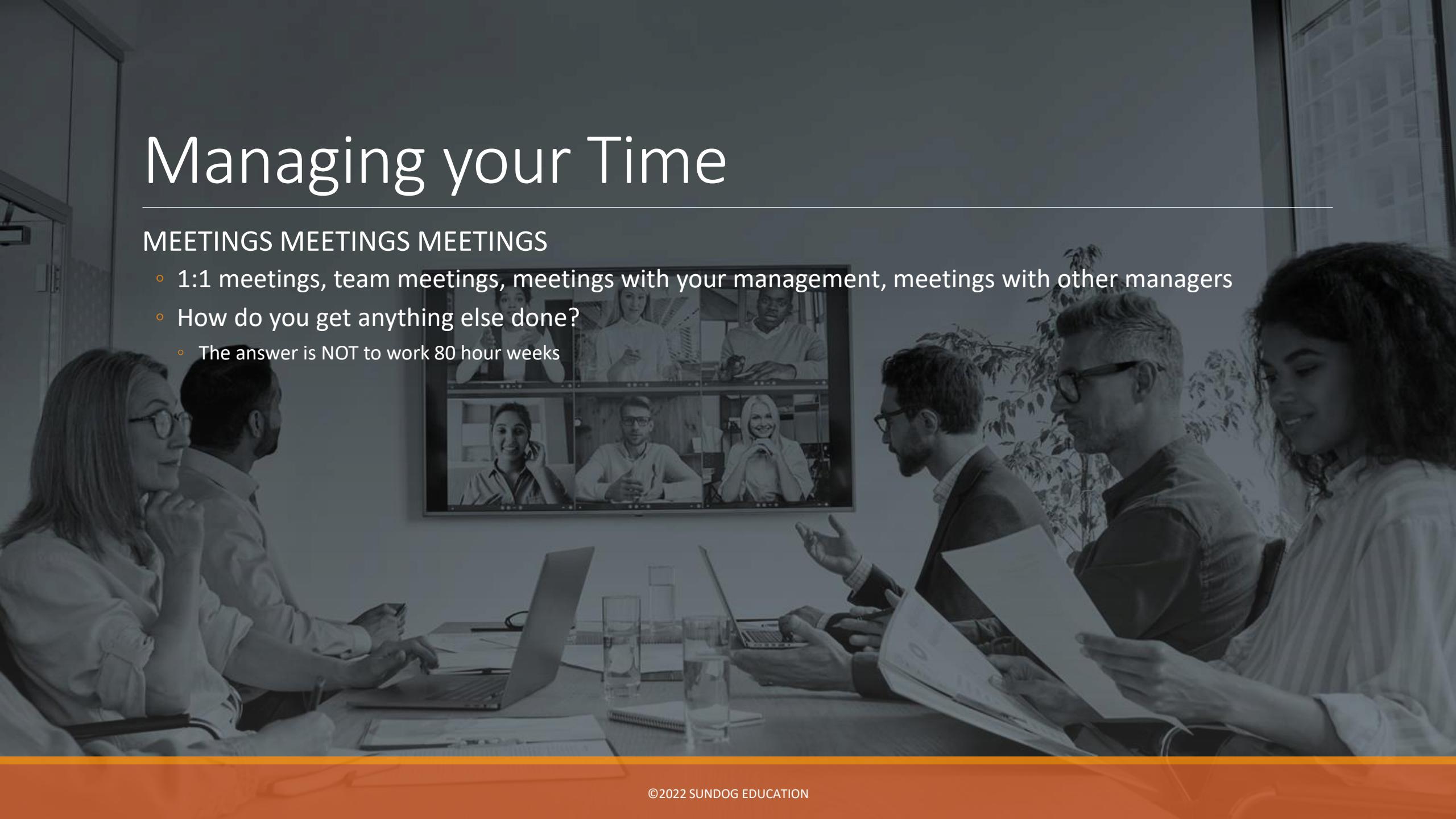
If you feel frustrated or demoralized, work through that yourself before you let it show



Managing your Time

MEETINGS MEETINGS MEETINGS

- 1:1 meetings, team meetings, meetings with your management, meetings with other managers
- How do you get anything else done?
 - The answer is NOT to work 80 hour weeks

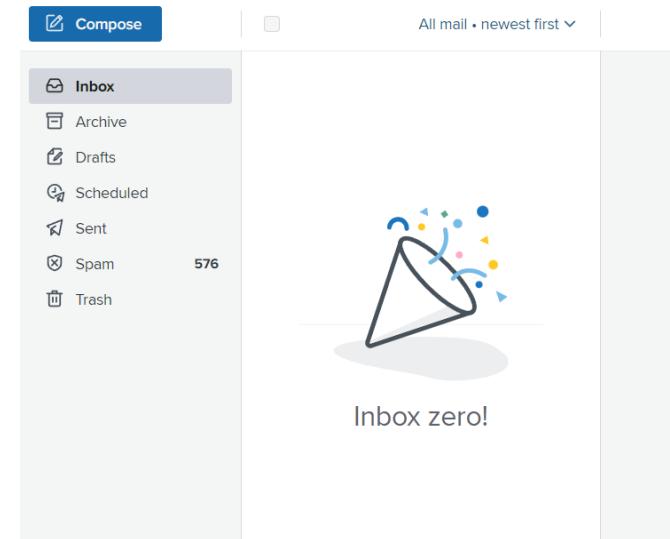


Inbox Management 101

Stay on top of emails whenever you can

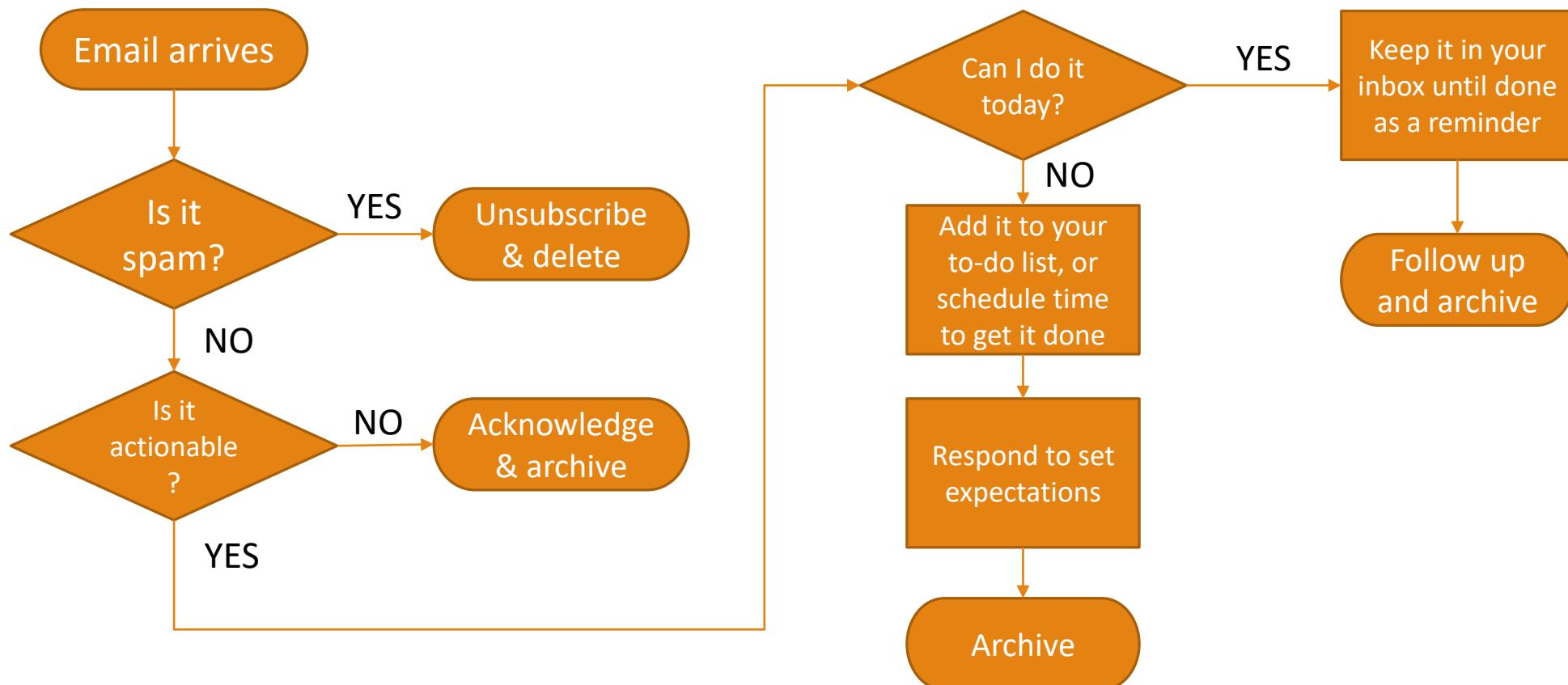
The goal is INBOX ZERO

Email is slowly dying, but the same idea can be applied to messages



Actual photo!

Email Triage





To Do:

Your (not) fancy to-do list

I used a whiteboard.

A little text document will do as well.

You don't need fancy software to manage your own work.

You can also schedule meetings with yourself to complete individual tasks, or to remind yourself to follow up on things.

By knowing you have a record of all your current responsibilities somewhere, you can erase it from your mind and make it seem less overwhelming

Well that all sounds fine and dandy

But what if there aren't enough hours in the day to stay on top of it all?

It's achievable with:

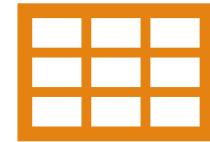
- Discipline
- Focus
- Delegation
- Saying no (tactfully)

Those are the real secrets to time management, not some fancy patented system.

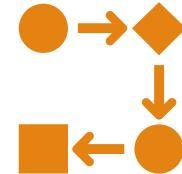




But it requires DISCIPLINE to stay on top of your emails and messages



...and to follow through on your tasks without letting them pile up



It just has to become a habit

You may develop it just to survive.

Discipline cannot be taught

How do I get stuff done in between all those meetings? FOCUS

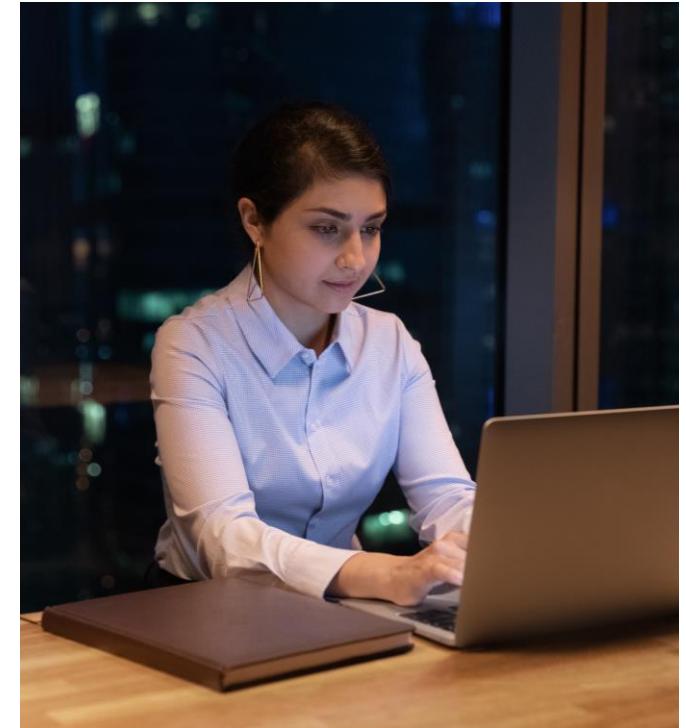
Again, turn off notifications when you're trying to get stuff done!

Put on headphones to discourage interruptions

If you were a successful engineer, you know how to get into “the zone” still

Hide somewhere if you must

Defensively block off time on your calendar for getting work done



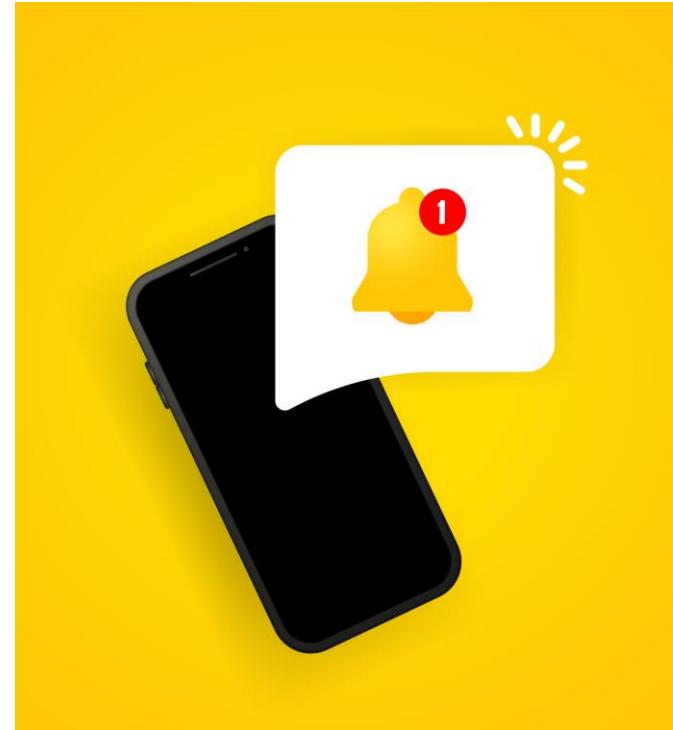
Avoiding Death by Notifications

NOTIFICATIONS DISTRACT YOU AND STEAL YOUR FOCUS

KILL THEM NOW

If you are tethered to Slack conversations, you will NOT be productive

If you check your messages every few hours or so, you'll be fine



Delegation

Remember, you have a team! Let them help you.

Do you have a project manager? A shared administrative assistant? Let them do their jobs!

DON'T TAKE ON EVERY TASK YOURSELF JUST BECAUSE YOU DON'T TRUST ANYONE BUT
YOURSELF TO GET IT DONE

- Common new manager pitfall!

The Art of Saying No (Delegating Out)

You don't have to accept every task that gets thrown your way.

Are you the right / best person to do it?

Can you get it done within expectations?

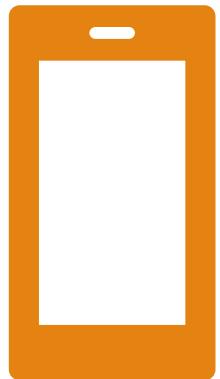
Can you say no to another task to make room for this one?

Can you flat-out say no? Is it just pointless busy work and you should call it out as such?

- This may require tact

NO

Managing your time and your tasks
makes you...



RESPONSIVE

RELIABLE

Activity: Tame your inbox!

If you have time to watch this course right now, maybe you can take an hour to get closer to inbox zero as well.

Go through all the emails you've received so far today and apply our system for managing them.

Spam or useless notification? Unsubscribe & delete.

Informational only? Archive, reply only if necessary.

Requires a quick action? Do it now, then reply & archive, or keep it in your inbox until you do it later today.

Requires a larger action? Delegate, create a meeting with yourself to get it done as soon as possible, or add it to your to-do list – then reply to set expectations, and archive.

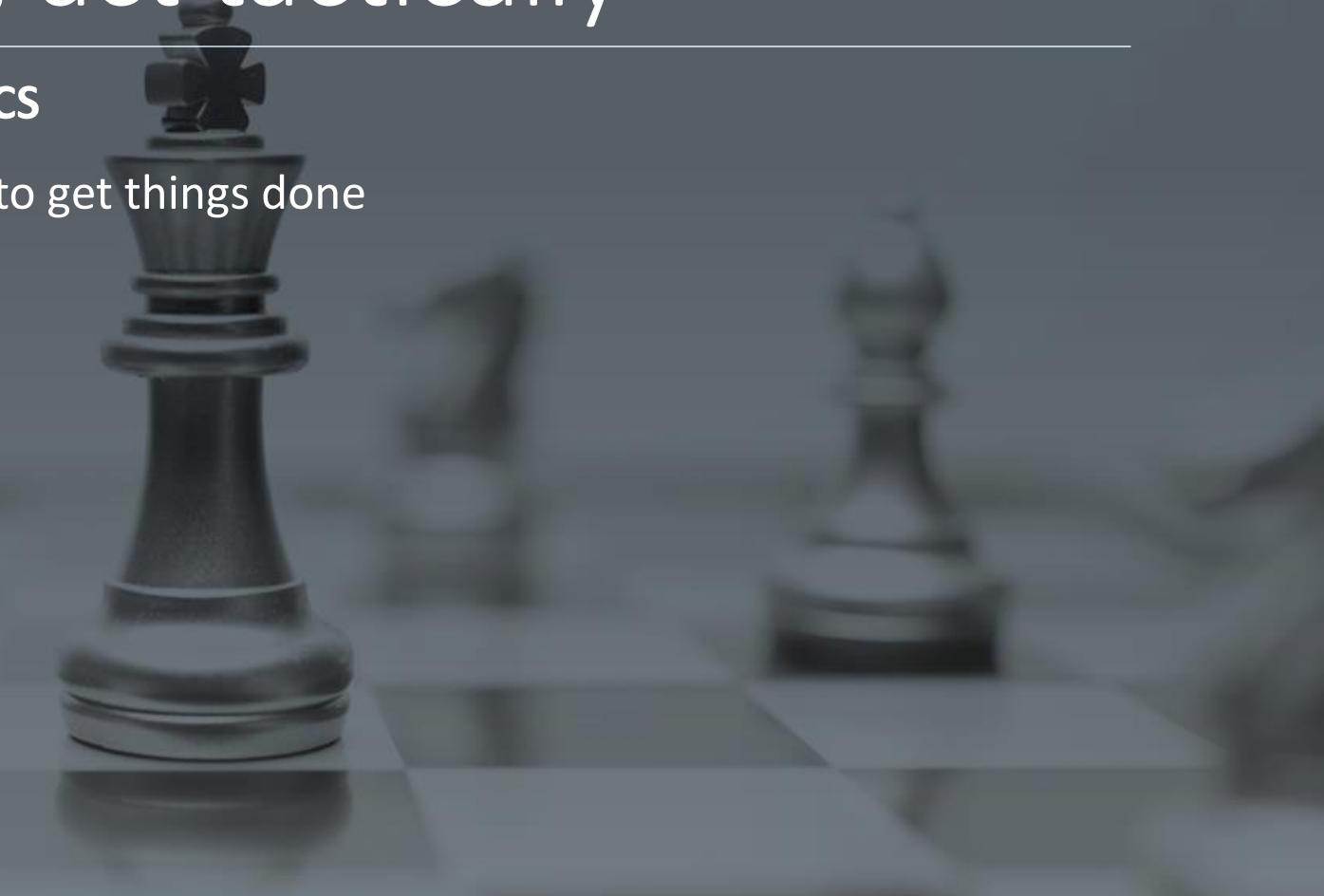
BONUS POINTS: Disable notifications on your phone and desktop for any non-emergency topics. If you make inbox zero a habit, you won't need them.



Think strategically, act tactically

As an engineer, you should excel at **TACTICS**

Always think several steps ahead on how to get things done





Think strategically, act tactically

But grasping the **strategy** behind what you are building may be a new skill

You need to learn to **THINK BIG**. What are the **BUSINESS** objectives you are trying to fulfill?

Understand **WHY** your team is building something, not just **HOW**.

Understand the customer experience you are delivering, not just the technology.

As you progress as a manager, you will start developing your own strategies.

Activity: Understanding Tactics and Strategy

Make a list of the goals you have committed to (hopefully you already have this!)

For each, write down HOW you plan to achieve them (tactics)

...and WHY that goal is important to the business (strategy)

If you don't know why a goal is important, ask your boss in your next meeting!

- Understanding the strategy makes it easier to “sell” the work to your team



Delivering results from a team

Avoiding overcommitment

- **The quickest way to fail is to sign up for more work than your team can handle**
- Learn QUICKLY that how long it would take for YOU to perform a task is not the same amount of time it would take your TEAM to perform a task
- You CANNOT take your own time estimate, divide it by the number of people assigned to the task, and go with that. There is overhead, unforeseen difficulties, varying experience levels, and dependencies to consider
- Remember people are not writing code 8 hours a day

Inspirational quote



Lt. Commander Geordi La Forge:

Look, Mr. Scott, I'd love to explain everything to you, but the Captain wants this spectrographic analysis done by 1300 hours.

[La Forge goes back to work; Scotty follows slowly]

Scotty:

Do you mind a little advice? Starfleet captains are like children. They want everything right now and they want it their way. But the secret is to give them only what they need, not what they want.

Lt. Commander Geordi La Forge:

Yeah, well, I told the Captain I'd have this analysis done in an hour.

Scotty:

How long will it really take?

Lt. Commander Geordi La Forge:

An hour!

Scotty:

Oh, you didn't tell him how long it would *really* take, did ya?

Lt. Commander Geordi La Forge:

Well, of course I did.

Scotty:

Oh, laddie. You've got a lot to learn if you want people to think of you as a miracle worker.

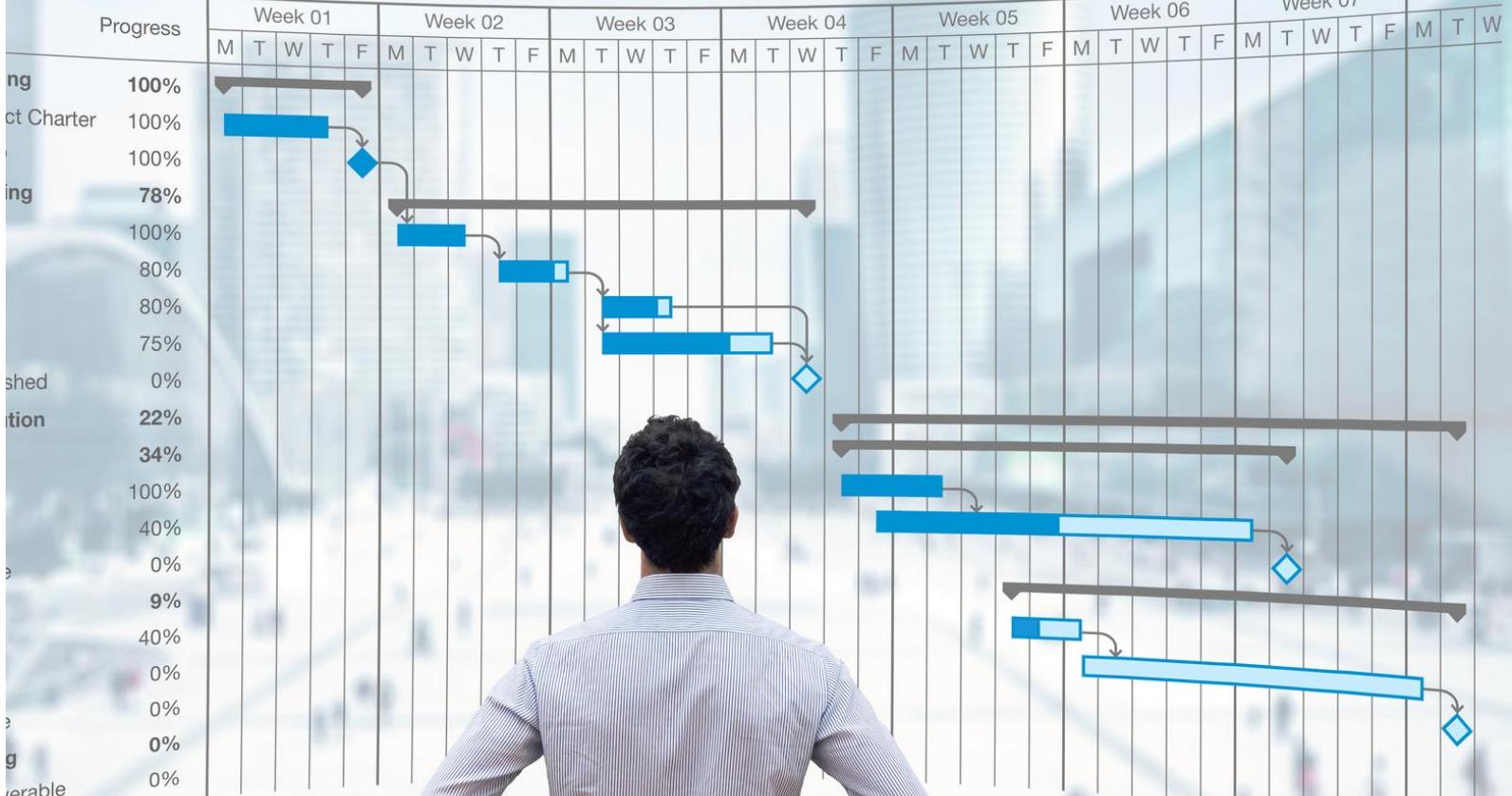
Avoiding overcommitment

LISTEN TO YOUR PROJECT MANAGER
INVOLVE THE TEAM WHEN YOU CAN

ID: 01234

Resource Project View

Progress



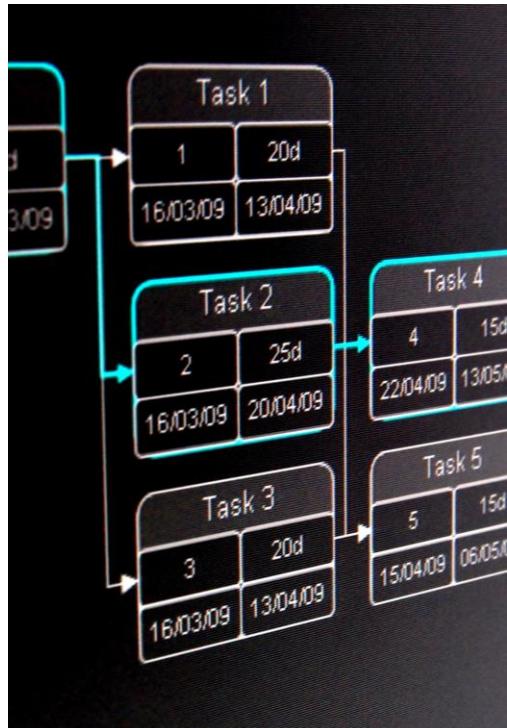
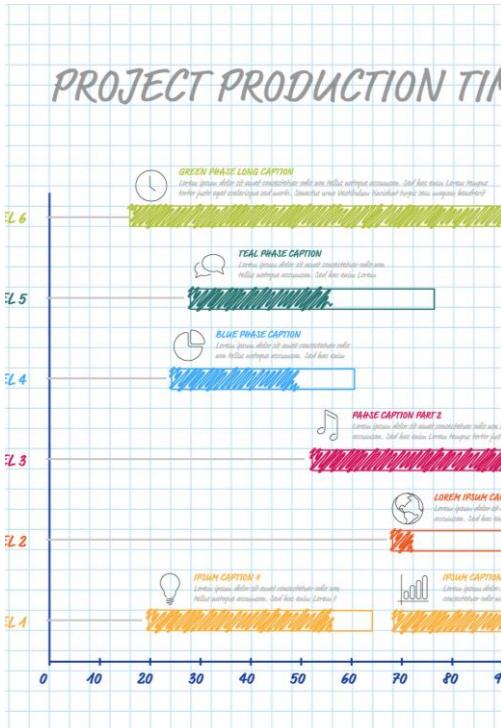
Tactics: How Things Get Done

There is a strategy to tactics!

Realistic estimations require an ability to:

- Break down a project into individual, lower-level tasks
- Understand the availability and efficiency of the people best suited to those tasks
- Understand the dependencies between these tasks
- Understand any external dependencies that might impede progress
 - ...and how those external dependencies might be eliminated

Tactics: How Things Get Done



Even if you are using something like Kanban or Scrum for day-to-day project management, older “waterfall” project management techniques may be better for understanding dependencies

GANTT charts

PERT charts

If you have a PM, use her experience and tools.

Pushing things forward

If you were promoted from a technical position, you already know your company's daily project management practices

- Kanban
- Scrum
- Waterfall

Remember what you found useful and annoying as an engineer – you have a chance to fix that now!

- Too many meetings?
- Are “daily standups” necessary for every project?





Pushing things forward

Use your weekly(?) 1:1 meetings to stay on top of deliverables (among other things)

- What are they working on right now? Does that surprise you?
- How did they spend their time this week?
- Are they blocked by anyone or anything?

Situational Awareness

IF YOUR BOSS
STOPPED YOU IN THE
HALL RIGHT NOW,
WOULD YOU KNOW
THE STATUS OF YOUR
TEAM'S PROJECTS?

The Importance of Simplicity

Engineers (like you?) prefer building complex systems that provide interesting engineering challenges

THIS IS NOT HOW TO GET THINGS DONE

Understand the RESULTS you are being asked to deliver

What is the SIMPLEST system that will deliver those results?

Simplicity = less things to break, quicker delivery, lower cost



The Importance of Simplicity

Example: Build a system to recommend related products in a person's shopping cart.

Solution A: Use deep learning on a large cluster of GPU instances in the cloud, with daily tuning of its hyperparameters and systems to manually classify objectionable content. Train it in real-time using customer purchase behavior data.

Solution B: Store purchase data in a graph database, and issue a one-line query to find items that tend to be purchased with other items.

Deep learning may be fun to build, but it will be expensive and difficult to tune and maintain.

If you want to get stuff done – and minimize the accrual of technical debt – **B** is the right choice.

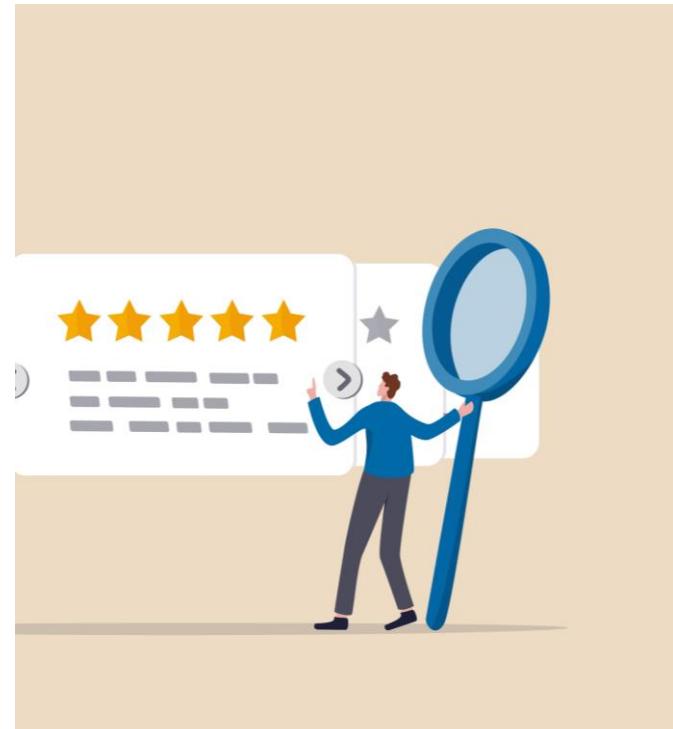
The Importance of Simplicity

You need to strike a balance between too simple and too complex

This is where your judgment comes in.

What if you just recommended the highest-rated products within the same category? That's even simpler, but might not be targeted enough to be effective.

Starting simple and working your way up can work.



Working Backwards

Work **BACKWARD** from the **customer experience** you are delivering, and figure out the **simplest** technical solution to deliver that experience.

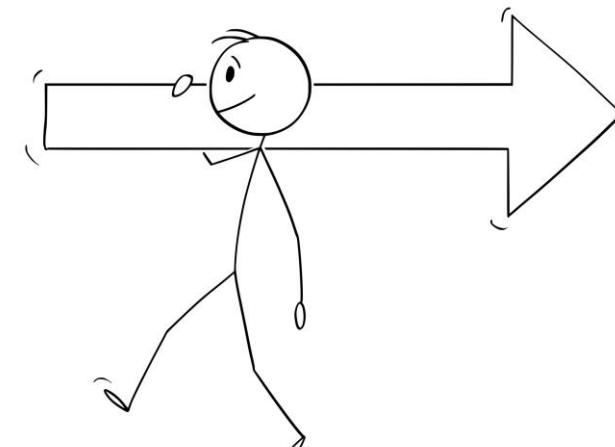
Avoid working **FORWARD** from whatever the latest trendy technology is

- “solutions in search of a problem”

Examples:

- Using Blockchain to manage an achievements system
- Using deep learning when a database search would do
- Using quantum computing for... anything right now.

Stay focused on results



Tools for working backwards

Start with a press release, explaining to the world why they should be excited about what your new system will DO (not how it works)

Design systems from the customer backward

- Start with the UI and what builds it
- Then the services that power that UI
- Then the data that powers the services

Activity: Working Backwards

Your team has been tasked with building an ad targeting system for showing specific product ads to individuals on social media.

- Feel free to substitute a problem more relevant to your organization or expertise.

Write down your initial “thinking forwards” thoughts about the type of system that would work best.

Start with a press release aimed at the customers who will see these ads. Why should they be excited about it? What will it deliver to them?

Sketch a high-level system design working backwards from the front-end that will deliver this system.

- Note, social media will give you information about individual customers like the subjects and categories they are interested in, where they live, demographics, etc.

How did the “backwards” approach differ from the “forwards” approach?

People management basics

Running useful 1:1 meetings

Meet regularly with everyone on your team. Ideally once per week.

Objectives of the 1:1 meeting:

- Learn about status of deliverables, anything blocking the person
- Work toward their career goals
- Provide timely feedback, positive and negative
- Let them provide feedback for you

Mainly this meeting protects everyone from nasty surprises.



Absolute Candor

Acknowledge work well done (this is surprisingly powerful! And surprisingly rare)

But do not shy away from delivering areas for improvement

- Nobody should hear negative feedback for the first time on their performance review.
- Nip issues in the bud
- Be blunt, stick to the facts.
- You are criticizing the behavior, not the person

The \$#!% Sandwich

- Start with positive feedback, then negative (if any), then end with something positive.
- If it's serious though, don't sugar-coat it.



Is your objective Specific ?	SPECIFIC <input checked="" type="checkbox"/>
Can you Measure progress towards goal?	MEASURABLE <input checked="" type="checkbox"/>
Is the goal realistically Achievable ?	ACHIEVABLE <input checked="" type="checkbox"/>
How Relevant is the goal to your organization?	RELEVANT <input checked="" type="checkbox"/>
What is the Time for achieving this goal?	TIME BASED <input checked="" type="checkbox"/>

Checking in on goals

Your employees may have specific goals for the year

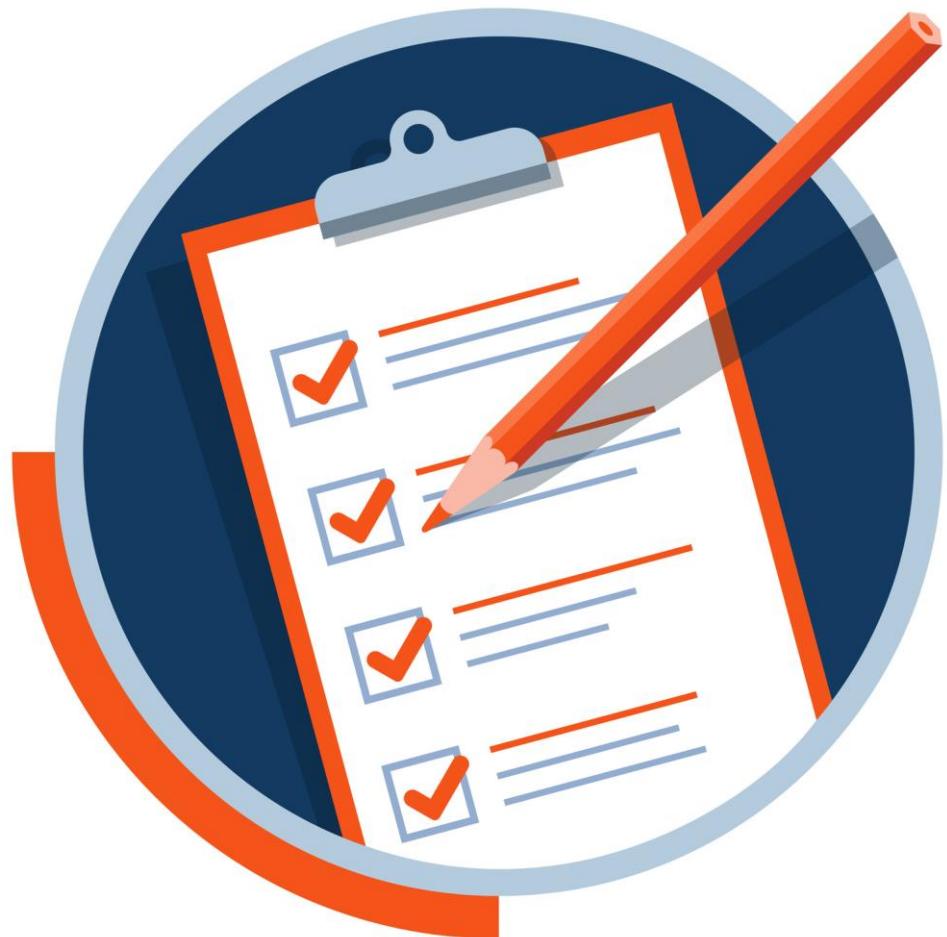
SMART goals (your organization may vary)

Do these goals still make sense?

Is the employee receiving opportunities to achieve them?

Is the employee on track to achieve them?

Adjust them before review time, before they become a problem.



Sample 1:1 agenda

Check-in on project status

Check-in on performance goals

Check-in on career goals

Feedback (positive and negative)

Feedback for you

Mock 1:1 Meeting

A ROUTINE CHECK-IN



Handling difficult conversations

LISTEN

- “Reflective listening” / “active listening”
- Repeat back what you heard in your own words, get affirmation that you understand
- Acknowledge how it makes them feel
- The engineer in you wants to jump right to solutions
 - But first, listen! Empathize!

Stay cool

- Don’t cross the line to sympathy or assigning blame just yet
- Listen, be concerned, but don’t promise things you can’t deliver
- No touchie – you’re the boss, not a friend

Kleenex and a glass of water

Set up a time to follow up on the issue so you can investigate

- Involve HR and/or your boss if appropriate
- Respect confidentiality

Write down what you heard and what you said someplace safe and secure

More on Active Listening



PAY ATTENTION! SHOW
THAT YOU'RE LISTENING.



DON'T INTERRUPT;
DEFER JUDGMENT



KEEP YOUR OWN
FEELINGS OUT OF IT

Do not hesitate to involve HR

There could be legal repercussions if you try to solve delicate, personal situations yourself

- Not only for the company, but for you

Anything health related, potentially discriminatory, harassment etc. – go straight to HR

Many companies have an Employee Assistance Program (EAP) to help with personal problems

- They are qualified to offer advice, not you

Mock conversation

BOB'S BEING A JERK

Letting employees be their best

Solicit and nurture new ideas

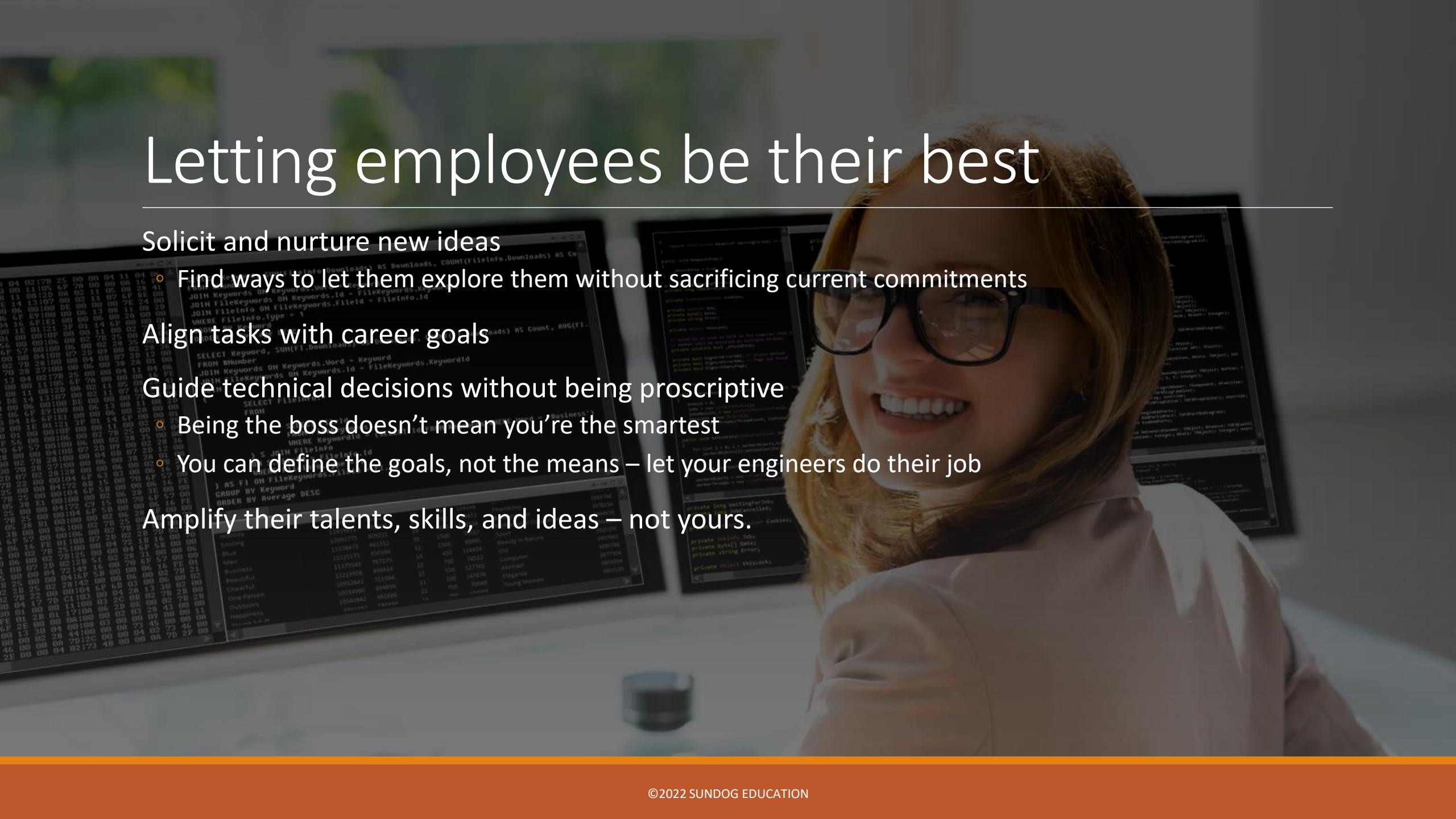
- Find ways to let them explore them without sacrificing current commitments

Align tasks with career goals

Guide technical decisions without being prescriptive

- Being the boss doesn't mean you're the smartest
- You can define the goals, not the means – let your engineers do their job

Amplify their talents, skills, and ideas – not yours.



Managing growth at different levels

How you manage a new hire is different from how you manage a principal engineer

New hire – find them a buddy, set clear expectations, ensure work is tightly defined. Check-in frequently.

Mid-level – Find opportunities for growth; working with other groups, architecture work. Check-in weekly.

High-level – Collaborating with other high-level engineers, or work toward management. Check-in as needed.

Activity: Practice Active Listening

Active listening, or reflective listening, isn't just useful at work!

Try it at home, next time a family member or friend has an issue they want to talk about

Listen, acknowledge

Reflect back what you heard and how it makes them feel

It may seem unnatural to you but not to them

- It's just demonstrating empathy really.

Hiring and Firing



Keeping the right people
on the bus



Always
raise the
bar

Recruiting tips

Make your company's recruiters your best friends

Devote the necessary time – this is a very important part of your job

Hone your sales pitch – why is your team awesome?

- And if your team really is awesome, you won't have to recruit as much...

Get creative with sourcing

- Interns / college hires
- Incent employee referrals
- Searching github
- Searching academic papers
- Social media / groups – where do your potential employees hang out online?
- Host or sponsor local technical events / hackathons etc
- Internal hires
- Host internal or external tech talks
- Go on tour
- Remote workers



“Managing up or out”

Sometimes a member of your team won’t be pulling their weight, and you must take action.

You can manage “up” – try to correct the behavior. Or “out” if that fails.

Always consult with HR before taking any disciplinary action

Firing someone is the most difficult thing for a new manager – or any manager.

Layoffs happen too.

Sometimes someone is just in the wrong role.



Why firing is important

The cost of a toxic employee is astronomical

- Your entire team could fall apart

Even someone who is just underperforming will drag down the performance of the entire team

You may be surprised that the rest of your team will thank you for it

The cost of turnover and hiring a replacement is high, but the cost of having the wrong person on the bus is higher.



How NOT to fire someone

Do it out of anger

Deflect blame

Make it personal

Give false hope

Be too nice

Dump them on someone else's team

If the employee is surprised by it, you've done it very wrong

If you have security waiting outside because you think they'll get violent, you've done it very wrong



Firing: best case scenario

Employee has known for some time they are not meeting expectations

With HR you implement a Performance Improvement Plan

Employee finds a new job that is a better fit for them

You can remain on good terms

It is done discreetly

HR guides you on logistics

EXIT



Handling layoffs

Demonstrate empathy

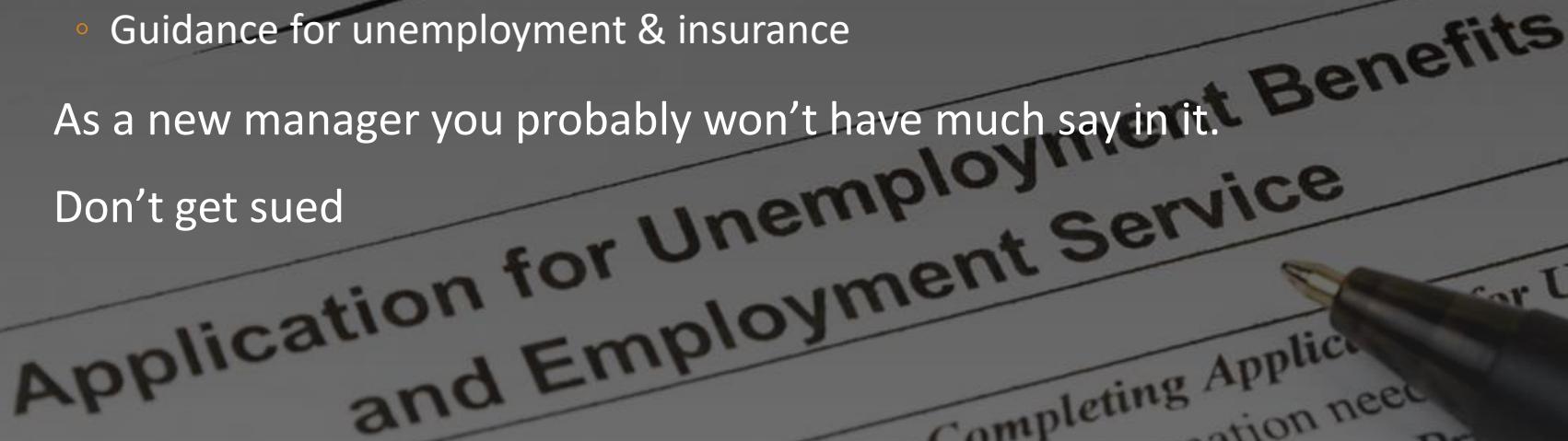
- But stick to the facts

Have all logistics ready

- Final payments / severance
- Guidance for unemployment & insurance

As a new manager you probably won't have much say in it.

Don't get sued



Activity:

Think of the people on your new team. Are there performance issues you need to deal with?

Write down steps these employees could take to improve their performance

Working with Upper Management

Managing Up

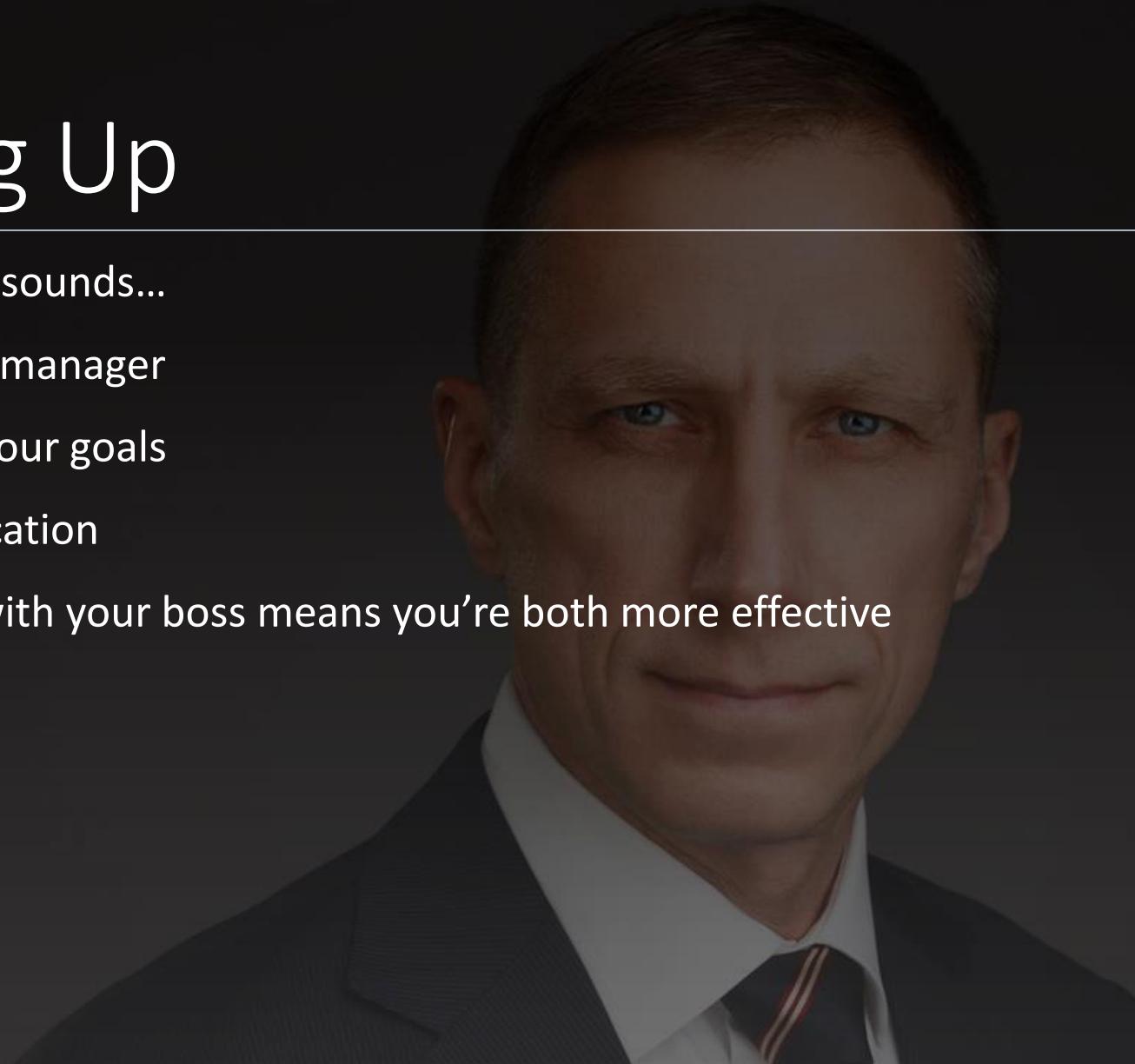
Not as nefarious as it sounds...

Just understand your manager

Understand both of your goals

Keep open communication

A good relationship with your boss means you're both more effective



Have backbone

Work to understand managerial decisions and directives first

But don't be afraid to ask questions, or push back

In most corporate cultures, critical thought is valued



Disagree and commit

Sometimes however you must commit to a decision from above

- Even if you don't personally agree with it.

Recognize you could be wrong

Do not complain about it

- Especially to your team

Just make it happen and move on.



How to deliver problems or bad news

Be honest

COME WITH SOLUTIONS

Present your plan to fix the immediate problem

Show that you understand the ROOT CAUSE of the issue

...and you have already taken actions to prevent re-occurrence

Meeting etiquette

If you don't know, say "I don't know" (but will find out and follow up – then do that.)

- Never make stuff up just to look good.

Don't hog the floor

Don't interrupt others

Speak clearly

Be prepared

Be on time

Leave on time

Don't call unnecessary meetings

Overcoming introversion

Common issue with developers turned manager

- Extroverts tend to dominate discussions

Finding openings to talk without interrupting can be hard

Find an ally – can your boss make sure you’re given an opportunity to speak in meetings?

Be the person who may not say much, but says something really insightful

Listening more than talking

If you are structuring the meeting, ensure everyone – including you – has a chance to speak.

Can follow up in writing later

Presenting to upper management

BE PREPARED

- Anticipate questions and have the answers and data ready
- Sit in on similar meetings if you can, so you know what to expect
- Do a practice run with your boss

IN THE MEETING...

- Be succinct, don't ramble
- Don't make stuff up, say "I don't know but will look that up and get back to you right after this meeting."
- Don't take things personally

AFTER THE MEETING...

- Write down any action items
- Make sure to do them and follow up ASAP



Activity:



Think of two past higher-level decisions you didn't agree with.



Understand WHY those decisions were made, and if they accomplished their goals after all.

Building and Maintaining Morale



Build your tribe

Remaining relatable

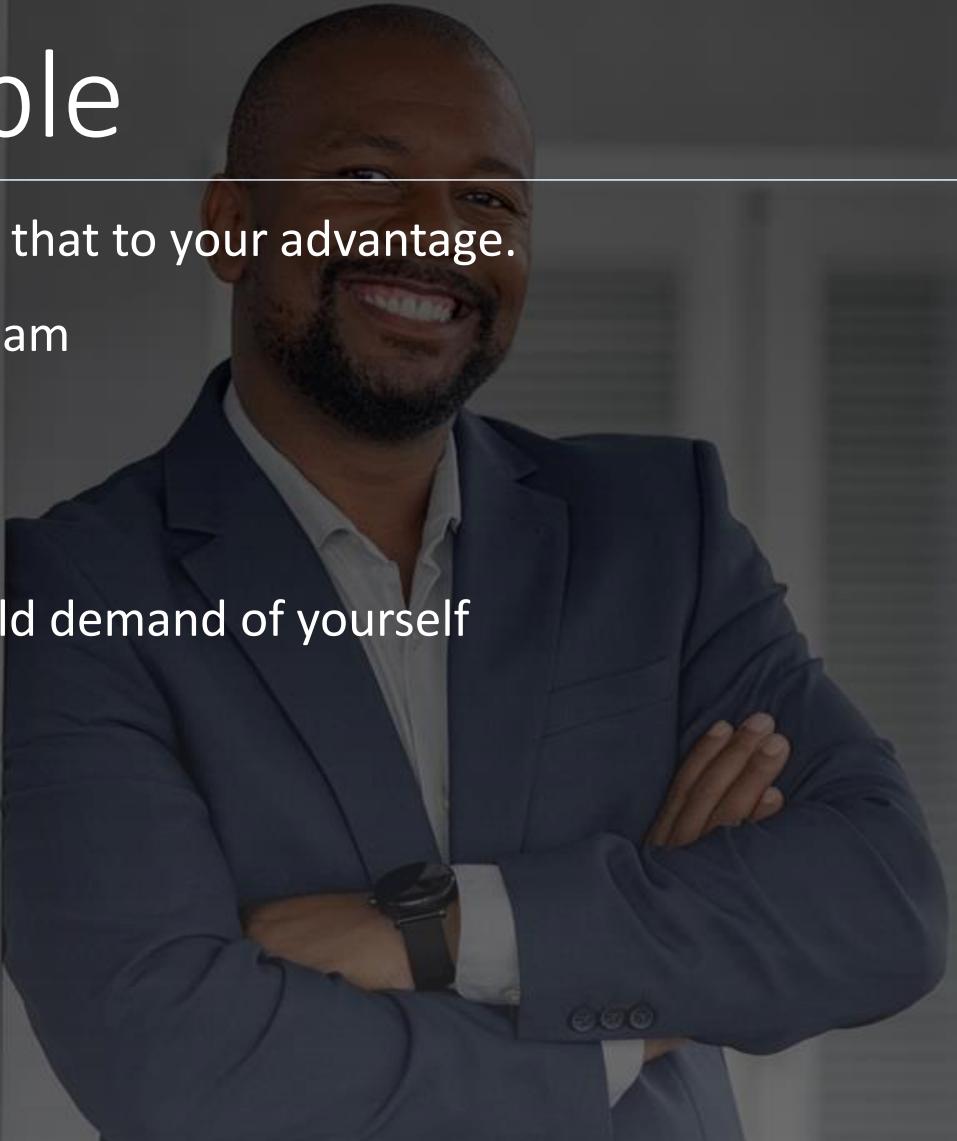
You were one of them not long ago! Use that to your advantage.

Continue to respect and listen to your team

Show that you're in this together

Listen, don't just talk

Don't demand more than what you would demand of yourself



Goals and Morale

A team making progress toward a shared goal makes the team more cohesive.

Individuals making progress against their own career goals keeps individual motivated.

Always watch for opportunities to help people with their personal goals

Always make sure your team knows their shared goals and their progress toward them

Really, keep the right people on the bus

One toxic team member can destroy your team's morale

You want everyone on your team to feel like they are part of the A-list



Killing a project without destroying morale

A very challenging situation is cancelling a project your team has been working hard on

Make sure you understand why it was cancelled and can convey this effectively

Deliver the news in person

You may be demoralized by it – don't let that show

Recognize the great work done on it thusfar

Recognize what was learned from it

Can work from the cancelled project be used for a new one?

Keep the focus on larger strategic goals



Stay on top of internal & external dependencies

Work being blocked due to some other team is frustrating

Work with your PM to ensure things outside your direct control are well managed

- Focus on the common goals of the company when negotiating with other teams for resources
- Have a backup plan if they don't deliver
 - Can you get what you need somewhere else?
 - Can you shuffle the schedule to buy some time?
 - Can you change the design to avoid the dependency entirely?

Activity:



Brainstorm ideas for making your team more cohesive based on what you've learned



Evaluate and act on the best ones!

Your continued growth

Find a mentor



Understand the business



Learn from
decisions you
don't
understand



Observe upper management and learn from them



Build good
relationships
outside your
team



Activity:



MAKE A LIST OF PEOPLE YOU MIGHT
APPROACH FOR MENTORSHIP



ASK!



Now go captain
your ship