



The
Pragmatic
Programmers

Become a Great Engineering Leader

Build Effective Skills
to Lead and Grow

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When the Stuff Hits the Fan

So far we have covered how to figure out a productive relationship with your manager: one that builds on your strengths and weaknesses, and one that is symbiotic. However, this is only one side of the coin: you also need to be able to handle the inevitable situations where things go wrong.

It is important to define the word “wrong” since it does not necessarily mean that you have done something wrong yourself. Instead, we broaden the definition of “wrong” to cover:

- *Escalations*. These are situations where you need to escalate a problem to your manager because you are unable to make the decision yourself. This could be because you don't have the authority or because you don't have the information.
- *The Eye of Sauron*. These are situations where an external event, or intense internal scrutiny, throws everything up in the air among intense pressure. This could be a major incident or a sudden change in direction from the CEO.
- *Unpleasant surprises*. This is where you or your manager are caught off guard by something that you didn't expect. For example, there could be a critical security vulnerability in your product, or you are being billed a large amount of money for a cloud service that you didn't know you were using so much.

We'll explore each of these in turn and see how you can handle them in a way that is proactive and productive.

Escalations

Escalation has long been a dirty word in the world of management. It is often seen as a sign of weakness or indecision, and a sign that you are unable to do your job. However, this is not the case. Escalations are a healthy part of any organization, and they are a sign that you are able to recognize when you need help and that you are able to ask for it.

Escalations, when managed well, can be highly productive, can build trust between you, your manager, and others that are involved, and can lead to better outcomes for the organization as a whole.

Generally speaking, an escalation is required when you are unable to make a globally optimal decision at your level of the organization. This could be because you don't have the authority to make the decision or because you don't have the information to make it. In either case, you need to escalate the

problem to somebody who *does* have the authority or information to make the decision.

Examples of escalations can include:

- *A disagreement between two teams that you are unable to resolve.* For example, a disagreement between your team and another team about the best way to integrate your systems. Both parties refuse to budge, and you are unable to make the decision yourself.
- *A disagreement about staffing across groups.* For example, another part of the organization is requesting three of your engineers to work on a dependent project, but you are unable to spare them because you are already understaffed.
- *A disagreement between priorities.* For example, you want to deprioritize a project because of a critical security vulnerability, but your peer wants to continue with it because it is the foundation of a new product that they are launching.

The commonality between all of these examples is that you are unable to make the decision yourself, and you require others that have more context, authority, and a global view of the organization to help make it for you. This is a good thing.

When you are faced with a situation that looks like it needs an escalation, you should follow the recipe provided here:

- *Identify the problem.* What is the problem that you are facing? What is the decision that needs to be made? What is the impact of not making the decision?
- *Have all parties involved in the escalation agree to it being escalated.* This is important: you need to ensure that all parties involved in the escalation agree that it is the right thing to do. This is because you need to ensure that they are bought in to the process, and that they are not going to be surprised by it.
- *Work together with the other parties to define the problem, the choices, and the ramifications of each choice.* This is a collaborative process. For example, if the escalation is around staffing, you need to explain the different options of where to allocate staff and what the impact of each option is. Your manager, and others that are receiving the escalation, need to understand the full picture from the information that you provide.
- *Make a recommendation.* Both parties will have their own recommendation, so make this clear about what you prefer and why.

- *Escalate!* Let your manager know that it's coming, and then put it in writing. A useful method is to start a private chat channel for the escalation and get everyone involved to join it. Then, write up the problem, the choices, the ramifications, and your recommendation, asking for feedback. Ensure that the conversation happens in the open where everyone can see it.
- *Don't take it personally.* If your recommendation is not selected, don't take it to heart. You presented the facts, and the organization chose another way. It has nothing to do with you: it has everything to do with the long-term view of the company.

As you get more experienced with escalations, you'll come to understand that they are a powerful tool to have in your arsenal. By working through disagreements and problems in a collaborative way, you can build trust with your peers and your manager, and you can ensure that the organization is making the best decisions possible.

An Example Escalation

Hey, we'd like to escalate a problem to you. We have a critical security vulnerability in the open source libraries that handle our auth system that we need to fix. However, we are also helping Alice's team on a new product that is due to launch in two weeks. We have two options:

- We can deprioritize the new product and fix the security vulnerability. This will mean that the new product will be delayed by two weeks. However, this has knock-on effects to our marketing team, who have already started to advertise the new product.
- We can continue to work on the new product, and fix the security vulnerability after it launches. This will mean that the new product will launch on time, but we will be vulnerable to attack for two weeks. The vulnerability is not public, but it has been published widely online. In fact, it was on Hacker News this morning.



Our recommendation is that we deprioritize the new product and fix the security vulnerability. We think that the risk of being attacked is too high, and that the delay to the new product is worth it. However, this is causing obvious conflict with Alice's team, who is already under pressure to launch the new product.

An Example Escalation

Please help us make the right decision here.

As a senior leader, your staff will also escalate to you. When helping them through this, ensure that you coach them to follow the same recipe as above. Pay close attention to the following bugs that can occur, which can also occur in your own escalations upward:

- *Your staff don't enumerate the options.* This is a common one. Your staff may come to you with a problem, but they don't have a clear set of options for you to choose from. This is an essential part of the escalation as it forces them to think through the situation clearly. Also, bluntly, if they don't, they are expecting you to do their work for them.
- *Your staff don't make a recommendation.* Building on the above, you should not be doing their work for them. Ensure that a recommendation comes with any escalation, and push back on them until they can provide one.
- *They initially opt for solutions outside of their span of control.* When escalating, it should be because one has exhausted all options that they can put in place, or need help choosing. If a recommendation, for example, is to do less on project A, and more on project B, and both A and B are within their organization, then that's fine. However, if the initial recommendation is that they think you should transfer staff from outside because they feel their project is more important than others in your organization, then that's not OK: only you can offer that solution because you have more context.

Escalating well is a skill that you and your staff will develop over time. It is a key part of being a senior leader, and when done well, it is both effective and the bedrock of strengthening trust between you, your staff, and your manager.

The Eye of Sauron

In the *first book in this series [Sta20]*, we covered situations called the Eye of Sauron: situations where an external event, or intense internal scrutiny, means that your engineering team is being watched extremely closely. As you go further up the org chart, these situations can still occur, but they can be much more intense, the communication can be more unfiltered and candid, and you alone cannot solve the problem yourself by working on it: you have to delegate and coach others to do so.

The Eye of Sauron can be caused by a number of things, such as:

- *A major incident.* This is where a critical part of your product or infrastructure is down, and it is causing a major impact to your customers. This is a high-stakes situation, and suddenly you are in the spotlight from your peers, your manager, and your CEO.
- *A sudden increase in interest, scrutiny, or change of direction from an executive, like the CEO.* Although yesterday it was business as usual, today the CEO has decided that the direction of your team and their priorities are all wrong, and they seem to know better. This can manifest in them thinking you should be working harder, faster, or on something else entirely.

The abstract pattern of a whirlwind is that you are in the spotlight, you can begin to question yourself and your judgement, and you are under intense pressure to resolve the instability as quickly as possible. This instability can manifest as actual issues with your product or infrastructure, or it can manifest in what yesterday felt like a clear direction and set of priorities suddenly being questioned.

When these situations happen, your job as a manager is to remain calm, execute diligently, listen to all inputs, make decisions and escalate where needed, and communicate clearly and frequently. As before, never take it personally: you are not the problem, the situation is. However, you can be the solution.

Here's a recipe for handling the Eye of Sauron:

- *Remain calm.* This is the most important thing. You need to be the calmest person in the room, and you need to be able to think clearly and rationally. If you are not calm, then you will not be able to do your job effectively.
- *Listen to all inputs.* You will be receiving a lot of information from a lot of different sources. You need to be able to listen to all of them and then make decisions based on the information that you have. If you disagree with an input, then you should be able to push back on it and explain why. However, always work with *strong opinions, loosely held*. You need to have strong opinions to create action, but you need to be able to change your mind when presented with new information.
- *Come up with a communication plan.* Depending on the type of situation, you may decide that putting out updates to stakeholders (which can be the whole department or company) is something that needs to happen hourly, daily, or weekly. This is important because it shows that you are in control of the situation, are able to level set expectations, and do not need to be chased for information. A production incident may require

hourly updates, whereas a change in direction from the CEO may require weekly updates to show the progress that your team is making.

- *Coach others to see these situations as a learning opportunity.* The Eye of Sauron is a great opportunity to have high-growth individuals on your team step up and prove themselves on a wider stage. Don't feel like you have to do everything yourself: delegate and coach others to do so. Not only will this help them grow; it will mean that you can focus more clearly on specific tasks, such as communication.
- *Retrospect after the situation is over.* Once the whirlwind has passed and you are back on track, regroup with your team and your manager to understand what went well, what didn't, and what you can do better next time. Could the whirlwind have been prevented altogether? How can you work to prevent it in the future? What can you do to ensure that you are better prepared next time? Publish a postmortem if you think that it could help others deal with similar situations.

Like escalations, the Eye of Sauron does not need to be entirely negative. It is a great opportunity to gain exposure to the wider organization, and to show that you are able to handle high-stakes situations. They are also a great opportunity to coach others to do the same. As hard as it may be, embrace them. They might just be the place where you can shine.

Unpleasant Surprises

Unpleasant surprises are situations where you or your manager are caught off guard by something that you both didn't expect. A classic example is when the finance team informs you that you have completely blown your budget because of a spurious cloud spend that you didn't know about.

Unpleasant surprises are a fact of life, and given the complexity of the domain that you work in, they are inevitable. The way that you deal with unpleasant surprises is that you understand what is outside of your control (the surprise itself), and what is within your control (that is, how you react to it). Like the Eye of Sauron, extracting blame, taking it personally, or getting angry or upset will not help you solve the problem. Instead, you need to be able to react to it in a calm and rational way.

Here's a recipe for handling unpleasant surprises:

- *Assess and confirm the situation.* What exactly is the situation? What is the impact? What is the root cause? Importantly, is the unpleasant surprise true? Verify the facts. For example, is the cloud spend actually real,

or has there been some kind of clerical error on your end or the provider's end? Get the facts, and be clear with your manager about what they are.

- *Come up with a clear plan.* Work with your team and your manager to come up with a plan to mitigate the situation. If you can make the situation go away by reprioritizing work, then do so. If the situation cannot be changed, then focus on how you can mitigate the impact and prevent it from happening in the future. If that cloud spend is because of a service that has been sending far too many logs, then work with your team to immediately reduce the amount of logs that are being sent.
- *Execute on the plan.* Once you have a plan, execute on it. Depending on the seriousness of the situation, follow similar communication protocols to the Eye of Sauron: communicate frequently and clearly, and ensure that you are not being chased for information.
- *Retrospect after the situation is over.* Once the unpleasant surprise has passed and you are back on track, regroup with your team and your manager to understand how it will never happen again. Publish a post-mortem and move on.