Hiring Engineers Marianne Bellotti

Hiring Engineers

Marianne Bellotti

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Overview of the Pipeline

Hiring software engineers is hard. It's hard because it is competitive. It's hard because writing good software is a skill that requires competencies across multiple disciplines and abstractions. It's hard because being an effective engineer is close quarters work, even on fully distributed teams.

While computers were developed originally as mathematical tools, modern day software involves a fair amount of self-expression and artistic license. To produce a tool to solve a problem, one must be able to define what the problem looks like and how the solution should communicate itself to a potential user. Software doesn't fail because it's buggy, software fails because the people who should want it do not find it attractive or compelling enough to use it.

That makes the task of hiring software engineers complicated. On one hand there are a lot of technical competencies that seem like they should be relatively objective—design patterns, algorithms, diagrams and back of the napkin capacity plans. On the other hand, so much of what determines whether a given piece of software succeeds or fails is based on the engineer's ability to empathize with the customer, on her ability to mentor others, and on her ability to learn from past experience.

Hiring engineers is difficult because the business side of the organization (HR, Recruiting, PeopleOps, etc.) needs the engineering organization to define what a great prospect looks like, interview them, and then assess the candidates. Hiring requires engineers to develop skills that are not directly applicable to their work or else suffer the consequences of hiring candidates who are not qualified.

This is a book primarily for software engineers who want to make the collaboration between their group and Recruiting/HR as

painless and straight forward as possible. It will be most useful to engineering managers tasked with building a pipeline for their teams, but if you're an individual contributor who has been asked to pitch in interviewing candidates you will also find value here.

I wrote this book mainly so that I could stop writing this book. I have built six successful hiring pipelines with this methodology. When I start work at a new organization the pipeline is almost always the first task they ask me to conquer. I found myself writing and rewriting the same guidance and policies over and over again. Sometimes just copying and pasting passages on to new corporate letterhead. I had developed an informal toolbox of resources I could deploy to build pipelines fast. I went from being a top interviewer, to a trainer of interviewers, to a pipeline builder, to a trainer of pipeline builders. This would have been great if I had any desire what-so-ever to make a career in people operations.

Instead I decided to collect and organize all my resources and publish the toolkit so that instead of rewriting the same thoughts over and over again for different companies I happen to work for, interested parties everywhere can just download them.

Hiring Pipelines Are About Communication

I detest bureaucracy. I spend just as much of my time pulling weeds of bureaucracy out of my carefully cultivated engineering teams as I do building process with them. It's important to learn the difference between process and bureaucracy. Process empowers people. It helps them escape having to learn everything via trial and error and gives them a framework to think about how they do what they do. We do not create process to eliminate one-on-one collaboration and communication between coworkers. Process does not babysit employees who can't be trusted to do the right thing.

We do not use process to avoid taking responsibility for negative outcomes or abusive coworkers.

Standardized hiring pipelines are about minimizing inconsistencies through time and across different organizational divisions with different backgrounds, expertise and personalities, but there are no bulletproof pipelines. Even the most carefully constructed and thoughtful pipelines cannot eliminate all bias or stop the occasional bad hire, and that's not the point. If you expect a pipeline to do that you are creating bureaucracy, not process.

Good process starts with trust. If you want process because you don't trust your colleagues, then you're using bureaucracy to mask the real problem and will pay for it later.

When we start building pipelines we need to start with the assumption that everyone involved in the hiring process wants to make fair decisions. That they want to avoid hiring jerks and don't want to eliminate good candidates based on their gender presentation, race, age, etc. If you are uncomfortable stipulating that for whatever reason, there is nothing in this book that is going to help you.

Instead of preventing the people in the hiring process from making a bad decision, the goal of our pipeline should be to help them make the best decision possible. Our goal is to help them stick to the same standards by first clearly communicating what those standards are and then providing specific guidance on how candidates that meet those standards will present in an interview.

My Experience

I started building hiring pipelines by accident. I was the top rated interviewer at my organization and was asked to start training other interviewers. That lead to writing questions to fill out or refresh our question pool, which lead to refreshing our core competencies. I have built pipelines at small organizations, medium sized ones and the largest hiring organization in the United States (the federal government). That last one is the pipeline I'm the most proud of because in addition to all the normal problems my team also had to regularly negotiate approvals from three different groups of government lawyers and an office of industrial-organizational psychologists. We had to build a process that could satisfy those extreme bureaucratic standards and be resilient enough to function as a hiring pipeline.

How This Book is Organized

The chapters of this book are arranged roughly in the order that a pipeline runs. A good pipeline starts with standards of what the organization hires for defined upfront. These are called core competencies and the idea is that every candidate that interviews for a role in engineering regardless of the exact position or experience level will be evaluated against those standards.

Once that foundation is set the rest of the pipeline should be familiar to you:

- Review resumes
- Screen prospects for suitability
- Interview candidates
- Make a hiring decision

For those steps we need to prepare the following:

- Competency definitions
- Written position descriptions
- A question pool with scoring rubrics

As we advance through the pipeline my hope is I can sell you on outcomes of a good pipeline that might seem impossible or unintuitive at first glance. For example, I use the same interview questions for interns as I do for staff engineers. Does that seem unbelievable? I hope by the time you get to the end of this book it won't anymore.

What's Out of Scope

This book is for technical people about the process of deciding whether or not to recommend hiring other technical people. As a result there are many aspects of the hiring process that aren't covered. My framework assumes you know and have already been trained on what is legal or illegal to ask a candidate during an interview. I do not touch on crafting offers or compensation schemes.

This is also not a book about recruiting. I include some thoughts on sourcing, particularly when it comes to diversity, but only a small section on recruiting as a practice. Although pipelines are the more effective when engineers are involved in the sourcing, cultivating and ultimately converting leads to candidates, there's just too much to say on the topic to do justice here. And anyway, as I am not a recruiter, I'm not the best person to collect advice on that topic. While interviewing frequently requires the recruiter to defer to the judgment of the technologist, recruiting goes better when the technologist trusts the judgment of the recruiter.

Lastly, although I do touch on career ladders and position descriptions at various points I don't have much to say about crafting job announcements, allocating headcount or anything like that.

When Should You Standardize Your Pipeline?

Early stage organizations don't get very far with a standardized pipeline. To begin with, early stage organizations do not have well-formed identities. The questions of who are we? and what do we hire for? are not easy ones to answer at any stage of an organization's life, but with newborn organizations the answers may honestly be whatever will make enough money to survive and whoever is willing to agree to work for us.

Also at the early stage an organization has only a few people doing interviews. Rather than building out a process to keep them in sync it's better to encourage them to share notes on candidates after interviews are completed and try to keep each other in sync. While this might introduce some bias, the burden of a premature process on a tiny startup is the more serious risk.

What I do when I'm considering whether it's time to formalize the pipeline is look at the following criteria:

- Hiring needs: How many open positions do we have?
- **Product market fit**: How likely are we to experience a major pivot that might radically shift our core competencies and hiring needs?
- **Potential interviewers**: Are candidates vetted by a small group of people or do people just sit down with the CEO?
- Referral rate: Are we mainly looking to recruit our friends and former colleagues or are we thinking about posting to job boards and recruiting?

If you're not really hiring that much than it doesn't make much sense to invest the time and energy needed to build a pipeline that won't get used often enough for you to see the benefit. Remember that standardization is not about restriction, it's about communication. If there's only one person doing interviews that one person should not need help communicating with themselves.

But once you start bringing people you do not know in for interviews or asking multiple people to assess the same candidate, adding structure and process will pay dividends.

In general I standardize in stages, evolving the pipeline as the organization grows and matures. As we go through the stages of the pipeline, I'll point out how certain concepts manifest differently in younger and older organizations. Hopefully you'll be able to see what the right approach is for your size without any trouble.

Let's get started...

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Groups -vs- Individuals

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Disciplines

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Levels

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Looking at It Altogether

How Many Competencies Should We Have?

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Developing Core Competencies

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High Touch: Group Brainstorming

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Low Touch: Survey

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Even Lower Touch: Individual Interviews

Circle Back

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Distilling

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Organization Size and "Senior Software Engineers"

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Core Competencies and the Career Ladder

Reviews and Promotions

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Competencies and Glue Work

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Refreshing Competencies

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Specialization to Discipline

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Extending the Ladder

Takeaways

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Antipatterns at Different Scopes

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Outcomes

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Acceptable Characteristics

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Dealbreakers

Where to Post Antipatterns

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Position Descriptions

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Metadata

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Role Description

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Minimum Qualifications

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The Loop Plan

Keep It Neat

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The Role of Engineers in Recruiting

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Build or Buy?

Keep in Touch

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Resume Reviews

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Reviews and Competencies

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Scaling Up Reviews

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Anonymizing Resumes

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Question

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Background

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Lead-in for Juniors

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Potential Follow-ups

Scoring Rubric

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Types of Interview Questions

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To Live Code or Not to Live Code

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Pairing

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"Whiteboarding" Algorithms

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Take Home/Async Assignments

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Writing Rubrics

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Good Answers and Bad Answers

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Career Levels

Pass/Fail and Strong Agrees

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Example Rubrics

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Short Question Rubric

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Long Question Rubric

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Considerations

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What Do You Know from a Correct Answer?

Filling in The Blanks

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Solved Problems Only

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Developing a Question Pool

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How Many?

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Example Interview Template

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Different Template Formats

General -vs- Specialization

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Handling Experts

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Technical Screens

EQ Screens

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Others

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Founder/Leadership Screens

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Cross-Team/Cross-Functional Interviews

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Breakpoints

Scheduled Breakpoints

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Candidate Experience

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How Long is Your Loop?

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Interview as Sales Pitch

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Managing Interviewers

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Solos, Pairs, Panels

Composition

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People Who Look Different

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The Grand Inquisitor

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Round Robin

Primary/Secondary

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Remote -vs- In-Person

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Candidate No-Show

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Controlling Scope

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Fielding Tough Questions from the Candidate

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Training Interviewers

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The Hiring Theory

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Prebriefs

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Training

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Shadowing

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Should Interviews Be Scored?

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Takeaways

Hiring Decision

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Hiring Manager -vs- Hiring Committees

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Loop Based Committees

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Non-Loop Based Committees

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The Hiring Manager's Vote

Hiring Decision 33

Moderating the Discussion

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If It's a Maybe, It's a No

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Probabilistic Decision Making

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Takeaways

Conclusions

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Pipeline goals at every level

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Micro (< 10 engineers)

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Small (10 - 50 engineers)

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Medium (50 - 100 engineers)

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Large (100 - 500 engineers)

Conclusions 35

Mega (500+ engineers)

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Hiring Should Be Fun