
2020 Engineering Management & Alignment Report

Engineering Leaders Overestimate
Amount of Work Allocated to
Roadmap by 62%

Why that's the case, and what you can do about it.

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A common challenge facing engineering leadership today is that as teams scale, it becomes increasingly difficult to keep a pulse on what they are working on, how they're performing, and whether their work aligns directly to the company's strategy. In an effort to better understand the breakdown of information between engineering teams and their leaders, the Jellyfish Data Science team analyzed the work of over 4000 engineers, and surveyed dozens of engineering leaders. The results give us greater insight into why this gap in understanding exists, and what drives engineering performance against a company's strategic roadmap.

In this report, you'll learn:

- 1 How and why engineering leaders tend to overestimate the amount of resources they can and will devote to new feature work;
- 2 How that changes as teams scale in size and age; and
- 3 Best practices for making sure your teams don't follow the same patterns.

Engineering Leaders Overestimate Feature/Roadmap Resources

Our analysis suggests that engineering leaders tend to overestimate the amount of resources they can devote to new feature work/strategic roadmap. Many VPs of Engineering (VPEs) and CTOs would love to say that their teams are 75-80% allocated to new feature development or roadmap items, but most are more savvy than that. On average they estimate about 59% of their teams resources are devoted to these strategic initiatives (see Figure 1).

Fig 1. Software Engineering Work Breakdown As Estimated by Leadership



That leaves about 41% of the engineering team’s time and resources to pick up things like:

Sustaining Engineering: Include any work needed to be done to maintain and support written code, but not developing code itself. That includes things like tech debt, infrastructure work, pre-production bug fixes, and tool implementation. The engineering leaders we surveyed estimated a 17% allocation to sustaining engineering.

Customer and/or Production Support: Bugs and other issues reported by customers that require engineering efforts to resolve. The engineering leaders we surveyed estimated a 12% allocation to customer or production support.

Strategic Customer Development: New feature development and work done to support customers and prospects deemed strategic to the company. Most companies try to keep this work to a minimum, but recognize the importance for large customers. The engineering leaders we surveyed estimated a 7% allocation to strategic customer development.

Other (Unknown / Unallocated): Engineering work done that is not documented well enough to know in which of the above categories it falls. The engineering leaders we surveyed conservatively estimated a 4% allocation to “Other”.

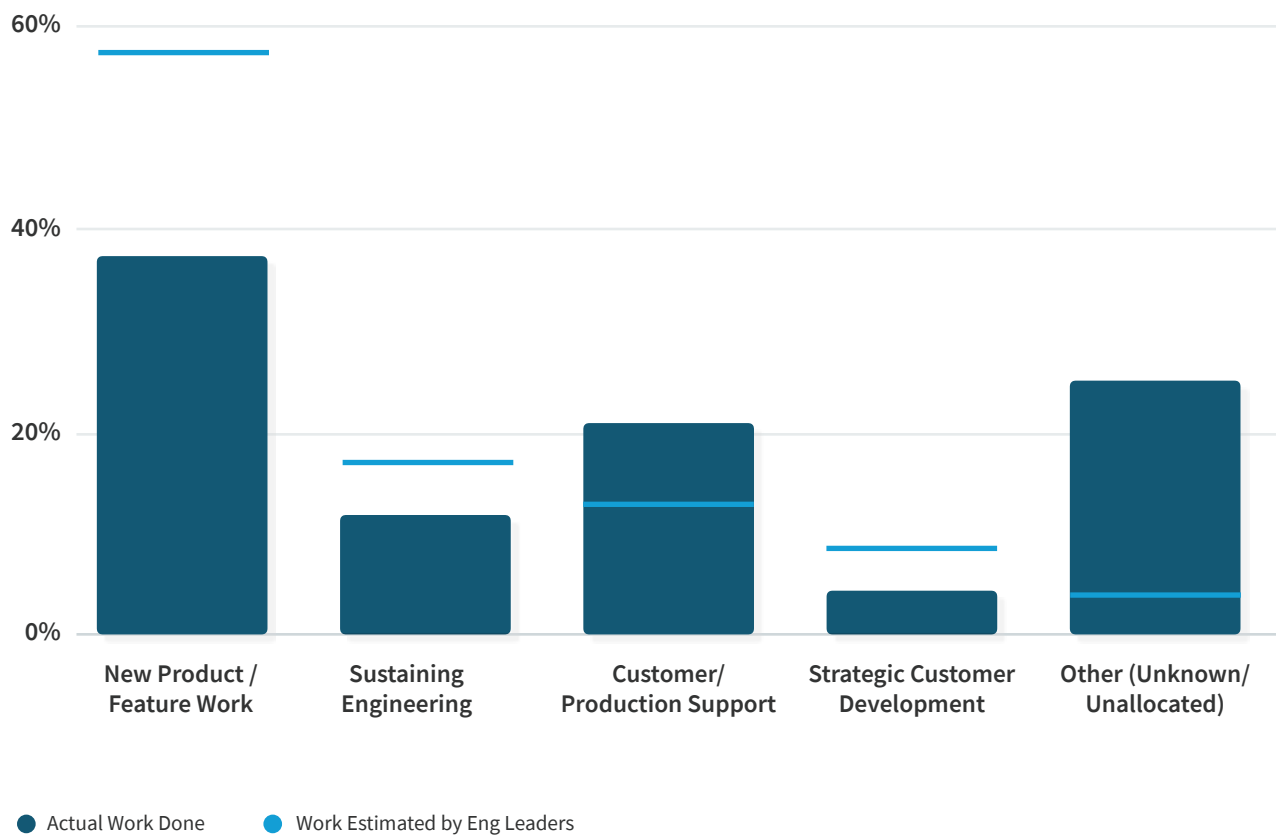
At first pass this seems like a sensible, if not optimistic, understanding of the engineering organization’s work breakdown. Our data analysis, however, revealed a different reality. As the graph of actual work performed

(Figure 2) shows, the average engineering team is only spending about 36% of its time and resources on new product or feature work. That means less than 2 days per week of the average engineer's time are devoted to developing toward the roadmap and making progress on the strategic initiatives of the company.

While engineering leaders seem to have a relatively strong feel for the amount of time spent on sustaining engineering - activities like building and maintaining infrastructure, managing technical debt, or fixing bugs - they tend to underestimate the amount of work needed for support. The average engineering team spends about 22% of its efforts on customer or production support, 83% more time than estimated by their leaders. This may be even more dangerous as this unplanned work can interrupt the daily and planned workflows of the engineering teams and further delay roadmap and new feature development.

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Fig 2. Actual Work Performed by Engineering Teams

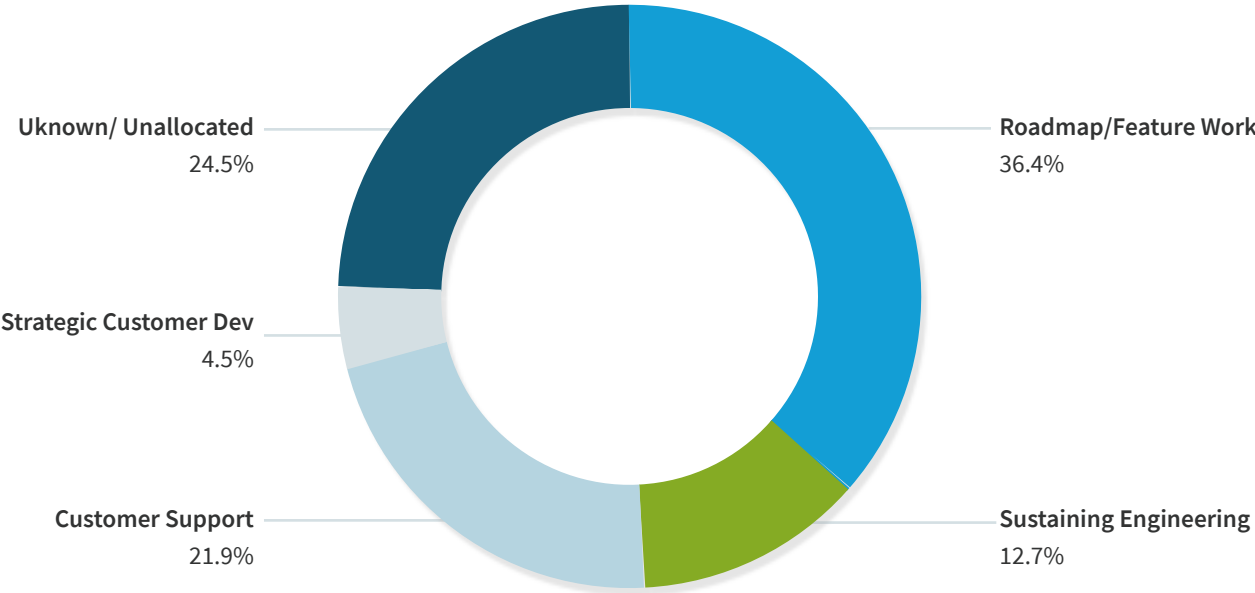


Visibility Into the Real Work of Teams is Limited

By far the clearest miscalculation highlighted by our analysis of actual engineering work allocation is that engineering leaders mistakenly believe they have a complete picture of what their teams are working on. In fact, almost a quarter (24.5%) of the work being done by their teams was dedicated to unknown projects or were unallocated to one of the other investment categories. This can happen for a variety of reasons, but the most common is that certain projects are poorly documented.

When projects are not properly tagged or labeled in roadmap, project, or issue management tools, they become nearly impossible to track against broader engineering efforts. This can lead to a series of downstream problems, not the least of which is that the managers and ultimately executives of the teams have a skewed understanding of what work is being done and the true capabilities of the current team. That negatively impacts the efficacy of roadmap planning, strategic alignment with other parts of the business like Sales and Marketing, measuring financial impact of projects, and ultimately team optimization efforts (headcount, prioritization, and tooling).

Fig 3. Allocated Investment of Engineering Teams

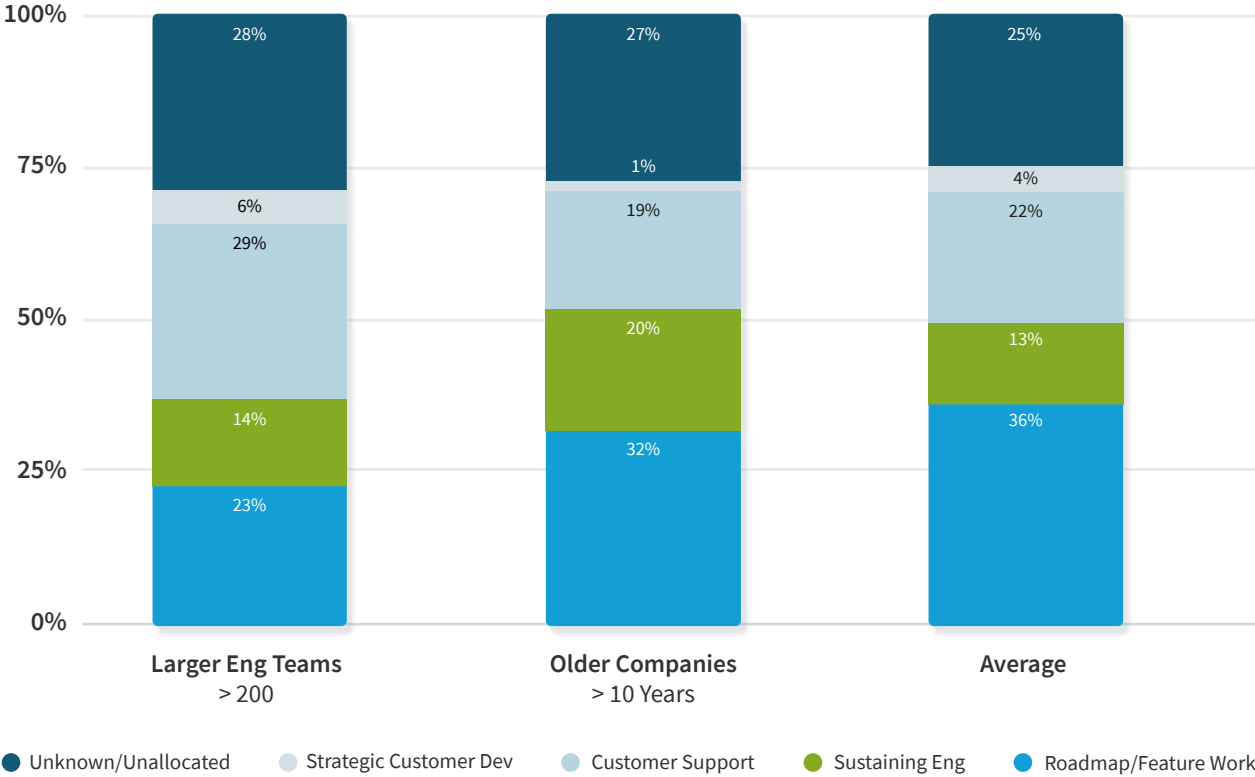


Even Less Visibility for Larger and Older Teams

These problems are amplified as engineering teams scale in size and become older. In both cases, the percentage of work that is unable to be qualified increases significantly to 28% and 27% respectively. With so much work unaccounted for, the ability to appropriately plan and allocate resources becomes a significant challenge. That is made apparent when we analyze the amount of time dedicated to new feature and roadmap work compared to time dedicated to unplanned customer and production support.

For companies greater than 10 years old, engineering teams focus just 32% of efforts on developing new products and features and 20% or a full work day on customer and production support. Worse yet, organizations we analyzed larger than 200 engineers spent only 23% of their time on new product and feature work, but nearly 29% on customer and production support. That’s almost a third of the team’s time retroactively managing unplanned customer requests, fixing reporting bugs, and fighting fires.

Fig 4. Allocated Investment for Larger Teams (>200) and Older Companies (>10 Years)



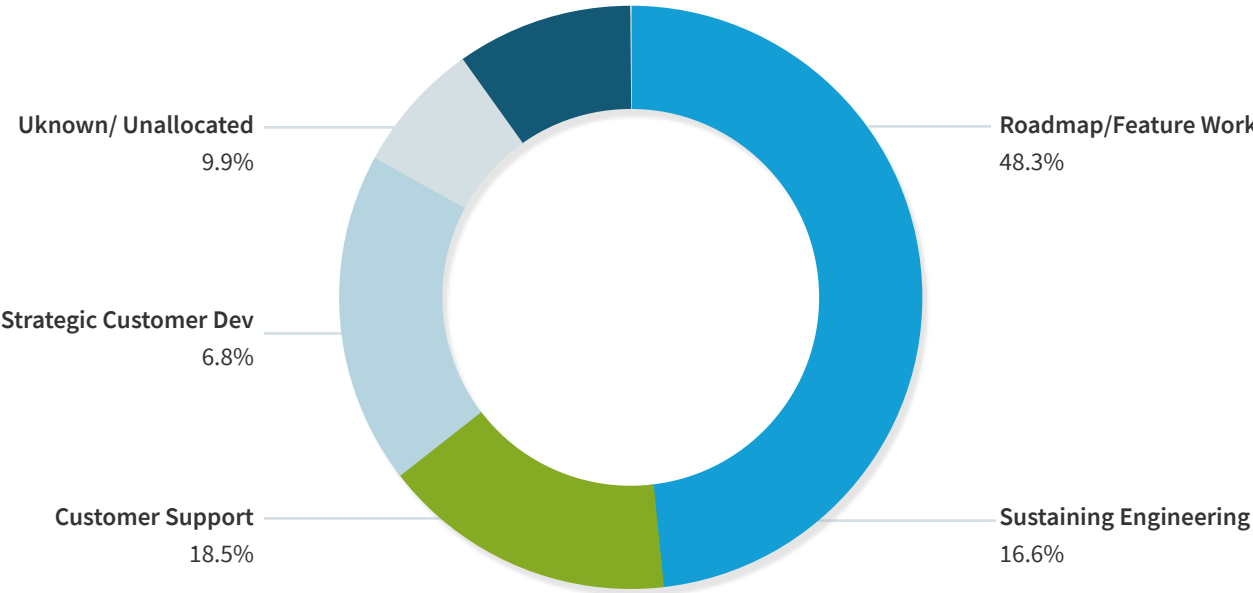
The reasons for these alignment issues are not hard to conceptualize. Visibility is simply more difficult to achieve and maintain among larger software engineering organizations, and older companies (assuming they continue to grow) tend to have larger engineering teams and older processes. In both cases, these teams are more likely to have been involved in some kind of acquisition or merger, and/or have amassed multiple business units and created more engineering teams over time. This establishes an engineering organization with multiple teams, often operating different technology stacks and running different processes from each other. They sometimes label and document projects in divergent ways, if at all. Additionally, these teams are more likely to be distributed or separately located. By the time information flows up to the executive level, it becomes painful to make enough sense in order to effectively ensure teams are aligned, focused on the most important projects, and operating efficiently.

High Performing Teams Have Dramatically Higher Visibility for Engineering Leadership

The highest performing engineering organizations saw much more promising results. The key to success on these teams is a 60% decrease in the amount of unknown or unallocated work, which we equate to a 60% increase in overall visibility and understanding of team efforts among their leadership. With this increased visibility, leaders can make better judgement calls into how teams themselves are allocated, what projects are prioritized, and which processes and protocols will have the most impact.

For example, customer support is clearly a larger consumer of time and resources than most leaders expect. Having that understanding, these organizations spend even more time on sustaining engineering (planned work), which allows them to decrease the amount of time spent on customer support by 16% or more in some cases. Additionally, these high performing teams spend 35% more time on roadmap work and/or strategic customer development - the work that moves the business forward. But even these companies have room for improvement, where on average 9% of engineering time and resources are dedicated to projects and work that is unknown or allocated.

Fig 5. Allocated Investment of High Performing Engineering Teams



The high performing teams in this study have the commonality of a high degree of visibility into the work being done. They are data driven about measuring and analyzing this engineering work in order to optimize the design and operations of the team around four vectors:

- 1 Alignment with the Business
- 2 Reliability and Predictability of New Product Release
- 3 Continuous Improvement
- 4 Financial Responsibility

Collecting and analyzing this information can be a cumbersome task. It can mean combing through issue tracking and source code management tools, manual calculations, and complicated spreadsheets, which is why most engineering leaders tend to ignore this. However, there are tools to automate this process that can have a significant impact on the performance of the engineering organization. The leaders of the highest performing teams in our study employed an Engineering Management Platform (EMP) to aggregate engineering signals and layer on contextual business information. This reveals for them where their organizations are focusing and how they execute.

High performing teams spend 35% more time on roadmap work or strategic customer development - the work that moves the business forward

Conclusion

Our analysis shows that engineering leaders trend toward overestimating the amount of time their teams are able to focus on roadmap work and new feature development and underestimating the amount of time spent on customer support, especially as teams scale and age. Visibility remains a key problem as significant portions of work go unallocated, hindering planning and alignment processes. There are, however, simple ways to remedy these challenges. By ensuring standardized practices in labeling and documenting work completed, and by automatically collecting, measuring, and analyzing that work more critically with tools like EMPs, engineering leaders can better understand what their teams are focused on and take the steps to align engineering work with business priorities, ensure more predictable development cycles, increase financial responsibility, and continuously improve operationally. Ultimately, this increased visibility will help engineering leaders create their own success.

About Jellyfish

Jellyfish is the leading Engineering Management Platform, providing complete visibility into engineering organizations, the work they do, and how they operate. By analyzing engineering signals and contextual business data, Jellyfish enables Engineering leaders to align engineering decisions with strategic business objectives and deliver the right software, efficiently, on time. Companies like Acquia, Toast, and Jobvite use Jellyfish to optimize the process, allocation, and structure of their organizations, and to focus their teams on what matters most to the business.