

Software Engineering Management

Status: Ready

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Aim of the Document

The single highest leverage activity in software engineering organizations is to build a world-class team committed to continual improvement, capable of understanding and solving customer problems, and passionate for the opportunity to create value -- and to unleash it. Such a team is where individual growth accelerates and the creation of customer value compounds. The task of leading such a team as its manager: hiring, coaching, performance management, setting expectations, developing talent, and sufficiently understanding and leading the technical direction -- is a serious task, to be undertaken only by those who genuinely love every part of it.

A high-performing Engineering Manager has both authority and accountability. She provides direction, protection, and order for her team¹. She demonstrates accountable behavior to ensure her team generates the optimal outputs towards achieving the outcomes agreed upon in the product strategy. She is deeply engaged in creating a shared understanding of the problems to be solved and accelerating the growth of everyone on the team toward solving those problems and creating successful careers for her software engineers. By coaching for competency and ownership, and by providing the context needed to make good decisions she creates teams that deliver value to customers by identifying opportunities and leading the team to find solutions that customers love and that drive the business forward, in a sustainable and generative way.

In short, we need to build a world class engineering management team to build a world class engineering team. We provide a career path for our current and future engineering managers that we believe are both inspiring and meaningful. The goal of such a ladder is to provide a development path for managers who deliver superb results in a meaningful way, bringing value to our customers, employees, partners, and shareholders while doing so. The ladder is designed with “L-moves” in mind – incrementally extending scope with new responsibilities atop of previous scope. This allows building expertise and gaining experience sustainably and, crucially reversibly, to encourage risk-taking and “stretch.”

We believe that Engineering Manager seniority should be commensurate with the expected degree of impact and level of competency instead of span of control, budget, or years of experience. Tying seniority to the number of people managed incentivizes the wrong mindset and the wasteful behavior of hiring more instead of multiplying and achieving more with less. The same is true for tenure: the number of years in the role is not synonymous with impact or competency.

Scope

Currently there are 4 career paths under the job family *Product Engineering*: Software Engineering, Architecture, Test Engineering, and Technical Writing. As part of the refinement of career ladders the job families Test Engineering and part of Architecture will be merged into the Software

¹ See “[The Work of Leadership](#)”

Engineering career ladder. This document is about the management track on this newly merged job family, the job family Technical Writing is out of scope.

The Engineering Manager

The Engineering Manager is fully accountable for the results² of her managed team³, the growth of all team members and the ability to also deliver good results in the future. She has a solid understanding of both the business and the product – which helps her to assess the impact of what the team delivers and to take ownership for shaping the direction of the team and its systems in line with business objectives and strategy. She has strong technical skills⁴ and authority, and mainly uses these skills and her authority to identify, evaluate and grow talent, and for ensuring the team is staffed well and moving in the right direction, both to deliver current objectives and to get ready for future challenges.

She sees her responsibility in making her team successful – now and in the future – and understands that her #1 job is delivering results while and through growing the members of her team. She takes full accountability for everything falling in her teams' scope from architecture, implementation, and ways of working to business outcomes. Her most important tool for delivering results is identifying growth opportunities and matching them to available skills, empowering team members to take ownership and coaching them to success. She is highly empathetic, an excellent communicator, a role model for leadership behaviors and principles, and she enjoys helping others to be successful just as much as having individual impact.

Beyond helping her team be successful she shows continual leadership by identifying opportunities and taking ownership of appropriate initiatives outside of her team's scope – both to have an impact and as growth opportunities for herself. She understands that a significant contribution outside of her teams' scope can help her deliver the impact and demonstrate the leadership expected of her. This is vital if she lacks the opportunity⁵ to do that within her teams' scope.

Starting Off into Management Track

We expect engineers to first make their way into a Software Engineer 4 (level 16) position before making a sideways transition into the management track. The sideways transition from Software Engineer 4 to Software Engineering Manager 1 should only be considered by those who are clearly mastering their role as Software Engineer 4.

² The nature of these “results” can vary a lot – the default is that the team is solving the problems they are asked to solve and that they are “moving the needle” in a meaningful way. We expect both EMs and PMs (and other leaders) to share responsibility for creating value for customers. PMs are accountable for identifying the achievable outcomes that maximize value for customers. EMs are accountable for creating the output that best generates the agreed-upon outcomes. This is intended to foster collaboration and shared ownership, and to unite them behind common goals (see also “rich objectives” in *6 Simple Rules* and “product team objectives” in *Empowered*).

³ The term team is used throughout the document for the team or org that is managed by the manager. It can be a single engineering team or a cross-functional organization of 150 employees.

⁴ The depth of technical skills required will usually be lower in more senior engineering management roles, with more emphasis on product and business understanding and strategic direction. Direct managers of engineers however should be strong engineers themselves for a variety of reasons.

⁵ There will always be situations in which an Engineering Manager manages a scope smaller than her current or intended job level. By extending her impact to outside her own team we avoid making this situation an issue for TomTom or her and instead leverage it to scale the org more fluidly and eliminate single points of failure.

A direct promotion from Software Engineer 3 (level 15) to Software Engineering Manager 1 (level 16) or from Software Engineer 4 (level 16) to Software Engineering Manager 2 (level 17) is possible if the engineer has been able to demonstrate convincingly in her current role that she is likely to succeed on the new grade.

Engineering Management Ladder

Level 16⁶

Software Engineering Manager 1

The Engineering Manager 1 demonstrates a passion for people management. She invests actively in building a strong people and team management skillset and receives support along the way from her manager. She is expected to make smart decisions, try out novel approaches and make a few mistakes along the way. Open and transparent collaboration with her manager and peers is more important than the outcome of her decisions, and she actively escalates situations that exceed her skillset or experience.

- The Engineering Manager 1 typically owns the results of a single team by directly managing software engineers.
- She has three main areas of management responsibility: team health, personal development of team members and helping her team to deliver on expectations.
- By default, she is the technical leader of her team. She may delegate some or all technical leadership to one or more qualified Software Engineers on her team, or to a relevant Staff Engineer as agreed upon with her line manager.
- She actively involves her line manager when it comes to hard-to-reverse decisions, compensation, performance management, staffing and strategy.
- She contributes to team deliverables on the quality level of a senior engineer if time permits.
- The L-move on this level: Her next step is to take one or more Engineering Manager 1s as direct reports in addition to managing software engineers directly – getting her ready for effective management of more complex organizations.
- At mastery level she takes responsibility for: compensation, performance management and staffing

When to promote: Promotion should happen when the Engineering Manager 1 is consistently delivering impact and showing leadership in line with expectations and there is enough convincing evidence that she (a) is able to effectively manage other managers, (b) successfully supports the growth and effectively manages performance of her direct reports, (c) consistently needs little to no guidance by her manager on common management challenges, (d) demonstrates ownership of her own further development as a manager through self-study and by seeking out mentorship and feedback. Promotion typically requires a matching vacancy.

Level 17

Software Engineering Manager 2

The Software Engineering Manager 2 is a respected expert in team and people management and continuously strives to improve this skillset further. She is able to solve complex and difficult people and team health topics on her own and implement a team topology that sets her team up for success. Her opinion and support are sought by other leaders throughout her org. She drives meaningful business outcomes while always being aware of her own limits and asks for feedback and support. She understands that being open and transparent about her challenges and

⁶ See also “Starting Off into Management Track”. The role of Software Engineering Manager 1 should only be taken on by engineers that are clearly mastering their role as Software Engineer 4 and as the first step on the Engineering Manager career. If after some time a promotion to Engineering Manager 1 is not possible, we strongly suggest reconsidering fitness for the management track.

approaches in solving them is a driver of trust, but that her performance will be assessed based on the impact she generates.

- The Engineering Manager 2 typically owns the results of multiple teams by managing EM 1s and/or ICs.
- The L-move on this level: She owns the results of multiple teams by managing one or more Engineering Manager 2s additionally to managing EM1s directly
- She solves most challenges within the scope of her team with minimal guidance.
- She actively grows senior leaders⁷ in her team.
- Her primary impact is through others, focusing on coaching and developing direct reports.
- Her secondary impact continues to be through driving appropriate technical topics, and she maintains sufficient technical expertise to establish credibility with and cooperate with senior Software and Staff Engineers.

Level 18

Software Engineering Manager 3

The Software Engineering Manager 3 is the true owner of her business domain along with her product counterpart. She consistently helps her team to deliver on objective-driven business impact. Her team is continuously growing stronger and healthier, the team's topology and architecture are fit for purpose and setup well for the future, and the whole team is united behind a clear mission in line with business strategy and consistently and predictably delivering business value. She needs little guidance to achieve optimal results in a sustainable way, and she appreciates that her performance is significantly based on the business impact of her team as well as the extent to which her team develops top talent through daily business.

- The Manager Software Engineering 3 typically owns the results of the software engineering teams in a coherent business domain, taking full accountability for business impact, **tactical** direction, and a fit-for-purpose org structure with high flow.
- She actively grows leaders in her team.
- Her primary impact is through others, focusing on coaching and developing direct reports.
- Technical and people decisions are her responsibility, while business direction is created along with product management counterpart
- She is responsible for financial planning of her team

Level 19

Director Software Engineering

The Director Software Engineering is the true owner of her business domain along with her product management counterpart. She consistently helps her team to deliver successfully on business objectives. Her team is continuously growing stronger and healthier, the team's topology and architecture are fit for purpose and setup well for the future, and the whole team is united behind a clear mission in line with business strategy. Value flows to customers efficiently in her organization. She needs no guidance to have the optimal results in a sustainable way and appreciates that her performance is assessed based on the business impact of her team as well as the extent to which her team develops top talent as part of daily business.

⁷ Both future Engineering Managers and future Staff Engineers.

- The Director Software Engineering typically owns the results of the software engineering teams in a coherent business domain, taking full accountability for business impact, **strategic** direction, and a fit-for-purpose org structure.
- She actively grows leaders in her team.
- Her primary impact is through others, focusing on coaching and developing direct reports.
- Technical and people decisions are her responsibility, while business direction is created along with product counterpart
- She is responsible for financial planning and budget ownership of her unit