

The Manager's Skill Set: How to Move from Programmer to Manager

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ABSTRACT

Programmers desiring to make the career move from the role of Programmer to that of Manager should be aware of the skills that comprise a manager's skill set, and define a plan of how to acquire those skills. Gaining that initial management title is a challenge, as those recruiting are usually seeking experienced managers. The more elements of the manager's skill set a candidate can acquire prior to seeking a management position the greater the chance of earning that first position. The "Manager's Skill Set" can be defined by using the following groups of skills: Project Management, Personnel Management (incl. recruiting and hiring candidates, as well as evaluating and developing employees), Communication, Negotiation, Team Motivation, Conflict Resolution, and Financial Management. Examples of these skills include: the ability to set clear performance expectations, improve underperformance, and reward high achievers (Personnel Management); the ability to negotiate deliverables, timelines, or work schedules (Negotiation); the creative use of both financial and non-financial incentives to reach goals (Team Motivation); and an understanding of financial performance expectations and how to influence them (Financial Management). Fortunately, there are ways to acquire these skills without holding a position with others reporting directly to you. For example, you can acquire skill in evaluating job candidates by participating in interviews and candidate evaluations. You can learn basic financial measures through online research or by speaking with someone in your Finance Department. Finally, working with your current manager or another mentor toward this career goal can be the best approach.

INTRODUCTION

There are many ways to discuss the skills required to be a good manager and a good leader. The core leadership skills generally transcend any particular industry. In this paper, I focus on the following core skills: Project Management, Personnel Management (incl. recruiting and hiring candidates, as well as evaluating and developing employees), Communication, Negotiation, Team Motivation, Conflict Resolution, and Financial Management. Examples of these skills include: the ability to set clear performance expectations, improve underperformance, and reward high achievers (Personnel Management); the ability to negotiate deliverables, timelines, or work schedules (Negotiation); the creative use of both financial and non-financial incentives to reach goals (Team Motivation); and an understanding of financial performance expectations and how to influence them (Financial Management). I present some brief thoughts on each of these topics and include a *"Practice" section in italics* wherein I describe some actions you can take to develop each of these skills. Once these skills are acquired the candidate for a manager role should also know how to highlight these skills on their resume.

LEADERSHIP VERSUS MANAGEMENT

I'd like to interject a few words here about the concept of leadership versus management. Although these terms will be used somewhat interchangeably in this text I'd like to draw a few distinctions. Generally, a management perspective is short-term whereas a leadership perspective is longer-term. Management power is based on position or authority, while leadership power is based on personal influence. Managers plan tactics while leaders plan strategy. These and other distinctions between a manager and a leader are summarized in Table 1 (Hart and Walsman, 2005). While not all managers will have good leadership skills, good leaders will also have management skills. I use the term "Manager" rather than "Leader" because the first job title you may acquire where other employees report to you is likely to be "Manager."

PROJECT MANAGEMENT

All programmers have to manage projects at some level. In order to manage your personal workload and meet expectations, you are employing some project management techniques such as breaking down a project into its component parts, identifying dependencies, and estimating time to complete tasks. In addition to managing personnel, the successful manager will need to manage projects at various levels. These projects include the delivery of specific programming outputs for clinical trials analysis, as well as technical projects such as a software implementation, or the rollout of a new department or company policy such as adding work from home flexibility. Each of these types of initiatives has common project features such as resources, deliverables, timelines, assignments, dependencies, constraints, etc. All of these need to be managed in order to bring a project to a successful conclusion. There are numerous project management models (e.g., Software Development Life Cycle (SDLC)) and tools (e.g., Microsoft Project) that can be employed to assist in this process.

Practice – All employees must manage their own work commitments, so this is one of the areas wherein it is easier to gain experience without a manager title. Furthermore, as a member of a project team your assignments and deadlines impact the work of others. Be actively involved in project team meetings and pay attention to how project interdependencies and timelines are discussed and revised as necessary. Particularly within programming work learn the usual flow of tasks (importing raw data, creating analysis datasets, producing Tables, Listings and Graphs (TLGs), validation, etc.) and the interdependencies of each.

Table 1. Manager versus Leader

Manager	Leader
Has a short-range perspective	Has a long-range perspective
Plans how and when	Asks what and why
Eyes the bottom line	Eyes the horizon
Imitates others	Originates
Accepts the status quo	Challenges the status quo
Does things correctly	Does the correct thing
Seeks continuity	Seeks change
Focuses on goals for improvement	Focuses on goals of innovation
Power is based on position or authority	Power is based on personal influence
Demonstrates skill in technical competence	Demonstrates skill in selling the vision
Demonstrates skill in administration	Demonstrates skill in dealing with ambiguity
Demonstrates skill in supervision	Demonstrates skill in persuasion
Works toward employee compliance	Works toward employee commitment
Plans tactics	Plans strategy
Sets standard operating procedure	Sets policy
Relies on analytical decision-making style	Relies on intuitive decision-making style
Is risk cautious	Takes the necessary risks
Uses a “transactional” communication style	Uses a “transformational” communication style
Mostly uses an informational base of data and facts	Uses an informational base, including “gut feelings”
Builds success through maintenance of quality	Builds success through employee commitment
Does not want to experience anarchy	Does not want to experience inertia
Plans, budgets, and designs detail steps	Develops the vision and the strategies to achieve it
Sets standards of performance	Sets standards of excellence
Develops the detailed plan to achieve results	Develops the future direction by gathering future trends

PERSONNEL MANAGEMENT

I devote the majority of this text to the topic of personnel management as it is the primary differentiator between senior-level staff without direct reports and managerial staff with direct reports in an organization.

RECRUITING AND HIRING CANDIDATES

The management of employees begins with selecting the right employees for the jobs available. One of the principal roles of a manager is to select the right employees for their team. Selecting the right candidate begins with understanding the role you're seeking to fill, understanding the optimal qualifications for that role, and possessing the ability to assess a candidate's qualifications from resume review, phone screen, and face-to-face interviews. You may be involved in writing the job description, as well finding the right candidate(s). A good manager will learn how to review a resume for key words and descriptions, how to probe to learn more about bullet points on a resume, how to ask good questions, how to read nonverbal communication in an interview setting, and how to leverage the interview feedback of others.

Practice – Learn about screening and interviewing techniques. You can search the human resources literature or contact your Human Resources department for this information. If possible, get involved in the evaluation of candidates for open positions at your company. In my own position as a Director of Programming, I rely on my managers and senior staff to provide pertinent evaluations of candidates. Their input is crucial in our hiring decisions.

EVALUATING PERFORMANCE

The evaluation of performance begins with setting clear performance expectations. Employees should understand what is expected of them and how their performance will be evaluated. This begins with a clear job description and a set of goals and objectives by which they will be measured. An individual's goals should be tied to department and corporate goals, so they may see how their performance impacts company performance. Expectations of an employee should be specific and measurable. For example, the objective "Deliver output on-time and with quality results," while certainly a desired outcome, is somewhat vague. Outcomes such as "100% on-time delivery of output" and "0% rework of final deliverables," on the other hand, are specific and measurable. When clear goals are set the employee has a better understanding of how their performance will be measured and the manager has a more explicit yardstick by which to measure and evaluate each employee. While performance evaluation always has a subjective component, setting clear expectation increases the objective component which is easier to evaluate and manage.

Practice – You can practice this skill by actively participating in the performance evaluation process at your company. Most companies will allow—and should encourage—you to complete a self-evaluation. In addition, you may be asked to provide (usually confidential) feedback on colleagues with whom you work. Take these opportunities to hone your evaluation skills. Provide honest and realistic feedback. As a manager I can't count how many evaluations I've received wherein people rated themselves and others with virtually all perfect marks with no explanation. In addition to being extremely unlikely, this feedback is pretty useless in helping to evaluate, reward, and improve performance. Honestly evaluate yourself and others with concrete examples. If you feel you performed at an above average level in some measure, then rate yourself as such and provide examples of why you feel it was above average.

IMPROVING UNDERPERFORMANCE

This can be one of the more difficult tasks a manager has to perform. Addressing an employee regarding deficiencies in their performance can be uncomfortable, particularly if the manager's personality type is one which tends to avoid confrontation. Correcting performance problems, however, is always the best long-term solution and outweighs the short-term benefits of conflict avoidance (and perhaps maintaining a revenue stream by not eliminating a billable resource). The effective manager realizes that underperformance adversely affects quality and productivity, and reduces the level of customer service—to both internal and external customers. Furthermore, performance problems among employees who are members of larger teams affect the entire team by shifting an additional burden to others and creating resentment toward the manager who fails to address the problem. Performance problems can be confronted, however, in a positive manner with a focus on issue resolution, performance improvement, and increased confidence among the team (and customers) that management will proactively deal with problems impeding success. Prepare a clear performance improvement plan with specific tasks and timelines. This is critical to effectively resolve performance problems. The plan should be graduated, outlining stepwise improvement with realistic near-term goals and a specific timeline. The plan should be communicated and discussed before implementation and reviewed regularly for progress. The manager must ensure s/he is able to create the situations necessary for the employee to demonstrate improvement. The plan can be adjusted as needed throughout implementation, but should only be modified if there is a delay in providing the opportunity for the employee to demonstrate improvement, or for employees who are clearly striving hard toward improvement but may require a little more time than first estimated.

Practice – This skill may be difficult to practice for one not in a supervisory role with direct reports. As you take on a mentoring role, however, for programmers more junior than yourself you can practice communication and working toward development goals, both of which are key to managing performance improvement.

PROMOTING PROFESSIONAL DEVELOPMENT

The effective manager understands that, while some employees are comfortable with routine, knowing what they'll be doing each day and employing the same skills on a regular basis, many are looking to grow and develop in their knowledge and experience. In order to foster this development and demonstrate commitment your employees, you should have an Individual Development Plan (IDP) as a regular component of performance management. The main components of an IDP are an employee self-assessment of strengths and development needs, desired near-term career goals; a manager assessment of the employee's strengths and development needs, and an action plan to meet the development goals. The action plan should be cooperatively developed by both manager and employee and regularly reviewed at one-on-one meetings. A reality every manager encounters is limitations on the budget available for professional development. With limited budget a manager must think creatively to fund career development activity. Strategies such as use of local SAS conferences, web-delivered training that can be attended by many staff across various sites, internally-sponsored training by senior staff, supporting conference attendance for those who get papers accepted, taking advantage of corporate tuition reimbursement programs, etc. all are ways to support the professional development of your staff.

Practice – Participation in your own professional development planning will give you experience with the process. Regularly discuss development topics with your manager. Become familiar with your company's professional development policies and your department's approach to creating a budget for these opportunities.

MENTORING

One of the most important roles a manager can fulfill is that of coach or mentor. While most tasks can be taught at some level through didactic education, and further through practice, the example and explanation of an experienced professional is invaluable in creating the most effective learning environment. Mentoring can be done informally (by taking time to explain processes or concepts to others or provide advice on efficient programming practices) or formally (by establishing a mentor-mentee relationship and meeting regularly to discuss specific topics).

Practice – As a programmer you can gain experience at this role by assisting other programmers on your team in any of a number of specific or general tasks. For example, you could help a programmer improve the efficiency of their code by teaching them some macros or utilities you use; you could explain a statistical procedure and SAS coding options; or you could share your experience of how to prepare a successful presentation for an industry conference and get company budget allocated to send you. You can also establish a more formal relationship with a colleague having the goal of helping that colleague reach certain performance milestones.

REWARDING HIGH ACHIEVERS

Every team has (and needs) its top performers—individuals who excel at their job functions, are reliable, have a positive attitude, and are team players who willingly assist others to achieve group success. It is very important to reward these individuals with public recognition and financial rewards and continue to advance their career path. The failure to reward high achievers, or failing to reward them at a higher level than average performers, can result in the attrition of the very staff around which you want to build your team. Rewards can be monetary (bonuses, merit raises, promotions, and other achievement-specific cash awards), as well as non-monetary (public employee recognition, compensatory time off work, increased work flexibility, and preferred office space).

Practice – Get to know your company's performance reward philosophy and how to influence rewards. Observe how managers use both monetary and non-monetary rewards. Think about how you would do it. Provide input (anonymously if you wish) to your company's human resources department about the company's compensation philosophy including recommendations for improvement.

CAREER PATH DEVELOPMENT

This topic has a lot in common with professional development as discussed above. Career path development, however, is a little more specific and should include discussion of the actual titles, role descriptions, and qualifications for senior positions in an employee's functional area. Within a programming group employees can generally develop on a 'technical track' or move to a 'leadership track.' Employees on a technical track are generally not looking to become managers with direct reports but to develop broader and deeper technical skills and employ those skills in positions of increasing responsibility and reward. Employees on a leadership track are seeking positions wherein they will have direct reports and be responsible for the personnel management of other staff. This is not to say that those in a technical track do not employ leadership skills. Those employees will certainly be called upon to lead various projects and initiatives that require those skills outside of a direct report relationship.

Practice – As is the case with professional development, active involvement in your own career path development is good practice toward managing the career paths of others. Get to know the technical and leadership career paths of your company and various skills required for each. Think about the opportunities that are available (and not available) in your workplace to acquire the skills necessary to advance to the next career level. Take advantage of those opportunities that do exist and seek to create those that don't currently exist.

SUCCESSION PLANNING

The proactive manager plans with an eye to the future business development of the organization and the ongoing career path development of their programmers. Business growth can necessitate moving existing staff to new positions; career path development should result in some personnel moving to different job assignments in the longer-term; and unplanned events such as resignations may involve moving staff assignments in the short-term.

Practice – This task can also be a little difficult for the non-manager to practice. You could prepare for this task by participating in your company's succession planning if you have the opportunity, or by considering a project on which you work and thinking how you'd replace a team member should they leave the project.

COMMUNICATION

Communication is one of the most important tools in the manager's toolkit. The ability to clearly present and request information, to express yourself orally and verbally, to read nonverbal communication, to actively listen, to explain sometimes complex concepts, and to understand cultural differences in communication in a global workforce are great assets. Different people also have different personality types and communication styles. It will help you to be a more effective manager to learn something about the variety of personality types and communication styles and different techniques to interact with each. As a manager some of your direct reports are likely to be introverts who don't communicate frequently with coworkers, while others will be extroverted and need a lot of interaction with others. The fact that the extroverted employee may ask for frequent confirmation that they are moving in the right direction on a project does not necessarily mean that they understand it less than the person who communicates little about their progress. Beyond understanding the different communication styles of various types of people, the best strategy for team success is to know your employees as individuals and their personal communication strengths, weaknesses, and preferences.

Practice – We all communicate everyday so this is a skill at which everybody should get a lot of practice. You can learn more about your own communication and interaction style, as well as that of others, by researching information about personality types and communication. There is a lot of research available on this topic. You can find and take free personality assessments such as a Myers-Briggs test on the Internet to see how your personality is classified and to learn of the different types and preferences of each. If necessary, you can research available information on effective business communication.

NEGOTIATION

The first step in successful negotiation is to understand the needs, desires, authority, and flexibility of the parties involved in negotiating. Everyone has “must-haves” and “nice-to-haves” when negotiating. In addition, each party has control or authority over some decisions, influence over others, and little or no control over still other decisions. In negotiating a timeline, for example, you may as a programmer discuss “drop dead” dates between data management, biostatistics, and medical writing groups and negotiate a deliverable date that all parties can accept. As a manager, you may also have to negotiate that deadline with a customer (internal or external) who will have the final say in setting your timeline. In negotiating specific tasks, it is necessary to understand the time and resource requirements and dependencies of the components of that task, the relevant timelines, and resource availability. In all negotiations, try to think creatively.

Practice – You've probably already gained experienced negotiating your own timelines, work schedules, and workloads. As a manager you will be negotiating more decisions between a greater number of parties. Similar skills are involved, however, so when you negotiate your next timeline or vacation schedule, think about the “bigger picture” of how others will be impacted by your decisions and think of ways in which all parties could get what they want.

TEAM MOTIVATION

The first step in developing your ability to motivate your programming team is to have a positive attitude yourself. Attitude is everything! And your attitude as a leader will greatly impact those following you. Particularly in challenging times, your staff will take cues from you in forming their attitudes. The best managers also regularly cast and inspire a vision of a desirable future. As a leader you want to keep your team moving toward a better and better future. Effective leaders use both financial and non-financial incentives to motivate their staff. We can understand fairly easily how increased financial awards can motivate performance. Since the ability to use financial rewards varies due to many factors outside an individual manager's control—corporate budgets, employee incentive policies, etc—good managers need to understand the many non-financial motivators at their disposal. These are similar to those cited above under the topic of rewarding high achievers (public recognition, increased schedule flexibility, etc.)

Practice – The primary practice you can cultivate to be a motivational manager is to maintain a positive attitude yourself. A leader's attitude affects the entire group. A good leader shows genuine concern and respect for their staff. Many offices have some type of an employee activities or social committee. You can volunteer to get involved with a group like that and get experience motivating coworkers to get involved in social events or community charity work.

CONFLICT RESOLUTION

If you manage any number of people—particularly a large group—you're going to run into some conflict. In my experience, conflict is always better addressed and resolved than ignored. The ability to mitigate various problems which may arise between employees, managers, and clients is an important skill. The first step in resolving any

conflict involving your team is to gather accurate information from all parties involved. Talk to each of the parties involved individually and allow them to tell their story. Simply allowing people in conflict the opportunity to talk about their issues relieves some of the pressure they feel. Actively listen to each person, letting them know you're engaged by eye contact, probing questions, periodically summarizing what they are saying to ensure you understand. Also take brief notes during the conversation and more detailed notes as soon as your meeting is over while the conversation is fresh in your mind. In resolving conflict, you're trying to identify common ground between parties and define a solution that benefits all parties to the greatest degree possible.

Practice – The next time you encounter some conflict in the workplace—or in your personal life—try to understand the perspectives of the various parties involved and how they compare to your perspective. Enter the resolution process by believing that a satisfactory solution for all parties exists and seek to find it. Begin by seeking to understand, as well as be understood. Retain a professional demeanor and communicate with respect at all times.

FINANCIAL MANAGEMENT

A manager's level of accountability and influence over financial performance metrics will vary by company and a manager's role within that company. For example, financial drivers important to the manager of a programming group in a Contract Research Organization (CRO) are not exactly the same as a manager within a pharmaceutical company's development group. Some of the metrics for which you may be accountable, and over which you certainly will have some influence, include revenue, expenses, utilization, and profit margin. You should have an understanding of the metrics for which you're accountable and how you and your team can influence them. These metrics may be defined somewhat differently and carry different weight at different companies. For example, targets for revenue, billable utilization and profit margin are likely to be more critical for a programming department in a CRO than a similar department in a pharmaceutical or biotech company, where staying within expense budgets and meeting timelines (to keep products on track for market) are more critical. On the expense side, you'll likely be managing a budget which includes money for expenses such as salaries, bonuses, travel, training and professional development; and may include capital expenditures for technology, office space, etc.

Practice – Ask your manager and others at your company how budgets are developed there and who has what level of decision-making authority over budgets. Learn how you may be able to influence budget expenditures—perhaps you are in a position to recommend technology purchases or training and professional development expenses.

HIGHLIGHTING MANAGERIAL SKILLS

Once you understand and have been able to acquire some or all of the skills in the manager's toolkit, you will want to highlight these skills on your resume as you seek your first position as a manager. I suggest adding bullet points highlighting your managerial skills in various positions and perhaps creating a section on your resume entitled "Leadership Skills" and listing items such as:

- Mentored junior programmers to develop their industry-specific skills
- Reviewed the work of other programmers
- Provided performance feedback on colleagues and managers
- Provided input to department expense budgets and revenue forecasts
- Negotiated timelines and deliverables with customers
- Interviewed and evaluated job candidates and made hiring recommendations
- Participated on Employee Activity Committee

CONCLUSION

Fortunately, there are ways to acquire managerial and leadership skills without directly holding a position in which others report directly to you. For example, you can acquire skill in evaluating job candidates by participating in interviews and candidate evaluations. You can learn basic financial concepts and measures—such as budgeting, revenue forecasting, direct and indirect costs, margins, and pass-through expenses, etc—through online research or by speaking with someone in your Finance Department. If you are presently employed by a large company, there is a good chance their Human Resources or Corporate Training Departments already have developed much training on various management topics including communication, customer service, project management, negotiation, conflict resolution, etc. If you are employed by a smaller company, you may have more hands-on opportunity to use these skills. If you are an independent contractor, you can leverage some of the techniques you use to win and maintain

contract work. An experienced programmer looking to develop their managerial skills should also seek opportunities to train and mentor more junior programmers. The mentor role provides excellent opportunities to improve many of the skills in the manager's skill set. Finally, working with your current manager or another mentor toward this career goal can be an invaluable approach to acquiring these skills. Once you have acquired these skills highlight them on your resume.

REFERENCES

Hart, LB and CS Walsman. The Leadership Training Activity Book. (Hart and Walsman, 2005.)

RECOMMENDED READING

Maxwell, J. The 21 Irrefutable Laws of Leadership. (Nashville: Thomas Nelson, Inc.), 2002.

Kouzes, JS and BZ Posner. The Leadership Challenge, 4th Edition. (San Francisco: John Wiley & Sons, Inc.), 2007.

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