A Guide for Front-Line Managers to Retain Talented Statistical SAS Programmers

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ABSTRACT

SAS® programmers have a variety of functional and technical skills, coding preferences, personality types, and communication styles. And those programmers, who aspire to make the career move to a manager role, should be aware of the skills that comprise a manager's skill set. I am presuming that a statistical SAS® programmer who has been working towards a management role has gained the initial management title and is aware of the fundamental skills (grouped under): Project Management, Personnel Management, Communication, Negotiation, Team Motivation, Conflict Resolution, and Financial Management, which is referred in the paper - manager's skill set (La Brec 2010) [1].

In this paper, I will provide tips for front-line managers or project team leaders to - build a strong and productive Statistical SAS® programming team; focus on developing the team; recognize and reward the effort by each team member; and retain the programming team's talent. Additionally, in each of the above mentioned areas, I will list the required skill and emphasize few <u>competencies</u> within each of them, which could be considered as the key elements in working towards the penultimate goal of each leader to retain best performers/ programmers and their talent.

DISCLAIMER

This paper represents my own personal opinions. By figuring out these guidelines the "hard way", I have been able to learn and progress in my career quite well. Below suggestions do not guarantee success, nor are they officially sanctioned by the company where I am presently working or at any company where I have previously worked. [2]

INTRODUCTION

Every manager or leader has their own style when it comes to building a strong and productive team, certainly it's challenging, but as well rewarding to get the experience in hiring talented SAS® programmers. Apparently, it doesn't stop there, the more crucial and important undertaking would be to focus on spending the time to develop and cultivate its team members. In addition, it's imperative to make the next step as a habit, that is, the programmer's morale and team's motivation which could be maintained high by recognizing and rewarding every effort contributed towards the team and deliverables. By doing so, the manager or leader might be assured of retaining their best programmers and the talent; however, even in the corporate world just as life, a lot is uncertain. Therefore, we should always integrate succession planning for every important role within the team, to protect the ability to work well in the event a core team member wins the lottery and decides to retire from the exciting life of SAS® programming.

Throughout this paper, I will be presenting the competencies that could be considered as the key elements in executing below summarized skills within their critical procedural steps.

- Build a Productive Team
    a. Scope of Work
    b. Resource Projections
    c. Recruiting and Hiring Candidates

- Cultivate It's Members
    a. Interpersonal Skills
    b. Mentoring and Coaching

- Recognize and Reward the Effort
    a. Recognition
    b. Rewarding High Achievers

- Retain the Talent
    a. Succession Planning
    b. Performance Evaluation

BUILD A PRODUCTIVE TEAM

To build a strong and productive team is challenging, but as well rewarding to get the experience in hiring talented statistical SAS® programmers. From my perspective, below outlined skills would help in the preparation towards building the much desired team. And to acquire those skills, I will list competencies and elaborate each of them with a relevant industry example.

SCOPE OF WORK

Business Acumen –

When a statistical SAS® programmer becomes a hiring or line manager, s/he would have been a technical expert within their function for a long time, unless the individual is fortunate enough to realize their management potential early in their career and/ or got the opportunity to be part of management. As these leaders have been dedicated functional or professional experts, it's perceptible for them to have limited exposure outside of the function, therefore might not be knowledgeable enough to understand the policies, trends, technology, and information affecting his/ her business and organization.

These inexperienced line managers need to get informed and understand how businesses work and should be aware of how strategies/ tactics work in the marketplace. As they might have been pigeon-holed within their function for multiple years, they should get ready for a new perspective and try getting close to the customers outside of statistical programming function. These leaders should clearly understand the integration points with other functions like – data management, biostatistics, clinical, and medical writing, etc. As it would help in realizing the importance of why tables have to be generated with quality after analyzing the data received from the data management group. So upon delivering these outputs by statistical SAS programmers to statisticians/ clinicians for review, and once approved, they are put together by medical writers in the clinical study reports for submitting to the respective agencies. Although most of the leaders are aware of the process outlined above; however, I would like to emphasize for those who should know how businesses work before trying to build a team to meet either client and/ or organization's expectations.

Planning –

An integral part to build a business or team would be to understand the specifications, scope of work, and budget/ finance. Then, estimate the need to plan and prepare by establishing goals and objectives, scope out difficulties, plan for task completion, develop schedules, and do roadblock management. Also, it is critical to envision the structure and process flow.

What does it mean for someone who is managing the statistical SAS® programmers? - Upon receiving the protocol and statistical analysis plan (SAP) for a clinical study, the manager should understand the list of tables (LoT) also called as table of contents (ToC) and then from that LoT try to run the number of units (unique vs. replicates) against the benchmarks to estimate the work hours needed to complete the assignment of generating the outputs. Additionally, the leader should take into consideration of other tasks like extracting and converting the raw data into derived datasets, which would be utilized by the macros to generate the tables for clinical study report. Once the difficulty of these tasks and projects are scoped out, the leader should be able to manage the work efficiently by assigning the right resources.

RESOURCE PROJECTIONS

Organizing –

As the scope of work is determined, now it's about organizing to find and arrange the resources – people, budget, material, support, training, etc. Despite appropriate advance planning, if the desired results are not accomplished, it could very well be due to any of the following: Inexperience to bargain and manage resources efficiently; Lack of delegation for big projects; Unaware of how to manage multiple tracks for complex tasks; Rely too much on self; May scramble at the last minute and have to work long hours to finish.

To orchestrate multiple activities at once to accomplish a goal, the leader should be able to use resources effectively and efficiently. In my opinion, the equal treatment is giving people tasks that match their capacities. Therefore, by paying attention to the weakest links in the team, the manager should identify the appropriate leads that can understand the protocol/ SAP of the study and get the work done through other support programmers. In statistical programming world, it would mean to complete the required macros to generate derived datasets and tables.

Timely Decision Making –

With the information we have around the scope of work and our planning to organize the resources, it's important to make decisions in a timely manner in order to not lose on time to bring the resources onboard to complete the work, which generates revenue for certain organizations.

Under tight deadlines and pressure, sometimes the limited or incomplete information we get from the specifications is what we have to rely on to make a quick decision on what level of statistical SAS® programmer to bring to get the work done. For example, after looking at the SAP or study protocol, the hiring manager shouldn't scramble to decide the level of programmer to hire (internal or external) to get started on the new work. If the leader is conservative, cautious, or a procrastinator to make a quick decision, it would most certainly delay in opening a requisition and therefore the hiring process, and would hurt the revenue or productivity expected of this resource.

RECRUITING AND HIRING CANDIDATES

Sizing up People –

To be a good judge for talent is a critical proficiency that any hiring manager should possess. S/he after a reasonable exposure should be able to articulate the strengths and limitations of people inside or outside of the organization especially while preparing to open requisitions in going through the interviewing process to bring onboard the new team members.

The manager or project leader should clearly understand the tasks for which the additional resource(s) is being added, and that would help in listing out the skills to look for in the potential candidates. For instance, we might need a statistical SAS® programmer who has the blend of experience/ interest to lead studies and team while performing as hands on programmer when required. For such a need, we would be looking for technical, functional, and leadership skills to successfully drive the desired results. Therefore, the hiring manager or leader should possess this competency to assess and evaluate whether the candidate will perform well in certain circumstances and challenges.

Hiring and Staffing –

After realizing the importance to have a nose for talent and by acquiring the capability to size up people, it's crucial to understand the interviewing process to hire the best possible candidate in the amount of time we could afford to spend. A skilled manager or leader is typically not afraid of selecting strong people and therefore assembles talented staff to accomplish the tasks.

Unless you are part of an interview panel, you wouldn't realize the difficulty in hiring and staffing up the team with the right resource/ fit just by speaking to the candidate maybe for an hour at the maximum. Thus, it is imperative for the leader to identify a good team of interviewers who have acquired the interviewing skills needed to evaluate statistical SAS® programmers. If we are looking just for a production or validation programmer that entails the requirement and emphasis on technical and functional skills, perhaps we should avoid paying the cost/ salary in bringing a senior or principal level candidate. However, for anything more, let us say if this hire is expected to coordinate and lead the programming efforts to deliver the derived datasets, tables, etc. then s/he should also possess the required leadership skills to engage and motivate the team in getting work done through the support programmers.

CULTIVATE IT'S MEMBERS

After thoroughly conducting the interviewing process that includes - reviewing of the resume; screening the candidate; and then perhaps proceed further to the next round to test more on technical and functional skills. Not always will the hiring manager be able to bring the right candidate. As we all realize, just few hours of screening might not be sufficient to evaluate the desired skills in the candidate. Therefore, it's kind of imperative to cultivate those new team members once they onboard the team. This approach would also help in addressing gaps (if at all), which were not noticed in evaluating the individual during the hiring process. In this section, with an example I will elaborate each competency needed to acquire skills listed below to develop the team.

INTERPERSONAL SKILLS

Effective Communication (Verbal and Written) –

In life sciences industry like most others, it has become conventional to work in a distributed office environment that includes full-time remote commuters (i.e. working from home), which brings to the surface on heavy importance for effective verbal and written communication. The line-manager or leader should be able to write clearly and succinctly in a variety of communication settings and styles. Also, be effective in a variety of formal presentation settings: one-on-one, small and large groups, with peers, direct reports, and bosses.

With teams comprising of statistical SAS® programmers across the globe and the manager remotely working from home, it's imperative for the leader to be effective on the phone and via emails in communicating study related issues (e.g. datasets, tables, graphs, etc.) and any other difficult topics (e.g. performance, conflict resolution, etc.).

Interpersonal Savvy –

An effective leader relates well to all kinds of people – up, down, and sideways, inside and outside of the organization. S/he should take the time and energy to build relationships with reports and colleagues by exercising

the listening skills and making an effort to be approachable. This would certainly help in building the appropriate rapport with staff and also might take it to the next level of building constructive and effective relationships.

For most tasks in the statistical SAS® programming world, we typically have a production (source) programmer to write macros to generate the required analysis datasets and also write additional programs to generate the outputs based of these analysis datasets. For this work, before the outputs are delivered to internal or external clients, it's validated by independent programmers from scratch to conduct quality check on everything performed. All of this might involve lot of back and forth communication of issues between production and validation programmer, which could lead to conflict in thoughts and approaches. Only when the leader is approachable, would any of these programmers reach out for conflict resolution. Therefore, the line-manager or leader should be comfortable to defuse even high-tension situations like these.

Managing Diversity –

As differences challenge assumptions, in today's corporate and distributed work environment, the leader or manager should be comfortable and effective with groups much different from him/ her. Also, should be able to handle conflicts and the noise of differing views and agendas, and make every effort to treat everybody the same without regard to their difference in opinions or approaches.

In Pharmaceutical industry like many others, the leader comes across and manages statistical SAS® programmers from various countries and cultures. Therefore, s/he should deal effectively with all races, nationalities, cultures, disabilities, ages, and both sexes. Since the markets and customers are diverse, therefore it would help to hire varied and diverse staff/ employees in the organization.

MENTORING AND COACHING

Understanding and Directing Others –

Good management consists in showing your direct reports especially the intermediate people on how to perform and complete the assignments like exceptional performers. So how would the leader bring out the best in a person? – By taking time to understand the strengths and weakness of their staff and with a clear communication that would maintain the two-way dialogue on the work and results. Upon which, the manager would establish a clear direction by distributing the workload appropriately and setting the goals and objectives.

The manager or leader spends the time with statistical SAS® programmers during 1:1's to gauge their background and professional experience to see what assignment would the programmer be more comfortable in getting started with the team. For example, one of the most commonly desired interests of a programmer would be to work on complicated hands on programming to develop the macros. Since the manager is now aware of the associate's interest to work on a particular area, s/he should look for an assignment like developing standardized macros for the whole the compound (clinical study trial/ program) and have the staff member work on such a team.

Managing and Measuring Work –

A good manager is adept at how to marshal the resources of balancing the time, cost, and personnel. To acquire that skill and be proficient in doing so, s/he should clearly - assign the responsibility for tasks and decisions, set clear objectives and measure the work assigned, monitor the process and progress with being able to measure the results, and as required design work-in-progress feedback for effective empowerment and engagement of the staff.

When a task like creating deriving datasets or programming macros to generate reports (i.e. tables, listings, and figures, etc.) are assigned to the statistical SAS® programmer, it's critical to communicate the benchmarks which makes it possible to measure the work done by the associate. When the manager is clear on goals, in this case, the number of derived datasets or outputs generated, s/he would be able to track the metrics and discuss the outcome with their staff. After initial discussions around work allocation, if expectations were misunderstood by the direct report, the leader should be flexible to utilize the most recent metrics in providing effective feedback on how to align with the expectations and therefore engage the staff in accomplishing the goal-setting effort.

RECOGNIZE AND REWARD THE EFFORT

As the manager or leader is now proficient in building a productive team and with required mentoring and coaching can develop the team members to be a good fit and great contributor in the group. Now it's time to emphasize on the importance of recognizing and rewarding their effort. In this section, with an example I will elaborate each competency needed to acquire skills listed below to acknowledge team's hard work and commitment.

TEAM RECOGNITION

Caring About Direct Reports –

A great leader should exactly know how/ when to hit the stride, therefore it's required for the manager to be genuinely interested in both work and non-work lives of the direct reports. As a continued effort, s/he should ask about their staff's plans, problems, and desires, also make themselves aware of any concerns or questions. It's always nice to have a boss who is available for listening to personal problems and who can monitor workloads and periodically appreciate the extra effort by the associate.

Even programmers like any other employees have personal lives and problems. Therefore, a little consideration by the manager towards professional hiccups during programming would be very much appreciated. The thought of the leader to listen in on the problem and recommend some resolving solutions around the issues will make all the difference for the direct report. At times too much work and task oriented without caring for programmer's concerns might back fire on their level of engagement and motivation in continuing to work towards completing multiple study team tasks.

REWARDING HIGH ACHIEVERS

Drive for Results –

Every team and a leader need an associate who is constantly and consistently one of the top performers. Hence the manager should always be on the lookout for a potential staff member who steadfastly pushes self and others for desirable results. This individual being bottom-line oriented and someone who could be counted on to exceed the goals successfully would qualify to be categorized in top 15% of the team.

A statistical SAS® programmer who can come across the hurdles like – personal organization, setting priorities, estimating time frames, overcoming resistance, and resource projections, etc., is considered to have worked as a subject matter expert (SME) with leadership skills for a long time in the industry. Through professional growth and promotions, this would typically put the programmer either at Senior or Principal level. Some of those individuals at this level lead by example and are confident in how to get things done through others, also they are comfortable signing up for the challenges where s/he would have to work with cross-functional groups.

RETAIN THE TALENT

All the skills and competencies discussed so far would help the manager in applying the much needed proficiency in retaining the talent developed through spending rigorous amount of time and energy in grooming the associate. Also in this section, I will cover the competencies to acquire the skills needed to retain the core team members.

SUCCESSION PLANNING

Strategic Agility –

With the switch from a technical role (who has been heavily involved in day-to-day hands on project work for years) to people manager or leader, it's difficult to delegate naturally and get away from hands on project work. However, the leader should make time for strategic planning in order to be successful in this role by delegating the daily tactical work. S/he should be able to anticipate future consequences and trends accurately, also have the broad knowledge and perspective to be future oriented who can create competitive and breakthrough strategies/ plans.

With various technical responsibilities like the programming assignments for submission work, the statistical SAS® programmer may have narrow experience(due to working in this function for a long time) and not be knowledgeable for business/ events across other functions in the organization and industry. Therefore, the leader who has been part of this function at a technical and functional level will have to understand the importance to think and talk strategy. Although the manager should help the direct reports to simplify the operational and tactical work, but have the perspective to pull together varying elements into a coherent strategic view. Upon identifying the top 15% of the team, the leader should plan in advance to work closely with the indentified top performing programmer(s) in coming up with a succession plan, which would help to weave a vision of the future to avoid any unexpected hindrance.

PERFORMANCE EVALUATION

Fairness to Direct Reports –

Having candid discussions and treating your direct reports equitably ensures to engage and motivate them. The manager should be able to read people's needs well and also tell how they are responding to his/ her treatment. The leader should certainly avoid the following – to be inconsistent and play favorites; to hide or keep things from direct

reports they have absolute right to know; and to bucket people into good and bad buckets to treat them accordingly.

For any process improvement, it's a good approach to share the thought/ idea with the team of statistical SAS® programmers to explain your thinking and ask them to come up with further enhancements or feedback, which could help in improving the process better. This would not only provide information to staff equitably but would make them feel included in the decision making process. When the leader is viewed as someone with no hidden agendas and/ or doesn't show preferential treatment, it works toward keeping the team motivated, dedicated, and committed. Also this approach helps the programmer to be empowered with nice ideas and be accountable on varied tasks.

Informing –

Implicitly it's expected of the leader to provide the work-in-progress feedback, which serves as the information that the direct reports need to know to do their jobs and feel good about being a member of the team/ organization. When individual's information is provided without prolonged delay, it helps them to make accurate and timely decisions. The manager should be cautious in falling for traps like these – not consistently communicate the feedback; may inform but lack follow-through; and avoid hoarding the information or not see informing as important. Also, when it's time to take a tough call, the leader should thoughtfully and courageously communicate.

Sporadic informing of technical feedback hurts the statistical SAS® programmer's ability to apply the constructive learning on a timely fashion. For example, the programmer creates a standardized macro that has bugs due to a SAS procedure incorrectly used, and if the feedback is not immediately shared with the source programmer, there is no way s/he could take the required action on time. Therefore, work-in-progress feedback is extremely helpful. Additionally, during interim and year- end performance reviews, the manager should capture all these findings and walk through them with the direct report as a measured metric to compare against the goals and objectives set for the programmer for that fiscal year.

CONCLUSION

In today's programming world, to build a strong and productive team is a challenge, and then to develop and cultivate its members by periodically recognizing and rewarding their effort is a huge undertaking. With that said, it is extremely rewarding to build and be part of a highly functioning programming team.

Hopefully, by working towards the competencies introduced in this paper, the front-line manager or project team leader will acquire the manager's skill set and would timely implement the above material in executing the critical procedural steps to retain the talented statistical SAS® programmers.

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