

Hiring the best SAS programmer in today's high competitive job market

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ABSTRACT

Hiring a new SAS programmer could be time consuming and challenging, especially in today's high competitive job market. Being a programmer manager for 4.5 years, I have led a fast-growing team starting from 5 people to 20 people globally, and I would like to share my successful experience on how to hire top SAS programmers.

INTRODUCTION

In this paper, I will discuss four critical stages during hiring, which includes (1) searching for candidates; (2) reviewing CV; (3) conducting interview and (4) completing the hiring. In addition, I will discuss multiple types of questions that I used for interview, those are customized questions which support the hiring managers knowing their candidates well within a short time period. The purpose of this paper is to help hiring manager finding high qualification SAS programmers through a normal interview process and ensure the project success in the long term.

STAGE 1-SEARCHING CANDIDATES

Searching for candidates is the first thing to do once there is an open position available in my team. If the job opening is due to someone leaving, it is usually with an urgency because of the 2 weeks short notice from people leaving and because of project work to be accomplished within planned timeline. There are different sources of candidates that a hiring manager could use. In Celgene, I usually rely on following four sources:

- (1) Company recruiting system. Celgene has its own recruiting system and it links to multiple prefer vendors. As a hiring manager, once I post a job opening there, I will receive dozens of CV from those vendors within 3 days. The advantages of using company recruiting system include: it is the biggest source of candidates, it is quick, well organized and easy to use. The shortages include limited information (CV only), time consuming due to large amount of CV to be reviewed, and some kind of blinding review, where I cannot do any further reference check as I could not see vendor's name and candidate's contact information.
- (2) Internal referral from Celgene employee. This is the most useful and efficient way to find a high qualified programmer. If I can get good candidates through internal referral, I will usually bring them to interview. The advantages include reliable information from referral, high successful rate of finding a good programmer, and conducting reference/background check in advance. The shortages could be very limited source of candidates available and some extra steps needed during hiring process as those candidates were not enrolled in company recruiting system.
- (3) External referral outside of Celgene. This is the same method as above but it is based on referral outside company. The candidates could be referred by previous colleagues, friends or anyone you know in the pharmaceutical or CRO industry. The advantages and shortages are the same as internal referral.
- (4) Sharing candidates among multiple hiring managers. When multiple hiring happens in Celgene programming department, sometimes the hiring managers may share the candidate source and their feedback with other managers, and recommend candidates to other team if they see a potential match to those positions. The advantage is saving time, convenient, sharing

opinions from other managers. The limitation is that it requires multiple hiring occurs on the same time, and sometimes, you may not get the best candidates.

- (5) Other methods. The other methods include finding candidates through internet (i.e. LinkedIn), conference presentation, or other channels.

In summary, there are multiple ways of searching candidates, the first two methods (recruiting system or internal referral) are what I mostly used either based on its large amount of information available or due to the efficiency and reliability of the method.

After searching for candidates, the next step is to select candidates. This step usually includes CV review and conducting interview.

STAGE 2-REVIEW CV

Reviewing CV could be a time consuming and boring job. Following are some useful tips as I collected from my daily work to help hiring managers doing their CV review both successfully and effectively.

First, you need to setup your own criteria and expectation for what you are looking for, the more specific the better. For example, do you require Oncology experience, CDISC skills, or specific SAS graphic skills for the candidates? do you expect the candidate to be in Pharmaceutical or CRO for certain years of experiences? Those expectation will help you to focus on your needs and select qualified candidates through CV review, or at least to exclude people whom you think are not qualified.

Second, it is suggested that you create a tracker file for every candidate that you reviewed. The file could include candidate's name, strengths and limitation, next action taken (i.e. reject, consider, call for interview, need more reference check...) as well as any comments you think helpful. There are two advantages of creating this tracker file, one is to help you for file management, and the other is to help you for decision making. Below is a sample tracker as I used for myself.

Purpose of Hiring	Candidate Name	Strengths	Weakness/Concerns	Action Taken	Comments
Support Study 000	Name 1	SDTM/ADaM, >10yr exp, Oncology,	No Medical Affairs exp	Setup Interview	
Support Study 000	Name 2	SDTM/ADaM, Oncology, K-M, RECISIT, Strong Graphic Skill	less exp (5yr)	Further reference check needed	
Replace XYZ	Name 3	Oncology/Hematology, exp, Big Pharma Project lead exp,	No stats background	Consider (tier 2)	
Replace XYZ	Name 4	Good communication skill,	Less exp, No Oncology exp,	Not Consider	

Third, you will need to setup a timeline to complete all CV review, as this is a time consuming and boring job, if you don't set a clear timeline, you may end up with never get all CV review finished.

Finally, it is recommended that you accumulate some quick tips on how to review CV. For example, as to my own experience, a good CV shall list Candidates' unique job responsibilities and achievements with

certain level of details, while a poor CV could be either too simple or too broad, i.e. it lists all kinds of popular skills or experience with no supportive evidence, which sounds not reliable.

STAGE 3-CONDUCT INTERVIEW

When talking about interview, people may immediately think about what questions to ask. However, before that, the first thing for hiring manager to consider is how to build an effective interview team. A good team shall be setup based on following features: job related, functional diversified, personal responsible and time available. First, those people do the interview shall have their job related to the open position; Second, the interview team shall contain people well diversified and from different functional groups; Third, people who conducting interview are highly responsible as the candidate selected will impact their future work; and finally, those people shall have time available to do a thorough interview.

Once the interview team was created, then it is the time to consider what questions to be asked. Of course, this is the most critical part for the whole interview process and shall take great efforts to prepare. Based on my experience, the types of questions I used are listed in below:

- a. Warm-up questions: those are questions usually I asked at the beginning of interview. And I have some standard list of warm-up questions, i.e. how is your commute to company? How do you hear about this job opening? Do know anyone in our company? Why do you leave current job and pursue the opportunity in our company? Those questions look simple but has special purpose behind them. The time of commute could tell the candidate's motivation, and if there is an internal people who knows candidate before, it gives chance to do more reference check. In addition, you can also tell candidate's motivation and job serious by checking their knowledge of your company and your team. Therefore, do not look down those warm-up questions, they will provide useful information for the hiring.
- b. Dig-in questions: I consider "using dig-in question" as the most efficient way to check out candidate's knowledge or experience to their job. Those questions usually start with an open question, then follow by more detail and specific questions. For example, If I want to check candidate's knowledge about solid tumor, I will start from "any experience on solid tumor?", if candidate say yes, then how about "RECIST criteria?" If again yes, then I will ask for definition on "CR, PR, SD, PD", if those are correctly answered, then I will further check about the derivation on "Confirmed CR/PR", and if answer is still correct, then I will ask about some specific cases in tumor evaluation, i.e. what happens if 1 or 2 missing tumor assessments are missing, or if there is any unscheduled tumor assessment collected? As you can see, the "Dig-in questions" is interactive, efficient and give hiring manager a true understanding on candidate's knowledge and experience in those areas which you are mostly interested in. To lead questions and evaluate candidate's response properly, it requires hiring manager himself with deep knowledge and experiences in the same fields, which could be a limitation for asking this type of questions.
- c. SAS programming questions: Since you are looking for a SAS programmer, 99% of chance that you will ask SAS related questions to test candidate's programming skills, unless you gave this test to other members. This type of question is pretty common, here I only get one suggestion that is to prepare questions based on your real example from your daily work instead of using any online samples. Two advantages of using real examples, first, you are familiar with those examples and second, instead of checking the right or wrong answer, you can test the logic thinking from candidate on they deal with this type of question.
- d. Soft skill questions (communication and behavior): Soft skill questions are important as in today's company operation model, we expect SAS programmers not only strong in SAS skills but having high communication and team work skills as well. As mentioned above, I will suggest testing soft skill questions based on your real working experience (i.e. doing a case analysis), as you already went through those experience yourself so you can judge whether the candidate understand those cases clearly and have the capability to resolve those cases in a practical and useful way.

In addition, a few more things need to do right after the interview. First, remember to take notes and write down your review comments immediately, the notes would be candidate's strength, weakness, whether to consider hiring or any further action to be taken, similar as the tracker sheet for CV review as mentioned before. The second thing is to arrange a debrief meeting after you have gone through interview for all selected candidates. The goal of having debrief meeting is to collect comments from whole team members, and more importantly, to make the decision on who to be hired.

STAGE 4-HIRING CANDIDATE

Once the hiring decision was made, I usually got support from HR or other dedicated group on completing the hiring processing. However, this does not mean that I am totally out of hand. It is a good idea that I make my contributions to ensure a smooth and successful hiring. Following key information are rely on hiring manager's input: (1) define the expected starting date for the candidate, (2) negotiate the bill rate (if you are hiring a contract) or salary package (if you are hiring a FTE) with candidate or his/her vendor, and (3) arrange the new hirer orientation, on board training and study transition. All these things require your time and effort to conclude the overall hiring process. One more suggestion is always to keep a backup option (plan B) in case if the first offer you gave out was rejected, so you can go to Plan B quickly.

CONCLUSION

In summary, hiring a high qualified SAS programmer could be challenge especially if you are under a time pressure of finding the right people quickly. The paper shared knowledge and experiences of hiring top SAS programmers which, in long term, helped your team to be successful on your project work.

CONTACT INFORMATION

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