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What's a "Senior" SAS® Position?
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Abstract

Are you a "junior" person looking to be promoted to a "senior" position? Are you a "senior" person looking to change positions or to help ensure you remain "senior"? Are you a manager looking for "senior" staff? Just what is a "senior" SAS position compared to a "junior"? Is it the number of years you have been using SAS? Is it having certain SAS competencies? Is it something else? Does it vary by industry?

This paper will address those issues by using two methods. First, a sample of job postings on the website Monster.com will be reviewed. Second, informal interviews will be conducted with managers who have wanted to hire senior-level staff in recent months.

My prediction before the review is that I will find most senior positions will require at least 5 years of industry experience, some very specific skills including specific non-SAS technical skills such as a specific operating system or other software, and an emphasis on being able to work independently and to communicate with a range of people from junior staff to senior management. Will I be right or totally off-base?

Background

I wanted to explore this topic for several reasons.

- 1) My job had been outsourced so I needed to find a position after having been a "Senior" person for several years. I found some positions needed something very specific. The company would rather wait for the right person with the specific skill set than to hire someone with part of the skill set and train them on the missing piece.
- 2) Another reason was a junior person stating, "I think I should be promoted".
- 3) At my first annual review of my new job, my boss started with a statement like "You are what we expect of a senior person." – and it had nothing to do with my SAS skills.
- 4) Several managers I know have talked about how difficult it is to find senior people even though they are in cities that are considered that are considered "popular". They've reported interviewing people who had the technical skills but weren't the right candidate.
- 5) SUGI has become the SAS Global Forum due to the diversity of SAS software users.
- 6) Five years ago, at the last SUGI held in Orlando, the paper "10 Things Experienced SAS Programmers Don't Know – But Should" was presented

by Doug Zirbel. I didn't get to hear the presentation because the room was completely packed. People were sitting or standing any place where there was room. I wondered how much things might have changed in the last five years.

- 7) Discussions on SAS-L, the electronic user group, about portions of SAS that are "out-dated".

The Planned Process

My draft stated the following as the process I would follow.

Zirbel's paper was quite interesting but I decided to take a somewhat different approach. I opted for a two-part approach. The first part would be to review actual job postings for Senior SAS positions. The second part would be informal discussions with hiring managers that I knew.

I searched MONSTER.COM for the terms "Senior" and "SAS" and retrieved over 1,000 hits. Restricting it solely to postings within 24 hours of my search still retrieved 101 hits. I decided to review 200 positions. To narrow down the postings, I opted to select postings for permanent positions only. I would first review positions that had both "Senior" and "SAS" in the job title. If I didn't find 200 such positions, I would select postings that had "Senior" in the title and SAS in the body of the job description. I discovered some postings were retrieved because SAS appeared in the company description but were really for a non-SAS position.

The Actual Process

Despite the high number of hits I had on my initial search, finding 200 positions turned out to be far more challenging than I expected. There were a large number of postings for non-SAS positions that had SAS somewhere in the body. Many of these were for a company that has a department referred to as "SAS". At least at the time I was searching, contract positions were also listed far more often than permanent positions. I was excluding those positions. I also discovered that even among the true SAS positions, many appeared to be the same position but posted on different days. After reviewing a number of positions that met my planned criteria, I opted to reduce my sample to 52. I was expecting to see patterns but was finding such a wide variation in the postings that it was hard to summarize the results as I had planned. I did split the positions between 16 Clinical Trials and 36 other positions.

Job Postings Findings

As you read through this paper, please remember it should be treated as antidotal so you should not try to draw statistical conclusions from it. If you pulled positions at a different time, you might find different results.

Years experience

I expected senior positions to require at least 5 years of experience for a senior position. I actually had

Less than 5 years	67%
At least 5 years	33%

The highest was 7-10 years experience for someone to do predictive modeling. There minimum listed was 2 years.

Education Requirements

I was surprised that education requirements were not always listed. For Clinical Trials positions, only 80% listed education and it was always a BS. One position also listed RN as an acceptable degree.

For the other positions, only 33 % listed education. This group had one that required an MS, one preferring an MS and another preferring an MBA. While you might think the MS and MBA would be equivalent, the one preferring the MBA focused on the business requirements of the position more than the SAS experience.

Industry Experience

I've often heard people complain that Clinical Trials positions require experience but don't offer positions so you can gain experience. Based on those comments, I expected all the Clinical Trial positions to explicitly mention industry experience. Only 33% required it and another 16% preferred industry experience. While no one said industry experience wasn't required, the others were not explicit. For the other positions, there was a slightly higher rate for requiring industry experience. Most of those requiring industry experience were in the finance/mortgage area.

Even though postings were not specific, I found them to indirectly require industry experience. For example, one position wanted an understanding of the "champion-challenger test design". I haven't a clue as to what that is but I'm assuming someone in the mortgage industry would know. Many positions provided details about the actual work to be performed that indirectly was a list of industry requirements.

SAS Skills

"Strong SAS experience" was a very popular phrase and all the positions used some variation of that phrase. But just what is "strong" experience? I don't think the postings I looked at provided much insight into that question.

For the Clinical Trials positions, 80% mentioned SAS/STAT in some way. However, for some it was clear from the overall wording that you do not need to be a statistician but you need to know enough about statistics and using the SAS/STAT procedures to work with the statisticians. Half of the Clinical Trial

positions mentioned macros. I found it interesting that there were references to “SAS/MACRO” as though it was a separate product like SAS/GPAPH. There were also a few references to SAS/AF and SAS/GRAPH while one position specifically said PROC REPORT.

For the non-Clinical Trials positions, there was one position that wanted SAS/AF, Macros, SQL, SAS/Graph, Proc Report and SAS/Stat. Everyone else just wanted that “strong” experience.

Recent discussions on the electronic user group SAS-L included whether DDE was out-dated. I did not expect to find any positions listing DDE and I did not. However, another debate is whether macros are outdated and SAS users should be moving to SCL. In addition to being used in application development, SCL can also be used in the data step. I did not find any positions that specifically mentioned SCL. I expected Clinical Trials to have a heavy emphasis on macros and that was found.

I did not find any positions that listed a need for the SAS industry-specific products such as those for Credit Risk Management in Banking or Detail Data Store for Retail. However, my guess is that the positions that want people with expertise in these products list those positions under titles such as “Risk Management Analyst” or “Retail Analyst” and do not list SAS specifically so they failed to come up in my search.

There was one position in the Clinical Trials area that stated the candidates would be given a programming skills test as part of the interview. It was listed as a separate item giving me the impression that the test was important. This was the same position that also specifically mentioned PROC REPORT and other details so you would have some idea what would be on such a test.

Non-SAS Technical Skills

I didn't count SQL in the SAS skills list because for most positions, I couldn't always tell if they wanted SAS SQL, SQL for a specific database or simply any SQL experience. If you are wondering why it would matter, then you haven't used SQL against a variety of databases. While much of SQL is the same regardless of the database, it is not identical. For example, SAS permits full joins on two tables but MS Access does not (or at least it didn't last time I used it). Some of the postings were definitely looking for non-SAS SQL experience.

Half of the non-Clinical Trial positions wanted something besides SAS skills. It was even higher for the Clinical Trial positions with 80% mentioning something else. Positions wanted a wide range of other technical skills. Some of these skills were listed as required and others were marked as preferred. Knowledge of a specific operating system was the most common but the system itself was varied. Some of the other skills that were listed were experience with Microsoft

office products, Java, VBA, Crystal reports, relational databases, large databases, and Six Sigma.

Non-Technical Skills

All the positions mentioned non-technical skills. The exact choice of words varied making it hard to summarize. For example, is “critical thinking” the same as “analytical thinking”? I think it depends on the industry so I’ve grouped them together. The most often mentioned skills are:

- Communication
- Organization and management
- Analytical/statistical skills and critical thinking
- Self-motivator

Communication is both written and oral. Postings cited the need to work with other team members as well as employees in other departments and at all management levels. References to organization and management included being able to manage multiple priorities, lead a project and lead others. Postings also mentioned self-motivator and working independently. Several positions listed both working independently and as a team.

Postings mentioning SAS/STAT were focusing on statistical skills. Other postings listed analytical skills. I think some positions used “analytical” in the same sense as statistical in that you need to look at the mathematical parts of a project. Others appear to use “analytical” in terms of looking at a project or process and finding ways to improve it. The term “critical thinking” was also used in other postings that were also interested in improvement. Regardless of what term you used, the postings want someone who can think rather than just writing code that follows a written specification.

Other skills that were mentioned include:

- Flexibility
- Works well under pressure
- Willingness to take on the unfamiliar
- Training others
- Writing good documentation
- Innovation

Interview Findings

The informal interviews were conducted with people in different industries across the US. One common theme for senior candidates that were interviewed but not hired related to the ability to fit in. Several managers reported the candidate was very strong technically but came across as a “guru” who simply knew more than anyone else and wanted to make sure you knew that. Such a person would not work well with current staff. These managers felt training others was an

important role for a senior staff member and previous experience had shown such people were not good at sharing their knowledge.

Another requirement was to always be willing to learn more. This skill was very apparent in my own review. I was praised for tackling a new area of knowledge. I'm now in the process of writing examples and notes so other staff can gain the knowledge as well. Some of the managers noted the candidates that were hired had detailed knowledge about specific areas of SAS that were required for the position and also demonstrated that they knew enough basic material about other areas to be able to quickly learn whatever they were lacking.

One thing that was common among the people I interviewed was the importance of industry experience. The common answer is that "it depends on the opening". If the opening needs to be filled immediately to keep up work levels, then the industry experience is essential. The new person will have minimal time to even learn the specific company style. Many times, it really isn't a SAS skills issue but a terminology issue. From my own experience, I worked with a very knowledgeable SAS programmer. His eyes glazed over when he was asked to do "LOCF" and flag those records. Although he knew the SAS statements that were required, he didn't have a clue what he was supposed to do until it was explained LOCF in terms he understood.

Other times, the person may be replacing the "guru" for something specific such as the operating system. In that case, knowing the operating system is far more important than knowing the industry. They would also factor in how many other staff members they currently had that were knowledgeable in an area or still learning. They need to keep a balance so those who were helping to train others didn't get overworked with training requirements.

Managers that I talked with stated they do have times where they can easily hire someone without specific industry experience. However, for economical reasons they may decide it's better to hire a junior person. If they are considering senior level candidates, they often find them through internal transfers from other departments or through employee referrals so such positions are not posted to external sources such as Monster.com.

Summary

I was correct on some of my predictions but not all. Number of years of experience isn't as tied to "senior" status as I expected. Specific SAS skills didn't appear that often but I was right in that "senior" staff are expected to have more than just SAS skills. Communication skills is definitely important but not the only non-SAS skill required for a senior position. Being able to work as a team is as common a requirement as being able to work independently.

At least based on my small sample, there are similarities for senior positions but each company still has unique requirements. So whether you are looking for a

promotion or a new position, my opinion is that you need to know your strengths for both SAS and non-SAS skills and how they related to the requirements of the specific position. I think you also need to be able to show how plan to improve on any areas that aren't a strength but are required for the position. You might not get the promotion or new job but you can improve chances compared to the person who says "I've used SAS for 5 years so I should hold a senior position."

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