

**Nithiyandhan
Ananthkrishnan**

*Founder and CEO, Algorithm
Informatics, Bangalore,
Karnataka, India*

Address for correspondence:
Mr. Nithiyandhan Ananthkrishnan,
Founder and CEO, Algorithm
Informatics, Bangalore, Karnataka, India.
E-mail: Nithiyandhan.A@gmail.com

Abstract

Clinical SAS programming in India: A study of industry needs versus wants

Background: The clinical SAS (www.sas.com) programming industry, in India, has seen a rapid growth in the last decade and the trend seems set to continue, for the next couple of years, due to cost advantage and the availability of skilled labor. On one side the industry needs are focused on less execution time, high margins, segmented tasks and the delivery of high quality output with minimal oversight. On the other side, due to the increased demand for skilled resources, the wants of the programmers have taken a different shift toward diversifying exposure, unsustainable wage inflation due to multiple opportunities and generally high expectations around career progression. If the industry needs are not going to match with programmers want, or vice versa, then there is the possibility that the current year on year growth may start to slow or even go into decline. **Aim:** This paper is intended to identify the gap between wants and need and puts forwards some suggestions, for both sides, in ways to change the equation to benefit all. **Settings and Design:** Questionnaire on similar themes created to survey managers and programmers working in clinical SAS programming industry and was surveyed online to collect their perspectives. Their views are compared for each theme and presented as results. **Materials and Methods:** Two surveys were created in www.surveymonkey.com. Management: https://www.surveymonkey.com/s/SAS_India_management_needsverswant_survey. Programmer: https://www.surveymonkey.com/s/SAS_India_programmer_needsverswant_survey. **Statistical Analysis Used:** Bar chart and pie chart used on data collect to show segmentation of data. **Results and Conclusions:** In conclusion, it seeks to highlight the future industry direction and the skillset that existing programmers need to have, in order to sustain the momentum and remain competitive, to contribute to the future pipeline and the development of the profession in India.

Key words: Clinical, outsourcing, SAS programming

INTRODUCTION

India is moving from the generic bulk drug manufacturer to one of key player in clinical research industry. Clinical trial analysis and reports submission using SAS software is one of the key activities carried out as part of the clinical research. Due to high availability of skilled resources,

innovative capacity and reduced costs this particular segment of resources is highly recognized and more work is being outsourced^[1] currently than in the past. As in any scenario, when the supply cannot keep up with demand, it always leads to numerous challenges.^[2] This paper is aimed to study the balance between the industry needs and the programmers want and also reflects on its impact, with the current challenges faced by the management.

MATERIALS AND METHODS

In order to analyze the equation, a survey was created using online survey portal survey monkey^[3] and questionnaires were sent to managers and programmers in the clinical

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SAS programming domain. The following themes were assessed as part of the survey.

Table 1 represents the themes assessed from management and programmers view in order to depict the industry needs and wants.

Survey responders experience level

The below Figure 1a and b represent the experience level of responders, who participated in the survey created, to analyze the theme. In total, there were 102 responses from programmers and 13 responses from management. The ratio of management to programming is roughly 1:12, which more or less mirrors the industry standards.

programmers to determine their average duration within companies during their entire careers:

If Employee A has stayed with Company X for 1 year, Company Y for 2 year, Company Z for 1.5 year, then the average duration is set to $(1 + 2 + 1.5/3) = 1.5$ years.

If Employee B has stayed with Company X for 3 year, Company Y for 4 year, Company Z for 0.5 year, then the average duration is calculated as $(3 + 4 + 0.5/3) = 2.5$ years.

RESULTS AND DISCUSSION

Theme 1: Skills to be developed

This theme briefly touches upon the skillset^[4] that the programmers (mid to senior level) are keen to develop mapped to the areas where management thinks that there is a strong need for them to develop. The first three bars in Figure 2 indicate the basic areas where the self-need to improve and management expectations are closely aligned. This is a positive trend as the needs are clearly translated and matching with the wants of the industry. The next three bars indicate the soft skills where the management assessed expectations are slightly above the programmer's perceived areas to improve. This indicates a need for additional steps, to be taken by the management, to mentor their programmers in honing their soft skills; this is especially true for senior programmers who are on the verge of managing projects and specifically in areas of resourcing, collaboration, time management, clear communications, expectations management and stake holder management.

Theme 2: Duration

With the increased demand for highly skilled programmers, in this specific area, the words "attrition" and "retention" are always a constant debate. This Figure 3 represents the reality in terms of the number of years the programmers have stayed within an organization and the number of years that the management expects them to stay, at least to give some stability to projects and maintain a reasonable return on investment in terms of efforts spent on hiring, training and coaching. The following formula was used with

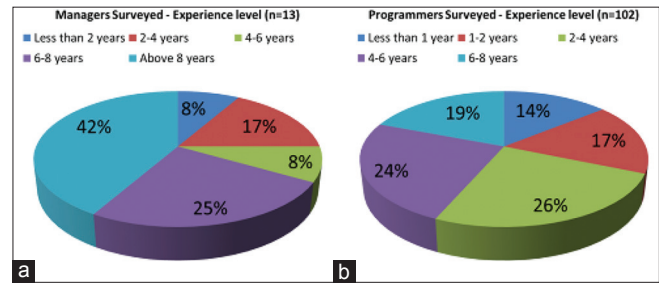


Figure 1: (a) The split of management experience level, with survey responders under the category management, which reflects the industry needs. (b) The split of programming experience level, with survey responders under the category programmers, which reflects the industry wants

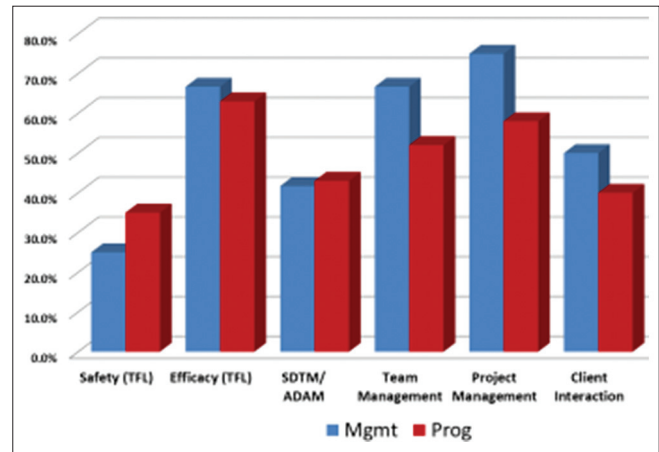


Figure 2: Skills to be developed

Table 1: Themes assessed		
Topics	Management view (industry needs)	Programmer view (industry wants)
Skills to be developed	Assessed	Perceived
Duration	Retention	Attrition
Career move factors	Perceived	Influenced
Pay structure	Giving end	Receiving end
Industry trend	Forecast	Anticipation

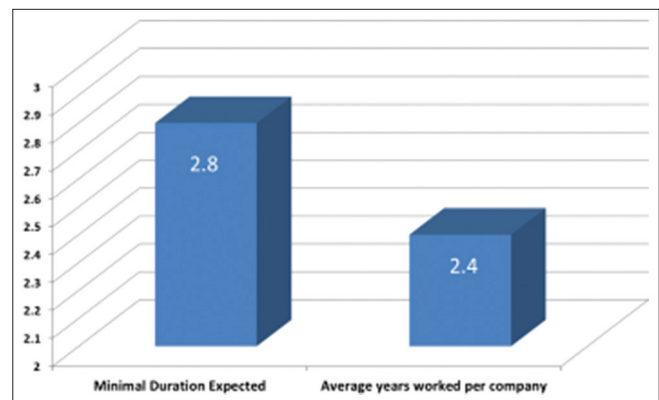


Figure 3: Retention versus attrition

Thus Figure 3 can draw the inference in two ways:

- The average duration worked is not even matching the minimal expectations
- The difference doesn't seem to be as bad as it is being portrayed if it's viewed from any skill set where the demand is higher than the supply.

This graph emphasizes the industry need for programmers to focus on stability within an organization and acquiring/honing the skill sets, as this would give them more benefit, in the long run, rather than switching organizations frequently for short term monetary benefits.

Theme 3: Career move factors

Talking about attrition, the next theme analyzed in Figure 4 was to look at factors that influence career move. This was again assessed in two ways: From the management perspective, what factors they perceive when their staffs move out from the company and the other one from the programmer's perspective, on what factors influence them to look for other job opportunities.

Figure 4 completely contrasts where the management heavily voted on the higher salary benefits, as the primary factor, whereas there is much a higher inclination from programmers on the end to end exposure.

This insight can be used by management to introduce retention measures in order to motivate their existing talent and retain them better

Theme 4: Pay structure

As we saw, compensation being one of the prime factors, which relates to the career move and attrition, the next theme analyzed in Figure 5 more closely the perception of salary ranges and structure from both ends.

The management views on salary ranges seems to be undisputed, whereas the programmers seem to have a different understanding (or perception) of industry pay standards. This reflects in the lower rating from programmers with respect to "On par scale" and below par scale. Industry standard salary should be seen as average salary paid per professional for their number of experience, skillset and the year on year average salary increase provided in companies.

The industry standard ranges should not be related with the salaries that people receive while moving onto a new job, as that pay will definitely be higher as companies use this to attract talent. Understanding Figure 5 might help to resolve the gap between the giving and the receiving end.

Theme 5: Industry trend

The last theme that was assessed, as part of this study, was to see how the industry trend will develop in the future.

Before we make this prediction, let us see how the industry has grown in the past 3 years [Figure 6]. The below chart explains that 17% of management has seen growth, in terms of staffing and volume of tasks, of more than 100% and another 17% says that growth has been somewhere between 80% and 100%. The growth rate of 60-80% is close to 16%. Overall 50% of the management have expressed that their teams have seen more 50-100% growth, which is a very positive indication and recognition for India for the quality of work delivered, talent pool available, revenue

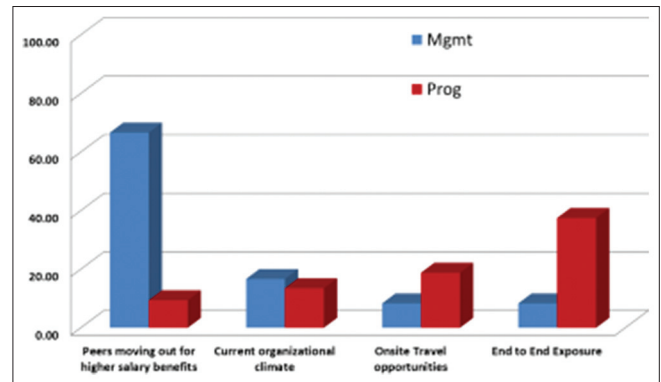


Figure 4: Career move factors

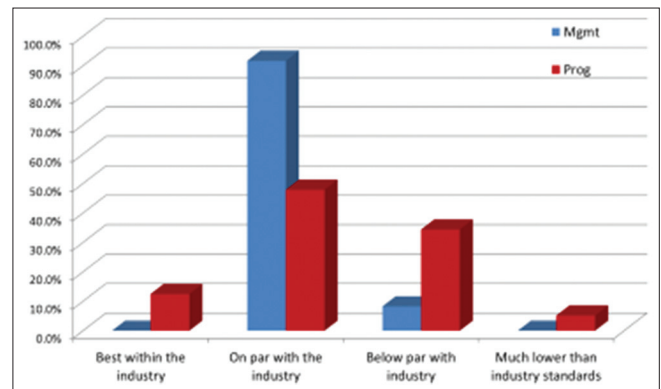


Figure 5: Pay structure



Figure 6: Industry growth trend over the last 3 years

margins achieved by outsourcing to India. With this as the baseline, now let's look at how future growth is forecasted by management and anticipated by programmers in Figure 7.

Both the anticipation and the forecast seem to be highly positive, with more inclination toward “grow more than the current rate” and “grow with similar rate.” There is, however, the third bar emerging which anticipates saturation at some point of time. This may be a reflection on some of the current challenges faced by management in engaging the operations. There has been absolutely no response on the decline trend, from management or programmers, which is again assuring in terms of the benefits that companies see in investing toward outsourcing of such activities to India.

CONCLUSION

The survey responses and graphs depicted, can be interpreted in many different ways, but the common themes that have emerged are in terms of skills to be developed and future growth forecast; however, the career move factors, pay structure and attrition seems to be contrasting to some extent. Management has also rated the following as the main challenges faced^[5] by them currently [Figure 8].

- Reduction in billing rates
- Employee retention and stability
- Unavailability of proficient skillset
- Improvement in quality and turn around.

Some of the gaps that we see in attrition contribute to employee retention and stability. The wider gap in understanding of salary structures, also on the long run, will directly impact with the challenge of reduction in billing rate. Gaps in the soft skills related to project management, resource management and client interaction, if not addressed, will impact on the improvement required in cycle time and quality.

In summary, the management and programmer community needs to be aware of the existing gaps and work together in addressing them. India's advantage of proficient talent pool and relatively low cost will continue to drive the market and the real success in future will be measured not only in terms growing headcount and resource pool, but rather having the same talent work on high end tasks, which involves end-to-end process from extraction until submission.

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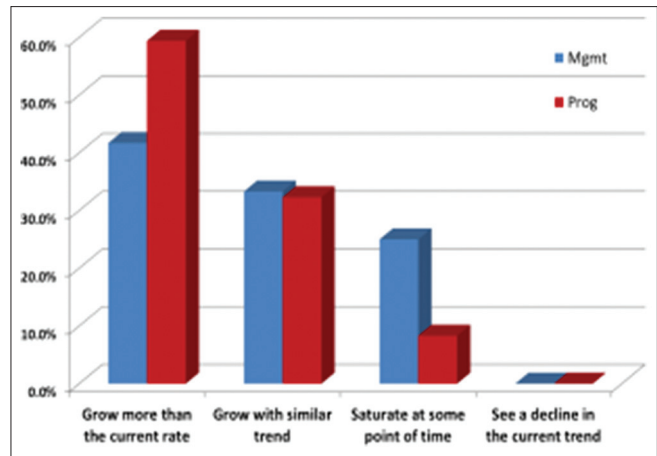


Figure 7: Industry future growth forecast

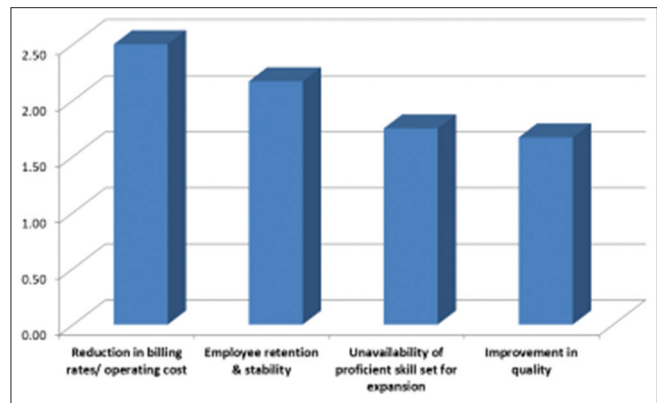


Figure 8: Challenges faced by management

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REFERENCES

1. Thu-Thuy Truong, Sy Truong. How is Outsourcing Going to Affect SAS Programming? 2005. Available from: <http://www.lexjansen.com/pharmasug/2005/applicationsdevelopment/ad20.pdf>. [Last accessed on 2014 Jan 31].
2. Vijay M, Matthews M. Pressures on SAS Programming Roles and their Evolution in the Competitive Global Environment. 2010. Available from: <http://www.lexjansen.com/pharmasug/2010/ib/ib03.pdf>. [Last accessed on 2014 Jan 31].
3. SurveyMonkey. Product or service names are registered trademarks or trademarks of SurveyMonkey in the USA and other countries. Available from: <http://www.surveymonkey.com>. [Last accessed on 2014 Jan 31].
4. Lafler KP, Charles ES. What's Hot, What's Not: Skills for SAS® Professionals, 2011. Available from: <http://www.support.sas.com/resources/papers/proceedings11/191-2011.pdf>. [Last accessed on 2014 Jan 31].
5. LaBrec P, Golder D. Challenges in Managing a Large (20+) SAS Programming Group, 2006. Available from: <http://www.lexjansen.com/pharmasug/2006/management/ma09.pdf>. [Last accessed on 2014 Jan 31].

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