HR ANALYTICS AT SCALENEWORKS - BEHAVIORAL MODELING TO PREDICT RENEGE

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Kumar Rahul and U Dinesh Kumar, Professor of Quantitative Methods and Information Systems, prepared this case for class discussion. This case is not intended to serve as an endorsement, source of primary data, or to show effective or inefficient handling of decision or business processes.

ScaleneWorks has been supporting several information technology (IT) companies in India with its talent acquisition. In 2015, the Indian IT industry directly employed 3.5 million workers.[1] Acquiring new talent is always a challenging and time-consuming task, especially in IT since the hired person has to handle fast changing technology. In many instances, it is difficult to find the exact match for the specified job. If an offer is denied, then the human resource (HR) department has to repeat the entire recruitment process resulting in additional effort from the top management.

On April 30, 2015, Sanjay Shelvankar, Cofounder and the Chief Executive Officer of ScaleneWorks called for a meeting of its top management, which included Ashish Tiwari, Vice President and Head of Operations and Sharon George, Head of Technology and Strategy. Sanjay wanted to brainstorm with Ashish and Sharon on the recent challenges the company was facing as talent management consultants. Sanjay began the meeting with the following statement:

> We all know that talent acquisition is becoming a tough task, consuming time and effort of HR department and top management of many organizations. Even after they find the right talent, there is no guarantee that the person will join the organization if an offer is made.

Sharon George, one of the co-founders of the company said:

> If we can predict in advance whether someone will accept an offer or not, it will help companies to reduce their talent acquisition effort significantly. I think, many companies are now using analytics to address HR problems, I saw a video in YouTube on how Google is using analytics for promotions.

Ashish Tiwari, the other co-founder of the company concurred and all of them decided to explore the possibility of using analytics to improve the talent acquisition process. ScaleneWorks had collected data from its past talent acquisition drives with key information such as current cost-to-company (CTC), expected CTC, offered CTC, locations and so on. All the founders of the company were convinced that it was possible to develop an early warning system that could help the companies to predict in advance whether a person would accept an offer and join the company after accepting the offer.

SCALENEWORKS

ScaleneWorks People Solutions LLP (ScaleneWorks) has been a Bangalore based start-up that commenced its operations in the summer of 2010. ScaleneWorks was conceived by a team of HR practitioners comprising Sanjay Shelvankar, Ashish Tiwari, and Sharon George who had already scripted successful corporate careers and were from three different areas of expertise such as technology consulting, talent acquisition and marketing. Their combined vision was to build an organization of great value and to position it among the most respected talent acquisition solutions providers globally within the next 5 years; this was reflected in the way they carefully chose their customers and engaged with

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[1] Source: *Economic Times*, February 17, 2015. Available at http://articles.economictimes.indiatimes.com/2015-02-27/news/59585092_1_economic-survey-e-commerce-market-export-market

them. ScaleneWorks considered itself to be the first true end-to-end talent acquisition solutions organization which had the passion to bring together decades of experience in technology consulting and talent acquisition areas to usher in a paradigm shift in the way talent acquisition was practised in the existing ultra-demanding business environment. ScaleneWorks not only advised its customers on the status of talent acquisition practices, but also recommended and implemented individually tailored, viable solutions using analytics.

Business process re-engineering with its three tenets (i.e. people capability, process maturity, and technology adoption) formed the core ability of the company to provide customers with an enterprise-class customized solution to address their talent acquisition challenges. They brought in deep domain knowledge of how talent acquisition occurred in corporates and provided viable recommendations to its customers.

EXISTING BUSINESS CHALLENGE

Client service is all about the quality of the people involved in delivering business. However, one of the major challenges for Sanjay and his clients revolved around managing a quality workforce. Organizations spend tremendous amount of time and energy to create a homogenous environment where people thrive and succeed. Despite all the efforts to maintain an environment that is conducive, people leave organizations in search of better opportunities. In order to fill the vacuum, HR is bound to recruit new talent, thus forming a vicious circle in between attrition and recruitment; and in order to mitigate this, organizations keep trying to bridge the gap by strengthening their recruitment processes and creating a culture of inclusivity.

Sanjay wanted to find a unique solution which extended beyond the process aspect of human resource management. At first, Sanjay identified and prioritized the renege problem and put it forward in a subtle way.

> In my opinion, a significant proportion of the candidates does not join the company that has made an offer. If we can identify them in advance, then companies don't have to waste their resources.

Although this problem is generic, for this case-in-study, a particular client of ScaleneWorks was identified. According to Sanjay, in a typical IT services company, the number of people not joining the company varied anywhere between 15% and 35% of all the people who accepted the offer. Sanjay went ahead to explain the impact of this problem from time, cost, and quality perspectives. The impact may seem minimal if the number of offers rolled out to candidates revolved around hundreds in a year. However, if the offers rolled out surpassed the thousands mark, the magnitude of impact increased exponentially.

He elaborated the impact for a client[2] where 12,000 offers were rolled out every year. At 30% renege rate, about 3,600 candidates would accept the offer and then not join the company. Even with the most conservative estimates, on average, organizations would have spent 15 man hours per candidate in the recruitment lifecycle, effectively indicating a humongous loss of 54,000 man hours wasted by one client alone. This involves the time spent by the company in interviewing the candidate whose value is more than the mere numbers of hours.

Renege has greater impact on the cost of talent acquisition. The entire recruitment lifecycle starting from sourcing resumes until candidate is deemed fit for recruitment, involves various agencies. These agencies work in tandem with the talent team to screen for candidates who would fit the profile. A payout is provided to these agencies for their involvement in the recruitment cycle. It was estimated by ScaleneWorks that owing to the renege candidates, the cost of hiring increased anywhere between 10% and 15%.

Ashish elaborated a scenario of business impact of renege:

> If a candidate sends in a mail rejecting the offer just 10 days before his date of joining and if the business has already committed to the client and had made an entire plan of on-boarding the new joinee to the project; what do we do? Either we go and tell this to the client and present a miserable situation which no one would like to do in front of the customer; or, we look for an alternative. Most of us look for an alternative and fill up the position so as to make business function as usual. But in doing so, we cannot expect to get the same quality of resource as the one who reneged.

Sanjay and Ashish wanted answers to the following questions.

1. What are the key drivers that influence the candidate joining/not-joining a company?
2. What rules can be used to predict the renege (candidates accepting the job offer and not joining)?
3. Devising a predictive algorithm to calculate the probability of acceptance of an offer and joining the company after offer acceptance stage.

ScaleneWorks had captured data related to the applicants. The variable description of the data captured is provided in **Exhibit 1**. **Exhibit 2** describes the recruitment process in detail.

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[2] Name of the client is not revealed to ensure confidentiality

Exhibit 1

Variables found in 12,000 records captured over a year

Sl. No.	Name of Variable	Variable Description
1	Candidate reference number	Unique number to identify the candidate
2	DOJ extended	Binary variable identifying whether candidate asked for date of joining extension (Yes/No)
3	Duration to accept the offer	Number of days taken by the candidate to accept the offer (continuous variable)
4	Notice period	Notice period to be served in the parting company before candidate can join this company (continuous variable)
5	Offered band	Band offered to the candidate based on experience and performance in interview rounds (categorical variable labelled C0/C1/C2/C3/C4/C5/C6)
6	Percentage hike (CTC) expected	Percentage hike expected by the candidate (continuous variable)
7	Percentage hike offered (CTC)	Percentage hike offered by the company (continuous variable)
8	Joining bonus	Binary variable indicating if joining bonus was given or not (Yes/No)
9	Gender	Gender of the candidate (Male/Female)
10	Candidate source	Source from which resume of the candidate was obtained (categorical variables with categories: Employee referral/Agency/Direct)
11	REX (in years)	Relevant years of experience of the candidate for the position offered (continuous variable)
12	LOB	Line of business for which offer was rolled out (categorical variable)
13	DOB	Date of birth of the candidate
14	Joining location	Company location for which offer was rolled out for candidate to join (categorical variable)
15	Candidate relocation status	Binary variable indicating whether candidate has to relocate from one city to another city for joining (Yes/No)
16	HR status	Final joining status of candidate (Joined/Not-Joined)

Source: ScaleneWorks

Exhibit 2

Recruitment process

The recruitment process at ScaleneWorks follows the usual talent acquisition lifecycle (TALC).

Sourcing → Screening → Selection → Fitment & Offer → Post-offer follow-up (PoFu)

The recruitment process for a company starts when the resource management group (RMG) performs a yearly demand planning in conjunction with business units, sales team and talent acquisition group (TAG). TAG finally takes over the recruitment process to meet the finalized demand pipeline.

Sourcing involves looking for resumes which can fit into the different schemas of demand. Typical channels to source resume involve:

- Job portals
- Employee referral
- Advertisement/Walk-ins
- Direct
- Vendors/Consultancy
- Internal database of sources resumes
- Social networking sites

Sourcing from vendors/consultancy is most expensive while sourcing through internal database and social networking sites is the least expensive way of sourcing resumes. However, companies prefer to adopt more than one way of sourcing so as to balance the cost, quality and effort required to obtain an optimal mix of resumes. Management and TAG look into the conversion rate for each channel and cost per channel to arrive at the channel mix to be used to meet the resource demand pipeline.

Screening can be broadly divided into two types.

- Hygiene screening involves scanning the resume for notice period to be served by the candidate, gap in education, previous companies of employment, etc.
- Technical screening involves matching the skills mentioned in the resume with the desirable skills mentioned in the job description for a particular position.

The screening process is a time-consuming and strenuous process. A team of HR executives is involved in screening nearly 12,000–15,000 resumes for every client every month. The screening process also includes a pre-determined service level agreement (SLA) with the client. This SLA puts a cap on the number of resumes which should not be rejected in the selection round. From a client's perspective, this SLA is needed to ensure the quality of resumes being screened by the HR executives.

Selection process involves multiple rounds of interview for the candidates whose resumes have been screened and cleared. Typically, selection process would include:

- Technical assessment 1: This would primarily be a telephonic round.
- Technical assessment 2: This may be a second telephonic round or a face-to-face interview.
- Final round: This would be a face–to-face interview round with senior management.
- HR round: This round of interviews is aimed at understanding the communication and inter-personal skills of the candidate.
- Customer round: This round's primary objective is to enhance the comfort level of the candidate and gain clients' confidence in the skills of the candidate.

Initially, the customer round may or may not take place for all the candidates. The objective of the selection process is to evaluate the candidate on technical/functional skills, process & tools knowledge, domain knowledge, and behavioral aspects.

Fitment & offer is a function of the score given by the interview panel in different rounds of selection process. Demonstration of skills, knowledge and attitude as judged by the interview panel finally gives a fitment calculation score. The offer roll-out or rejection is guided by this score.

If the candidate is deemed fit for a position, a final offer is rolled out which details each and every aspect of the employment. There is also an online system through which the offer is rolled out to the candidates, wherein they can either accept or reject the offer online.

Post-offer follow-up (PoFu) process requires the HR executive to be in touch with the candidate to whom the offer has been rolled out in order to ensure that the candidate joins the company after completion of the notice period being served to the parting company. The operations in this team are carried out by sub-teams organized as:

- **Document collection team**: If the candidate accepts the offer, within 24 hours, a link is sent to the candidate, which enables the candidate to upload all the documents to complete the joining formality. The target for the document management team is to get all the relevant documents uploaded and verified for completeness within five days. Once the documents are uploaded and verified for completeness, the document management team intimates the third party vendor for background verification process. The background verification needs to be completed within 15–20 days of document submission by the candidates.
- **Advanced PoFu team**: If the document collection team finds the candidates unwilling to submit the document, the matter is refered to the advanced PoFu team. This teams works closely with the clients TAG to sort out the issue and make amendments in the offer, if needed.
- **Renege management team**: If the candidate accepts the offer and uploads the document successfully, this team ensures that the candidate joins the company after completion of the notice period and on the date of joining agreed by the candidate. This team follows up with the candidate using a structured six-stage process (**Exhibit 3**). Every stage includes a questionnaire which the team uses to rate the probability of the candidate joining the company. The objective of

this team is to provide 70% predictability by stage 2. The objectives for the stages are detailed here.

Stages	Objectives to check
Stage 1 (SLA: 0-3 days)	Offered letter received
	Offer accepted
	Joining form filled
	Documents uploaded in the system
	Resignation submitted check
Stage 2 (SLA: Stage 1 + 10%*Notice period)	Last working day confirmation
Stage 3 (SLA: Stage 1 + 20%*Notice period)	Replacement found
Stage 4 (SLA: Stage 1 + 40%*Notice period)	Knowledge transition completed
Stage 5 (SLA: Stage 1 + 60%*Notice period)	Resignation acceptance mail
	Relieved from current role
Stage 6 (SLA: Stage 1 + 80%*Notice period)	Induction details received
	Date of joining confirmed
	Joined or not joined

Duration between calls is subject to change. Stage-wise objectives, issues, queries/unresolved queries, incoming calls from candidate, holidays, background verification, recruiter requests, etc. may impact the duration. Finally, renege cases are escalated to the advanced PoFu team for discussion, if needed.

Source: ScaleneWorks

Exhibit 3

The six-stage questionnaire

The table depicts the dialect process which involves six stages.

Stage 1			
Greeting	Mandatory	Resigned Check	Mandatory
Introduction	Mandatory	Resignation Acceptance Check	Mandatory
Call Recipient Check	Mandatory	Notice Period	Mandatory
Conversation Starter	Preferable	Replacement and KT	Mandatory
Setting the Agenda	Mandatory	Retention Efforts	Preferable
Job Offer Check	Mandatory	Tentative/Confirmed LWD	Mandatory
Congratulations on OA	Mandatory	Referral Pitch	Preferable
Reason for Accepting the Offer	Preferable	Tentative/Confirmed DOJ	Mandatory
Prelude	Preferable	Relocating Yes/No	Preferable
Documents Uploaded Check	Mandatory	Accommodation Required Yes/No	Preferable
Joining Form Filled Check	Mandatory	Induction Details	Mandatory
BGV Status	If Required	Preparation for Closing the Call	Mandatory
Current Company Details	Mandatory	Call Closing	Mandatory
Company Reactions	If Required	Prediction	Mandatory
Resignation Process	Mandatory		

Exhibit 3 (Continued)

Stage 2	
Greeting	Mandatory
Introduction	Mandatory
Call Recipient Check	Mandatory
Conversation Starter	Preferable
Setting the Agenda	Preferable
Documents Uploaded Check	If Required
Joining Form Filled Check	If Required
BGV Status	If Required
Company Reactions	If Required
Resignation Process	Mandatory
Notice Period	Mandatory
Replacement and KT	Mandatory
Retention Efforts	Preferable
Confirmed LWD	Mandatory
Confirmed DOJ	Mandatory
Referral Pitch	If Required
Preparation for Closing the Call	Mandatory
Call Closing	Mandatory
Prediction	Mandatory

Stage 3	
Greeting	Mandatory
Introduction	Mandatory
Call Recipient Check	Mandatory
Conversation Starter	Preferable
Setting the Agenda	Preferable
Documents Uploaded Check	If Required
Joining Form Filled Check	If Required
BGV Status	If Required
Company Reactions	If Required
Resignation Process	Mandatory
Notice Period	Mandatory
Replacement and KT	Mandatory
Retention Efforts	Preferable
Confirmed LWD	Mandatory
Confirmed DOJ	Mandatory
Referral Pitch	If Required
Preparation for Closing the Call	Mandatory
Call Closing	Mandatory

Exhibit 3 (Continued)

Stage 4	
Greeting	Mandatory
Introduction	Mandatory
Call Recipient Check	Mandatory
Conversation Starter	Preferable
Setting the Agenda	Preferable
Documents Uploaded Check	If Required
Joining Form Filled Check	If Required
BGV Status	If Required
Company Reactions	If Required
Resignation Process	Mandatory
Notice Period	Mandatory
Replacement and KT	Mandatory
Retention Efforts	Preferable
Confirmed LWD	Mandatory
Confirmed DOJ	Mandatory
Referral Pitch	If Required
Relocation Planned Yes/No	Preferable
Accommodation Planned Yes/No	Preferable
Preparation for Closing the Call	Mandatory
Call Closing	Mandatory

Stage 5	
Greeting	Mandatory
Introduction	Mandatory
Call Recipient Check	Mandatory
Conversation Starter	Preferable
Setting the Agenda	Preferable
Documents Uploaded Check	If Required
Joining Form Filled Check	If Required
BGV Status	If Required
Company Reactions	If Required
Resignation Process	Mandatory
Notice Period	Mandatory
Replacement and KT	Mandatory
Retention Efforts	Preferable
Confirmed LWD	Mandatory
Confirmed DOJ	Mandatory
Referral Pitch	If Required
Relocation Planned Yes/No	Preferable
Accommodation Planned Yes/No	Preferable
Induction Details	Mandatory
Preparation for Closing the Call	Mandatory
Call Closing	Mandatory

Exhibit 3 (Continued)

Stage 6	
Greeting	Mandatory
Introduction	Mandatory
Call Recipient Check	Mandatory
Conversation Starter	Preferable
Setting The Agenda	Preferable
Documents Uploaded Check	If Required
Joining Form Filled Check	If Required
BGV Status	If Required
Company Reactions	If Required
Resignation Process	Mandatory
Notice Period	Mandatory
Replacement and KT	Mandatory
Retention Efforts	Preferable
Confirmed LWD	Mandatory
Confirmed DOJ	Mandatory
Referral Pitch	If Required
Relocation Planned Yes/No	Preferable
Accommodation Planned Yes/No	Preferable
Induction Details	Mandatory
Joined/Not Joined Check	If Required
Preparation for Closing the Call	Mandatory
Call Closing	Mandatory

Source: ScaleneWorks