Industry-Academia Collaboration in Nepal

A case study of Customer Churn Prediction for Worldlink

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In the last two decades, emerging countries’ predominant strategy of expanding the size of the graduate pool by setting up new universities, without paying much attention to their quality, has resulted in a massive increase in the number of non-elite universities compared to the number of elite universities [1], [2], [3]. In non-elite universities in Brazil, China, and India, the percentage of faculty holding PhDs was only 27%, 20%, and 10% respectively in 2009, while the percentage in elite universities in all three countries was approximately 50%[3]. Human Capital research (e.g. Neal, 1995) suggests that in order to be prepared for jobs including those in R&D departments, two levels of skills are necessary: industry-specific and firm-specific[4]. As universities in emerging countries are constrained by a lack of quality resources, external industrial training programs could be perceived as ‘complementary resources’ (Lavie, 2006) to their existing internal teaching resources, enabling them to fill their resource voids[5].

In the context of developing nations like Nepal too, the theoretical approach of study is something Nepalese students have been following for ages. They are used to following the contents of the books and giving exams. In engineering too, most of the students are focused on only passing the exams and they are not aware of the importance of the actual implementations and applications of the context they are studying. Industry-academia collaboration provides linkage between the faculty members of the universities and the industries. It is an opportunity for both the universities and the industries as it helps in enhancing the growth and development of both the students and the industry. These collaborations are often encouraged at the national level and many studies have emphasized their strategic importance for firms seeking to gain new knowledge, forge new relationships, and yield higher research and development (R&D) productivity [6], [7], [8].
Literature Review

The churning of a customer in a company is a situation where a customer stops using their service or cancels their subscription. Primarily, studies on customer churn started from Customer Relation Management (CRM). Mozer, Michael C., et al. (2000) have proposed that, in terms of the net return on investment, marketing campaigns for retaining existing customers are more efficient than putting efforts to attract new customers[12]. Reichheld et al. (1996) have shown that a 5 percent increase in customer retention rate achieved 35 percent and 95 percent increases in the net present value of customers for a software company and an advertising agency, respectively [13]. As such, churn prediction can be used as a method to increase the retention rate of loyal customers and ultimately increase the value of the company.

The majority of the early studies on churn were conducted from a management perspective, especially CRM (Customer Relation Management) [14], [15]. The telecommunications industry accounts for the majority of previous studies on churn. The financial and insurance industries also predict customer churn. Zhang, Rong, et al. (2017) stressed the need to build churn prediction models and prevent churn, referring to high customer acquisition costs and high customer values in the insurance industry [16]. Moreover, studies on churn have been actively conducted in the gaming field as in the telecommunication field. These services have a fast cycle of customer inflow and churn because of mass competition. If a single service is run for a long time, the service competition intensifies and the Customer Acquisition Cost (CAC) tends to increase. As the CAC gets larger, the technology to predict and prevent churn becomes more crucial. Milosevic, Milos, Nenad Živic, and Igor Andjelkovic. (2017) created a model predicting churn in the study on game churn, gave churn prevention incentives by finding out and dividing probable churn customers into A/B groups, and demonstrated actual effects statistically [17]. Additionally, research on churn was also conducted in the Internet service and newspaper subscription fields.

Churn prediction in today's competitive world is an important issue for most of the company. Customer churn is even associated with the existing cycle of a business. So, a company like Worldlink needs to understand their customers’ needs and requirements before they churn and also their probable reasons for churn.

Whenever a company wants to grow, they have to invest in gaining a new customer. The company has to bear a significant investment loss if its customers leave the company. Predicting when a customer is likely to leave the company becomes essential for a company to acquire huge savings to the business.
Description of the project

The churning of customers who are using the services of a company negatively impacts the company's growth and profitability. So, the company needs to work on minimizing the churn rate. Especially for a subscription-based company like Worldlink, it is equally crucial to attract new customers and retain old customers who are their Revenue Generating Units (RGUs). Traditionally, Telecom and Internet service companies keep an account of RGU data and they try to increase RGU flows. Implementation of modern technology in solving such industry problems has shown to be promising. In this project, academia is responsible to predict possible churn-risk customers and provide reasoning to the behavior of their churning.

A machine learning model is applied to predict the churn. The pipeline used for the Worldlink project consists of seven steps.

Source: RIU Analysis

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## Lens

The case study has three major stakeholders: Industry, Students and Research and Innovation Unit (RIU). As it is a new learning experience for all the associated partners, the following table summarizes the pros and cons from the respective perspectives.

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| **Industry Lens**| • Partnership with universities can strengthen a company's research and development programs.  
• Industries get work-ready freshers.  
• Collaboration contributes to the access to additional employees to the company without actually hiring them.  
• Collaborating with the students requires less investment. | • Generally, the students are unaware of the necessary skills required for the project. Thus, the company will not get the output as they would get it from the experts.  
• Risk of disclosure of the internal issues of the company. |
| **Students Lens** | • Students get to learn the culture of the real industries and the way they operate.  
• As the work gets done, in many cases, students get scholarships in the form of stipends or tuition waivers.  
• Students gain experience in the large-scale projects that they are expected to face after graduation. | • Usually, students are not used to facing project deadlines, and this causes delays in the project submission.  
• Sometimes, projects get time-consuming and it affects students’ curriculum and academics. |
| **RIU Lens**     | • RIU benefits from the collaboration by acquiring financial rewards from the commercialization of academic research.  
• It is an opportunity for the faculty to find future employment for their students through this collaboration.  
• Through collaborations, RIU can understand the current requirements of the industries and can expose more students to the industries in future projects. | • The research topics are generally controlled by the available funds and project needs. Therefore, topics will not be fully explored and will be solely based on income generation.  
• The academic approach and industry approach for problem-solving might be contradicting. |
Conclusion

Industry-academia collaboration is a newly chartered field in Nepal. ACEM being first among others to step in this has boosted students’ morale in light of hands-on industry experience. The Worldlink Customer Churn project has acted as a milestone in achieving the industry-academia ecosystem. Due to a properly laid out framework, the industry-academia project has been able to run smoothly. Moreover, to accomplish the goal of the industry projects, assistance from field specialists has also been provided by RIU; enhancing the experience of students on industry-academia collaboration.

References
