

## Student Dropout rate (Predictive Analytics)

As per one of the press reports in 2016, One of the Australian universities has the highest dropout rate with almost 30 per cent of its first-year students abandoning their courses. While there could be several reasons for this, and not every reason can be taken care of by university, there are a few that can be dealt with real time analytics.

University can leverage Big Data and Data mining for various use cases.

1. To minimize the student, drop out ration.
  - a. Consider a student who frequents the campus gym and participates regularly in student activities: If this pattern abruptly stops, the school could check in to make sure everything is okay. Unfortunately, most colleges don't analyse this data in real time. They often wait until students leave school to look at the stats.
  - b. Poor academic performance (low ATARs) and attendance.
  - c. Poor interest in using various facilities like library, meetups, attending classes and sport.
  - d. Visa and Immigration changes, financial hardship in paying fees and living, difficulties in finding job, culture shock, racial bias, other personal issues.

## Utilization of resources

With Predictive analytics of current resource utilization, University can maximize the utilization of resources and even offer it for spot price in real time. This can be achieved using real time data processing, analytics on historical data and identifying pattern to apply accurate prediction.

For example, a course that University offers at campus has total 120 students enrolled. A Staff while booking a room to take lecture may consider the rooms that can fit at least 120 students. While it is almost impossible to predict how many students will turn up as it depends on so many factors. While some factors may be known in advance, while others might not be considered in prediction process. For example, broken public transport to reach to college can lead less turn out, or perhaps long holidays ahead or bad weather.

## How to achieve this

Predictive analytics encompasses a variety of statistical techniques from data mining, predictive modelling, and machine learning that analyse current and historical facts to make predictions about future or otherwise unknown events.

## Benefits

1. Profitability: University can offer resources such as lecture rooms, meeting room, auditorium, parking space to use as services on spot rates. (Bidding)

2. Better Service to Students: Based on the Search Patterns, University can predict what courses are going to be popular next year and can offer students what they are looking for. (Factors such as student searching on search engine, immigration policy on skillset, job market etc.)

## Virtual Assistant (Let's call it 'George')

Like Siri and Alexa, George will be mate to university students and staff.

1. Online chat
2. Voice Enable Assistance on personal devices, information self-service kiosk. This can do many task that are non-productive and that irritates staff members.
3. Auto Suggestions to students based on their academic records, online activity. (Like YouTube and Netflix suggest videos based on your previous history), course they may be interested in.

## Mobile App

Mobile app that helps students to access various facilities, course, and study material.

1. Big event – New Student Orientation
2. Academic Calendar (Classes, venue, exam, assignment due date)
3. Certificates, Attendance, grades
4. Student ID Card (Access Card – NFC)
5. Campus Map (Integration with google map for indoor mapping like shopping malls)
6. Access to content – Video, Images, white papers, blog, groups
7. Directory: Search the college directory from the palm of your hand to find faculty and staff members and other resources.
8. Track your favourite university club events. (For example – PinBall, Basket Ball)
9. Marketplace – Where students can put advertisement like need mate to share house.
10. Fees and payment – On campus accommodation payment, cafes, and other services.

## References

1. <https://www.google.com/maps/about/partners/indoormaps/>
2. <https://www.modolabs.com/>

## Input tools

1. Access card logs
2. WiFi connection (search results, number of people, area, download, upload etc)
3. Online activity, Search engine trends (Google Trend)
4. Service usage such as library, cafés, elevators, applications, toilets... (anything)
5. Microsoft MyAnalytics