From Academy to Industry
an experimental Student Journey
“Education is, today at least, a black box.

Society invests significantly in primary, secondary, and higher education. Unfortunately, we don’t really know how our inputs influence or produce outputs.

We don’t know, precisely, which academic practices need to be curbed and which need to be encouraged.”

George Siemens
Fighting to attract and retain the best students

Find ways to gain competitive advantage
Trends and Challenges

The Institution Perspective
The Student Perspective
The competitive advantage is there to be found hidden in the data that universities already have.
Road to a comprehensive Student Journey
Uncertainty

1. Information Gathering
2. Shortlist
3. Application
Development

Booking & Course Registration

Academic Experience

Career Services
Go-to-Market

Alumni Network

Career Counseling

Professional Experience
Road to a comprehensive Student Journey

1. Uncertainty
2. Development
3. Go-to-Market
What if Universities could provide an experience as personalized as your Netflix account?
HOW?

Educational Data Mining & Learning Analytics
Educational Data Mining can be defined as a science focused on developing new tools and algorithms for discovering data patterns using University’s data.
Learning Analytics focuses on applying tools and techniques at larger scales in instructional systems mixing data from several sources.
Student Journey: an Analytical Approach

Information Gathering
- Improve Targeted Marketing
- Use Right Channel

Shortlist
- Competitors Analysis
- Influential Factors Analysis

Application
- Smart Students Selection
- Employability Analysis

Booking & Course Registration
- Propensity to miss payment
- Course/Student Best Match

Academic Experience
- Propensity to Drop-off
- Likelihood to Succeed

Career Services
- Best Matching Industry
- Students Segmentation

Go-To-Market
- Social Network Analysis
- Sentiment Analysis

Student Satisfaction Study
- University Brand Recognition
# Use Case: a Performance Analysis

<table>
<thead>
<tr>
<th>Model</th>
<th>Predictive model to estimate Propensity to Complete the Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal</td>
<td>Predict yearly students with higher and lower propensities to complete the course they are enrolled in</td>
</tr>
<tr>
<td>Universe</td>
<td>Students enrolled in the Informatics Engineering course between 2007 and 2014</td>
</tr>
<tr>
<td>Software</td>
<td>SAS Enterprise Miner via SAS OnDemand for Academics</td>
</tr>
<tr>
<td>Technique</td>
<td>Logistic Regression</td>
</tr>
<tr>
<td>Main Outcomes</td>
<td>73% AUC ROC</td>
</tr>
</tbody>
</table>
| Implementation Details | (1) Identify main factors influencing students success/failure  
                      | (2) Invest in support for students with lower propensities  
                      | (3) Create a career path for students with higher propensities |
Our goal is to deliver an integrated offering...

... to help students throughout their academic journey
Some Expected Deliverables
Potential Advantages

- More likely to find the best-suited study program
- Excellent and personal service experience
- Greater chance of student success

- More effective by being able to focus on the students that need counseling
- Insight into the relation between student behavior and student success

- More student success (often leading to financial gains)
- Better reputation through better service experience
- Lower costs to give better advice and more targeted services
- Optimized processes, policies and service based on insights in student behavior
- Make a necessary change - over the next couple of years, data-driven will become the norm
Thank you!