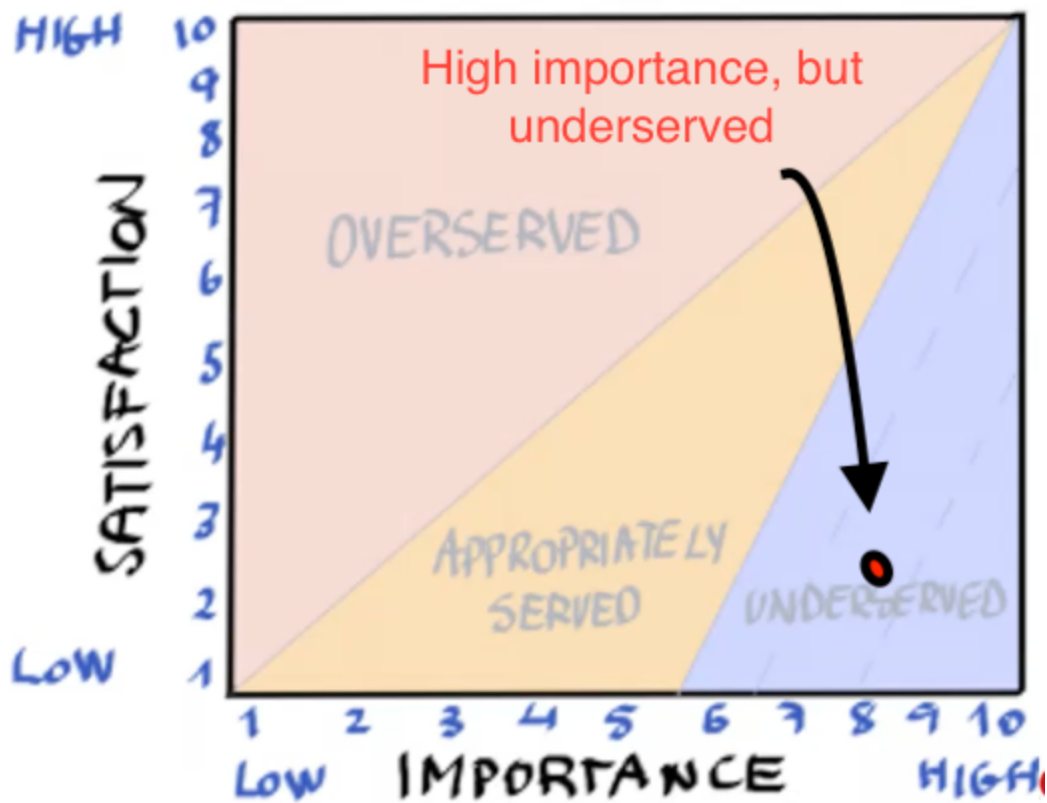


# Customer Problem Analysis

The most worthwhile problem to solve, according to me, is the **Inter-Department Resource Scheduling Problem**.

## Explanation and Evidence:

1. Academic departments don't have a good way to schedule professors for courses because different departments share instructors. Also, courses are cross-listed between different departments. Deanna Matthews, ETIM UG Program administrator, talked about this problem for quite long and it seems to be a real problem. Assigning resources like faculty, courses and shared venues is an important task of a Program Administrator's JBTD (Managing Academic Program).
2. There are about 4000 universities just in the US, each having multiple departments.  
(<https://www.usnews.com/education/best-colleges/articles/how-many-universities-are-in-the-us-and-why-that-number-is-changing>)
3. Assuming (conservatively) that each university has about 3 departments, there exists  $(3 * 4000 =) 12,000$  different departments/ programs that would be interested in a solution that solves the above problem.
4. Brad Eiben (from MSPM program) also mentioned that he has to struggle to get resources as Tepper MBA gets a bigger share of the resources. A solution to the above problem will increase transparency and will help both the Tepper MBA and the Tepper MSPM programs keep a tab on the shared resources.
5. **PROBLEM SIZE** : Deanna mentioned that it takes multiple days of turnaround time to manage a clash of professor availability timings with another department. With a real time scheduler, it should take not more than an hour to resolve the issue, considering that the primary issue is the complexity in handling schedule time clashes over mail.



6.

It is a high importance but also an underserved problem (since no solution exists from online research and discussion with Deanna Matthews')