

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Sloan School of Management

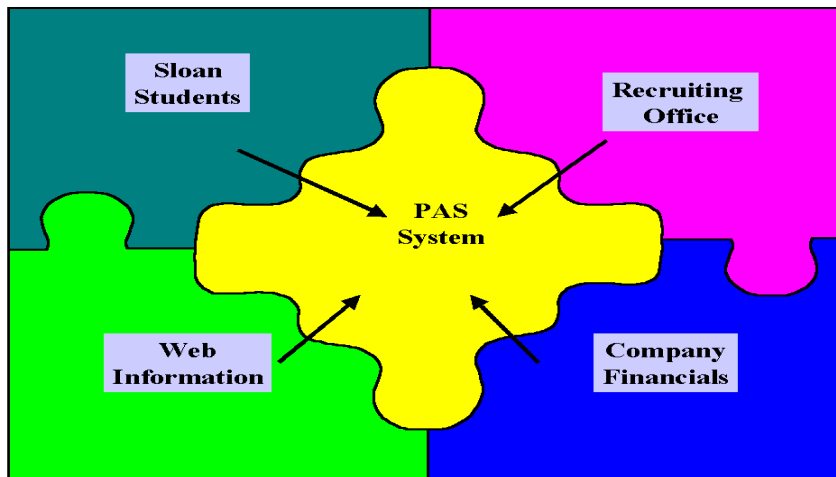
**15.565 – INTEGRATING INFORMATION SYSTEMS:
TECHNOLOGY, STRATEGY, AND ORGANIZATIONAL FACTORS**

CP0 -- COMPUTER PROJECT INTRODUCTION

**Placement Assistance System (PAS)
Operational Scenario and General Overview**

Functional Overview

As an MIT student, it would be nice to have a Placement Assistant System (PAS) to help decide on potential companies and prepare for interviews. There are many distributed sources for vital information. e.g., open company positions, interview dates, Alumni working in the company, contact information for relevant alumni, company industry and location information, stock performance, and current news (see range of sources below). The student is limited by the distributed nature of this information. The goal of this project is to integrate several of these sources using a web browser front-end interface to make it easier for the student make better and more informed decisions. The PAS application is to be modular so it can be scaled according to individual needs and to make it easier to incorporate new information sources.



Although we will define the basic functional overview and most of the project will be along the same lines, we would like you to come up with ideas on what information should be incorporated and other technologies that might further enhance such a project.

Note 1: CP1 should be done individually. All other parts (CP2-CP7) should be done in groups of 2 or 3 students. Please turn in the list of names of the students in your group by Lecture #7. If you need help forming a group, contact your TA.

Note 2: A simple demonstration version of such a PAS can be found at <http://coin.mit.edu/15.565/demo/PAS.asp> (... and shown on the following two pages).

Placement Assistant System (PAS) Demonstration – User Interface

<http://coin.mit.edu/15.565/demo/PAS.asp>

- **Select industries and geographic regions of interest**
- **Select from identified target companies**

The screenshot shows a web browser window titled "CAREER MANAGEMENT SYSTEM - Microsoft Internet Explorer". The address bar shows "http://localhost/pas.asp". The main content area features the MIT Sloan logo and the text "CAREER MANAGEMENT SYSTEM". There are two selection menus: "Select one or more industries" and "Select one more regions". The industry menu lists "Software", "Telecommunications/Media", "Textiles/Clothing", and "Transportation Equipment". The region menu lists "Asia", "California", "Canada", and "England". Below these menus is a "submit options" button. Two arrows point from the right side of the page to the industry and region menus, with labels "Industry (select Telecomm)" and "Geography (select all)".

Industry (select Telecomm)

Geography (select all)

The screenshot shows the search results page with the heading "Your search returned the following matches from the database". A list of companies is displayed in a scrollable box, including "AirTouch Communications", "Alcatel", "Aspect Telecommunications", "AT&T", "Connect Communications Corporation", "Disney Online", "France Telecom", "Hughes Communications, Inc.", "Inc. Magazine", "Latitude Communications", and "Lucent Technologies". An arrow points from the right side of the page to the "AT&T" entry in the list, with the label "Select a company".

Select a company

Information Located, Extracted and Displayed

- *Company information*
- *Recruiting dates and company contacts*
- *Employees currently enrolled at Sloan as students*
- *Employees and Chairman info from Web*
- *Headline info extracted in real-time from Web*

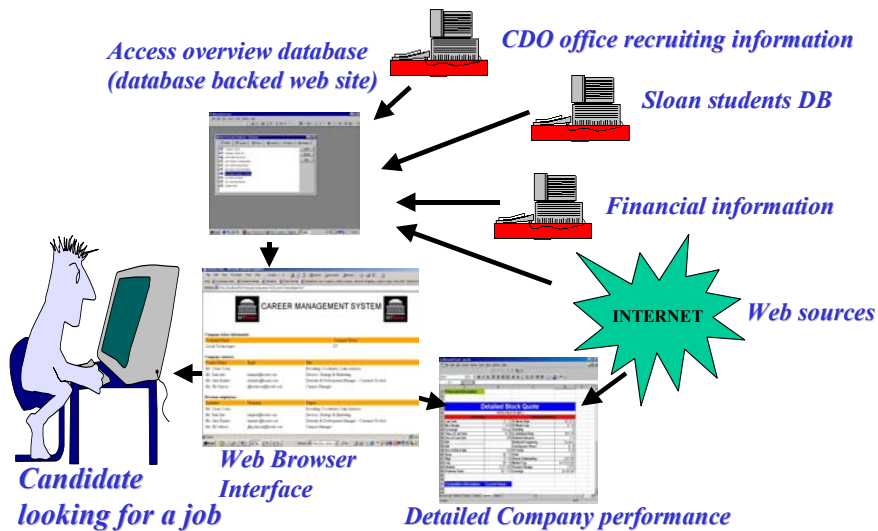
Company ticker information					
Company Name		Company Ticker			
AT&T		T			
Company contacts					
Contact Name		Email		Title	
Ms. Eloisa Regalado		eregalado@att.com		VP, International Traffic Management	
Previous employees					
Lastname		Firstname	Degree Program		
Lim		Terence	Ph.D.		
Mahrt-Smith		Jan	Ph.D.		
Kalmenson		Stuart	Ph.D.		
Chen		Su-Fun	Management of Technology		
Recruiting schedule					
Job title		Round	Schedule type	Resume due	Schedule date
Global Leadership Development Program		Winter 1999/2nd Year	Open		1/12/1999
Summer Intern		Winter 1999/1st Year	Closed	2/8/1999	2/24/1999
Financial and Company Information					
Headlines from Quicken					
AT&T Applauds USTR Decision to Pursue Case Against Mexico For Anti-Competitive Telecom Policies					
AT&T Cuts Stakes In 3 Internet Cos To Below 5%					
AT&T Is Moving 70 Jobs From Lower Manhattan					
AT&T Enters Residential Local Phone Mkt In Mich.					
AT&T Enters Residential Local Phone Market in Michigan					
Unions Refuse to Accept AT&T Contract Extension Offer					
Unions Refuse to Accept AT&T Contract Extension Offer; Company Offer Included Wage and Pension Improvements					
Tech Love Scorecard					
AT&T Criticizes Qwest for Freezing Local Accounts; 'Free' Service is Actually a Disservice to Customer Choice and Competition					
AT&T Managed Services Customer Portal Named Best in the Industry					
Number of Employees		CHAIRMAN			
166000		C. Michael Armstrong			

Operational scenario

We will assume that MIT wants to design and deploy the Placement Assistant System (PAS) for Sloan students who are actively pursuing their job search.

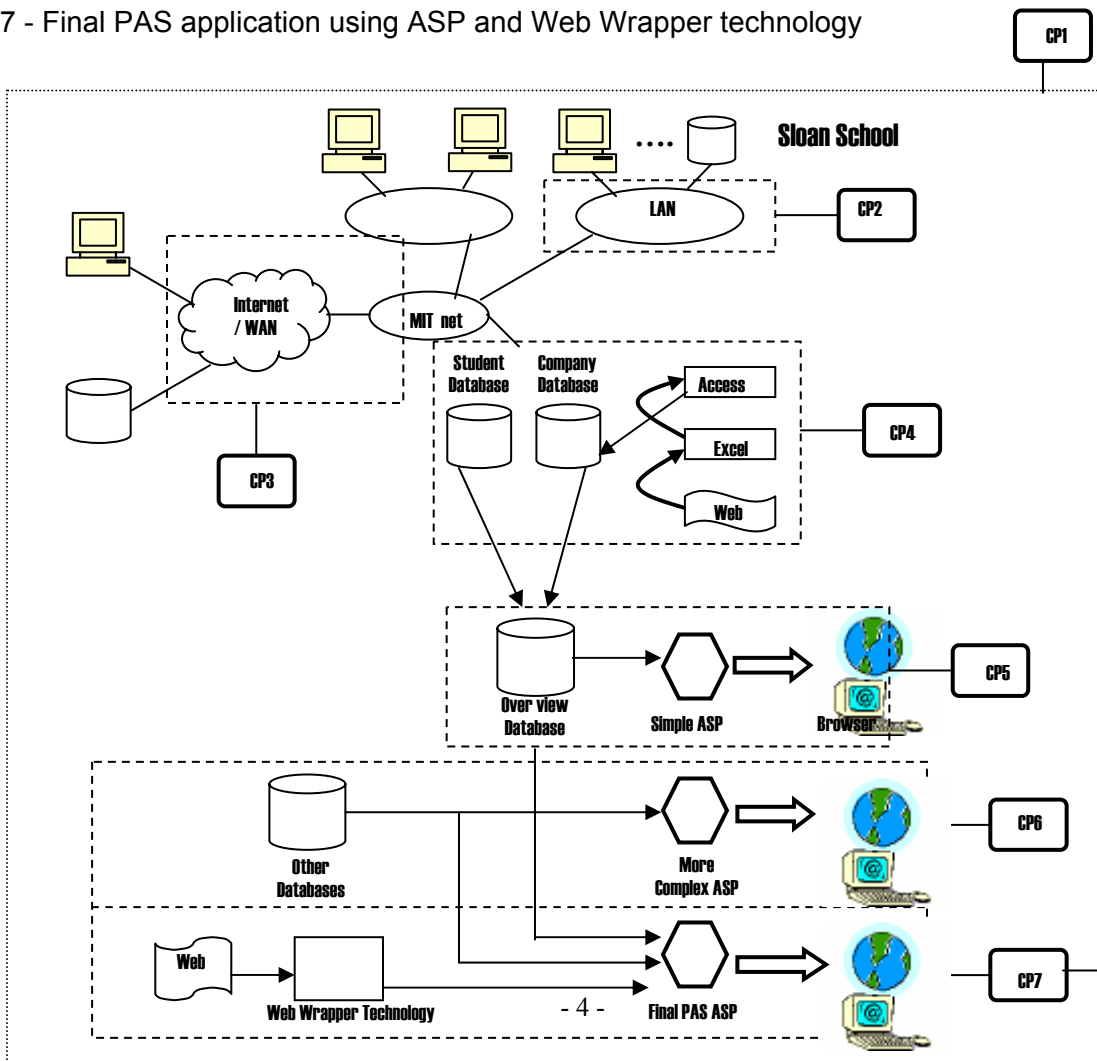
This will involve evaluating the networking infrastructure within these buildings and its connectivity to the Internet, integrating recruiting databases and alumni databases into a front end, and incorporating real time news and stocks quotes from web sites. The final interface is through a web browser. The overall proposed architecture is shown on the next page.

Proposed architecture



This project consists of 7 steps (referred to as CP1 through CP7):

- CP1 - PAS Goals / Concept write up
- CP2 - Local Area Network (LAN) design and evaluation
- CP3 - Wide Area Network (WAN) design and evaluation
- CP4 - Database Design and Relational Connectivity (using ACCESS, EXCEL, and Web)
- CP5 - View Integration and Logical Connectivity design and simple ASP
- CP6 - Integrating using a database backed web site, more complex ASP
- CP7 - Final PAS application using ASP and Web Wrapper technology



CP1 - Goals / Conceptual Write up

Your first step is to describe the features and functionality of an ideal Placement Assistant System you would like to use as an MIT student when you start your recruiting, and the reasons for your requirements. (As we will be following specific fixed guidelines in the most of the remaining parts, not all your ideas will be implemented in the project. Nonetheless, you will have chances for creativity towards the final steps of the project.)

CP2 - Local Area Network

In this step, you analyze a portion of the MIT local area network (LAN) and determine how best to extend the network. The Network is qualitatively and quantitatively evaluated using the IEEE Model 1 and Model 2 guidelines for multi-segment networks. This exercise teaches how to evaluate networks when they are expanded based on the IEEE Model 2 configurations.

CP3 - Wide Area Network

In this part, you examine and understand the MIT-Sloan wide area network (WAN) via the Internet architecture in terms of network components, topology, IP addresses, and trace routes. Ping and tracert utilities will be used for this purpose. You will also assess some Internet sources in terms of connectivity and network speed issues from within the MIT campus network.

The learning focus for this part of the exercise is:

- Understand network architecture issues. i.e., distinctions, limitations, and types.
- Evaluate a working model based on some attributes e.g., network viability, delay times.
- Understand network topology diagrams.
- Bandwidth requirements, transfer of data i. e. Protocol, Error Correction, etc.
- Understand issues with connectivity with the Internet.

CP4 - Database Design and Relational Connectivity (using Access, Excel, and Web)

This part will involve using an existing database and creating a new database by linking data sources seamlessly across Access, Excel, and external web sources. The two databases are:

- Company database - To search for company information based on industry, geographic location, and financial information.
- Student database - To determine is there are any students from the company in question currently enrolled at Sloan

Another part of this step is for you to address problems that can exist across multiple data sources even if they contain similar information. The deliverable is the identification of issues and complexities involved in the exercise. You will be linking tables within databases to produce reports and queries. You should document your observations regarding the database schema linking issues and data inconsistencies that create hindrances in your project.

CP5 - View Integration and Logical Connectivity (and simple ASP)

In this step you will integrate in a coherent fashion the various data sources (from step 4) that a student would need to access in their job search. The databases you will work to integrate are the databases you created in CP4, plus:

- Recruiting database - To determine if the company of choice is going to be on campus, and if so, when are they going to be here and what positions are they going to be interviewing for.

Once again you will address issues of the logical connectivity. The learning focus is designing real life logical connectivity solutions on a smaller scale. The deliverable is the identification of issues and complexities involved in the exercise. You will be linking tables within databases to produce reports and queries.

Also, in this step you will start to create an interface to your PAS application accessible over the Internet/Web using Active Server Pages (ASP).

CP6 – Integrating Information in the Web interface (using more complex ASP)

In this part you will integrate all the information into your Web front-end interface by making queries to the Access Database. You will use ASP technology to display information from the databases using a web front-end interface that dynamically pulls information from your Access database.

To do this, you will link the queries from the integrated Access database (from CP5) and present it in an easy to use form within a browser. This should integrate information from various tables within the three databases that you created. The web interface should represent seamless logical integration of the various back-end data sources.

The learning focus for this part of the computer project is:

- Basics of heterogeneous data source integration.
- Understanding how to query backend databases in a web interface

CP7 – Final PAS Application (using ASP and Web Wrapper Technology)

In this part of the Exercise you will finish the creation of your interface for the PAS system and also incorporate real-time data from the web using a Web Wrapper technology. You will be encouraged to use your creativity to make your PAS as easy-to-use and comprehensive as possible.

You will also prepare a presentation describing your views of the PAS goals and your implemented system.

The learning focus for this part of the computer project is:

- Use of WebWrapper technology and use of External Web queries
- Browser Interface design
- Overall observations regarding the design and implementation of integrated applications.

COMPUTER PROJECT TIMELINE

LEC#	Due date (in class)	Tutorial (subject to change)
4		Introduction to Computer Project
5		CP1 - PAS Goals
6	CP1 (Goals/Concepts) due	
7		CP2 - LAN
9	CP2 (LAN) due	CP3 - WAN
11		Q & A
12	CP3 (WAN) due	
14		CP4 – DB Setup, ACCESS/EXCEL/Web
15	CP4 (Database Design) due	
16		CP5 - View Integrate, ACCESS Join, ASP
17	CP5 (View Integration) due	CP6 - Enhanced ASP
19		Q & A
20	CP6 (Integrating Information) due	
21		CP7 - Web Wrapper, Final PAS Interface
23	CP7 (Final PAS Interface) due	Q & A
25	Selected Presentations	Q & A

CP1 - PAS Goals / Concept write up

CP2 - Local Area Network (LAN) design and evaluation

CP3 - Wide Area Network (WAN) design and evaluation

CP4 - Database Design and Relational Connectivity (using ACCESS, EXCEL, and Web)

CP5 - View Integration and Logical Connectivity design and simple ASP

CP6 - Integrating using a database backed web site, more complex ASP

CP7 - Final PAS application using ASP and Web Wrapper technology