

# College Entry as Learning Process Facilitated by Technology

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## Abstract

The decision to enter college is usually approached in the literature on Enrollment Management from a Marketing Science perspective. The emphasis is on customer relationship aspects; however, the choice of a college is usually the most important decision the prospects have to make to this point in their lives. The authors at Franciscan University conducted a study on diverse recruitment strategies concluding they can be enhanced if the traditional marketing perspective is complemented with a framework that capitalizes on learning processes. This work led to the design of a web-based system that focuses on eLearning. This involves the user in a series of engaging experiences through the Web to acquire the necessary knowledge to make informed decisions at college entry. The *Atrium* system is based on principles of meaningful learning, conceptual mapping and the ARCS model for learner motivation. It assumes also current best practices of Admissions in coherence with the learning approach.

## Introduction

The achievement of satisfactory levels of congruence between institutional goals and the profile of prospective students is an issue of major concern among admission professionals. Competition is intense among higher education institutions to attain an appropriate share of best-qualified students from the prospective target “market”. This approach has resulted in the popularization of the *Funnel Model* [1] as paradigm of the enrollment management process. Using such model, an institution divides the enrollment process in discrete events such as: Advertising, Inquiries, Application, Advising, Financial Aid, and Registration. In each event, a certain loss of prospective students is assumed and the institution tries to use incentives and disincentives in order to keep those prospects that correspond to selection criteria previously established by the institution. Success of this approach is measured in terms of reaching certain quantitative goals of enrollment per program, having on account valued criteria such as SAT/ACT scores, GPA, family relationships with alumni, etc. There are many antecedents that this market-oriented approach can generate efficiency for the institutions, in terms of reducing the amount of work and resources needed to obtain a pool of new as well as transfer students every year. However, there is evidence also that many institutions experience significant attrition rates during or after the first year of college. The current competitive scenario has made of enrollment management one of the hottest points of discussion and activity in American Higher Education.

In 2002, a team at Franciscan University of Steubenville (FUS) initiated a research with the purpose of finding novel strategies that might lead to the conception of a new and enhanced enrollment management model. The objective was to improve the quality of incoming cohorts, according to criteria defined by the institution in an effort to increase both mission-matching goals as well as retention rates associated with the first year. After the research phase was completed, they came to the conclusion that a new model could not be based uniquely or strictly on the idea of the *Funnel Model* and a marketing approach. Models of this kind are institution-centered only. A more effective approach would need to combine an **institutional mission** focus with a **student learning** emphasis. The “prospect” is a concrete person with needs, strengths and constraints and he/she must now see the enrollment process as a learning experience that needs to yield an optimal decision regarding college choice. Through this process, with support of family members,

prospects get prepared to make one of the most important transitions in life: stepping into a study program that will define a future career with a set of core values associated with the institutional mission.

Once the research phase was completed, the Office of Information Technology of FUS formed a project team for the design of a new system, labeled *Atrium*. This Web-based platform encapsulates the ideas of supporting the process of college entry through e-learning and providing a virtual space for prospects with the functionality they need to interact with decision-making aspects related to this process. Then, there is a double emphasis of mission matching and learning experience. This paper summarizes the theoretical ideas behind *Atrium*, and the strategies embedded in this system to maximize the learning results that incoming students can get during the critical stages of enrollment. To this purpose, the paper comprises four major sections. The first one deals with a conceptualization of enrollment as a learning process that has been termed the *Learning Transaction Model*, by contrast with the *Funnel Model*. The second describes the methodology used to build the specifications for an enrollment system using the new eLearning model as framework. The third describes the major components of *Atrium System*. Finally, the fourth section deals with the assessment of impact of *Atrium* and some recommendations for institutions interested in revamping their Web-based enrollment management strategies or designing a new one.

### **Learning Transaction Model (LTM) of College Enrollment**

The process of college entry for the first time usually involves young people age 17 to 19. Most often than not, they are dependents of parents or other adults and they are in the senior year of High School. A small proportion of them has already finished this level one to three years before, but could not register immediately due to a number of reasons: financial, marriage, military service, etc. The critical period of enrollment, since the initial inquiries to different institutions to actual registration usually takes from 6 to 12 months. During this process, the prospective student is involved in a number of learning activities that, although they are not characterized by a “curriculum”, certainly they have a clear progressive pattern. These activities comprise two broad types, using Bloom’s Taxonomy of Learning Objectives [2]: *cognitive* and *affective*.

Types of **cognitive** learning involved in the admission process:

- *Concept Learning*: clarifying concepts such as college, university, major & minor, financial aid, scholarship, study loan, etc.
- *Principle Learning*: how to minimize risks and maximize results with respect to college selection, getting the best match, self-describing strengths in an academic environment, applying criteria for selecting housing accommodations.
- *Procedural Learning*: learning of formal procedures for applying to college, requesting loan, requesting scholarship, applying for housing in or extra campus.
- *Problem Solving*: using appropriate search strategies, planning decisions, financial decisions, selection of major, getting higher scores in the tests, composing an application essay or answering essay questions proposed by colleges.
- *Learning from Models*: observing best practices, looking at others that have succeeded, interaction with graduates of desired program of study.

- *Learning Cognitive Schemata* (connected representations of knowledge): defining a college organization, modeling the admission-registration process, acquiring a broad view of one or more colleges and universities.

The types of **affective** learning involved in the admission process, according to Keller’s Motivation Model [3] are:

- *Attention*: increase of perceptual arousal in reaction to novel, surprising, incongruous and uncertain events. This happens, for instance, when a prospect receives a letter from admissions offering the possibility of application, or when he/she gets a *Flashcard* [4] about the institution through e-mail.
- *Relevance*: associating a given event or information with a specific goal of the individual. This happens when the student understands messages that orient behavior to certain goals, or connect characteristics of the institution to previously specified goals. Identify relevant institutional values for prospects – i.e.: Catholic ethics, student community life, and higher goals of knowledge.
- *Confidence*: allow prospects to develop confidence about succeeding in college admission, particularly those who have certain barriers (financial, low SAT scores or GPA) but still have good potential. Show the prospect that his/her expended effort directly influences the consequences. Generate positive expectations about college life. Help students estimate the probability of success in college by presenting performance requirements and evaluation criteria most frequently used by faculty.
- *Satisfaction*: using newly acquired knowledge or skill in a real or simulated setting. Provide feedback and reinforcements that will sustain the desired behavior. A very important point of satisfaction is when the student receives the acceptance letter by Enrollment Services. This must be accompanied of orientations on what to do next in order to preserve the desired pattern of behavior.

Based on the former events of learning during the enrollment process, the *Atrium System* facilitates the strategies indicated in Table I, through a combination of messaging and database management functions included in the program.

**Table I: *Atrium* strategies to support learning processes during college enrollment**

Phase	Associated Learning Processes	Atrium Strategy/Function
<b>Advertising</b>	<ul style="list-style-type: none"> <li>• Cognitive: Identify us; know how to contact us</li> <li>• Motivational: Attention, increase perceptual arousal and inquiry arousal</li> </ul>	<ul style="list-style-type: none"> <li>• Letter from admissions offering the possibility of application</li> <li>• Introductory Flashcard about the institution through e-mail</li> <li>• Present goal orienting statements and objectives</li> </ul>
<b>Inquiries</b>	<ul style="list-style-type: none"> <li>• Cognitive: Know more about us; context-based learning; meaningful learning; competency-based learning (SAT, ACT, essays)</li> <li>• Motivational: Emphasize relevance; learn from models; vicarious reinforcement</li> </ul>	<ul style="list-style-type: none"> <li>• Creation of <i>MyWebsite</i>, where all relevant information for prospect is displayed</li> <li>• Interactive tutorials about improving SAT/ACT results</li> <li>• Interactive tutorial about admission essay composition</li> <li>• Use concrete language and examples with which students are familiar</li> <li>• Encourage perception of self-effectiveness in accomplishing the admission tasks</li> <li>• Show comments of current students and alumni in a vivid manner</li> </ul>

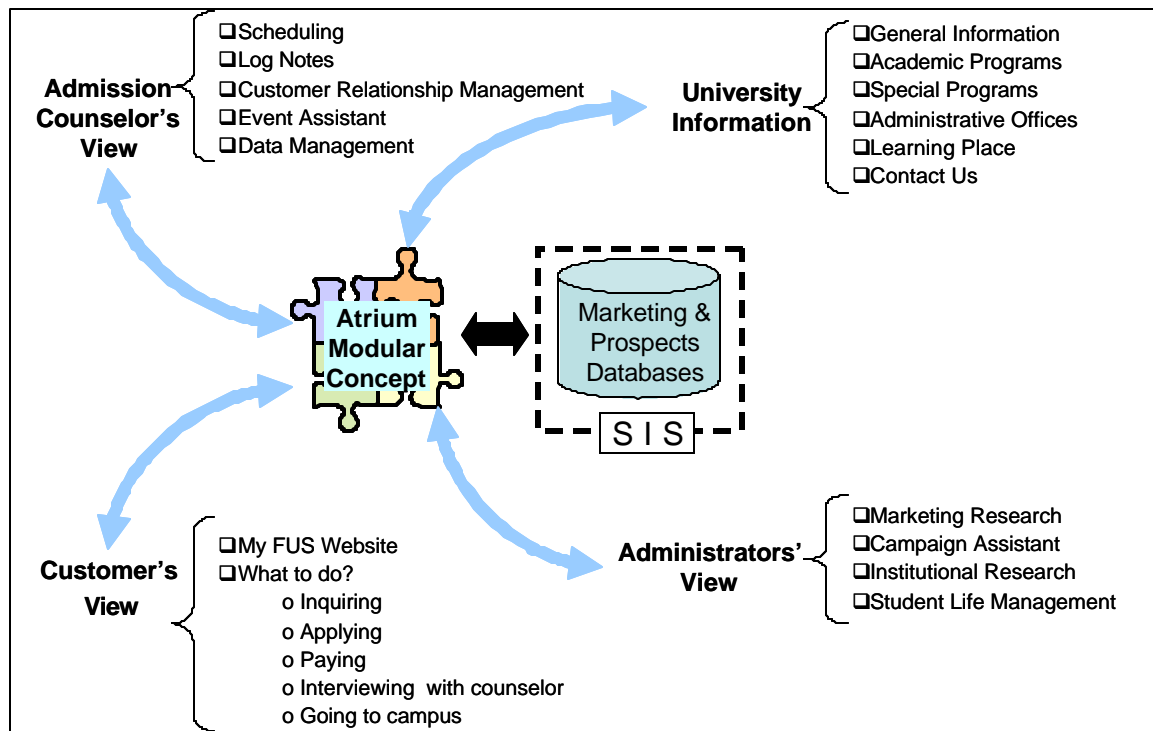
<b>Recruitment</b>	<ul style="list-style-type: none"> <li>• Cognitive: Context-based learning and meaningful learning on individual basis; collaborative learning</li> <li>• Motivational: Gain confidence; clearly establish goals; generate positive expectations</li> </ul>	<ul style="list-style-type: none"> <li>• Allow chat sessions with counselors and current students</li> <li>• Facilitate the counselors interviews by providing Web resources</li> <li>• Present a degree of challenge that allows for meaningful success under both learning and performance conditions</li> <li>• Virtual tour to University</li> </ul>
<b>Application</b>	<ul style="list-style-type: none"> <li>• Cognitive: Procedural knowledge; competency-based learning (SAT, ACT, essays)</li> <li>• Motivational: provide feedback and reinforcement that sustains behavior</li> </ul>	<ul style="list-style-type: none"> <li>• Facilitate online application</li> <li>• Provide orientation to procedural aspects and contextual help – Six-Step-Sheet</li> <li>• Financial Aid Letter</li> <li>• Automatically send greeting message after application</li> </ul>
<b>Admission</b>	<ul style="list-style-type: none"> <li>• Cognitive: Procedural knowledge</li> <li>• Motivational: Provide a sense of satisfaction; increase perceived self-efficacy</li> </ul>	<ul style="list-style-type: none"> <li>• Personalized acceptance letter</li> <li>• Orientation about steps to complete registration – Six-Step-Sheet</li> <li>• Follow-up message by Dean of Enrollment Management</li> </ul>
<b>Registration</b>	<ul style="list-style-type: none"> <li>• Cognitive: Concept and principle learning; problem solving; planning</li> <li>• Motivational: Use newly acquired knowledge; receive feedback that sustains behavior</li> </ul>	<ul style="list-style-type: none"> <li>• Interactive form for confirming or reselecting courses</li> <li>• Details of Financial Aid and/or Scholarship</li> <li>• Automatic delivery of course synopses and required textbooks</li> <li>• Account balance an explanation</li> </ul>
<b>Orientation</b>	<ul style="list-style-type: none"> <li>• Cognitive: Identity development; group adaptation; symbolic learning; experiential learning</li> <li>• Motivational: Clarify goals; define detailed plan; team learning; identify potential barriers and solutions</li> </ul>	<ul style="list-style-type: none"> <li>• Streamed video about orientation to the newcomer</li> <li>• Institutional vocabulary and jargon</li> <li>• Web questionnaire about goals and expectations</li> <li>• Response of counselor/faculty to questionnaire</li> </ul>

## Methodology

The process of designing the *Atrium* System went through the following stages:

1. Review of literature: locating relevant sources on Web-based admission systems and Internet sites that could serve as models. From this process, the developer extracted a general design and a number of requirements for the system.
2. Interviews with users: every person involved in the Admission process at FUS was interviewed, with the purpose of finding a detailed model of the admission process actions. A few students of recent cohorts were already interviewed about the steps they took when entering the University. This phase generated a process table with actions from the institution and the customer. This was validated with the originators of the information.
3. Design of the system outline: the views and functions in Fig. 1 were described, specifying relationships and a general database model that would fulfill those views and functions.

- Mockup model with some functions: this model was composed with a conceptual mapping application (*MindManager*<sup>TM</sup>) and allowed to reproduce the “look and feel” of the system although not the functionality. It was used for evaluation purposes.



**Fig. I: Atrium Modular Structure**

## Description of Atrium System

*Atrium* is a modular solution that will be developed responding to the sequence of strategies defined in Table I. “Modular” means that it will not be a single software package, but a series of applications linked through menus. Some of these applications will be new and some others already exist, but they will be integrated through software. All these applications will share a common prospect database that will carry the data of all individuals considered candidates for admission to the institution until they become students or desist. The prospect records will be renewed every year, although some customers of past years can be left active if they manifest that they still are interested in the institution as an option. The prospect data of previous years will be saved in a dormant database and they can still be used for research purposes, or to reactivate some cases.

The essential components of Atrium are depicted in Fig.1. The system modules are grouped in “Views” according to the type of user, with the exception of University Information; which is common to all users and not password-protected. The other views are protected by authentication, therefore only authorized users can access them. Prospects of FUS must open a free account and create *My Website at Franciscan* before they can access the Customer’s View. It follows a brief description of the *University Information* and the *Customers View*, as they are the two components most related to the Learning Transaction Model presented here. The other two are oriented towards institutional administrative processes.

## ***University Information***

Current and opportune university information is as essential element for the customer in any automated procedure. Normally, a customer will not be able to fill a form without previously analyzing some background information about the purpose of this form. For this reason, *Atrium* designers will pay a lot of attention about how the information of the University is presented to the client; it must be relevant to each stage of learning. Currently, the university keeps a series of static Web pages in the Admissions site through which customers navigate using browser facilities. These pages will be substituted by an active module with the following capabilities:

- all information pages will have a specific owner who can update their text at will; while changes in design will require authorization of administrator
- every faculty member and admission counselor will have a Homepage in which his/her basic data, academic career, current activities, areas of interest and how to contact information are presented to prospects
- pages can be selected by the client (i.e.: by URL) and added as links to the ‘*MyWebsite at FUS*’ section
- e-mail messages can be automatically generated to the customer by the information page owner as required
- flash cards, e-mail messages and printed letters can be automatically generated as reminders of deadlines in the admission/registration process, according to the current status of the customer; which means that those who already have taken a certain step will not receive a reminder

The sections of the University Information can be grouped as follows:

- ***General Information:*** Welcome message, mission and vision, data about the university, location, maps, comments of current students, etc.
- ***Academic Programs:*** Brief description of programs, course catalog, recommended programs for first-time and transfer students, access to faculty homepages.
- ***Special Programs:*** Honors Program, Study Abroad Program. Pre-Law and Pre-Theologate.
- ***Administrative Offices:*** Information about administrative offices that have more interaction with prospects and students: Admissions, Financial Aid, Student Life, and Registration. For each one of these offices, there will be a description of functions in terms of the customer and access to homepages of key personnel.
- ***Learning Place:*** The Admission process involves an accelerated learning process for the customers. In a short period, the customer must be involved in a series of engaging experiences to acquire the necessary knowledge to make an informed decision and be successful in the outcome. This module will provide self-tutorial assistance in skill areas that are important for the prospective student; some titles may be: *How to Make Decisions About Career Choices; How To Improve Results In SAT; Defining A Career Plan; How To Write An Excellent Admission Essay; Planning Personal Finances During College.* The prospect will also have access to an individual counselor during this process, if desired.
- ***Contact Us:*** This will be a special version of the Directory utilities, with focus on prospects and new students; namely, only addresses and telephone numbers that may be interesting to them will be displayed.

## Customer's View

This view will be available through the Internet for any customer that could be interested in Franciscan University; therefore the entry page is not password protected. It follows a description of the modules in this view.

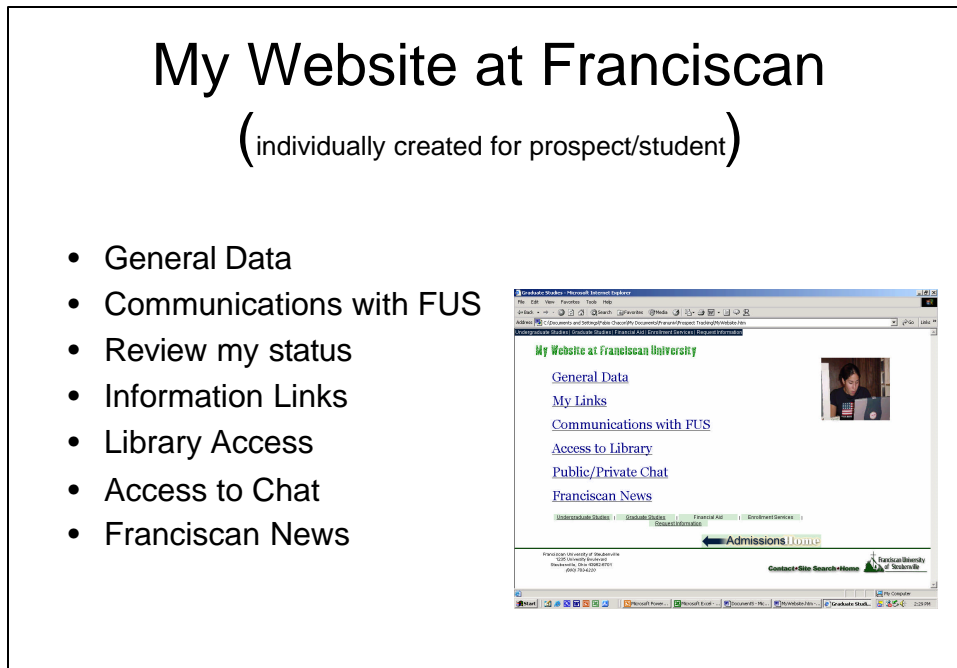


Fig. 2: Mock Model of Personal Website for Prospects

- **My Website at Franciscan (FUS):** When a user is interested in getting personalized contact, he or she will register freely as user and will acquire a personal home page; this will look as indicated in Fig. 2. The personal website will contain the ID data of the prospect, a photograph if provided, and links to essential information that he/she can use during the period of decision making with respect to enrollment; for instance:
  - general data of the prospect as collected in the University records
  - history of communications exchanged with the University via e-mail
  - status review of different actions initiated by prospect: inquiry, application, financial aid, etc. Some of these actions may be links to other existing systems.
  - information links to University WebPages selected by the student
  - library access
  - access to chartroom for prospect students
  - Franciscan News – a Web-bulletin maintained by the Press Office
- **What to do?** This sub-module allows the prospect to interact with the University during the admission funnel stages. The prospect completes certain interactive forms according to the action he/she wants to initiate: Inquiry, Application, Paying Fees, Requesting Interview, and Visiting Campus.

## Measuring Success and Recommendations for Implementation

*Atrium* will constitute a far-reaching innovation of the Enrollment Management processes of the university. As such, it must be subject to permanent evaluation through key performance indicators (KPI). The description of the evaluation system goes beyond the scope of the present proof of concept. However, some of the KPI can be established in advance; they will be constantly monitored and corrective actions will be applied when necessary. It follows a partial list of KPI:

1. Growth of the desired target population: young men and women with solid academic potential that feel commitment to the institutional mission and values.
2. Enhanced user satisfaction with the Enrollment Management (EM) process, as measured through flash surveys and responses to interviews.
3. Enhanced learning through the EM process, as measured through flash surveys and responses to interviews.
4. Increase Hispanic student population, in both U.S. nationals and international students.
5. Increase local commuters in the Tri-State Area, and Ohio national students.
6. Balance the pool of admitted students in terms of financial sustainability (equalize the relative numbers of those who have financial resources with respect to those who need assistance).
7. Right-size enrollment of resident and commuting students, according to the housing and classroom capabilities of the University, and the departmental goals based on current and planned faculty positions.
8. Increase the number of distance education students, as a way to increase the total student population.
9. Improve quality of the student pool in key academic indicators such as SAT, GPA, ACT, etc.
10. Allow early identification and enrollment of prospects with excellent qualifications through incentive program.

## **References**

- [1] Sevier, Robert A. (Ed.) *Integrated Marketing for Colleges, Universities & Schools: A Step-By-Step Planning Guide*, Washington: Council for Advancement & Support of Education 1998, p. 67. Dolence, Michael G. (Ed.), 1996, *Strategic Enrollment Management: Cases from the Field*, Washington: American Association of Collegiate Registrars and Admissions Officers, p. 107.
- [2] Benjamin S. Bloom, Bertram B. Mesia, and David R. Krathwohl (1964). *Taxonomy of Educational Objectives* (two vols: *The Affective Domain* & *The Cognitive Domain*). New York. David McKay.
- [3] It has been considered by the authors that the ARCS Motivation Model by John Keller appropriately represents the motivational learning occurring through the admission process.
- [4] Flashcard: audiovisual message, usually including animation that is transmitted through e-mail messages or Internet links.