

Chapter 2
Customer-Centered Resources

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Web Portals and Higher Education
Technologies to Make IT Personal

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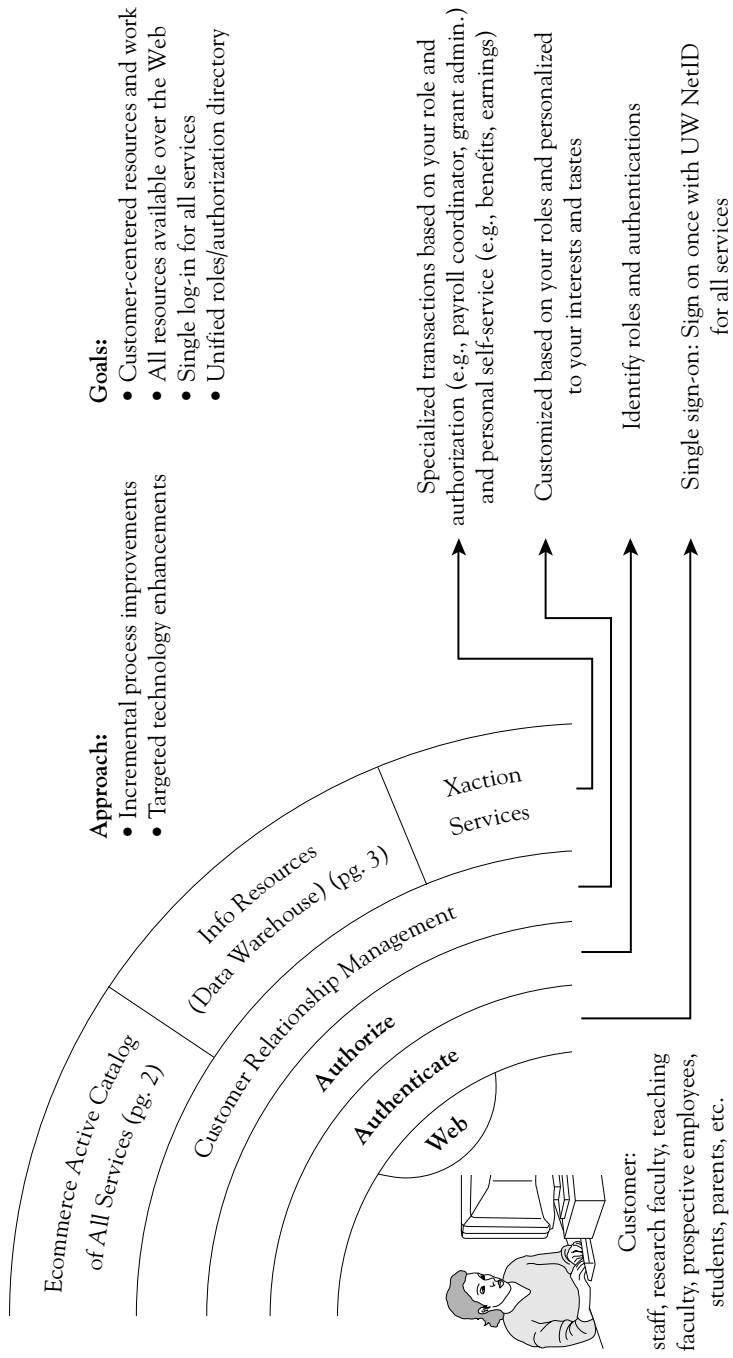
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Web technologies offer the opportunity for our colleges and universities to move from having a historic focus on processes to being information- and communications-based institutions. The University of Washington's goal is to provide people with the information they need—when they need it, where they need it, and in a format that can easily be acted upon.

At the same time, Web technologies are generating new opportunities at a tremendous rate, and the electronically based new economy is expanding at Internet speeds. Such a rapid growth in opportunities makes it difficult to know how best to reap the benefits. Portals, e-commerce, b2b, b2c, exchanges, enterprise resource planning (ERP), mass customization, and so forth, offer a confusing array of opportunities with no clear approach or vision of how they can be integrated to meet the needs of our customers. This has led the University of Washington to envision a deceptively simple, high-level, and highly inclusive customer-centered model (shown in Figure 2.1) of how we see these pieces fitting together. The customer-centered model is useful as a way of rethinking who are the University's customers and how it can effectively use the new technologies to meet their needs.



Goals:

- Customer-centered resources and work
- All resources available over the Web
- Single log-in for all services
- Unified roles/authorization directory

Approach:

- Incremental process improvements
- Targeted technology enhancements

Figure 2.1. Customer-Centered Resources

The Customer

The customer is rightfully the center of the university information model. Unlike many commercial enterprises, with simple client provider relationships, universities have a complex set of relationships with a wide variety of constituents. In fact, the term *customer* is misleading in a university context. We are using *customer* to mean the full community of individuals who have a relationship with our institution. Institutionally we tend to think in terms of separate categories for each of these relationships and separate institutional departments to service them. The new Internet-based relationships offer a unique opportunity to think more holistically about our customers and how we relate to them.

Customers interacting through the Web do not, and should not, have to think in terms of the institutional categories; they want information and services that address their needs.

The university community includes students, prospective students, extension students, certificate program students, graduate and professional students, parents, alumni, donors, sports fans, patients, referring physicians, career planners, continuing professional education students, staff members, administrators, researchers, faculty members, teaching assistants, prospective employees, and more. Indeed, of the more than a million different people each month who use the University of Washington's Web infrastructure to relate in some way with our institution, fewer than 10 percent are students, faculty members, and staff members, who make up our core campus-oriented community. Individuals are often in more than one category—such as alumni who are also patients, staff members who are also students, and parents who are also donors and sports fans. During the course of their lives, these complex relationships with the university will continue to change. It is not difficult to imagine an individual moving from the status of student in a summer extension course in middle school or high school to that of a prospective undergraduate, and then

becoming an undergraduate, and then a patient, and then an alumnus, and then going on to professional school, and then to continuing education through professional certification programs, and then becoming a sports fan, downloader of lectures, legislatively active citizen, and, eventually, donor.

We have a unique opportunity to deepen and enrich these relationships over an entire lifetime: building pride, loyalty, and enhanced opportunities for the university. Many dot-coms and portals are focusing on just one of those relationships, such as that with students, alumni, or sports fans. In thinking about our strategies for the new economy, as well as new learning and health care environments, it is important to develop an approach that is inclusive and discovers and even creates synergies between the different relationships, rather than fragmenting them into different silos or dealing with them monolithically.

The Web

The Web is the universal lens through which we will offer access to all of the university's information resources and the transactions that accomplish work. A strategy that is not based on this principle will tend to create barriers to access. For example, ERP systems or legacy systems that do not provide rich complex access to information resources via the Web will need to be modified or enhanced to do so.

Traditionally, the Web has been thought of as a way of publishing static content—an electronic hyperlinked version of printed materials. It is now time to rethink the Web and view it as a flexible, active, and personalized transaction-oriented service environment that can offer content and services that recognize an individual's interests and needs. To accomplish this will require a set of policy and technology infrastructure services that don't yet exist—in anything other than test bed form—at most of our institutions.

Authentication

Many universities are just beginning to broadly implement the concept of a single network ID to provide a uniform way of identifying a user for a wide variety of Web-based services. Taking this concept one step further, we are proposing the assignment of a single university ID that will give an individual access to the full range of university services over his or her lifetime. This ID can replace and bridge across the proliferation of IDs currently in use: employee IDs, student IDs, alumni numbers, and, most especially, the problematic social security number still used at many institutions.

Obviously there are many policy and implementation issues to consider in making this viable. If we are to offer services that involve sensitive information protected by privacy laws, transactions that represent potential liabilities for the institution, or transactions that, if compromised, would affect the credibility and good reputation of the institution, we need to set up processes and technologies that balance security with the level of risk.

For example, when the universal ID is assigned, we need to use processes to ensure that we are indeed providing the ID and password in a way that is appropriate to security requirements. The level of authentication that may be appropriate for a high school student seeking admission may be quite different from the security required for some administrative transactions, for a patient, or for an emergency room physician. Use of a universal ID, more importantly, will help us think more institutionally and systematically about our relationships as part of a university community.

Authorization

Once the infrastructure has authenticated the user and has provided the appropriate level of assurance that the individual is indeed who he or she logged in as, we need to understand what the

roles, relationships, and authorizations are that are associated with that individual. These roles and authorizations are often contained within separately managed authorization files associated with each system or service.

As more transactional services are offered over the Web, this fragmented approach to authorizations and roles will become extremely cumbersome to administer. The ideal administrative approach will be a decentralized, self-service model using electronic forms. All requests for authorization will follow similar, self-managed review and approval processes used for all other administrative reviews, such as purchases and personnel requests. This workflow management approach is an important component that allows for the centralized management of authorization in a decentralized manner.

Another key component of the authorization infrastructure is the concept of a person registry that tracks individuals and their associated relationships with the institution. Many universities do not yet consolidate different roles, such as that of alumni, student, staff member, and faculty member, into a single identity. It is essential to do this if we are to offer the well-focused yet integrated and facilitating view of the institution to an individual.

Relationship Management—the Portal

The portal depends on the authentication and authorization infrastructure for its power. Logging in with the university ID, the individual is authenticated, and the authorization system can recognize the full set of relationships and authorizations an individual has with the institution.

The portal can then build a default view of the Web-based information and services appropriate for the individual's relationships with the institution, and the individual can further personalize that view, based on his or her interests and needs. The portal, or relationship manager, will then keep track of the changing relationships

and personalizations over time. This is a very powerful concept that will allow institutions over time to build communities of interest and deepen the relationships that currently exist between individuals and the university.

Services

The services offered through the portal will reflect the full range of activities of the institution: teaching, learning, research, library services, public service, patient care, entertainment, the arts, and so forth.

Concepts such as “My Work” (a personalized dashboard of transaction-oriented services necessary for the activities of an administrator or researcher), or “My Studies,” which reflects the individualized course content and activities for a student (including the educational outreach/distance learning student), or “My Admission” application, or “My Employment” application, are ways of thinking about how to organize these services within the portal.

Business-to-business e-commerce services can offer a catalog of both university and external vendor goods and services appropriate to an individual’s role within the institution.

Business-to-customer services can offer a wide array of targeted services tailored to the interests and needs of the individual. Avoiding blanket advertising and offering tailored services within the commercialization policies of the institution can be accomplished, based on the roles and user profiles offered by the portal. For example, a graduating senior can be assisted in planning for the graduation ceremony, renting the gown, planning for travel, and arranging for the lodging of his or her visiting family.

Community-building tools allow subscription to, participation in, or setting up of discussion groups, information feeds, or shared activities of interest to the individual.

These tailored service offerings are all possible because of the infrastructure that recognizes who you are through your authenticated

university ID, what your roles and authorizations are, what information you use and subscribe to, and what your personalized interests and activities are.

The Challenges

The challenges associated with implementing such a vision are enormous, but they have the potential to be transformational in the same way that so much of what we do today is being transformed by Web technologies and the new economy. A demonstration that reflects some of the University of Washington's thinking about future services can be found at <http://www.washington.edu/protos/myuw/demo>.

We hope this vision and approach will be helpful as you sort through your own unique campus requirements. We would appreciate receiving your thoughts and feedback about the model or the approaches embedded in our MyUW demo. Please e-mail Ed Lightfoot at elight@cac.washington.edu.