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FS-WORKS MAKES THE UNIVERSITY OF WASHINGTON WORK

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Abstract

In 2001, the University of Washington Facilities Services Department purchased a vendor facilities and asset management system (FAMS) software package. The department knew there would be benefits to having a comprehensive, enterprise wide database of facilities information but often the user interface of package systems are complex and not flexible to the local environment. To solve this problem and improve usability, Facilities Services developed their own web-based user interface called FS-WORKS that customers can use to enter requests.

Prior to 2001, customers found the old, non-Windows work request system difficult to operate. As one memorable user said, the "system was not user friendly but user enemy." FS-WORKS allows a simple, web-based method to enter, route and track facilities work. Since FS-WORKS was developed in house, its design and function is flexible which optimizes the workflow into the underlying database. In six years, FS-WORKS has become an evolving product of customer driven technology which has produced a continuous improvement approach that underlies every customer interaction and transaction. The creation of FS-WORKS has improved customer satisfaction with the Facilities Services Department.

Interest in and use of FS-WORKS was achieved through branding efforts such as the creation of a logo, consistent web site design and promotional giveaways offered at a yearly business-technology fair. Results from better workflow design and promotion, enabled FS-WORKS requests to double from 10,000 in 2001 to nearly 20,000 in 2006. Since 2001, the web site that houses the FS-WORKS application has also become a customer communication tool, a portal for other service providers and a place for the UW Community to learn and gather information about campus facilities. Due to a familiar and simple user interface, users have required minimal training. As further testament to the success of a system that works, customers are eager to have additional facilities-related services accessed through FS-WORKS. The agile design of FS-WORKS also allows the addition of future service providers without the purchase of new software.

The long term maintenance design of FS-WORKS allows for vendor software upgrades or replacements to be transparent to the user. Since FS-WORKS was designed in house, when it comes time to upgrade or replace the underlying facilities software, FS-WORKS does not have to change the interface and can be reconnected to the new software. Many Universities has expressed interest in acquiring the FS-WORKS code to adapt to their facilities environment.

FS-WORKS derives success from an easy to use design which has focused on a simple way to request service, access to detailed work order information and a commitment to customers by anticipating, listening and using their suggestions. The Facilities Technology Staff at the UW work to improve the human and software workflow and will continue this development model to incorporate more service providers with the goal of FS-WORKS to become the one best place to enter work at the University of Washington.

Introduction of the Organization

The campus customers and staff of Facilities Services have both benefited from the use of FS-WORKS. The customer now has a place to go on the web to enter and track work, find facilities information and learn what is new about FS-WORKS. The staff of Facilities Services can now intake their work from a wider variety of customers and have the ability to communicate with customers, via the web, through work status changes that are made in the underlying facilities software.

UW Facilities Services is composed of 984 staff who are responsible for maintaining the main Seattle campus which encompasses 300 buildings with a total of 15.5 million square feet, 69,000 pieces of equipment, 700 acres of urban property and 22 miles of roads and pathways. The UW Facilities support 35,000 students and nearly 16,000 faculty and staff. The FS-WORKS system provides the input and tracking of the 50, 000 work orders issued per year to maintain the Seattle campus.

Statement (Restatement) of the Problem/Initiative

In 2001, the University of Washington Facilities Services Department purchased a vendor facilities and asset management system (FAMS) software package that didn't have a suitable user interface to request work. The Facilities Services Department developed their own web-based user interface called FS-WORKS. Before 2001, customers often called in their work requests, filled out paper forms or used a system they found cumbersome and had too much administrative control which required an account setup and budget approval. It was hard to get work started and customers didn't have a single

place to get work moving, find out where to request work or just gather facilities information. Facilities Services needed to create a work entry system that was easy to use, flexible, provided rich information and not dependent on vendor software.

Design

The effort that went into the creation of FS-WORKS required collaboration between multiple university departments and the package vendors that provide the underlying facilities and routing software.

The web-based front end of FS-WORKS was developed in house. The underlying work orders system is a facilities asset management system (FAMS) called Facility Focus. The software that drives request routing and approval is ASTRA, developed internally by central computing, and Ariba, a purchasing software vendor.

Institutions that purchase FAMS packages may also realize (as the UW did when evaluating the vendor software) that package user interfaces are not flexible and perhaps they would like to develop their own web-based work entry system. Other organizations are interested in using FS-WORKS and the University of Washington will provide the source code to them at no cost but they would need the technical expertise to build the interface from the FS-WORKS code to the underlying facilities software they are currently using. Institutions that have expressed interest in using FS-WORKS include; University of Massachusetts Medical Center, University of Alberta, Portland State University, Broward County Florida.

Another characteristic that has made the development of FS-WORKS unique is the focus

of continually trying to improve the flow of work through FS-WORKS by listening to

and trying to anticipate customer desires. To follow the best practice of continual work

flow improvement means more agile in house software development which is ahead of

vendor upgrade cycles. FS-WORKS does not function alone as a piece of software, it

requires a significant human element involved in improving every interaction of the

software with the customer.

Did the initiative require additional personnel, capital equipment purchases, or electronic systems solutions?

The majority of FS-WORKS is built upon the existing university computing

infrastructure. Facility Services used current personnel and did not hire new staff. The

2001 implementation of Facility Focus required the purchase of a new server.

What were the cost and/or budget ramifications?

Since 2001, Facility Services actually lost central computing developers but the

department has worked on fostering computing and process improvement skills in our

own staff to take on the needed gaps in development and consulting.

Please include any faculty, student, or administrative involvement required or solicited during the planning stage.

Facilities Services went through an extensive reorganization starting in 1999 and part of

that process resulted in a customer feedback group. Facilities worked with this customer

group to develop criteria that went into the initial design of FS-WORKS in 2001.

Management is currently involved in quarterly customer feedback sessions which also

inform our users of the latest FS-WORKS developments.

Implementation

The final element of a 1995 instigated Facilities Services reorganization was the implementation of a new FAMS. The RFP went out in 2000, a vendor was selected and the implementation of the underlying FAMS software, Facility Focus, was accomplished in summer of 2001.

Concurrent to the Facility Focus implementation was the initial development of the software that would become FS-WORKS. Since 2001, the underlying Facility Focus software has been through many upgrades but the design is essentially the same. FS-WORKS, however, has been through many design and functional changes in response to customer demands.

Benefits

In 2005 a customer survey was conducted concerning the quality of Facilities Services work and 63% of the work was entered through FS-WORKS.
The use of FS-WORKS as a primary source of requesting work is evident in the yearly rise of customer requests:

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2001   4673
2002   10687
2003   13261
2004   15407
2005   17559
2006   19923
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The core group of FS-WORKS Users are building coordinators who manage from single to multiple facilities. The response of this group of FS-WORKS customers is always positive and they have been heavily involved in feed back groups and even help our staff in the yearly university business technology trade show.

Summary of the Institutional Benefits provided by FS-WORKS:

- **Has a user-friendly, web-based interface**
  Since FS-WORKS is web-based, its simple design and functionality is similar to other web-based transaction systems familiar to users. FS-WORKS has required minimal user training and support.

- **Improves customer communications**
  Customers are provided status emails when their work has been accepted and completed and are also provided with the contact information of the shop person working on their job.

- **Provides rich information**
  Customers can access detailed maintenance and financial history of their requests which can be downloaded into Excel format.

- **FS-WORKS and its web presence improves workflow and provides a single place to request work or find facilities information**
  The website that houses the FS-WORKS application has also become a central facilities communication and information portal. The website allows customers to view Facilities Services as a system of service providers.

- **Flexible design allows for upgrades without affecting the user and for other universities to use FS-WORKS**
  Since FS-WORKS was designed in house, when it comes time to upgrade or replace the underlying facilities software, FS-WORKS does not have to change the interface and can be reconnected to the new software. Many Universities have expressed interest in acquiring the FS-WORKS code to adapt to their facilities environment.

- **Leverages existing university computing infrastructure**
  Using central computing authentication, called a UW NetID, FS-WORKS allows more UW staff, students and contractors easier access to requesting facilities work. FS-WORKS also provides work order information via the University

standard information portal, MyUW.

- **Eliminates the need for purchasing other departmental work order software**
  The routing and approval methods of FS-WORKS were found to help Housing & Food Services manage their work. H&FS has partnered with Facilities Services and are now using FS-WORKS to service student online requests at no additional software cost. Currently, multiple facilities related departments such as Maintenance, Alterations, Operations, Engineering and Housing & Food Services take their work orders from FS-WORKS and more services providers want to be added.

- **Uses existing purchasing system to route and approve customer requests**
  To eliminate the cost of additional software, Facilities Services partnered with Computing & Communications to develop routing and approval methods using their existing purchasing system. The existing routing software allows FS-WORKS users, if they desire, to assert budget or building control regarding requests.

- **Allows maintenance recharge funds from research grants to be more accurate**
  Since the user interface of FS-WORKS is flexible, developers were able to add the ability for users to track maintenance costs down to the room. The University benefits from having accurate space maintenance data which allows a more a more equitable and accurate indirect (facilities) cost recovery from grants.

As more users request work from FS-WORKS, the efficiency of the work flow must improve with the simple task of efficiently moving the work order into the hands of the person that can do the job and more value can be added for the customer.

The vision of the development of FS-WORKS is to be the one best place to enter facilities related work and we continue on that path.

Retrospect

To achieve a greater economy of scale, all university departments doing facilities work should have been part of the implementation. We implemented with a small core of service providers and have slowly been adding more but it would have been simpler to

start with all the service providers in one system. The Department also needed to clearly identify redundant (shadow) systems and determine if their function needed to be incorporated in the new facilities and asset management system.

Since FS-WORKS handles simple requests from changing a light bulb to more involved requests like remodeling an office, the user interface should have been designed with basic fields to accomplish the simple tasks visible, then more complexity could have been worked into the interface as requests became more complicated. The future redesigns of FS-WORKS will take into consideration this wide variation of request type.

Facilities Services is currently trying (and should have been done in the past) to impart the knowledge to the university community that a work order is a work order and that all service requests can flow into the same place for dispatch and fulfillment.   The message to facilities departments should have been not to view systems as ones they own but rather view their systems as serving the customer.