User experience in the enterprise: Fusion apps

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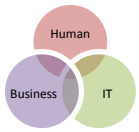
Introduction

Companies buy enterprise applications because they need to accurately and efficiently execute tasks that support their business. Not because it is cool. Fusion applications have been designed with the user in mind. To accomplish that, Oracle has applied user interface methodology during the design of Fusion Apps. This session describes the methodologies that were applied and shows a (pre-recorded) demo of Fusion Apps. The technology and methodology that was applied for Fusion applications can also be applied in your organization to make sure the business has the information they need, when they need it.

General

Often in IT projects, focus is on the business process and the IT needed to support the process. But, the human factor is equally important. Take for example the Expense process in a self service application. An organization has business goals associated with the expense process. The process is part of the HR processes of the company. Organizations want to make sure that processing of the expenses is as cheap as possible. That is why they encourage self service. This makes it important that submitting expenses is easy to do for employees. This way they make very little mistakes and don't call the administration office with questions about the process. But, the tools that they need to use to submit the expenses also have to be attractive, to make sure that they will keep using them.



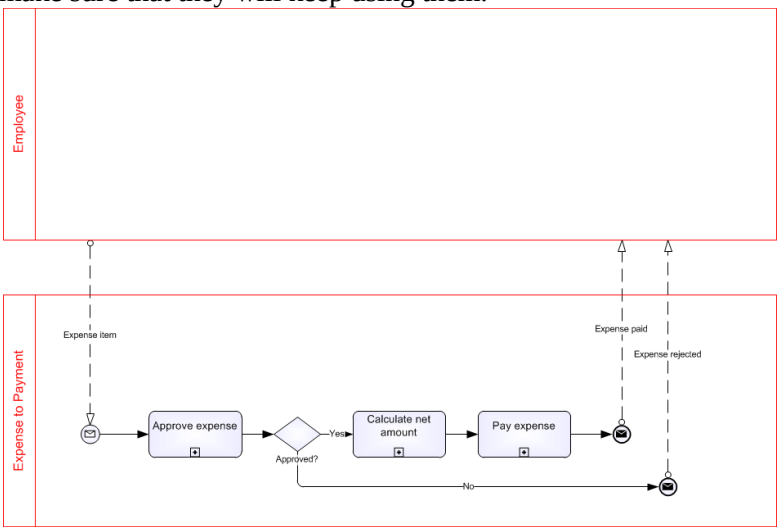
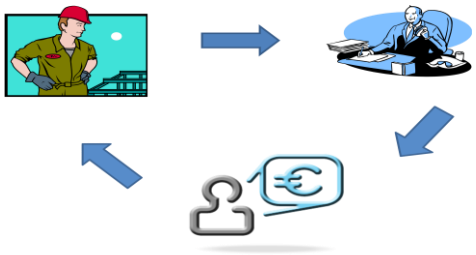


Illustration 1.Expense to payment process

The expense items are approved per item. For example, if an employee goes on a business trip, all the items in this trip are evaluated separately. Every item can be approved, or disapproved. So the process is built around one expense item, as illustrated in figure 1. There are a lot of business rules associated with expenses, that determine both if an expense is approved and the amount that is paid to the employee. The way the user interacts with the system is different every time, depending on the user, the location, the time and the role of the user.

In this case, there are three different types of users:

- The employee who submits the expense;
- The manager who approves expenses;
- The administration office employee that pays the expense at the end of the month.



An employee can submit expenses while on a trip, or right after coming back from a business trip. Usually they try to submit them as soon as possible, to make sure they get their money back. Others save the expenses and submit them every six months, or even once a year.
Managers have to approve the expenses. They approve expenses from different employees. It helps them to be able to view expenses from other employees to compare the amount that is expensed. They try to handle as many expenses from as many different employees at the same time as they can. The administration office calculates the amount and checks the tax rules once a month, right before they make the pay checks.

User experience techniques

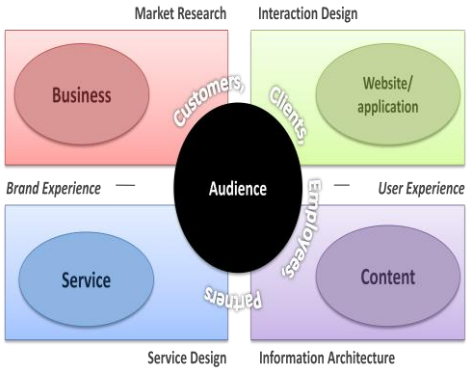


Illustration 2 UX Quadrants © Akendi 2009

Looking at the audience of your organization can be done from different perspectives: business, service, application and content perspectives. All of these perspectives require different techniques. For example, the business perspective can be researched using focus groups or surveys. A company can gather information about the opinion of prospective employees and research its reputation as an employer in the market. Creating an application that actually is easy to use and is fit for the type of user that it is intended for requires different techniques, like creating scenarios and do usability testing. Illustration 3 shows the different activities in the lifecycle of creating a business service or product. Often, the activities that are colored pink in the illustration are left out, effectively creating a feedback gap. Closing this after the launch of the product is much more expensive in terms of money and reputation then doing this during the development process.

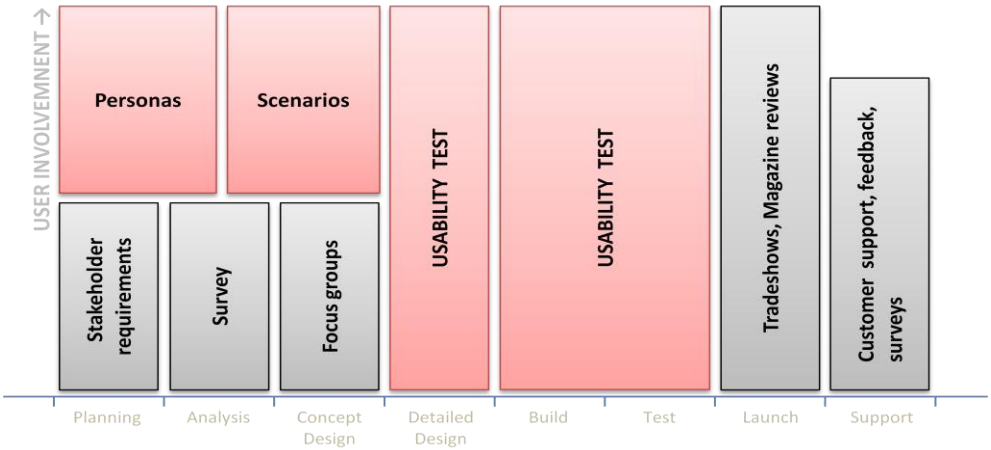


Illustration 3. Closing the feedback gap ©Akendi 2009

Keep in mind that with these UX techniques, the application is optimized from the user perspective. This does not automatically create an efficient or effective process for the organization. We will discuss how to do that in the next section.

BPM Techniques

If we look at Business process management (BPM), the focus is a little bit different. With BPM, not the user is the central focus point, but the business process and the goals the organization wants to reach. In BPM the following lifecycle is often described:

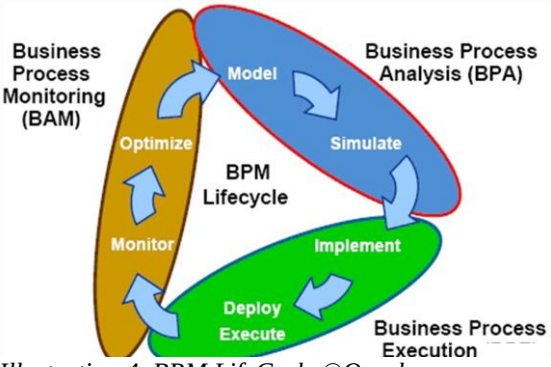


Illustration 4. BPM LifeCycle ©Oracle

First, the process is modeled, often using BPMN or EPC or some other formal method. That way, the model can be simulated to check beforehand if the goals that were defined are being met. Then the model is implemented using a BPMS or some other IT technique. This is deployed and the process is executed as built. This process is then monitored to make sure that the goals that were set are actually being met. If necessary, the process will be optimized and remodeled. A common pitfall when modeling the process is to model the user interaction using fine grained steps depicted as human tasks. This often leads to awkward user interfaces that are completely out of context for the user, although they are in context with the business process. With business process management techniques, the business process will be as effective and efficient as necessary. Flaws in the user interface are not detected nor improved this way.

Architecture

In order to support both approaches and create an application that is truly effective and efficient for both the organization and the audience it is intended for, service oriented architecture is the logical choice. The reference architecture consists of a number of layers and components. The operational systems and application offer the functionality. This can be an ERP system, or a custom developed component. The services layer defines the services that can be used by other applications, services, processes and presentation solutions. The Enterprise Service Bus exposes these services to these other components. The presentation layer can potentially be accessed from a mobile phone, tablet, laptop, or even a voice system. This obviously depends on the process and the type of organization.

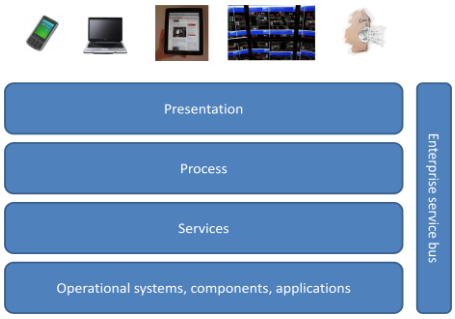


Illustration 5. Reference architecture for effective, efficient and attractive applications

Fusion applications

Oracle has acquired a lot of companies over the years, including packaged applications like Siebel, PeopleSoft and JDEdwards. Integration of these packaged applications with each other and other applications in any organization had been a focus for these companies before. Oracle decided to build the next generation of the packaged applications: Fusion applications.

User experience

User experience became an integrated part of the development process. Companies buy Enterprise applications for support of their business. This is different than consumer facing applications like Amazon or Facebook; in Enterprise applications, users need to be able to accurately and efficiently complete their tasks. Fusion applications enable this because it takes the context of the user/customer into account. The business context consists of four elements:

- Who you are
- What you are doing
- Where you are
- What information you need to complete the task

Research

Instead of looking at the data and generating a lot of screens on top of those data, Oracle has done extensive research to define the roles and persona's, the processes and tasks that need to be supported and the requirements these different users have.
They applied various user experience techniques like contextual inquiry, personas and scenarios, card sorting, tasks analysis and quantitative methods like eye tracking and keystroke level modeling.

Analysis and modeling

This research resulted in prototypes and different solutions. There are four key concepts in fusion apps:

1. The right information at the right time. The information that is needed for a task is present, so the user does not have to navigate out of a screen to get to required information. Analysis of what information is needed at what time is key here. There are different patterns that are applied: showing information when hovering over an item, context sensitive actions that are available when clicking on an item, etc etc.
2. Different types of navigation: search, dashboards, worklists (to-do lists), watch lists and bookmarks are examples of this. This caters different user preferences, and different types of tasks at different times.
3. Collaboration and communication. People are a source of information, just like stored data. So collaboration and communication are an integral part of the fusion apps experience.
4. Increased productivity and ease of use. By analyzing tasks, the actual productivity of the users is increased considerably.

Testing

The results were tested with customers to make sure that it actually increased the productivity and the overall experience.

Architecture

As we discussed previously, the architecture that is supports both efficient and effective processes and efficient and accurate users, is based on services. For Fusion applications, Oracle used Oracle Fusion Middleware. This technology stack provides not only the correct architecture to expose functionality to the user and in processes, but also offers capabilities to users to collaborate and work from different locations. These options are all built in Fusion applications.

Conclusion

User experience techniques improve production and can motivate people to use an application. There are different techniques that need to be employed in different phases of the product lifecycle and for different goals. User experience is used by Oracle and others to create packaged applications, but can also be applied when customizing these applications or when developing your own applications.

The approach Oracle took is very much task oriented with an emphasis on task analysis and quantitative research. This makes sense, considering the earlier statement about enterprise applications and the need to support the claims with data.

However, in addition to that, adding concepts like persuasive design into the mix to actually influence users in an organization would make it even more compelling. This is particularly true for areas like CRM or the so-called 'self service' or employee tasks like filling out expense reports, questionnaires, and updating resumes.

When used in conjunction with Business Process Management, and the right architecture your applications can be successfully implemented in the organization and will have a good return on investment.

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