



Moving Towards a User Centered Architecture (UCA)

Infor's next-generation framework for user centered library services

White Paper

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Key trends in the information landscape

In today's environment, information of any kind - cultural, social, academic... - is everywhere. Information is not merely "supplied"; it is in fact created and dispersed by each and every one of us. There is moreover a continuous evolution in how we generate, store, deliver and process information. A number of important trends stand out:

Delivery; information is delivered not just through personal computers, but increasingly through mobile devices such as PDAs, smart phones and e-readers.

Speed; speed is everything; more computing power and faster indexing ensures ever-faster delivery of information.

Collaboration; no longer a buzz-word, "collaboration" between people - i.e. creating, sharing and exchanging data as a collaborative process - makes information more relevant and useful.

Portability; through widgets and gadgets, users "grab" content from websites and take it along to other destinations on the web.

Fundamental to each of these trends is the consumer or "the user". Users after all demand pertinent information at a time and place of their choosing. Overarching the above trends therefore is the concept of customization, which is enabled by both hardware (for information delivery) and software (for collaboration and portability).



Information sharing on multiple devices.

The evolving library

The evolution of the information landscape naturally necessitates a change in how libraries deliver information and create awareness of services. Information after all is everywhere; users can create, find, access and share information in a nearly unlimited array of resources and on a multitude of devices. In this environment, the library must have the tools to understand the needs of its users, and to effectively communicate the library's "brand" as a cultural center that meets social needs, promotes the arts, and enables information discovery (of traditional and digital media). The library must also deliver its services in ways that users have come to expect by focusing on a personalized and customizable user experience.

Underlying the ability to effectively deliver and communicate services in the evolving information landscape is a focus on building relationships with users. This entails a change in how libraries approach workflow, metadata management and front-end interfaces. Specifically:

- Workflow. Managing customer relationships, and understanding needs and trends must be fully

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integrated within the back-end workflow.

- Metadata. Metadata management must be flexible and user-driven.
- Front-end. The front-end user interface must be customizable and portable. It must be both a collaborative platform for users and a marketing platform (a tool to create awareness) for the library.

Introducing a user-centered system architecture (UCA)

Infor's user-centered system architecture facilitates user collaboration, information discovery and the delivery of extended services to library users. UCA centers on the following components:

- A CRM focused and analytical back-end to manage and understand customers.
- A de-coupled "collaborative" front-end to promote the library and create an experience beyond search.
- A Service Oriented Architecture (SOA) that ensures system extensibility.
- Flexible and user-driven metadata management and repository to create a rich discovery environment for users.



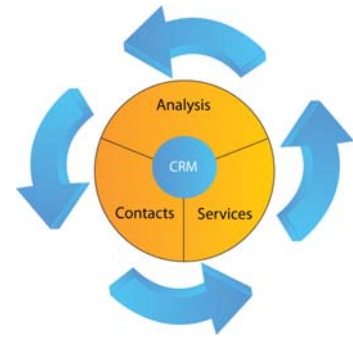
The UCA Architecture



CRM-focused back-end

CRM involves a defined spectrum of activities to engage and communicate with users, and to understand usage and user needs. Our solutions support the fundamental life-cycle of customer retention and growth by enabling libraries to manage contacts and understand usage as integral components of the back-end workflow. Examples include the ability to:

- Manage critical customer contact points such as customer information and communication such as visits, complaints, questions, requests and records of telephone conversations.
- Gain insight and understand usage of collections and services. Libraries can answer important questions about usage in combination with customer data such as gender, residential area, borrower category, age, etc.
- Develop collections on the basis of user-provided and usage-based data by combining both CRM and analysis.



Customer retention & growth

Decoupled front-end

Beyond managing contacts and understanding usage, libraries must continuously act to promote services and engage users. To effectively engage users, libraries require a suite of front-end applications that address user needs, continuously assess interests and effectively promote the library.

Infor's decoupled front-end provides libraries with a set of applications to understand user needs, promote services and to foster engagement with and between library users. This includes the ability to:

- Deploy a set of Web 2.0 applications to understand library customers and attract increasingly savvy users.
- Engage users in multiple, collaborative ways around many services and diverse information needs.
- Effectively promote the library and engage users in a single environment.



A single environment for user collaboration and marketing

Service Oriented Architecture

When deploying software, libraries must be able to easily change components of their software applications and / or add third-party solutions, without going through major, disruptive upgrades

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and implementation processes. The cornerstone of this approach, and an underlying principle of Infor's software development, is a Service Oriented Architecture (SOA). Through SOA, libraries can implement additional software applications that are loosely connected and extend the library's service offerings to its users. SOA thus enables libraries to extend services with seamless links to, for example:

- Self-check systems
- Payment processing applications
- External databases
- Virtual learning environments
- Digital repositories
- Etc.



Service Oriented Architecture

Alongside SOA, Infor enables customers to extend the reach of deployed applications by using core system data to offer new and increasingly diverse services to users. This approach to openness involves an emphasis on connectivity. In this scenario, customers interface with core system data to enable a host of supplementary services. The most prevalent modern method of enabling this type of openness in our applications is through web services (on top of traditional ODBC / SQL) using common protocols and standards such as HTTP, XML and SOAP.

With the availability of a set of flexible web services, Infor offers libraries additional means to easily integrate system data into other applications. The tighter integration of data between multiple systems in our applications facilitates extended functionality for information delivery, circulation, inventory management, and more.

Flexible metadata management - from an ILS to a repository

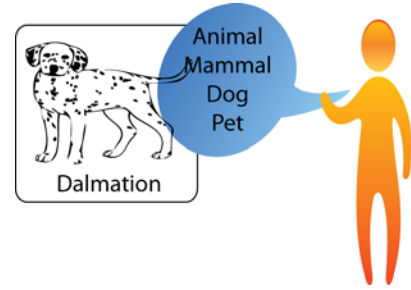
Metadata management comprises two areas; the management of flexible data formats by library staff on the one hand, and user-contributed metadata on the other hand. Both areas must be integrated with, and "inform" one-an-another to create a rich discovery environment for users. Through the integration of flexible metadata management, V-smart serves as a true repository of knowledge creating a dynamic gateway into digital objects and traditional materials of any kind.

For the library, flexible metadata management involves organizing and showcasing collections in multiple formats. Infor's back-end systems support a range of standard data formats and protocols, which enable the library to manage diverse collections. In addition to standard formats, the library can also define other formats in order to provide access to additional databases. The library may thus enable users to search collections of books, photographs or museum exhibits - each of which can constitute a database of a different format.

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On the front-end, user-contributed (or generated) metadata enables the overall user experience to be more personalized and collaborative by offering users additional entry points into the library's collections on the basis of popular keywords and descriptions. User-generated metadata can then be added to the back-end system to further enrich the library's collections.



User-contributed metadata

A new paradigm emerges

Through a User Centered Architecture, a new paradigm emerges to combine traditional library automation with sophisticated customer relationship management. Back-end functions that support collection development and services become a function of an understanding of user needs and behavioral patterns. On the front-end, libraries continuously drive usage of collections and services by engaging with users through an array of Web 2.0 applications that extend the user experience beyond search and into the realm of multi-faceted collaboration.

Infor's solutions enable libraries to effectively manage customers, understand needs and promote services. By creating a holistic approach to automation and CRM, Infor provides libraries with the necessary tools to attain critical objectives of meeting user needs, ensuring growth in usage and achieving maximum ROI.