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A Platform Approach for Websites, Portals and Mobile Apps Leads to Faster Time to Market and Improved User Experience

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Websites, portals and mobile apps are frequently built in silos across the organization and with third-party involvement, using disconnected and disparate tools. A platform approach can assist IT managers and executives with faster time to market and an improved user experience.

Key Findings

- Today's increasingly strategic and pervasive Web and portal initiatives require a more modern, comprehensive and coordinated technology platform.
- Current Web, portal and mobile initiatives are frequently accomplished in a piecemeal fashion, with various parts of organizations and third parties using specialized and dedicated tools.
- A user experience platform (UXP) approach offers coordinated, rationalized and integrated components to improve IT agility and build a more compelling and comprehensive user experience (UX).

Recommendations

IT managers and executives should:

- Develop a long-term (five year) vision centered on the UX of your organization in partnership with business stakeholders.
- Devise a target UXP framework of complementary components designed to accomplish the vision with minimal redundancy and conflict while preserving the agility needed to compete in fast-moving markets.
- Ensure governance across all key stakeholders to assure that the platform solution meets the needs of the business today and into the future. Examine the feasibility of a commercial off-the-shelf (COTS) strategy versus roll-your-own UXP strategy.

Analysis

Enterprise Needs Raise Demand for a Platform Approach

The technological foundations of Web initiatives have largely centered one of two broad categories of software until now. Web content management (WCM) systems arose initially out of the urgency of establishing a Web presence in the mid-to-late nineties. Enterprise portal platforms emerged in the late nineties, providing organizations with a means of aggregating and delivering disparate information and applications that existed in many places, and targeting that delivery toward specific groups of users.

The two categories have evolved along their own paths, still rooted in their initial value propositions but ineluctably expanding into each other's domains (see "The Roles and Synergies of Portal Software and Web Content Management"). Portal software vendors are increasingly providing content management capability, and WCM vendors have added personalization capabilities and a component model, leading to a new form of portal product — the lean portal. Both software categories, and the various internal and external parts of organizations that support them, are moving to address the Nexus of Forces (mobile, social, the cloud, and information). Unfortunately, they're too often doing it separately. The correct approach is a unified architecture, not a bolt-on.

The WCM/portal conflict conceals a great deal more complexity for most organizations. First, many companies already have multiple WCM systems and portal platforms. Using WCM systems and portal platforms together often requires complicated integration that is difficult to manage and maintain, and creates additional redundancy and conflict among systems and people that manage them. Many attempts at combining WCM and portals together have resulted in handicapping both platforms for the sake of the integration.

Second, although WCM systems and portal platforms often serve as the core or foundations of websites and portals, they don't by themselves serve all established or emerging needs. Organizations frequently require specialized search and collaboration capabilities. Social capabilities have become a requirement, especially for customer-facing sites. And to compete effectively on the modern Web, the sites need more sophisticated analytics, context awareness, and more cohesive support for mobility. Additionally, an increasing awareness of the importance of user-centered design has created demand for UX management.

Building modern Web presences requires countless hours and a wide range of skills. Each enterprise developer may take their own path to the tools and components, leading to longer time to delivery, a large portfolio of components demanding support, hard-to-diagnose performance problems, and crippling maintenance costs. A piecemeal approach may have sufficed in the past, but the new urgency of delivering consistent and meaningful UX across channels necessitates a coordinated approach.

IT has been using platforms successfully for building conventional applications for years. It is high time that enterprises employ a platform concept when building the UX. A UXP represents the emergence of this platform approach.

The UXP Takes Shape

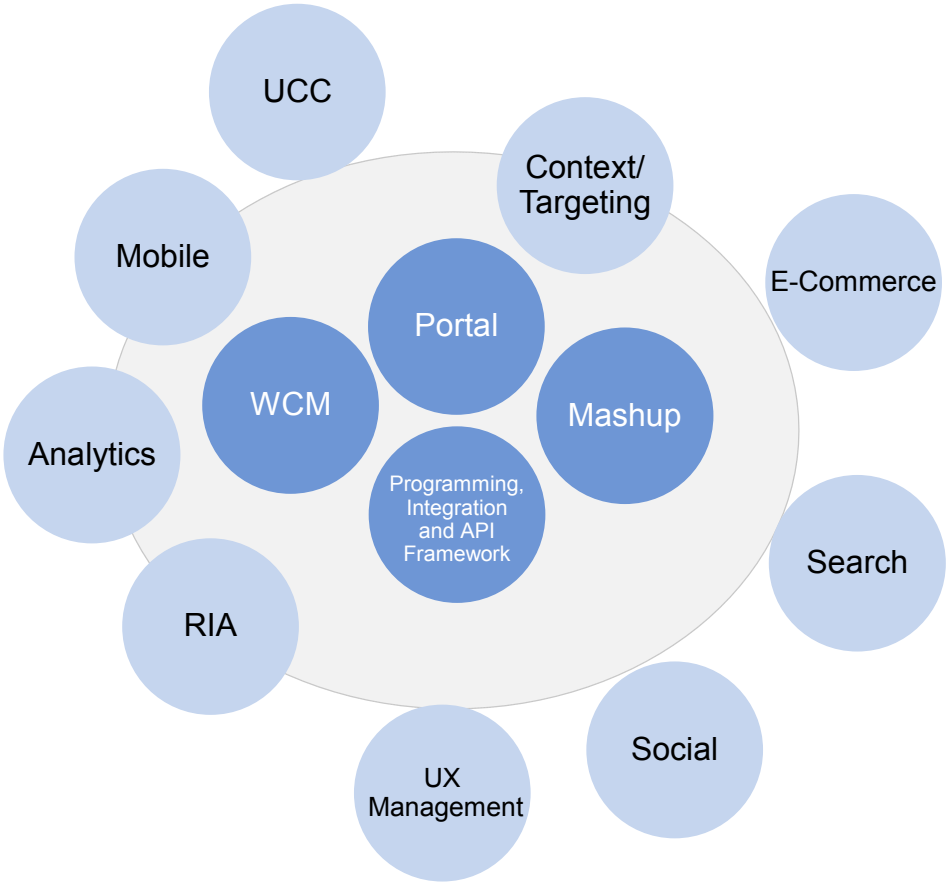
A UXP is an integrated set of tools for delivering modern websites and portals. It focuses on the front end, the presentation and user interaction layer. Integration within the UXP and with back-end services is achieved primarily through portlets, widgets, integration technologies (for example, an enterprise service bus) or Web services. It consumes business application components from a variety of back-end systems and tools, assembles and orchestrates them, combines them with supporting tools like search and collaboration, and delivers the resulting interfaces to a variety of channels and devices.

A UXP can serve as the enabling, unifying system for multichannel, modern Web initiatives like online channel optimization (OCO; see Note 1) and digital marketing, next generation intranets and B2B collaboration environments. A UXP can serve any audience and support any business function that requires human interaction.

The platform approach lets organizations assemble the tools necessary to support websites, portals, and mobile sites with a variety of different requirements and features. For example, a business-to-consumer (B2C) website may require Web content management (WCM), digital marketing, e-commerce, social media, search and analytics, while a business-to-employee (B2E) portal may require a portal product, document collaboration, search and extensive business application integration capabilities. By creating a platform and populating it with appropriate tools and components, an enterprise delivers a ready-made framework for its developers to use for any website or portal requirement. This platform may also include tools for building a variety of mobile websites and mobile applications. Developers can pick and choose, assembling the capabilities they need from the portfolio of tools/components in the UXP. Organizations don't need a different set of tools for each channel, as the tools in the UXP support multiple channels. The platform's reusability of tools and components benefits IT in the form of efficiency and cost control, but it also benefits business stakeholders as a more unified way to engage with their constituencies, and end users, who benefit from a more cohesive experience across channels. Efficiencies derived from use of a platform approach can also lead to reduced time to market, benefiting all parties.

As mobile computing continues to grow explosively, finding ways to effectively deploy existing Web assets to mobile channels is paramount. A UXP, with its WCM, open API and mobile capabilities, allows enterprises to mobilize existing websites and portal sites. One particular approach that is resonating with enterprises is the use of a PhoneGap-like wrapped HTML hybrid mobile app model. The capabilities of the UXP facilitate this model (see Figure 1).

Figure 1. User Experience Platform Services



Acronym Key: RIA — rich Internet application; UCC — unified communications and collaboration

Source: Gartner (March 2013)

Core Features of the UXP

A UXP has a core set of services that coordinate the essential functions of WCM, portal and application/process compositing (see "The Emerging User Experience Platform"). These services are typically delivered by an integrated set of components, together comprising a platform. The core services are also designed to eliminate the redundancy and conflict caused by bolting WCM, portal, and other Web products together. UXPs may be purchased from a variety of established and emerging vendors, or created by the organization by obtaining separate components and integrating them.

Underlying the UXP is a set of supporting infrastructure services, such as identity and access management, security, runtime and management. In addition, some of the underlying infrastructure services may be extended by the UXP — for example, portals and context-aware tools can extend identity services.

WCM — Every website or portal needs content management capability to support the creation, organization, publication, and retirement of information on the site or portal.

Portal — While not every website need be a portal, modern horizontal portal capability is necessary to support a broad UXP strategy. Portal services deliver a personalized, unified point of access, aggregating and integrating relevant content, applications, business processes and other people. Chief among the portal's services are the coordination of access management, personalization/ targeting and customization, which allow contextual access to Web resources. The essential portal method, including a page framework and component (portlet or widget) model, is essential to the UXP's interoperability, extensibility, and reuse.

Applications/integration/API framework — Modern websites and portals must be able to consume and distribute content, applications and services through Web services and APIs. Of course, portals have traditionally focused on the consumption side, invoking content and applications from a wide variety of Web-based and non-Web-based resources. But the UXP, in a world where a single website or portal does not equal Web presence, must be able to both consume and deliver APIs to other websites, portals and mobile apps. A model that exposes REST-based APIs not only facilitates multichannel deployment (for example, PhoneGap-style wrapped HTML) and third-party consumption of business services, but also facilitates integration between back-end services and the UXP. The integration framework may also rely on SOAP-based Web services or integration technologies like an enterprise service bus or an integration broker to consume application content and services from back-end systems.

Mashups/compositing — Representing the front-end, interaction layer, the UXP isn't itself an application development platform. It is poor practice to encapsulate business logic inside the UX layer. The UXP still requires an ability to assemble and tie together application components for a variety of purposes and audiences. The visual component model known generically as the "portlet" serves as a fundamental building block for assembling composite applications and mashups that can employ the UXP's other services like personalization and security. Lately, widgets (easier-to-create RESTful and components that depend less on server side processing) are emerging as an alternative to the longer established portlet model. In any case, portlets and widgets ease the difficulty of integration and extension, and allow IT to more safely delegate the assembly and management of websites and pages to business users.

Basic context — A foundation for context-aware computing is required for a UXP. As a starting point, most organizations will need to employ personalization to deliver relevant information and applications based on their role, the device they're using, or their location.

Basic mobile — The ability to render mobile Web content for consumption in the Web browser of smartphones and tablets is a core requirement. The ability to develop native mobile apps and hybrid mobile apps is also a core requirement.

Basic analytics — UXPs must have the ability to provide Web and portal analytics to help monitor use and measure success of their website and portal efforts.

Basic RIA — UXPs must support rich Internet applications. Ajax support is a requirement, as is the ability to support HTML5/CSS3/JS.

Additional Features of the UXP

Other features of the UXP are considered optional, but they are usually necessary for the creation of modern websites and portals.

Advanced content — In addition to WCM, other content capabilities such as digital asset management and document management are frequently needed. This may lead all the way to enterprise content management (ECM) capabilities. Leading UXPs also enable end users to create and manage content without IT intervention. This is particularly true of the digital marketing use case, where the marketing department can, by itself, create and launch websites for ad campaigns.

Advanced context — The ability to test and target Web content is frequently a requirement, especially in digital marketing use cases. Multiattribute personalization, based on a combination of static and dynamic attributes and driven by a rule engine, is a feature of advanced context. Contextual services for mobile devices (for example, location based services) is also a frequent requirement.

Advanced mobile — A full mobile AD platform (MADP) capability may be included in a UXP. A mobile device management (MDM) capability is also an advanced feature of UXPs.

Advanced analytics — Cross-channel website and portal strategies will increasingly require an ability to gather analytics across many points of interaction, including websites, portals, social sites, and more traditional data marts/data warehouses. The onslaught of big data will require the UXP to handle a variety of data sources for analytics. UXPs will help support real-time decision making for users, and they'll help organizations sense and respond to changes in market demand.

Advanced RIA — Modern Web users expect richer, more engaging, and more rewarding experiences, so UXPs will provide support for a variety of rich Internet applications. While Adobe Flash and Microsoft Silverlight give way to HTML5, new UI technologies and modes of interaction, like touch and voice, will require support. Responsive design capabilities are also a feature of leading UXPs.

Advanced search — Search has been a much underappreciated and underutilized feature within many portal and Web content management platforms and initiatives, a somewhat surprising dynamic considering Google's demonstrated success on the consumer Web. UXPs will employ advanced search more prominently to help users and IT departments deal with greater volume, variety, and disparity of information sources, including internal and external Web content, documents, and digital assets. No longer just a search box, search technology will provide an engine to help deliver relevant information and applications to users. Advanced search will allow search results and order bias based on contextual variable. Finally, search may provide a valuable source of information for digital marketing purposes.

Communications and collaboration — In some cases, UXPs will provide a range of tools to allow people to work together, whether asynchronously with tools like document collaboration, threaded discussions, team rooms, and forums, or real-time with VoIP and instant messaging.

Social computing — Closely related to collaboration, Websites, portals, and mobile applications increasingly require social computing capability and interoperability. Internal portals and websites often employ core social capabilities like social profiles, activity streams, social graphs, and folksonomies to better engage users, to provide better peer-to-peer service, and to improve information management and findability. External websites and portals use social capabilities to improve customer self-service and support. Marketing groups must manage social presence not only on the organizations' own Web properties, but in public social media outside of their control (e.g., Facebook, Twitter; see "Managing Engagement Through Multiple Social Media Channels").

E-commerce — E-commerce capabilities are necessary for organizations transacting on the Web. Frequently included are transaction capabilities, catalog management, merchandising functionality, promotions support, credit card validation and shipping. Depending on the importance of the Web channel, the size and breadth of the business, and the need to support many sales channels and many products (as in consumer products and retail), some organizations will use an e-commerce platform as a foundational component of their UXP.

UX management — Effective UX is becoming a first-level requirement for many organizations. A UXP delivers programmatic support for UX methodologies, such as user-centered design, usability testing, personas, interaction patterns and testing/targeting. Currently, experienced UX designers and developers primarily use offline tools (for example, spreadsheets and presentations) to keep track of these UX artifacts. The need for online support is evident, as is the need for enhanced UX skills within the enterprise.

"Roll Your Own" Versus Commercial Off-the-Shelf UXPs

As with any major technology platform, a UXP can be assembled from components or will be able to be acquired as an integrated suite as the market emerges toward the end of 2013. The "roll your own" approach allows for the use of best-of-breed and legacy components from multiple vendors or open-source initiatives, and avoids locking in to a single vendor. But it also requires integration of components and, in some cases, this can be significant, leading to longer time to deployment and an ongoing maintenance burden. Additionally, the best-of-breed approach may bring overlapping functionality and services which can create conflict. There doesn't need to be a single tool for every task. However, they should be rationalized and overlaps should be minimized.

Buying a UXP as a COTS offering, either as a single product SKU or an integrated suite, can reduce time to market, reduce integration costs and minimize overlapping functionality. However, many suites contain a combination of best-of-breed and good-enough components, and a single-vendor UXP product may create vendor lock-in. Innovations frequently occur in small, best-of-breed vendors, and it may be months or years before these innovations appear in suite-oriented offerings.

A variety of vendors are springing up at this genesis of the UXP market. For a discussion of them, see "Who's Who in the Emerging UXP Market." The UXP market will emerge in late 2013. As such,

the vendors and products will be first generation. While the components comprising the UXP are in most cases mature and industry-proven, the integration across them is less so. In addition, UXPs represent the convergence of many disciplines, not just multiple technologies. The principles of modern architecture, development, integration and content management, and design must come together in a manner that is appealing, coordinated and fruitful for a wide range of stakeholders. In a new market, even if composed of several mature markets, UXPs must evolve and undergo refinements before they reach their potential.

Some system integrators and digital agencies are addressing the need for a platform by taking components (or UXPs) from independent software vendors (ISVs) and adding their own specialty tools and value-add components. An example of this is the Fluent offering of Razorfish, which they label as a "digital marketing platform." These platforms are not sold as products, but are used internally and in conjunction with third parties to design, develop and deploy websites, portal sites and mobile apps.

There is no right or wrong answer to whether to roll your own UXP or opt for a COTS UXP. Each enterprise has a different set of infrastructure and platform requirements, as well as a different mix of existing technologies, some of which will be required components of a future UXP.

If your enterprise already has a majority of the components that deliver UXP services and is happy with them, then it may make more sense to continue the roll-you-own strategy by obtaining missing pieces and integrating them yourself. If your enterprise has a few, scattered, disparate tools for building websites, portals and mobile apps, then you should consider buying an emerging UXP product as a fast path to establishing a UXP.

There are some use cases where a UXP may take time to resonate. One in particular is digital marketing. Digital marketing is accomplished by a large number of groups, including IT, marketing, digital agencies, ad agencies, creative agencies, advertising brokers, and many others that form the digital marketing ecosystem. A variety of tools and approaches are currently used across this ecosystem. It may be difficult to establish a single platform for the entire digital marketing ecosystem to build upon. While a platform approach would still be beneficial, the enterprise may have to initially focus on a platform for a subset of the digital marketing ecosystem versus the entirety. Despite this difficulty, some vendors (for example, IBM's Customer Experience Suite and Adobe's Creative Cloud and Marketing Cloud) are targeting the digital marketing use case with their emerging UXP offerings.

Multiple UXPs?

For large enterprises, it is likely that multiple UXPs will emerge. This may be due to political conflict, acquisitions or a highly decentralized IT infrastructure, or it may be driven by specific needs and requirements of select audiences. The requirements of a digital marketing site differ dramatically from a corporate intranet. Different UXPs have different ethos (see "The Ethos of Vendor User Experience Platforms"), and the needs of the audience may drive the enterprise to more than one UXP. Obviously, IT would prefer to have one UXP, but the needs of the business may override that desire.

When a Platform Approach May Actually Lower Agility

If the UX platform (whether roll-your-own or vendor product) is closed, has substandard components, or does not evolve to keep up with user demand and industry innovations, it may actually lower enterprise agility. Open platforms that allow new capabilities to be easily added should be the target. Also, if the UXP used is from a vendor, make sure that the vendor innovates near the pace of best-of-breed component vendors. In today's emerging UXP market, some vendors innovate rapidly, while others innovate slowly. Some have open architectures, while others have closed architectures. Care must be made in selecting vendors that will provide agility for years to come.

In industry segments or use cases that are chaotic, with many players using many tools with little to no coordination, a platform approach may not be feasible. As these areas mature and become less chaotic, a platform approach should be considered.

To Platform or Not to Platform

Any UXP acquired from a single vendor may contain a collection of best-of-breed components and good-enough components. The challenge to the enterprise is to determine if good enough is good enough for them. If not, then the enterprise must look for an alternate UXP provider, or an alternate to the components that are inadequate for their purposes. This is not unique to UXPs, and has been the situation since software platforms were created.

With the complexity and need for agility of modern websites, portal sites and mobile apps, the number of technology components required to build them is large and growing. A platform approach will allow enterprise designer and developers to select the appropriate tools, components and services from the toolkit and assemble them with minimal friction to meet the needs of customer, employees and partners alike.

Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"Online Channel Optimization: Framework to Optimize Online/Offline Communications"

"Best Practices in Moving From Social Experiments to Online Channel Optimization"

"The Emerging User Experience Platform"

"Who's Who in the Emerging UXP Market"

"Magic Quadrant for Horizontal Portals"

"Magic Quadrant for Web Content Management"

"The Roles and Synergies of Portal Software and Web Content Management"

"Managing Engagement Through Multiple Social Media Channels"

"The Ethos of Vendor User Experience Platforms"

Note 1 How the UXP Supports and Complements OCO Strategies

The OCO discipline requires a broad set of technologies for realization. Historically, enterprises built websites with a loose collection of best-of-breed and open-source offerings, primarily using WCM and portal products. Recently, portal products have provided a suite-oriented approach, but many aspects of websites and portals — and especially mobile apps — require additional technologies. The result is that the organization has to perform a great deal of integration, and there is duplication of functionality across the developer teams.

The UXP attempts to solve these problems by delivering a broad set of technologies in an integrated fashion. The technologies found in UXPs align nicely with the capabilities required by OCO. The UXP provides a platform for enterprise developers, end users and third parties to create modern Web presences, along with complementary capabilities such as search, collaboration and social networking.

The UXP also supports the multichannel/multidevice aspects of OCO. Web artifacts created for websites and portals can be repurposed for other channels and devices, such as the mobile channel. Therefore, a widget created for deployment via a portlet in a portal can be wrapped in a hybrid mobile application. This reusability aspect can be extremely beneficial, eliminating a large amount of duplicate code and reducing development and integration efforts.

As a Pace-Layered Application Strategy is applied to OCO, the UXP can support all three layers of Gartner's pace layer model (systems of record, systems of differentiation and systems of innovation). Many of the same UXP services will be consumed by all three types of systems, but others (such as contextual targeting) may be limited to systems of differentiation or innovation.

The potential optimization of ensemble interactions holds great promise. If a single technology area could process and turn all the information in an organization into intelligence, the value would be immense. In the meantime, an organization following OCO and using a UXP should begin to see a real return on its investment in its online presence.

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