Digital Experience Platforms

DXP
MARKET GUIDE

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TABLE OF CONTENTS

Introduction

Seismic changes in business conditions across 2020 and 2021 due to the COVID pandemic continue to provide new opportunities and challenges for organizations focused on improving digital customer experience.

The go-to technology for delivering such high quality customer experiences is the digital experience platform (DXP). While current economic uncertainty may pressure executives to pull back on infrastructure investments, forward-looking leaders are making their organizations more adaptable to future events. A DXP is often at the center of these efforts.

The SMG team has been covering and analyzing the DXP market for the last 15+ years. This market guide is intended to provide you with a solid foundation for understanding this market, with in-depth guidance for selecting the right vendor and platform for your unique business requirements.

With that said, we wish to underscore the importance of the DXP implementation partner or partners you work with, your internal teams and your overall approach to organizational agility. We encourage you to tune into these broader conversations on CMSWire and participate in our Digital Experience Summit conferences.

What Is A DXP?

For the purpose of this guide, a DXP is defined as an integrated set of core technologies whose goal is to support the creation, management, delivery and optimization of customized digital customer experiences (DCXs).

At the heart of every cohesive DXP is a web content management (WCM) system or content management system (CMS). In fact, many of today's DXPs historically derive from portals and WCM systems.

Core DXP Functionality

- Customer experience (CX) personalization
- APIs for administration, authoring, interoperability, decisioning and delivery
- Content authoring, workflow and collaboration
- Content and experience analytics
- Content indexing, metadata and search
- Content modeling and extensible content types
- Content presentation and delivery
- Content security and access control
- Content versioning and change management
- CRM and marketing automation integration
- Digital Asset Management (DAM) and/or integration
- E-commerce or E-commerce integration
- Experience design (low code site or page design)
- Experience personalization
- Experience testing and optimization
- Experience/site versioning and change management
- Forms design, integration and delivery
- Image management and editing
- Multi-lingual support and/or localization integration
- Multi-site, multi-channel, multi-device support
- Platform account and access services
- Platform/back office extensibility
- Social media integration

What Can a DXP Do For You?

DXPs are the centerpiece of any serious data-driven, digital customer experience (DCX) strategy. Prior to engaging in any level or type of digital transformation or customer-centric business initiative, a DXP needs serious consideration since it can serve as the hub for delivering a cohesive customer experience across multiple channels.

Key business benefits of a DXP include:

- Reflect the ontology of your organization via content types, metadata, experience personalization and customer journey pathways

- Coalesse content, customer intelligence and experience delivery from across your organization

- Centralize omnichannel content and experience delivery via integration with other back office, e-commerce and customer focused systems

- Provide a strategic focal point for customer experience improvement and customer satisfaction feedback

- Support new customer acquisition and nurture via intelligent experience optimization and streamlined information delivery

- Support rapid prototyping and customer experience evolution agility

DXP integration with the rest of your systems is critical to enable you to leverage valuable customer data to provide a tailored experience to your customers.

It's important to note that no vendor is capable of meeting all the needs of every organization. Admittedly, some of the vendors in this guide do not have all the features in our Core DXP Functionality list above. Each DXP product has a different footprint, different strengths and comes from

its own unique software legacy. The best DXP systems are ones that can serve as a foundational platform, operating as a platform-as-a-service (PaaS), allowing organizations to use that foundation and extend it by integrating with other internal and external systems.

Since many companies are not prepared to take on a DXP implementation themselves, in many cases finding a mature and dependable implementation partner becomes absolutely essential to DXP project success.

This is confirmed by research from Gartner, which reports that through 2021, 85% of effort and cost in a DXP program will be spent on integration with other systems. Also through 2021, 90% of global organizations will rely on system integrators and partners to create and execute their DX strategies.
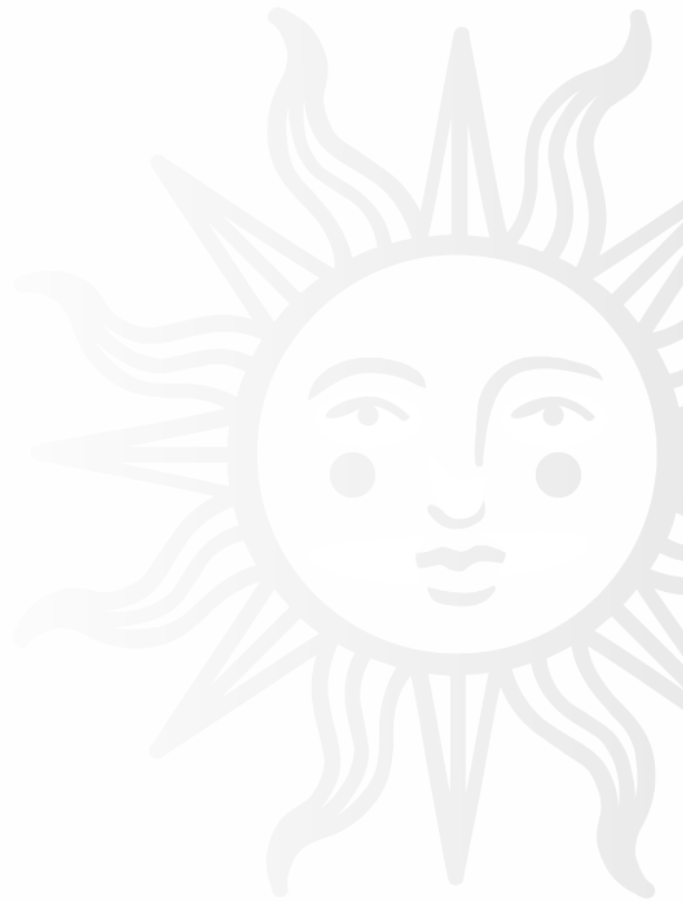
Market Overview

2020 and thus far in 2021 have been watershed years for business and digital technology. The COVID-19 pandemic has affected the world in ways not imagined only a few months prior. The economic fallout from the crisis has caused CFOs to be reticent to commit to significant investment in such unstable conditions, according to the 2021 State of the Digital Customer Experience Report. In fact, the number one challenge reported by organizations was "limited budget/resources," which rose significantly from the previous year from 34% to 46%.

When respondents were asked about any plans to invest in a new web CMS or DXP, the proportion of those buying a new platform reduced from 11% in 2019 to 6% in 2020. There has been a similar reduction of those upgrading or enhancing an existing platform from 26% to 15%, while those just continuing with their current platform have grown from 19% to 29%.

But the issue for business and marketing leaders is not just how to survive the current moment, which is critical, but how to make their organizations more adaptable to extreme and unpredictable events like a pandemic going forward, and how to improve the ability to communicate with customers in ways they have become accustomed to.

While almost 80% of DCX executives surveyed said the digital experience was "very" to "extremely important" to their organizations, only 11% reported that their DCX tools were "working well," and 42% declared their tools "need work." Some potential reasons for this level of dissatisfaction include low levels of maturity in areas such as personalization, silos between different tools that may impact the ability of teams to understand customers, and budgetary challenges.

The pandemic hasn't changed the trends of digitization, consumer-centric business plans and personalized marketing at scale. Rather, it's pushed those trends off a cliff and forced everyone to scramble to stay competitive. For companies that want to not just survive this tsunami of unpredictability, but thrive in it, they need an infrastructure experience platform that will enable acceleration of digital transformation efforts to meet emerging needs, changing habits and business conditions.

While many WCM vendors are developing DXPs and may offer a DXP alongside a separate WCM product, some traditional WCM vendors are not keeping pace with current developments in the market and are falling behind. That said, vendors with more platform-oriented solutions are innovating more rapidly and increasing their ability to execute.

Headless content management is fundamental to effectively managing digital experiences. With a hybrid headless Content-as-a-Service (CaaS), one can choose between operating in pure headless mode or in traditional front-end content delivery mode. Content can be accessed as a service, exposed via APIs and delivered to any channel or device through a customer's journey.

Cloud-based DXPs are becoming commonplace, and vendors are no longer calling out infrastructure as a key differentiator. DXP buyers are more looking for cloud-native DXP technologies that are built on mesh apps and service architecture (MASA), microservices, and serverless and containerized architectures. But buyers should be warned that given the relative immaturity of microservice-oriented DXP, inappropriate use can lead to unnecessary application complexity.

In terms of long-term growth, which may be further impacted when these estimates update after 2020 is fully incorporated, the DXP market is projected to grow to $13.9 billion by 2024, according to a study by

Research and Markets. The market in Asia Pacific (APAC) is expected to grow at the highest compound annual growth rate (CAGR) with the adoption of technologies such as cloud, AI and ML. China and India's technological growth is expected to contribute to the growth of the DXP market in APAC.

According to Gartner, a cloud-first and API-led approach to DXP management and integration is the most attractive path forward giving organizations a faster pace of innovation, with increased scalability and agility. They recommend that buyers maintain an incremental, iterative and experimental approach to solution development, while establishing an ideal vision of what their overall tech stack solutions will be.

History

The history of DXP systems begins with the first generation of content management platforms that were used in publishing and media organizations at the advent of the internet and digital technology in the 1990s. About 20 years ago, those CMS platforms began to evolve into web content management (WCM) systems as companies of all types began to publish content themselves.

Over time, these WCMs included not only the content creation and management functionality of a CMS, but have added broader applications including website management features (layout, menus and navigation), personalization and analytics capabilities, as well as the ability to easily integrate with the rest of the tech stack through APIs. WCMs have evolved to deliver content to a wide variety of digital devices and formats. CMS/WCM vendors needed to keep up with market and customer demands, and have added to their portfolios to expand their capabilities.

After 20 years of development, the WCM market is now in a mature phase and is evolving into digital experience (DX) management, as WCM systems expand to become the modern DXP. Even though the WCM market is at full maturation with some consolidation, there are still a significant amount of products for consideration. While this growth is in process, WCM systems continue to be a core technology driver for many companies. Today, with demand from marketers and customers for a unified CX across all touchpoints, WCMs are expanding their functionality and integration capabilities in order to serve up an omnichannel experience to customers and employees. With these demands, they are naturally evolving into digital experience management platforms (DXPs).

The demand for continuous innovation and digital agility has led many organizations to move past traditional centralized cloud hosting to more mesh applications and service architecture (MASA), microservices, and serverless and containerized architectures.

One issue facing organizations is, it is typically two different people who are buying a DXP vs. overseeing the CX strategy. This IT and business disconnect can potentially impact the uptake of DXP systems, as CX decisions are being made in a silo and may incur overlapping systems.

DXP Heritage

To provide a framework around where some DXPs come from in terms of legacy solutions, we have categorized DXPs based on the software packages they traditionally have evolved from.

CMS-Heritage DXPs

These platforms evolved out of more traditional CMS platforms that are designed to create, manage and publish digital content. They focus on the needs of marketing, editorial and creative departments. They can collect customer data, but it tends to be anonymous and generalized. These types of systems perform well in B2C applications such as retail. Industry leaders in this space will have a variety of software packages that can be integrated with the core DXP platform to include functionality like web analytics, user roles and permissions, advertising campaign support, and email campaign support.

Portal-Heritage DXPs

As the name implies, these DXPs evolved out of the customer portal space. Some DXPs in this class will be focused on the presentation layer, while other more inclusive systems will include a broader feature set, including content management capabilities, targeting, mobile support, and workflow support. These systems tend to be strong on integration, which is of benefit to companies undergoing digital trans-formation, allowing them to employ reusable modules and services for rapidly changing strategies and customer needs. Portal DXPs are particularly suited to nurturing long-term customer relationships post-sale, and helping organizations understand customer loyalty, retention and renewal.

Commerce-Heritage DXPs

These DXPs are focused on servicing organizations in retail and commerce with seamless integration with ecommerce capabilities. Base functionality in these systems include e-commerce product content delivery, inventory management, shopping cart functionality, payment integration and fulfillment. Many commerce DXPs will also have content management capabilities related to the management and promotion of product content.

Vendor Profiles

To help potential buyers in their selection process, this guide provides details on number of leading DXP vendors. With these profiles you will get a solid background on each provider, key strengths and potential weaknesses of the platforms, as well as a record of recent acquisitions.

Acquia

HISTORY

Acquia is a private enterprise software-as-a-service company founded by Dries Buytaert and Jay Batson in 2007. It is currently headquartered in Boston, Massachusetts with approximately 800 employees and over $200 million in annual revenue. Acquia has offices in North America, Europe, Australia and India and is best suited to B2C and B2B use cases. Acquia got its start providing support for Drupal and Drupal-related products, with hosting as a top use case. Media and entertainment companies were among the first customers. In 2008, Acquia redeveloped their digital stack, still fully based on Drupal, to provide new tools, like AI, for the automation of the production lifecycle of content through the Acquia Experience Platform.

ACQUISITIONS

- In 2019, Acquia acquired the AgileOne CDP platform.

- In 2019, Acquia acquired Mautic, an open marketing automation and campaign management platform.

- Also in 2019, Acquia acquired Cohesion, an enterprise-grade, low-code Drupal website builder and the creator of DX8.

- Also in 2019, Vista Equity Partners bought a controlling stake in Acquia, valuing the company at $1 billion.

PRODUCT

Acquia Open Digital Experience Platform The Acquia Open Digital Experience Platform includes content management, personalization and customer journey management functionality. The open platform is engineered for extensibility, supporting integrations and open APIs, allowing you to connect marketing technology assets you already own.
Drupal Cloud is Acquia's content management platform. This includes Drupal hosting, development tools, hosting services and enterprise grade security; Site Studio low-code tools for designers and marketers;

Edge Security; Site Factory to build websites at scale; and developer tools to assist writing code in Drupal.

Marketing Cloud is developed from the AgileOne CDP. Insights, segments, journey mapping, and personalization take place on a foundation of cleansed, deduped, validated data resolved into a unified, persistent profile. Tools include no-code personalization, full enterprise grade CDP, Campaign Studio and Campaign Factory for cross-channel campaign management, plus a Digital Asset Manager (DAM) to store and organize your creative assets.

TECHNOLOGIES

Drupal is a free and open source web content management framework written in PHP and distributed under the GNU General Public License. Acquia's DXP open platform can support any framework (React, Angular) for customers to build applications and any API type (REST, JSON, GraphQL) to integrate with any legacy or homegrown system.

The Acquia DXP is the result of three years of development. All Acquia technology is based on the open-source Drupal Cloud. Acquia added to their DXP functionality in 2018 through OEM relationships to include DAM and journey orchestration capabilities. The acquisition of Cohesion allows customers to spin up a dev environment for any developer to write code anywhere.

Acquia does not position their DXP as headless, but does offer support for customers who do not wish to use Drupal as the "glass" or "head."

The addition of low code tools in Site Studio for marketers enables them to be more self-service and be independent from developers to execute on customer-centric initiatives. Site Studio tools include pre-built design elements, drag and drop functionality, pre-built components like surveys and quizzes, plus you can provision site studios across all parts of an

org for setting and enforcing brand guidelines. Also included in the DXP is Site Factory, allowing the ability to easily launch microsites (BtoB or BtoC), spin up instances on different stacks, and use pre-built compo-nents for a faster time to market.

DEPLOYMENT MODELS
Cloud subscription model.

PLAYS WELL WITH OTHERS
Stack Integration
Acquia's DXP is based on the Drupal open-source foundation which allows for stack cohesion and the distribution of work to core apps and core design elements.

Content & Experience APIs

- **Drupal:** An open source CMS, offers modules that support all the GraphQL specifications and can be used to build and expose GraphQL schemas.

- **Cloud Platform API:** Extend, enhance, and customize Cloud Platform using a RESTful API web interface, Drush commands, and Cloud Hooks (scripts executed by defined triggers).

- **Site Factory API:** REST API to create and manage your hosted websites and to obtain the status of your Site Factory interface's jobs.

- **Acquia Commerce Manager API:** Enables developers to securely interact with Acquia Commerce Manager websites and services.

- **Acquia DAM API:** Enables developers to securely read and write from Acquia DAM, allowing users to push and pull their important files and metadata.

- **Custom Insight tests:** Enables you to develop your own custom Acquia Insight tests when Insight examines your websites.

- **Content Hub API:** Enables you to create, read, update, and delete content entities in the Content Hub service.

- **Decision API:** Enables you to set and review administrative functions for how decisions about content may be displayed to Personalization users.

- **File Import API:** Enables Personalization customers with the Omnichannel subscription to import structured data about website visitors from other data sources.

- **JavaScript API:** Use the JavaScript API to send information to the Personalization service.

- **Profiles API:** REST API that you can use to integrate your websites and applications to the Personalization service.

- **Push API:** Enables the Personalization service to send information to an external endpoint URL.

ECOSYSTEM

Clients

Acquia DXP is often deployed in financial services, manufacturing, and government verticals. Clients include Big Lots, Centers for Medicare & Medicaid Services, Charles Schwab, Edward D. Jones & Co., Godiva, Lululemon Athletica, NBC Universal Media, Nestle, Novartis and PVH Corp.

Partners

Acquia has launched a DX Alliance that highlights their critical integration partners, and they are currently in active discussions with dozens of other organizations looking to formalize existing integrations into an official partnership.

To meet an increased demand for new commerce platforms, Acquia has built an integration and go-to-market with commercetools and Lucid-Works as a recommended, best-of-breed approach. Acquia also offers a commerce framework to integrate with many commerce solutions.

Extensions & Contributions

Acquia leverages the 45,000 modules within the Drupal community to connect content to a variety of systems. Acquia customers have used these modules to connect thousands of different technologies in the Web/Content, email, CRM, Social, Commerce, and emerging tech (chatbot,

voice, wearables) space. In addition, their open architecture and APIs enable their customers to connect to any offline and homegrown solution.

Their partner ecosystem includes over 600 digital agencies, systems integrators, and drupal development shops around the world.

Top partners include MRM/McCann, Accenture Interactive, Wunderman Thompson, EPAM, and Bounteous.

Drupal does offer a public exchange for contributed models and extensions. It is available here. For more information on Drupal contributions and development, please review this blog post from Dries Buytaert.

STRENGTHS

- Open DXP gives IT teams enterprise functionality with web components and low-code site-building solutions that let teams re-assemble digital experiences as required without a total replatforming.

- Drupal's modular approach to site creation is built upon a series of modular content components or "nodes" that can be arranged and deployed across a variety of displays, devices and channels.

- Acquia's relatively recently acquired CDP gives brands the ability to create unified customer profiles that can be used to orchestrate multichannel journeys and deliver personalized experiences on a one-to-one level.

- A machine learning framework built on a unified data foundation that can be applied across all native and external tools.

- Security across all digital properties without passing complexity and regulations onto the customers themselves.

- The Acquia DXP embraces role-based management. This includes optimized data, content, processes and services for individual roles (marketing, sales, IT, CS). This allows you to optimize workflows across all roles.

- The Acquia DXP is purpose-built for integration with its open APIs and decoupled architecture.

- A mature user profile unification process with a unified data backplane.

- An open data model with ID resolution engine that allows you to see the full journey of a customer.

- For content migration they offer Acquia Migrate: Accelerate, a tool for performing Drupal 7 to Drupal 9 migrations up to 50% faster on Acquia Cloud. Acquia automates as much as possible the migration of the customer's content, configuration, and community code.

- For the things Acquia can't automate, they provide guidance to help customers complete their migration. Within the UI is a messaging console that will show any errors encountered during a migration along with an Acquia-recommended solution that gives next steps.

- For customers coming from non-Drupal solutions, Acquia has partnered with Xillio to offer Acquia Replatform, which helps customers migrate from legacy CMS to Drupal 9. It offers migration planning, migration design (transformation and authorization), transformation reports, and migration test results.

- Acquia's open DXP vision and roadmap closely match buyer demands. — Gartner

- Acquia has a symbiotic relationship with the Drupal open-source community. — Gartner

- Acquia's acquisition of Mautic, AgileOne, and Cohesion give it digital marketing capabilities, a CDP, and a low-code site builder. — Gartner

CHALLENGES

- Overlapping capabilities of the Drupal Cloud and Marketing Cloud have caused some confusion in the marketplace. — Gartner

- Acquia DX personalization functionality is not as advanced as other competitors. — Gartner

- While Acquia emphasizes on being open, they have a small number of technology partners in its ecosystem. — Gartner

TRAJECTORY

Acquia continues to build and acquire functionality that helps take it beyond its roots as a content management platform toward a true digital experience platform that addresses the needs of experience designers and marketers. These moves continue to advance Acquia in the market and position the company as a full digital experience suite competitor against Adobe, Optimizely, Sitecore and others.

Adobe

HISTORY

Adobe Inc. is a public software company founded by John Warnock and Charles Geschke in 1982 in Mountain View California after working together at Xerox PARC. It is currently headquartered in San Jose, California. Adobe currently has 21,428 employees with $9.03 Billion in annual revenue.

Adobe got its start by helping to establish the desktop publishing industry with the development of the PostScript print language. Through the 1990s Adobe began developing and selling more application software with Adobe Illustrator being the first introduced in 1987, and Adobe Photoshop introduced in 1990. In 1991, Adobe acquired video production software Adobe Premiere. By 1997, close to 80 percent of Adobe's revenue came from application sales. In 2005, they acquired Macromedia and its Dreamweaver software, along with Shockwave and Flash applications.

In the last decade Adobe expanded into the enterprise digital experience space with acquisitions of analytics provider Omniture in 2009, and web content management software platform maker Day Software in 2010 for $240 million.

ACQUISITIONS

- **In 2009 Adobe acquired the Omniture digital analytics platform.**

- In 2010 Adobe acquired Day Software, the foundation of its current DXP offering.

- In 2018 Adobe acquired the Magento commerce platform.

- In 2018 Adobe acquired the Marketo marketing automation platform.

- In 2020 Adobe acquired marketing workflow startup Workfront for $1.5 billion.

PRODUCT

Adobe Experience Platform The Adobe Experience Platform, the foundation of Adobe Experience Cloud products, is an open system that helps transform data into unified customer profiles and uses AI-driven insights to deliver digital experiences across every channel.

TECHNOLOGIES

The Adobe Experience Platform is a customer experience management platform with real-time customer profiles and an open architecture. Features include content management, analytics, personalization, customer data management (CDP), and campaign management. The Adobe Experience Cloud is built using RESTful API-first development with all platform functions, services, adobe solutions and 3rd party integrations.

For an improved data foundation, Adobe introduced Experience Data Model (XDM), a standard for representing customer data. Adobe Sensei machine learning offers predefined models, as well as the capability to develop custom machine learning models for specific tasks. Audience activation features include services that work together to enable your organization to build and activate audiences based on customer profiles containing individual attributes and behaviors.

DEPLOYMENT MODELS

On-premise and Platform-as-a-Service (PaaS)

PLAYS WELL WITH OTHERS

Stack Integration

Built on RESTful APIs, the Adobe Experience Platform exposes the full functionality of it's system to developers, supporting the integration of enterprise solutions using familiar tools. Experience Platform also supports partners to build and integrate their own products and technologies as needed.

Content & Experience APIs

In the headless department, Adobe introduced GraphQL APIs for headless content delivery. GraphQL is an application-agnostic query language to retrieve content. Developers using GraphQL can query for marketing content from Adobe Experience Manager, have personalized content sent to an app that renders its UI, then have the marketer use Experience Manager's authoring UI to add marketing content across multiple devices and touchpoints.

- **Access Control API:** Access Control in Adobe Experience Platform allows IMS Organization administration to assign roles and permissions for various Platform capabilities.

- **Catalog Service API:** Catalog is the system of record for data location and lineage within Adobe Experience Platform.

- **Data Access API:** Data Access facilitates the access and egress of data within Adobe Experience Platform.

- **Data Ingestion API:** Data Ingestion allows you to bring your data into Adobe Experience Platform through batch ingestion and streaming ingestion.

- **Dataset Service API:** The Dataset Service API provides several endpoints to help you manage data usage labels for existing datasets within the Data Lake. Data usage labels are part of Adobe Experience Platform Data Governance, which allows you to manage customer data and ensure compliance with regulations, restrictions, and policies applicable to data use.

- **Flow Service API:** The Flow Service API is used to collect and centralize customer data from various disparate sources and is used to create and activate data to various destinations within Adobe Experience Platform. The service provides a RESTful API from which all supported sources are connectable.

- **Identity Service:** Adobe Experience Platform Identity Service provides a RESTful API to help you to gain a better view of your customers and their behavior.

- **Mapping Service API Resource:** Mapping Service allows data to land in CSV or other simpler formats and map this data to existing Experience Data Model (XDM) schemas before landing in Adobe Experience Platform.

- **Observability Insights API:** The Observability Insights API is used to collect and expose metrics data from various components of Observability. It listens to events broadcasting on the data pipeline and collects metrics on resources and statistics on data ingestion.

- **Policy Service API:** Adobe Experience Platform Data Governance simplifies and streamlines the process of categorizing data and creating data usage policies.

- **Privacy Service API:** Adobe Experience Platform Privacy Service provides a common, centralized facilitation of access/delete requests and opt-out-of-sale requests for private data. The service includes a UI for selecting and creating requests, a business layer that processes incoming and outgoing traffic, a data store for audit and logging information, and temporary storage for data retrieval while requests are pending or waiting to be viewed.

- **Query Service API:** Experience Query Service gives you the ability to use standard SQL to query data on Adobe Experience Platform to support many different use cases. It is a serverless tool which allows you to join any datasets in Experience Data Lake and capture the query results as a new dataset for use in reporting, Data Science Workspace, or for ingestion into Real-time Customer Profile.

- **Real-time Customer Profile API:** Real-time Customer Profile provides a holistic view of each individual customer that combines data from multiple channels, including online, offline, CRM, and third-party data.

- **Sandbox API:** Adobe Experience Platform provides virtual sandbox environments which provide isolation and access control for Platform integrations. Sandboxes can be used for application lifecycle management, project management, and building customized development ecosystems.

- **Schema Registry API:** The Schema Registry API is used to access the Schema Library within Adobe Experience Platform. The registry provides a user interface and RESTful API from which all available library resources are accessible.

- **Segmentation Service API:** Adobe Experience Platform Segmentation Service API allows you to programmatically integrate the service's various functionalities into your experience application, providing RESTful endpoints for managing segment definitions, exports, schedules, and more.

- **Sensei Machine Learning API:** Sensei Machine Learning API provides a mechanism for data scientists to organize and manage ML services from algorithm onboarding through experimentation and to service deployment.

ECOSYSTEM

Clients

Adobe's primary use case is B2C, but some organizations also use it for certain B2B purposes.

Partners

Adobe's partner program has expert advisors focused on helping you succeed in your digital transformation. Their partners put Adobe Experience Cloud technologies to work through best practices, creative services, solution development, and strategic solution architecture and implementation services.

One of their priorities has been developing a rich partner ecosystem to extend the value of Adobe Experience Cloud.

Their partner community, which includes software vendors, data vendors, and technology partners, power a collection of third-party apps and integrations that help you get more out of your Experience Cloud investment.

Extensions & Contributions

Adobe Experience Manager can now integrate and extend commerce services from Magento and other commerce solutions through Adobe's Commerce Integration Framework (CIF). CIF is built on APIs that aid a storefront authoring experience in Adobe Experience Manager.

STRENGTHS

- Adobe Experience Cloud is an experience management solution with a baked-in real-time CDP, analytics, journey orchestration capabilities, and personalization. It is a cloud-based platform using a PaaS foundation for extensibility when needed.

- AEP caters to the mid-enterprise market to enterprise market, with features to work across a wide variety of business sizes, industries and applications. The interfaces are tailored for a variety of business and technical user personas/roles, from marketing to developer.

- The Adobe Sensei AI/ML framework gives organizations an evolving intelligence layer that will allow functionality such as the auto-creation and rending of single assets to be used in multiple channels, smart tagging of assets, and the smart cropping of assets.

- Adobe's technology is widely adopted across the world and has high brand recognition. — Gartner

- Adobe offers data management capabilities for profile and ID management, and real-time segmentation and data enrichment for personalization. — Gartner

- Adobe has a large ecosystem including design and creative, system integrators, and marketing/ad agencies. — Gartner

- Adobe has strengths in experience management and platform services, including content, marketing, and analytics. — Forrester

- Adobe is primarily focused on B2C. While Adobe has the most digital experience agency partners of any vendor, it also competes with those partners for strategy, architecture, and hosting services. — Forrester

CHALLENGES

- The AEC is primarily for the mid-enterprise market to full enterprise. It may be overkill for a SMB.

- The AEC is a complex suite of applications, requiring multiple products from Experience Cloud to be successful. Some organizations can be challenged by such a complex system, which can include complex integrations, a high cost of ownership, and steep learning curve.

- Implementing and using the DXP may be complex and challenging for some partners. — Gartner

- Abode's support of B2B use cases is still limited. — Gartner

- It is weaker in infrastructure services, including API management and low-code development. — Forrester

TRAJECTORY

Adobe has been in acquisition mode for over a decade, on a mission to construct a full set of enterprise-grade digital experience tools. They've already acquired most of the components that form a digital customer experience stack: analytics, web content management, testing and targeting, DAM, commerce, customer data management and marketing automation, to name a few pieces.

Most recently, the company acquired Workfront, a marketing workflow, project management and DAM provider. The challenge going forward is ensuring seamless integration and flow between all its tools. Historically, this has moved more slowly than customers and implementation partners had hoped.

We see Adobe's trajectory as a continuation of the current pathway, with much opportunity for deep integration of the products they have already acquired, advancement of Adobe Sensei, their AI/ML services, normalization of data types, user interfaces and nomenclature across products, and further progress toward being a truly modular platform as a service — the vision that Adobe has been espousing for years.

bloomreach

HISTORY

Bloomreach was founded in 2009 by Raj De Datta and former Google Search Engineer, Ashutosh Garg. It currently has 550 employees and has offices in Mountain View, Dallas, London, Amsterdam, Bangalore, Bratislava, Brno, Moscow, and Atlanta.

In 2016 they joined forces with Hippo, a leading open-source Web Content Management company, to create the first digital experience platform that combines content, search, and merchandising.

In 2021 Bloomreach announced an investment of $150 million by Sixth Street Growth and signed a definitive agreement to acquire CDP and marketing automation provider Exponea.

Bloomreach is invested in by private equity firms Bain Capital Ventures, Battery Ventures, New Enterprise Associates, Lightspeed Venture Partners, and Salesforce Ventures.

ACQUISITIONS

- In 2013, Bloomreach acquired e-commerce vendor ShopLogic.
- In 2016, Bloomreach acquired WCM company Hippo, forming the brX Platform.
- In 2020, Bloomreach announced a major strategic partnership with a leading customer data platform (CDP), Exponea.

PRODUCT

Bloomreach brX Platform.

The brX platform provides capabilities including content management, personalization, search and merchandising. Bloomreach's brX can serve

as the core front end for a website and power the entire experience, or it can be used in a modular way to improve the experience with 5 modules: Site Search; Merchandising; Recommendations, Content and SEO.

TECHNOLOGIES
Bloomreach is an API-first platform built specifically to create commerce experiences.

brX is a modular, API-first platform that leverages data, products and content together with AI to drive business outcomes. The platform can be used in a modular fashion to complement a headless, microservices strategy. It is microservices-based, cloud-native and tuned to drive revenue growth within B2B and B2C commerce.

Bloomreach Experience Manager offers a Java-based modular architecture. The platform maintains a clean separation between content and presentation, and between authoring and delivery. It's designed to fit in with your existing enterprise architecture and infrastructure. It has GraphQL-based integrations to leading commerce platforms (SAP, Commercetools, Salesforce B2B, Shopify) and product feed connectors to extract your catalog and import into the BloomReach search index.

The Bloomreach Content module (CMS) offers a Java-based modular architecture, which gives front end control to business users in a headless environment.

DEPLOYMENT MODELS
It is available as a hybrid cloud solution, partly PaaS and partly SaaS.

To allow retention of full control over the infrastructure, Bloomreach supports on-premises deployment. This allows companies to meet requirements regarding hardware location and access, network security and the use of a specific software stack.

Bloomreach offers the "Bloomreach Cloud," their cloud-based service. Companies get full control over deploying Bloomreach projects through a web-based UI. Bloomreach takes care of all infrastructure tasks such as hardware and software updates, system security, network availability, automated backup and disaster recovery. Additionally, Bloomreach has announced that they will release a new SaaS Content offering in 2021.

PLAYS WELL WITH OTHERS

Stack Integration

The Bloomreach DXP supports headless, decoupled setups. They offer an API for this purpose, and also have SDKs for React, Angular and Vue,js as well as a generic JavaScript SDK for other JS-based frameworks. Bloomreach is currently building a sample front-end application that customers can use to reduce time-to-value for their implementations, and are looking into offering pre-built integrations with several commerce-focused storefronts and PWAs.

Content & Experience APIs

Bloomreach offers a (hosted) GraphQL service that was released in Q3 2020. It covers all Bloomreach Commerce APIs, additionally offering out-of-the-box integrations with most commerce platforms. Bloomreach is in the process of building out this service to also cover content scenarios, with the eventual goal of offering a full federated GraphQL layer across all the Bloomreach APIs.

- **Administration:** Bloomreach offers a Site Development API that customers can use to manage all configuration related to setting up and managing sites, sitemap, pages, templates, components and menus.

- **Back Office:** They don't currently have REST APIs for back-office actions, but they do have a fully functional UI for this purpose.

- **Delivery — Content/Assets:** Bloomreach offers a Content REST API that developers can use to query the CMS repository for collections of content as well as individual content items.

- **Delivery — Marketing/Personalization:** The Bloomreach Page Model API is the main API that their customers use for this purpose. It allows marketers and other business users to preview their digital channels and manage the presentation (creating pages, adding components, etc.), while allowing developers to build the decoupled front-end in their favorite front-end framework. They offer SDKs for all major JavaScript-based frameworks.

Additional APIs for Marketing/Personalization:

- **SEO API:** Provides the ability to enhance a page with widgets which are optimized to drive SEO indexing by flattening the link graph or increasing synonym density.

- **Analysis API:** Provides access to reports that have been defined within the Marketing Automation platform.

- **Tracking API:** Endpoint for the creation of marketing automation events.

- **Email API:** Provides an API to trigger emails sent via the marketing automation platform.

- **Import API:** Provides an endpoint to programmatically import data into the Marketing automation platform.

- **Pathways and Recommendations API:** Non-linear search experiences based around the core Bloomreach Algorithms — Search, Category, Similar product, Co-bought, co-viewed and personalized — with fine grained merchandising capabilities.

For Commerce customers, Bloomreach offers the following API endpoints:

- **Category API:** Provides the ability for organizations to make category and faceted category eCommerce calls.

- **Product Search API:** Provides the ability for organizations to search a product index.

- **Content Search API:** Provides the ability to search a content index.

- **Relevance by Segment API:** Provides the ability to perform search, category or recommendation requests focussed by customer segment.

- **Bestseller API:** Provides the ability to recall best-selling products.

- **Autosuggest API:** Provides autosuggest covering machine learned suggestions, machine learned associated products.

- **Data Connect API:** Provides an API to ingest and index data and also to monitor the status of ingestion and indexing processes.

- **Content Rest API:** Provides the ability to retrieve content from the CMS platform.

- **Page Model API:** Provides a representation of a page in a data form so that it may be rendered in a framework (headless page rendering).

- **Authorization API:** Provides security for the marketing automation API's.

- **Customers API:** Provides an end point to manage customer attributes within the CDP platform.

- **Catalogs API:** Provides a mechanism to Create, Read, Update or Delete arbitrary catalogs within the Marketing Automation platform.

- **GDPR API:** Provides a way of managing customer consent within the Marketing automation platform.

ECOSYSTEM

Clients

Clients include Puma, M&S, Staples, Bosch and Albertsons.

Partners

Bloomreach has partnerships with leading commerce platforms (commercetools, Elastic Path, SAP, Salesforce), but does not have a commerce platform of its own. It also partners with other providers such as DAM, PIM, etc. and integrates well, but does not carry these capabilities natively.

Partners include DAM (Bynder, Cloudinary), Commerce systems (SAP Hybris, SF, Commercetools, Big Commerce, etc) and CDP with Exponea.

STRENGTHS

brX is differentiated against Enterprise DXP competitors by having fast

time to value, lower TCO, a unified DXP platform, and stronger discovery and cross-experience personalization and targeting solutions (dynamic content targeting, personalized merchandising, personalized site search (products & content), recommendations, SEO).

brX is differentiated against the stand-alone point-solution competitors by having:

- Unified product, content, customer data and indexing.

- Built-in front-end experience management capabilities (e.g. personalization, WYSIWYG editing & preview).

- Integrated business tools to manage the solutions.

- Lower overall TCO when building a complete digital experience.

- Bloomreach is particularly well-suited for the commerce market, but has also been known for serving other markets such as financial services, government, and media/entertainment.

- Bloomreach Search uses natural language processing, attribute extraction, and past visitor behavior to surface the most relevant products for your visitors and leverages AI to continuously improve the accuracy.

- Bloomreach now powers over 25% of all commerce experiences in the US and UK, which gives it a distinct advantage for commerce companies.

- Bloomreach's AI-powered technology works with merchandisers to help them be more data-driven. Learn which products are under-performing, personalize how products are displayed by segment, and boost, bury or lock-in-place products to tell a story.

- Edit and preview content without leaving the page with preview that includes text, visuals and products inserted on the page. Publish updates instantly across every channel. Reuse and update text, graphics, images, videos, interactive components, visuals and forms across all your channels. Publish on any channel whether it's your single page application, website, app, kiosk or IoT device.

- Launch, manage and customize campaign-specific landing pages and microsites at top speed without depending on IT.

- Intelligent product recommendations.

- Drive incremental organic search traffic by filling content gaps in existing category pages for mid and long tail queries.

- Bloomreach has improved headless support with a full GraphQL API. — Gartner

- Bloomreach has strong search, product discovery and merchandising with a unified data layer. — Gartner

- Bloomreach has a strong focus on customer success with best practices, customer enablement, and through leadership. — Gartner

CHALLENGES

- Bloomreach has partnerships with leading commerce platforms (commercetools, Elastic Path, SAP, Salesforce), but does not have a commerce platform of its own.

- It also partners with other providers such as DAM, PIM, etc. and integrates well, but does not carry these capabilities natively.

- Bloomreach has a narrow go-to-market strategy with a focus on commerce-driven use cases. — Gartner

- Bloomreach's growth in 2020 was slower than expected, and awareness remains low. — Gartner

- Bloomreach has a smaller partner ecosystem than competitors with fewer Tier 1 global service provider partners. — Gartner

TRAJECTORY

Bloomreach has announced plans to release the SaaS Content module (CMS) in early 2021. The company has a strong history with its Java-based PaaS offering and has been well-known in the developer community for its open-source-based product.

The company has expanded its footprint from its origin in Silicon Valley to offices in Dallas, London, Amsterdam and Bangalore.

Bloomreach also announced a major strategic partnership with a leading customer data platform (CDP), Exponea, in late 2020.

Major future initiatives Include:

- SaaS initiative to bring the entire platform together as SaaS and API-first and further increase time to value and ease of upgrades.

- Shift away from Java development to configuration (no code/low code/ Javascript) through dynamic components.

- Major feature development to support manufacturers and distributors (incl new features: Content Search, Relevance by Segment).

- Initiatives in personalization (including new features: Relevance by Segment, Experience-Driven Recommendations).

CONTENTSTACK

Contentstack LLC is a privately-held and privately-funded Delaware Limited Liability Company based in San Francisco CA. The company currently has about 190 employees and has office locations in San Francisco, CA, Austin, TX, San Diego, CA, Amsterdam, The Netherlands, London, UK and Mumbai, India.

Contentstack's team of CMS and MACH (Microservices, APIs, Cloud, Headless) experts spent over a decade researching, implementing and supporting every major content management system on the market. After experiencing the challenges of using traditional CMS suites as consultants, Contentstack invented a new platform with a modern architecture specifically built for enterprises. This new platform allows marketers to manage content and deliver digital content experiences to their audiences across any digital channel and any digital touchpoint – Web, Mobile, Kiosk, Smartwatch, Jumbotron, AR, VR, Voice and Bot. Given its focus on enterprise, Contentstack saw early traction among large global brands across industries as diverse as technology, manufacturing, financial services and sports.

While Contentstack does not meet our minimum requirements to be categorized as a DXP (since the platform does not natively provide experience delivery or experience testing and optimization), we find it noteworthy for its focus on enterprise grade agility, content extensibility, a balance of business user and developer friendliness, and a robust content services (CaaS) architecture. We believe this vendor's positioning provides a useful contrast for prospective DXP buyers to understand.

ACQUISITIONS
N/A

PRODUCT

Contentstack Headless CMS Contentstack is an API-based, headless content management platform that allows developers and content managers to create and manage content simultaneously and independently, to create websites and applications as quickly as possible. It is important to note that unlike other vendors in this guide, Contentstack does not provide experience delivery. Developers must create the frontend experience that end users interact with.

TECHNOLOGIES

Contentstack has been a 100% headless CMS from its inception. They recommend that customers select the best frontend framework for their project so they retain full control over the "head" or experience delivery layer.

Contentstack is a flexible authoring and management tool that works best with medium to large teams with medium-to-complex workflow needs, multi-language translations, and granular permissions and governance controls. Organizations across all industries use Contentstack for use cases that range from internal communities, public marketing sites, franchise-level micro sites, native mobile apps, in-game content, IoT devices and more.

DEPLOYMENT MODELS

Saas Cloud subscription

Contentstack offers multi-tenant (default) and single-tenant options. Both are delivered as turnkey Software-as-a-Service to customers.

PLAYS WELL WITH OTHERS

Stack Integration

Contentstack was built for integration. The Contentstack team has extensive experience with integration concepts and architecture. Beyond API connectivity, Contentstack's architecture includes well-defined SDKs for integration right into the business user interface. In addition, customers use their Content Management API (CMA) for

integrations with other platforms. Contentstack also has extensive workflow and webhooks for integration at the appropriate moment in a content lifecycle.

Content & Experience APIs
Contentstack provides APIs and SDKs for customers to integrate into their applications.

REST APIs include:

- **Administration:** 100% coverage of platform.

- **Back Office:** 100% coverage of platform.

- **Delivery — Content/Assets:** 100% coverage of platform

- **Delivery — Marketing/Personalization:** N/A. Contentstack recommends using a MACH approach to your application development and integrating a best in class technologies for these activities.

- **Delivery — Commerce:** N/A. Contentstack recommends using a MACH approach to your application development and integrating a best in class technologies for these activities.

Contentstack offers a GraphQL API that covers 100% of delivery functionality. Their GraphQL API was rolled out to existing customers in batches starting in June 2020 and is today in widespread use with customers. Their GraphQL API covers 100% of delivery functionality available through our other delivery APIs including content, assets, and over a dozen parameters for filtering including search using regular expression. Contentstack also offers migration scripts that work as a part of our CLI. They allow you to export from some of the most popular CMSs and then import the content into Contentstack.

ECOSYSTEM
Contentstack is headless and completely agnostic to the tools a partner or customer uses for implementation and integration. Their APIs are Restful/JSON based and offer sample apps and SDKs to accelerate front

end development for iOS, Android, Java, Javascript, React Native, Ruby, .NET, PHP and NodeJS.

Clients

Clients include Chase, Cisco, Dell, Elastic, Ellie Mae, Icelandair, Holiday Inn, Mitsubishi Electric, Morningstar, Riot Games, Sephora, Shell, the Spectator and the Miami HEAT.

Partners

They have 35 full apps (which Contentstack calls Extensions) and over 100 field integrations live and supported in the ecosystem today. These integrations cross most major categories including search, static site gen, personalization, marketing automation, DAM, video, and e-commerce. Contentstack has strategic relationships with Smartling, Translations.com, Algolia, commercetools, Gatsby, Bynder, and Brandfolder. In the coming months, they are adding several more partners across commerce and personalization.

Extensions & Contributions

As mentioned above, Contentstack has an integration architecture with SDKs for extensibility within our product and UIs as well as a complete CM API. Both parts of the product were designed so that Contentstack can be implemented to co-exist with existing investments in the customer's stack to fully embrace a composable and MACH architecture of the future.

STRENGTHS

- **User friendliness.** Contentstack's software was designed to be appealing to both business and technical users, while most other platforms often are stronger for one user class over the other.

- **Extensibility.** Contentstack embraces the best-in-class, composable DXP stack as opposed to any single vendor's tightly coupled DXP suite. As such, integration is at the core of Contentstack's architecture and product roots.

- **Editorial ease of use.** Contentstack was made with the editor and marketer in mind. The user interface is at the heart of every decision the company makes. Editor training takes 30 minutes. Contentstack ensures editorial features are usable without understanding code or HTML.

- Collaboration in the platform is supported by a variety of options from the workflow engine. UI allows for additional features, fields, and frameworks to be used within the same interface, allowing for integrations and custom functionality to look and feel like it is a part of the same tool that it resides in.

- Contentstack has strong native asset management capabilities, but is not a full featured DAM. Customers refer to it as a "lightweight DAM." Native capability includes asset storage, metadata, folders and related features. In addition, content delivery APIs also include capability for image manipulation at delivery / request such as crop, trip, scale, blur, etc. It also includes an "auto-optimize" option. This reduces the need for multiple 'versions' of the same asset. Instead, front-end developers can adjust dimensions, weight, and other key attributes as appropriate to the usage. Where customers desire a full DAM, they have strong integration with Egnyte, Cloudinary, Bynder, AWS S3, Adobe DAM, Microsoft Sharepoint DAM and Brandfolder.

- Contentstack has pre-built integrations with solutions including Google Analytics, Marketo, Eloqua, Salesforce Einstein, IBM Watson, Optimizely, Google Optimize, Dynamic Yield, Monetate etc.

- **Modular Blocks capability.** This addresses one of the key concerns of non-technical users (content editors) in moving to a headless model. Modular Blocks allows a content model to have flexibility in the number and type of the fields or sections included in a particular content entry as well as dynamic re-ordering within the entry. For example, if a new landing page warrants 2 banners, or 2 forms, rather than the typical 1 and 1, the functional user has that capability without developer involvement.

- **Content commenting.** This feature reduces the need to collaborate on content production in 3rd party tools. Instead, teams can author content and have a dialog, at a field by field basis, with each other. Commenting works inline and also notifies the appropriate people in Task lists and messaging platforms like email or Slack. This adds on top of Contentstack's existing workflow features. This has allowed customers to begin their content creation process in the CMS instead of 3rd party collaboration or word processing tools.

- **Global fields.** Collections of fields that are embedded within a content entry and managed as a single object. What this provides, when combined with Modular Blocks, is the ability to map reusable front-end components 1:1 with backend CMS blocks. For example, if a

certain image carousel is used on multiple page types, the developer needs to only reference the global field, which is mapped to that component on each page type.

CHALLENGES

- **Lack of e-commerce.** While Contentstack does not have built-in e-commerce capabilities, they have significant strategic technology partnerships with some of the top headless e-commerce platforms in the market. They provide officially supported integrations, as well as a set of integration points that were built for this sort of ecosystem connectivity in mind. These include commercetools, BigCommerce, ReactionCommerce, Shopify, SAP, with plans for VTEX and ElasticPath.

- **Headless only.** Contentstack is not appropriate for organizations that are unprepared to build their own front end delivery tiers.

- **A relatively young product.** This could be viewed as a strength — it's been built for the market of today — and that has truth to it. But its relative youth means things like integration modules, extensibility libraries, technology partner ecosystem, implementation partner ecosystem, etc. are in their early days.

TRAJECTORY

The areas that Contentstack is interested in developing for the future are first bringing git-based functionality into the process of content management. They describe this as branches of content-as-code right from within the CMs which provide rich integration with CI/CD development processes. They will also be releasing updates to the asset manager to more closely align with features frequently requested by customers in this domain. Lastly, they will be releasing additional options for enterprise-level authentication and integration with 3rd party IdPs in the form of newer APIs for user provisioning and management.

At this point the product team does not foresee providing the end-user delivery layer. Nor are they currently investing in customer data management, personalization, testing or experience optimization functionality.

crownpeak

HISTORY

Crownpeak has 150 employees and is currently based in Denver, with offices in Salt Lake City, Utah and London, United Kingdom. Crownpeak is fully owned by private equity firm K1. Founded in January 2001, Crownpeak was the first company to offer digital content management through a SaaS solution. Crownpeak provides a solution for DXM featuring content management, personalization, search and hosting, in addition to providing integrated Digital Quality Management (DQM) to ensure brand integrity and meet compliance requirements.

With its recent acquisition of e-Spirit, Crownpeak gets a strong European partner and customer presence, as well as better access to AI-powered personalization, search and e-commerce integrations that e-Spirit specialized in.

ACQUISITIONS

- In 2016, CrownPeak acquired ActiveStandards for optimization, government and compliance capabilities.

- In 2017, Crownpeak acquired Evilon for compliance and modeling tools.

- In 2021, Crownpeak acquired e-Spirit.

PRODUCT

Digital Experience Manager (DXM) An enterprise-grade, cloud-native, digital experience platform with content management, experience optimization, governance, web accessibility, and privacy UX built-in.

TECHNOLOGIES

Crownpeak offers a suite of tools to deliver enterprise-grade digital experiences. Crownpeak's Digital Experience Manager (DXM) is an enterprise-level cloud-native content management system built on a decoupled architecture. DXM provides multi-site, multi-language, and collaboration features combined with accelerated time-to-market and a flexible delivery system.

Crownpeak template development is implemented using the subset of control structures (iterators, conditionals and variables) common to all C-based languages, including Java and C#. The underlying host technology is .Net, which is relevant for the purposes of library inclusion syntax. However, while the template scripting language is based on a C# subset, that does not mean that Crownpeak is solely a .NET development environment. Using Crownpeak's template API, template developers may program the output of any content and any data structured for any standard, dialect or technology, including PHP, JSP and .NET. At publish time, assets are rendered using the template into deployable artifacts which are then securely transferred to the target platform.

DEPLOYMENT MODELS
SaaS

PLAYS WELL WITH OTHERS
Stack Integration
Crownpeak DXM delivers content either headlessly via the RESTful Dynamic Content API, or statically via publishing to the filesystem. It is this combination of options that allows users to not only manage structured content like a traditional "headless" architecture but also to control the layout experiences using in-line editing and drag & drop authoring, personalization & digital quality (governance) management. Crownpeak refers to this as "Headless 2.0." Crownpeak also has a set of software development kits (SDKs) aimed at accelerating the delivery of experiences for single page application developers (using Angular, React & Vue.JS frameworks).

Content & Experience APIs
Crownpeak DXM supports a number of Enterprise-focused experience deployment patterns including standard publishing, API-invoked content, content injection, experience ingestion, as well as headless content delivery via the Crownpeak DXM API. Crownpeak DXM does not impose any specific deployment pattern on DXM customers and allows

them to configure DXM deployments to meet business needs. It is not uncommon for DXM customers to utilize a hybrid approach, or a combination of deployment patterns for their digital experiences, that leverage a Head-Optional delivery in one form or another. Crownpeak recently introduced Headless SDK's for the top JavaScript frameworks (Angular, Vue. JS, and React) to scaffold entire headless applications in the CMS with full Preview, In-Line and Drag and Drop editing capabilities.

Crownpeak DXM exposes two core RESTful APIs. The CMS Access API is used to automate the curation and publication of content, as well as manipulating and settings or configuration required from an external platform. The CMS Dynamic Content API is used to return content in several formats (e.g., JSON, XML, CSV) for consumption in a headless manner. DXM can also invoke any web-based API from within the platform, at multiple areas within the content lifecycle. Configuration of DXM is achieved in a no-code (component building), low-code (template configuration) or full API interaction method. Additionally, DXM's SDKs for single page application frameworks support a complete SDLC approach, including external Git/Mercurial source control management, as well as continuous build/integration paradigms.

ECOSYSTEM

Crownpeak provides an app marketplace leveraging the Crownpeak Component Architecture with self-contained experiences including integrations with interactive maps, chatbots, DAM images, AI tagging and more. Crownpeak's Extensible App Framework provides the mechanism for components to be defined, packaged, and distributed via a common marketplace to all Crownpeak customers. Components can be provided by Crownpeak, Crownpeak customers, and Crownpeak partners. Crownpeak connectors are available in 3rd party marketplaces as well including Workato, AWS and Salesforce.

Clients

Crownpeak is often considered by organizations in financial services, consumer industries and the pharmaceutical and healthcare sectors. Clients include Freddie Mac, Unilever, Associated Press, Toyota and Credit Suisse.

Partners

Crownpeak provides built-in integrations with various platforms and service providers such as Marketo, Eloqua, Hubspot, Salesforce, Lingotek, Bynder, Amazon Rekognition, Twitter, Bitly, DemandBase, MaxMind and more. Crownpeak's decoupled architecture allows the platform to consume content, data and capabilities from multiple sources, while allowing content, data and experiences to be published in any technology.

This flexibility coupled with a fully Restful API have allowed customers to configure custom connectors and integrations with platforms such as Brafton, EC Innovations, TransPerfect, Sajan, AddThis, Brightcove, Clicky Analytics, Disqus, ExactTarget, Facebook, FeedBlitz, Feedburner, Google Analytics, JanRain and much more. Crownpeak also offers native integrations with Crownpeak DQM, as well as Crownpeak's Digital Governance products directly within DXM. DQM provides a number of checkpoints to evaluate DXM managed experiences during the authoring phase prior to deployment, while the DG product line offers privacy consent management, tag auditing and tag control capabilities.

STRENGTHS

- The Crownpeak DXM has both an integrated headless and traditional CMS, allowing both to be leveraged for different use-cases and delivery needs. With headless you can publish once and deploy everywhere, while full CMS functionality allows for traditional web site publishing.

- The platform is targeted for customer-centric use cases and enables marketers to build and manage global omnichannel experiences without relying on IT. DXM is designed to be quick to build and implement and has integrated governance and privacy features.

- Crownpeak sees their DXM being focused on delivering three core functions.

  - **Usability:** DXM empowers an intuitive user experience and makes it easier for organizations to do more with fewer people.

  - **Agility:** DXM provides the ability to respond quickly to changing market conditions, ensuring a faster time to market. DXM has led to 10x faster implementation cycles due to its agile positioning.

Also included are no-code and low-code features to empower marketers to execute.

- **Interoperability:** DXM uses APIs for the integration of content, experience, data and personalization to bring best of breed solutions together.

- A nice feature in DXM for governance is DQM (Digital Quality Management). This allows governance and brand standards to be enforceable centrally, with the ability to set standards for SEO, usability, brand, and legal. DQM can crawl already published sites, look for material out of standards, and then alert or auto-fix with real-time remediation.

- Crownpeak has a transparent, modular pricing model that allows customers to expand at their own pace. — Gartner

- Crownpeak's DXP appeals to midsize organizations with few IT resources. — Gartner

- Crownpeak's DXP UI is intuitive and easy to use. — Gartner

CHALLENGES

- Up to this point, Crownpeak had been North America centric. However, the acquisition of e-Spirit positions them well in Europe.

- Crownpeak covers less of the tech landscape than other vendors in AI, CDPs, customer journey mapping and analytics. — Gartner

- Crownpeak's marketing effectiveness is limited compared with competitors. — Gartner

- Crownpeak's partner ecosystem is small and resources to support implementation are scarce. — Garnter

TRAJECTORY

With the recent acquisition of e-Spirit, the question of how the two full DXP vendors will integrate their technology platforms is yet to be seen. The company recently announced they would spend the coming weeks post acquisition working on a product roadmap and bringing together the best of both worlds without disrupting their existing customer base. One of their first focuses will be ensuring the software pieces around each company's CMS become available to customers regardless of which core CMS they use.

HCL

HISTORY

HCL Software is the software division of HCL Technologies with over 4000 employees. HCL Technologies is a public Indian technology services and consulting company founded in 1976 in Noida, Uttar Pradesh, India. It has 150,000 employees worldwide with $10 billion in revenue and US offices in Sunnyvale, CA. HCL Technologies is a subsidiary of HCL Enterprise.

In 2017 HCL acquired IBM's Forms Experience Builder, and in June 2019 HCL acquired IBM's DXP business unit and its legacy on-premises DXP products called WebSphere Portal and Web Content Manager. These products made up the IBM DXP sans the Watson Content Hub, which was sold to Centerbridge Partners. In June 2020 HCL acquired Temenos' development platform for low-code application development.

ACQUISITIONS

- In 2019, HCL acquired a $1.8B software business from IBM, including Digital Experience, Marketing, Commerce and Security products, to establish the HCL Software business unit.

- In 2020, HCL acquired the Temenos' Multi-Experience Development Platform for low-code application development.

PRODUCT

HCL Digital Experience HCL Commerce is offered as a separate enterprise-grade solution for B2B and B2C business models while supporting a purely API-based headless experience.

TECHNOLOGIES

HCL DX is a hybrid solution that provides headed and headless experience delivery creation. For headed content creation the solution provides a 'site manager' that enables practitioners to create sites and

pages, specify page layouts and populate pages using drag and drop to populate pages with content and applications.

For headless content creation the solution provides a visual drag and drag environment with a UI for both modeling and creating content which is exposed via OpenAPI compliant REST APIs for delivery to any digital touchpoint using any front-end framework.

HCL DX is Java-based and runs on a J2EE stack. However, HCL Software has been investing heavily to provide a built cloud-native platform with native support for containerization and kubernetes as well as public, private and hybrid enterprise container platforms including OpenShift, Amazon EKS, Azure AKS and Google GCP/GKE, so they can deploy in a cloud native fashion.

HCL DX is now available via HCL SoFy, which enables customers and business partners to access a catalog of HCL Software products and services and with a single click deploy to a Kubernetes test environment running on Google GCP/GKE, and the ability to download HELM charts for provisioning to a supported public or private cloud-native Kubernetes environment.

DEPLOYMENT MODELS

On-premise or cloud deployed perpetual — Processor Value Unit and Authorized user.

On-premise or Cloud deployed Term — Processor Value Unit. Managed hosted offerings available via business partners.

PLAYS WELL WITH OTHERS

Stack Integration

The native personalization engine included with HCL DX is extensible and has APIs that enable personalization to leverage data contained in 3rd party repositories including CDP and CRM solutions. When integrated with 3rd party repositories the data and attributes contained

in those repositories can be used in conjunction with the DX personalization engine to contextualize the experience by delivering more relevant content and applications.

Content & Experience APIs

- **Administration:** HCL DX provides a number of APIs for administering the platform ranging from provisioning the solution to Kubernetes to automating and managing deployment of customer developed artifacts (I.e. JavaScript or Portlet applications) as part of a CICD pipeline, managing users and access control to stopping/starting the platform.

- **Back Office:** N/A. Integration with back-end systems is accomplished using custom applications leveraging existing services or in conjunction with HCL Link leveraging connector and transformation capabilities to expose services from packaged applications or using generic integration capabilities such as the Digital Data Connector or Web Application Bridge.

- **Delivery — Content/Assets:** The scope of content and asset delivery is wide with support for authentication, authorization, content CRUD and lifecycle management.

- **Delivery — Marketing/Personalization:** HCL Unica is a cloud-native, integrated marketing platform with an API first design philosophy. With over 750 open REST APIs, marketers and IT can orchestrate and deliver highly personalized customer engagements across outbound, inbound, physical and digital channels. The APIs provide a broad coverage of marketing capabilities such as planning & operations, campaign management, centralized offer management, contact strategy optimization, real-time personalization, digital messaging, deep behavioral insights, localized last-mile personalization and 3rd party integrations to Ad-Tech, CRM, and social channels.

- **Delivery — Commerce:** HCL Commerce is a fully headless architecture allowing all front end elements of delivery, administration and back office capability to be customized as the customer sees fit. All API endpoints developed or modified since version 9.0 have been upgraded to level 3 according to the Richardson maturity model.

The solution includes a GraphQL interface that front-ends the OpenAPI compliant set of REST APIs. GraphQL functionality was made available

as a preview in fall of 2019 and generally released in May of 2020. The GraphQL interface is mature and HCL DX takes an API-first approach where every new feature is exposed a REST API.

Today GraphQL support is content/asset focused both for web content and rich media assets stored in the DAM. As mentioned above content/asset REST APIs support authentication, authorization, CRUD and lifecycle management.

ECOSYSTEM

HCL DX customers use a mix of development frameworks and on average integrate with 15 different back-end systems. As a result HCL DX provides an open platform for creating bespoke applications and integrating systems of record. For custom applications the platform supports use of market leading front-end development frameworks (I.e. Vue, React and Angular), portlet development (i.e., JSR 168/286), Struts, JSF and Spring. In addition to the development frameworks above the solution also supports Java based frameworks such as Hibernate, Tapestry, EJBs and JMS.

Clients
The HCL DXP is deployed primarily in government, life sciences, insurance, financial services and other verticals for B2C, B2E and B2B use cases. Clients include Santander Bank, Konica Minolta Business Systems, BlueCross BlueShield, State of Ohio, Prudential Insurance, Dutch Tax Office, Spanish Social Security and Unicredit.

Partners
HCL provides integration with both 3rd party software vendors and with the HCL Software family. HCL DX partners and has embedded integration with Tiny for rich text editing capabilities and has a connector that syndicates videos stored in the HCL DAM with Kaltura's online video platform for delivering the best video playback experience.

To secure experiences DX integrates with leading identity providers such as IBM Security Directory Suite, CA Siteminder, IBM Security Access Manager and Tivoli Directory integrator. Many customers use DX as

an application integration platform and the solution provides several methods to integrate data from systems of record. This includes support for creating custom JavaScript and portlet applications which can be utilized to integrate with systems or data using included Java connectors such as JDBC and JMS.

HCL also offers a solution called HCL Link which simplifies integration and transformation with over 30 connectors for leading packaged software solutions including SalesForce, ServiceNow, Azure and Amazon cloud services and SAP just to name a few. Additionally, the solution provides generic integration technologies that enable customers to integrate existing digital properties such as the Web Application Bridge (WAB), which enables as-is integration or the ability to intercept markup and trim about double navigation and harmonize branding (I.e. Share-Point integration).

For web content management the solution includes a CMIS connector for connecting to ECM systems and generic integration technology called the Digital Data Connector that enables backend systems to be exposed as content suitable for a content author to add data from back-end systems into experiences.

To provide insight into digital property performance the solution integrations with Google Analytics to provide web analytics. DX also integrates with Unica Discover to provide deep behavioral analytics into the actual customer experience to identify where conversion process abandonment is occurring with the ability to replay sessions, explore attention heat maps (i.e. where are my users focusing their attention on a page so I can optimally locate a CTA) and struggle detection for lead capture (i.e. where is drop off occurring in form completion).

HCL DX integrates with a number of HCL Software products including HCL Connections for delivering enterprise social collaboration capabilities such as wikis, blogs and activities for project based collaboration. Additionally, HCL DX provides packaged integration with HCL Commerce enabling merchandisers to leverage web content and rich media assets

inside Commerce's storefront LOB tooling to deliver a better shopping experience and increase revenue.

For their partner implementation ecosystem, HCL provides a certification program called HCL Software Academy as a part of the HCL Partner connect program that certifies their partners via learning roadmaps to teach and demonstrate solution expertise and competencies. Additionally, HCL recognizes a select group of partners that demonstrate competencies in their field and demonstrate a passion for sharing knowledge with others. Some key implementation and agency partners include Sirius, Asponte, Perficient, IBM iX, Deloitte and RSI.

Extensions & Contributions
The native personalization engine included with HCL DX is extensible and has APIs that enable DX personalization to leverage data contained in 3rd party repositories including CDP and CRM solutions. When integrated with 3rd party repositories, the data and attributes contained in those repositories can be used in conjunction with the DX personalization engine to contextual the experience by delivering more relevant content and applications

STRENGTHS
- HCL DX enables the flexibility to deploy the platform using a modality that makes sense for their organization based on security requirements, regulatory mandates, geographic presence and cloud strategy.
- HCL DX enables customers to run the solution on-prem or in a public, private or hybrid cloud environment.
- Deliver customer-centric experiences by integrating and blending complex, varied data, processes and workflows via experience API.
- Connect and manage APIs in a low-code environment that reduces the need for custom code.
- Broad cloud-native platform support with recently added support for Azure EKS.
- All-new DAM with video support.
- Enable developers to deliver applications to audiences faster by

automating deployments and integrating data without coding.

- Automate process of building/deploying/testing applications from non-production to production environments with new CI/CD support.

- Personalized, secure access to information and content based on identity, role, or relationship with the organization.

- Reimagined drag-and-drop interface and inline content-editing tools in Content Composer.

- Theme-building and branding tools to customize how content looks, feels, and behaves.

- Actionable insights let you see what is directly impacting your business' performance.

- Production Docker & Kubernetes support. Company officials said Docker support provides an open standard for packaging and distributing containerized applications on most platforms.

- A forthcoming and new native digital asset management capability.

- OpenAPI set of REST services.

- HCL's has strength in consulting and professional services. — Gartner

- HCL clients can use IBM's partner channel. — Gartner

- HCL is good for B2B, B2E and B2C use cases. — Gartner

- HC has a good reputation for integration and extensibility. — Gartner

CHALLENGES

- HCL DX is less suited for anonymous branded sites and small businesses, who can be better served with basic CMS tools. HCL DX is much more suited to medium to enterprise businesses that need to deliver experiences to customers, employees and partners that intersect processes, applications and content.

- HCL inherited technical debt from the IBM acquisition. They need to modernize the DXP's codebase and legacy features. — Gartner

- HCL puts a focus on content management but struggles with executing a cloud strategy. — Gartner

- Their UI is reported to be difficult to use and in need of modernization. — Gartner.

TRAJECTORY

HCL DX plans to integrate with HCL Volt MX, which is a low-code app development platform. Using Volt MX customers can incorporate DX experiences into non-site based digital touchpoints including mobile apps and wearables with augmented and virtual reality support.
They plan on further modernizing site management capabilities by enabling LOB users to create sites and pages without coding by using drag-and-drop.

ibexa

HISTORY

Ibexa (formerly known as eZ Systems) is a private software company founded in 1999 in Norway. Their first generation product was a Web CMS called eZ Publish and it was strongly focused on the publishing space with reference clients including Hachette Publishing, William Reed, The Economist, The Financial Times and The Christian Science Monitor. In 2020 the company changed its name from eZ Systems to Ibexa and over the past 3 years has been focused on decoupling its solution to offer an incremental set of products serving a range of content, workflow, integration, personalization and ecommerce use cases.

In recent years Ibexa has been sustaining a steady 10-20% annual growth rate with revenues shifting increasingly towards recurring subscription fees, the Ibexa team reports regular annual profits and annual turnover (ARR) in the $10-15M range. The company's current geographical focus is largely on the European market, but they have partners and employees in North America as well.

ACQUISITIONS

- In 2016, Ibexa German startup Yoochoose, a cloud-based behavioral personalization engine that has become the foundation for the Ibexa Personalization service.

- In January 2020, Ibexa acquired the B2B e-commerce software assets of silver.solutions, which became the core of the commerce features of Ibexa Commerce. Silver.solutions, an integration partner of eZ Systems, had originally built their commerce features on top of the eZ Publish platform.

PRODUCT

The Ibexa DXP consists of Ibexa Content; Ibexa Experience; and Ibexa Commerce.

Ibexa Content is a headless content management system (CMS) that is intended to serve as the backoffice component of a decouple digital experience stack. Not totally headless at this point, but this is very much the pathway. No page builder. No site factory. Structured Content is accessed remotely, via either REST or GraphQL APIs to be used (or re-used) by any front-end environment, from REACT and JamStack applications to IoT devices and more.

It's possible to use this in a non-headless manner via the PHP API and have a single server legacy WCM deployment model.

Ibexa Experience is a modular Digital Experience Platform (DXP). It has Site Factory, allowing you to create campaigns quickly, build and manage microsites, sub-domains, and multiple brand sites. The platform also features AI-based personalization, provided by the Ibexa Personalization engine.

Ibexa Personalization is an SaaS personalization engine that can be used with any of the Ibexa products. The engine collects event data in a dedicated repository, provides a back office for rule management and scenario modeling, and then provides APIs for event input and personalization decision outputs.

Ibexa Commerce is a commerce-ready B2B DXP designed to digitalize and streamline B2B business transactions.

Open source framework allows integrators to build, run and maintain applications faster and with less custom coding. An open source code base also allows teams to test, learn and experiment quickly.

The Ibexa DXP can address most requirements through extensibility and customization without code hacking. This makes it usually a strong fit with project cases showing advanced/complex requirements. This makes the platform a particularly good fit for complex applications like B2B e-Commerce use cases with integration with ERP/CRM systems and asynchronous connectivity in real-time.

The core of the Ibexa DXP is Ibexa Content CMS, which allows the creation of content architectures, such as content re-use, translations, omni- and multi-channel delivery, along with headless capabilities.

TECHNOLOGIES

The Ibexa platform is based on the PHP/LAMP stack, and is built on the Symfony Application framework. The re-platforming to Symfony in 2015 has allowed Ibexa to shift to an integrated DXP platform with expanded e-commerce abilities and improved business functionality. The Symfony platform basis is viewed as strategic by the company as it makes the core platform more accessible for clients and partners, and allows them to ramp up new employees more rapidly.

The core of the DXP is open source code distributed under the GPL v2 open source license.

DEPLOYMENT MODELS

On-Premise This is the history of eZ Publish and Ibexa. Many new customers are licensing on-prem. Country patterns vary widely.

Managed Cloud / PaaS Ibexa cloud is built upon Platform.sh. You own the code base by license. You deploy the code via Platform.sh tooling. You can change what you want and break what you want. This is managed instances, not multi-tenant SaaS.

Multi-Tenant SaaS There are currently no plans for a true multi-tenant SaaS deployment option. Part of the reasoning here is that Ibexa wishes to continue to allow customers to easily extend the codebase and in some cases make modifications to the core.

PLAYS WELL WITH OTHERS

Stack Integration

Ibexa and Symfony are both designed for integration and are considered connector and extension friendly. The Ibexa community

portal has a library of extensions here.

Ibexa Commerce provides a connectivity framework supporting flexible integrations with ERP, CRM and PIM systems, including a number of specific vendor connectors.

Connectivity Framework for DAM: All products have the ability to connect with a range of third party Digital Asset Management (DAM) systems.

Segmentation REST API: assumes a discreet, internal system, such as a CDP, where customers are segmented. The Ibexa decision engine can pull in customer segment data to support its decisioning.

Additional Connectors: Google Translate and others are in the works. The Ibexa community also contains a number of connectors and integrations created by the community.

Content & Experience APIs

- **REST API:** 10 years old API, deep in the core. Backoffice is based on REST. Heavily used "internally" to the product.

- **Content GraphQL API:** Investment in this area began in 2017 and was released in 2018. This is the preferred and now primary way to access content and data in a decoupled deployment model. This API is focused on retrieving content and data from the content repository and, if configured as such, leverages the Elastic Search capabilities.

- **Personalization REST API:** This is used to retrieve personalized recommendations and requires that a user ID is included in any request.

- **Segmentation API:** Released as part of v3.3 a new REST-based Segmentation API enables integration of remote segments in the Ibexa Experience rendering and decisioning engine.

- **Aggregation GraphQL API:** This evolving API serves to wrap the Content GraphQL, Elastic Search capabilities and the Personalization API so that you can access all current API functionality via a single GraphQL service. As of January 2021 this is still a work in progress and should be viewed as the next evolution of Ibexa's APIs.

- **PHP API/Template Tags:** Accessed from the Symfony layer or the Twig templating engine; used in a legacy WCM deployment mode, typically with the Ibexa Experience product, which is self-contained back office, sitebuilder, pagebuilder and presentation.

ECOSYSTEM

Partners

Current stack partners and key technologies include PHP, Symfony, Platform.sh. Platform.sh is OEM'ed by Ibexa for its PaaS offering.

The company's agency partner model and network is fairly typical in the space. Ibexa sells their software directly to their customers, but project implementation is done by a partner or, occasionally, by the customers themselves, never by Ibexa.

Geographically, Ibexa's partner network is focused in Europe with the most robust presence in France and Germany. The company also has a number of small-to-medium sized partners in North America. Partners pay fees that include training, certification and access to Ibexa's annual partner conference. As a rule of thumb implementation labor costs run about three times the cost of the software. The implementation partner is a significant factor in project success.

Extensions & Contributions

The core of the product is open source software. Contributions to the core generally come from partners, not customers.

Ibexa relies upon Symfony's extensibility architecture to open the product to partner or customer contributions in the form of Symfony Bundles. However, with that said, the product team sees the trend more in API-driven openness and extensibility focused on API robustness. The product team is currently working on v4.0 of the platform and that version has a focus on API investments and likely some closer relation-ships with enterprise-grade iPaaS vendors.

STRENGTHS

- Ibexa is a compact solution with a single Symfony application stack and runtime, as opposed to combining different sets of tech from multiple acquisitions. This allows for more agility for developers and a reduced number of moving parts for operations teams to manage.

- Customers cite Ibexa as being reliable, well engineered and highly customizable.

- As the core of the platform is open source and hosted on Github, prospective clients can download, inspect and play with the software before purchasing.

- The underlying content workflow engine is flexible and extensible, even if the out of the box user interfaces for workflow are unlikely to be feature rich enough for sophisticated content teams. Customization of workflow UIs is possible and is fairly common as part of an implementation.

- Designed with extensibility in mind, Ibexa can address most requirements through extensibility and customization without unpleasant or difficult to maintain code hacking. This typically makes it a strong fit for projects that require more of a content services, commerce or digital experience framework than a turn key solution.

- The Ibexa core has been around for many years, and hardened across clients in a range of geographies and industries. This translates into a product that has fairly mature architecture, supports content reuse well, supports multi-cultural experiences and multi-channel delivery.

- A flexible deployment architecture along with a maturing set of APIs allows customers to use Ibexa in traditional, headless or hybrid deployment models.

- The Ibexa cloud solution is built upon the robust Platform.sh PaaS, leveraging the same enterprise-grade infrastructure as some of the largest household brands.

CHALLENGES

- Ibexa is a smaller organization than other solutions highlighted in this guide, many of which have larger ecosystems. So it may be more challenging to find resources. To offset that, being a pure Symfony

application allows customers to tap into that broader ecosystem, which is a significant consideration.

- Larger enterprises will likely find that there are no limitations with the Ibexa technology, but depending on your geography, the partner ecosystem may not have the bandwidth to service very large projects.

- If prospective clients are based in North America, then the company's relatively thin direct and partner presence in that market may be a challenge for them.

TRAJECTORY

After several iterations of Ibexa leadership and investors, and a few bumps in the road, the company is back to being profitable, largely focused on European markets and has refined it's business strategy with clearer positioning.

In April 2020, v3 of eZ Platform was released incorporating content management, site building, e-commerce, personalization and accelerated development capabilities which fully completed the transition to the company's software to the DXP space. A new brand identity was sought to better support these changes and to mark the next phase of the company after 20 years as a successful WCM vendor.

In Spring of 2020 the company rebranded to Ibexa as a company and over the course of the year the product names were brought in line with the new branding. Some of this work continues today. Version 3.3 of the product was released in January 2021, and brought additional integration APIs, tighter integration of Ibexa Personalization with the Ibexa core and a new image editing experience for content authors.

At this point the company seems to be on even footing with sustained, if modest, growth and consistent profitability. Product investments continue at a healthy pace with a focus on API-driven openness, integration of more marketing functionality and back office usability and features.

Liferay

HISTORY

Liferay is a private open-source software company headquartered in Diamond Bar, California. The company currently has 1,000 employees and has offices in Markham, ON, Canada; London, UK; Eschborn, Germany; Tokyo, Japan; São Paulo, Brazil; Madrid, Spain; Budapest, Hungary; Dublin, Ireland; Paris, France; Bangalore, India; Singapore; Sydney, Australia; Dubai, UAE and Casablanca, Morocco.

Liferay Inc. was founded to provide support and consulting services around the open source Liferay Portal; two of their earliest clients were Cisco and Symantec. Liferay Portal was designed for customers that couldn't, or didn't want to, pay the higher costs associated with portal vendors like Microsoft, SAP, and Oracle but needed more functionality than what existing offerings could deliver.

ACQUISITIONS

In 2018, Liferay acquired a controlling interest in account based marketing (ABM) platform Triblio.

PRODUCT

Liferay Digital Experience Platform (DXP) is the flagship DXP offering. Users can publish and target web content, forms, documents, knowledge base articles, blogs, and more using Liferay DXP. They can also add documents, web content, and forms through a workflow.

Content creation is designed to be simple for authors while also offering options to promote content discovery and reuse. Web content is created through a drag-and-drop interface that allows business users to leverage basic components and developer-created page fragments and deploy applications via widgets without developer intervention. Content can leverage templates and master pages to reduce the work required for creation and ensure brand consistency. Authors can also preview and

stage their content so they can see how it looks prior to publishing. In-context content performance analytics capabilities make it easy to understand how content is resonating with audiences. Users can also get a high-level view of what kinds of content they have and where there may be gaps via the content dashboard.

Liferay Commerce: a B2B digital commerce platform built entirely in-house to work seamlessly with Liferay DXP. Liferay Commerce requires a Liferay DXP enterprise subscription to operate but is priced separately.

Liferay Analytics Cloud: Because Liferay is primarily deployed in authenticated scenarios, the platform has more intelligence regarding users than would be true of an analytics tool designed for use with a marketing site. As a result, Liferay Analytics Cloud, a SaaS-based customer analytics offering, delivers especially powerful capabilities for marketers to optimize and target content. To illustrate, Liferay Analytics Cloud supports the creation of segments using individual, account profile, and advanced behavioral data. Marketers can leverage audience segments to create versions of content specifically tailored to a specific audience and A/B test multiple versions with assigned goals to improve performance. Liferay Analytics Cloud allows marketers to understand the performance of specific assets e.g. where in a form people are dropping off, not just site and page-level analytics.

Liferay DXP Cloud: An enterprise PaaS tailored for the DXP that provides autoscaling, development tools, environments and monitoring.

TECHNOLOGIES

Liferay DXP is a Java-based platform. They leverage the React framework for UI development along with the Bootstrap framework and Clay, a web implementation of Liferay's Lexicon Experience Language. They also use JavaServer Pages (JSP) to serve dynamic web content. As a portal-heritage vendor, Liferay supports the kinds of authenticated experiences critical to B2B, B2E, and long-term B2C use cases. These

capabilities include account services, extensibility and integration, and security and access control.

The core platform is designed to be flexible and interoperable. Liferay's adherence to open standards, by supporting headless/decoupled deployments and enterprise integrations via OpenAPI standards, helps companies accelerate their digital transformation in customer experience and operations while keeping their existing systems in place and replacing them over time as needed.

DEPLOYMENT MODELS

Liferay charges for enterprise subscriptions that provide customers with support, fix packs, and legal indemnification, among other benefits. They do not charge for software licenses. Liferay DXP and Liferay Commerce customers are given a perpetual license that allows them to continue using their software even if they are no longer customers.

Liferay DXP has historically been an on-premise offering. In 2018 Liferay launched Liferay DXP Cloud, an enterprise PaaS offering tailored for Liferay DXP, to help customers migrate their workloads to the cloud. Liferay DXP Cloud incorporates best practices from thousands of Liferay deployments. Customers also have the option to host Liferay directly on public cloud infrastructure e.g. GCP, AWS, Azure, etc. themselves or through third-party managed hosting providers.

Moving forward, Liferay plans to offer standalone SaaS-based offerings beginning with Liferay Commerce SaaS in 2021.

PLAYS WELL WITH OTHERS

Stack Integration

Liferay DXP is a portal-heritage offering with extensibility, integration and interoperability at the core of design and implementation. Liferay DXP allows their web services to be exposed in a number of formats including SOAP, JSON, XML, REST and GraphQL.

Liferay DXP can inter-operate with various DMS/ECM solutions, such as Google Drive, Alfresco, Nuxeo, and Oracle Content Manager. Liferay DXP also supports popular CMS standards such as JSR-170 (JCR), and CMIS. Some vendors, such as Alfresco, provide ready-made Liferay DXP integration portlets as well.

Content & Experience APIs
Using Liferay DXP's OpenAPI compliant APIs, customers can use integration hubs and ETL tools like Talend and ESBs like MuleSoft, Boomi, and Informatica to integrate with ERP (SAP, Infor, Oracle, Dynamics), CRMs (Salesforce, Dynamics, etc), and other systems of record (e.g. Workday, PeopleSoft).

- **Administration:** Liferay DXP provides APIs for the full administration of users, roles, groups, and organizations.

- **Back Office:** User-created workflows, custom forms, and low-code applications all expose APIs for headless management.

- **Delivery — Content/Assets:** Liferay DXP allows you to access and manage all content through REST APIs. APIs are available to manage documents (including images and videos), blogs, wikis, knowledge base articles, and web content.

- **Delivery — Marketing/Personalization:** Liferay DXP provides APIs to retrieve information related to segmentation e.g. location. Content APIs also take this information into account, returning content collection(s) meant for the user's segment.

- **Delivery — Commerce:** Liferay Commerce has APIs for displaying catalogs, managing carts, and facilitating checkout.

- Liferay added a GraphQL API to Liferay DXP in Q3 of 2019, providing the same capabilities they were already offering through REST APIs. Their GraphQL API is used both internally to develop new features as well as by many customers. Any new capability added to their REST APIs is also made available for GraphQL.

ECOSYSTEM

Clients

Liferay is focused in the financial services, manufacturing, and insurance industries. Common use cases include customer and partner portals and corporate intranets. Clients include Airbus Helicopters SAS, Desjardins Group, Hewlett Packard Enterprise, Tag and Vodafone.

Partners

Dynatrace (for application performance monitoring); Elastic (for enterprise search); MuleSoft (for ESB/application integration); PunchOut2Go (for PunchOut catalog); Talend (for ETL).

Additional connectors (e.g., Salesforce, SharePoint, etc.) are available through Liferay Marketplace. Finally, they leverage infrastructure from GCP and Azure to deliver Liferay DXP Cloud.

Liferay has a Global Services division that is available to work with customers to implement custom solutions. They also have a global network of hundreds of implementation partners and SIs that serve as local experts on Liferay implementation and customization.Liferay's International Partner Program is designed to create mutually beneficial relationships that increase the overall success and capability of the Liferay ecosystem. The program helps differentiate system integrators in a crowded field, assists Liferay in providing local support and expertise to worldwide customers, and ultimately helps customers choose the right partners to deliver valuable Liferay-based solutions. Some of their leading partners include Accenture, Dunn Solutions, mimacom, Rivet Logic and Veriday.

Extensions & Contributions

The Liferay Mobile SDK is a framework for building native mobile applications that integrate with different Liferay DXP instances and their portlets. Available for iOS, Android, and Windows-based platforms, the Liferay Mobile SDK provides the means for mobile apps to consume Liferay DXP core web services and the web services of custom portlets. The Mobile

SDK wraps Liferay JSON web services, takes care of authentication, makes HTTP requests (synchronously or asynchronously), parses JSON results, and handles server-side exceptions. With the Liferay Mobile SDK, customers can reuse existing services or custom services and discover and consume services from Liferay DXP. The Liferay Mobile SDK also provides a native notifications framework: Liferay DXP-based notifications (also sent to native mobile apps), offline support and content geolocation.

STRENGTHS

- Liferay only sells DXP software and is committed to offering the productized connectors and open APIs organizations need to leverage their existing technology investments.

- Liferay's product portfolio has been developed entirely in-house, not grown via acquisition. This means its products are tightly integrated and built from the ground up to work together seamlessly.

- Liferay DXP is one of the only open-source offerings on the market. As a result, Liferay customers typically enjoy lower TCO and are given access to their codebase.

- Recent innovations include:
  - **Application Manager:** A low-code capability to build business applications backed by Liferay's Data Engine. Business users can use a GUI to define form and table views and leverage workflows to build applications with the goal of digitizing and automating business processes.

  - **Content Performance Analytics:** Content creators can view metrics on how many visitors read through the entirety of their content directly in-line with the relevant page or asset. Content authors also have access to more traditional metrics such as total views, search engine traffic volume, and keyword reports.

  - **Master Pages:** Master Pages deliver visual consistency and help ensure branding guidelines are respected across all pages in a site. Business users are able to create Master Pages to specify common elements, such as headers, footers, and company logos across pages.

- Liferay DXP offers "lightweight" DAM capabilities. Users are able to manage documents, video, audio, images, and other media types in

a unified repository. All content is stored in Liferay DXP and can be individually permissioned, categorized, and displayed (or done so on a group basis). Liferay DXP also enables the creation of asset libraries, dedicated repositories for assets that can be connected with a specified site for deployment and reuse. Connectors to external DAM offerings, such as Microsoft SharePoint, are available from Liferay and third-party vendors via Liferay Marketplace. Liferay also offers a robust library of APIs built to the OpenAPI specification that make it easy for developers to build their own connectors.

- Liferay Analytics Cloud supports the creation of segments using individual, account profile, and advanced behavioral data. Marketers can leverage audience segments to create versions of content specifically tailored to a specific audience and A/B test multiple versions with assigned goals to improve performance.

- Liferay's technology is tailored to supporting complex B2B and B2C scenarios like digital workplace solutions and customer and partner portals. Liferay's product portfolio supports ecosystems that include franchises, partners, local agents and international subsidiaries, with support for managing accounts with multiple named users.

- Liferay has a large global use base of authenticated customer and partner portal use cases. — Gartner

- LIferay is a good fit for enterprise IT buyers with strong externisiblity and app integration. — Gartner

- Their open-source foundation offers good value for the money and a lower TCO. — Gartner

CHALLENGES

- Liferay's DXP is aimed at midsize and large enterprises. SMBs may find that Liferay is outside of their price point and/or that Liferay's functionality outstrips their needs. These organizations may find that Liferay Portal Community Edition is a better fit.

- B2C Commerce: While Liferay Commerce can support B2C commerce use cases, this is not what the platform was designed to do nor do they offer much in the way of distinctive product differentiators for B2C commerce scenarios. Businesses looking exclusively for a B2C commerce offering are likely to be better served by a different vendor.

- Standalone Marketing Sites: If an organization is simply looking to create a marketing site and nothing more than Liferay is not the best fit, that organization would be better served looking to a different vendor.

- The LifeRay DXP lacks a mature extensibility model for flexibility in cloud deployments. — Gartner

- Liferay's pricing is complex and aligned with on-premises deployments. — Gartner

- Their DXP lacks advanced content management, personalization, and digital marketing features for B2C. — Gartner

TRAJECTORY

- Multi-tenant Commerce SaaS: Liferay plans to deliver on their true multi-tenant SaaS point solution, Liferay Commerce SaaS, later in 2021.

- Additional OOTB Themes & Accelerators: They plan to roll out additional preconfigured themes and accelerators designed for specific scenarios so that customers can start seeing business value faster.

- More Productized Connectors: Many organizations lack the internal development resources necessary to build and maintain their own connectors. While Liferay already offers a series of productized connectors to offerings like Salesforce CRM and Elasticsearch, they plan to expand their "connector library" to commonly used applications such as SAP ERP and Dynamics ERP.

HISTORY

Following the acquisition of Optimizely by Episerver in October of 2020, Episerver rebranded itself as Optimizely in January 2021. The company was originally founded in 1994 in Stockholm, Sweden.

In 2015, Episerver merged with Web CMS company Ektron, and combined software packages to make the Episerver Digital Experience Cloud, releasing the first major release of its platform the same year. In September 2018, Episerver was acquired by Insight Venture Partners for $1.16 billion. In 2021, Episerver rebranded it's business to Optimizely after acquiring it. With this rebrand they launched the Optimization as a Service offering for targeting, testing and recommendations.

ACQUISITIONS

- In 2015, Episerver acquired Ektron, a NH-based CMS company.

- In 2016, Episerver acquired Peerius, a commerce personalization company.

- Also in 2016, the company acquired Optivo, an email-marketing automation service provider.

- In 2018, Episerver was acquired by Insight Venture Partners for $1.16 billion.

- In 2019, Episerver acquired idio.io, a content intelligence software provider.

- Also in 2019, they acquired Insite Software, a B2B e-commerce provider.

- In 2020, Episerver acquired Optimizely, an experience optimization platform.

- In 2021, Episever rebranded itself as Optimizely.

- In 2021, Optimizely acquired CDP Zaius.

PRODUCT

[Optimizely Digital Experience Platform](#) Their Digital Experience Platform is Optimizely's flagship product. It is the culmination of all their products combined, particularly Content Cloud and Commerce Cloud, with integration of ERP, CRM and Customer Service Center.

Content Cloud (CMS): Content Cloud provides a single place to create, manage and deliver experiences to each individual.

Commerce Cloud provides a complete shopping experience so you can start quickly, and then optimize in flight.

Intelligence Cloud: Optimizely's personalization and analytics capabilities use AI to deliver 1:1 experiences at scale and deliver insights. Both products below are part of the Intelligence Cloud.

Optimization as a Service: A combination of the Episerver and Optimizely product capabilities, Optimization as a Service is a standalone offering for targeting, testing and recommendations for web and ecommerce sites.

Optimizely Data Platform: This CDP, resulting from the acquisition of Zaius, brings Optimizely and external data together against a common data model for objects, events, and customers — serving as the new foundation for analytics and segmentation.

TECHNOLOGIES

The Optimizely DXP is a modular product suite with digital content, ecommerce, personalization, data management and marketing automation. Multiple APIs and extension components offer flexible customization and integration possibilities. The platform uses the latest .NET and Microsoft standards for development.

The Optimizely Content Delivery API allows you to use Optimizely's CMS platform as coupled, decoupled, and headless architecture so you

can control and edit all your content for all your applications from one Optimizely instance.

DEPLOYMENT MODELS

PaaS primarily with some components as SaaS

All of the Intelligence Cloud is SaaS, (Content Recommendations, Content Intelligence, Web Experimentation, Product Recommendations, Marketing Automation, Optimizely Data Platform). B2B Commerce can also be deployed as SaaS.

PLAYS WELL WITH OTHERS

Stack Integration

Based on Microsoft .NET

Content and Experience APIs

The DXP supports GraphQL and has documentation as well. The entire DXP product is open through APIs and documented on world.episerver.com.

There are APIs for Content Delivery that supports various delivery architectures such as headless, hybrid, SPA, JSON or coupled. Other APIs are for specific areas of the product to be integrated, such as CartAPI, InventoryAPI, and ContentAPI for authoring and other types of management.

The Content and Content Delivery API are pluggable and configurable web APIs for querying Content, visitor data, and operations providing access to many services and capabilities such as:

- Returning access-controlled and personalized content.
- Deliver content.
- Use Episerver Search and third party search.
- Support localized content and multi-site scenarios.
- Support common querying, filtering, and sorting scenarios.

ECOSYSTEM

Clients

Clients include eBay, IBM, Microsoft, Pizza Hut and Yamaha.

Implementation Partner Ecosystem

The vast majority of their DXP implementations are led and performed by ~900 global solution partners. Partners are categorized by region and expertise, (Specializations, which have requirements for certified team members on specific technologies), along with actively certified team members and successful customer projects.

Packages are targeted for partners, such as Marketing Development and Education Development funds, which sponsor customer events and business reviews with clients. A complete Academy of sales and implementation courses is updated regularly with new certifications to complete, to ensure that customers are working with partners that have the latest product expertise. Approximately 40 partners are actively managed as influencers and with cooperative go to markets.

They host a marketplace of certified, supported applications that are verified and maintained by Optimizely including:

- DAM: Aprimo, Bynder Digizuite and Frontify.
- CRM: Salesforce, Marketo, Pardot are commonly utilized for CRM and Marketing Cloud connectivity.

For reference, on-commerce opportunities connectors like Infor are more critical for a B2B solution, while a content marketing project will utilize more Marketo integration.

Extensibility

The DXP prioritizes extensibility, through hundreds of supported connectors to other products and the option of utilizing the completely documented API for specific customizations. As one of the only products with a publicly documented API, Episerver has attracted projects and developers for all size

projects in all regions, with the combination of included functionality and instant access to extensible configuration.

STRENGTHS

- Optimizely's core strengths include content management, content personalization, testing and automation. Automation typically refers to the AI capabilities, such as Automation for Content Recommendations, Product Recommendations during customer visits. Automation is also applied for communications in Marketing Automation for outreach and response marketing. Additionally, practitioners benefit from automation for their tasks becoming easier and more accurate, for example automated segmenting, automated tagging, automated SEO tags and automated translations.

- Optimizely is focused on the four converging markets for mid-size to lower enterprise companies: digital experience, artificial and customer intelligence, digital commerce and digital marketing.

- Over 25 percent of the staff is dedicated to R&D.

- Their strong-fit scenarios are mid- to lower-enterprise companies in specialty retail, commercial services and supplies, trading companies and distributors, financial services and healthcare.

- The company's acquisitions of Idio for personalization and Optimizely for targeting and multi-variant testing help solidify their standing in the market. — Gartner

- Optimizely has improved its marketing effectiveness with messaging and prescriptive guidance. — Gartner

- Pricing and packaging are very transparent. — Gartner

- The pricing strategy appeals to large enterprises and growing mid-size. — Gartner

- Optimizely rates well in B2C commerce, search, and web experience management. Optimizely gets high marks on several strategy factors, including delivery model and execution road map. — Forrester

- Clients like Optimizely's capabilities for loose coupling to the content management system and the ease of deployment and operations. — Forrester

- Optimizely rates well in B2C commerce, search, and web experience management. — Forrester

- Optimizely is a good fit for European companies as well as midmarket companies in North America based on Microsoft Azure. — Forrester

CHALLENGES

- Optimizely is not usually considered for B2B use cases due to confusing product marketing and messaging. — Gartner

- Employee experience and B2E use cases are not their strong point. — Gartner

- Optimizely has changed hands a lot the last few years. Buyers should be aware of any changes in strategy or positioning. — Gartner

- It still trails others in its partner ecosystem and market approach. Clients would like improvements in training and partner availability in-market. — Forrester

- It is weaker in digital asset management and in infrastructure services, including API management and platform certifications. — Forrester

TRAJECTORY

In 2020, Optimzely landed major customers including Microsoft, Atlassian, KLM and the Wall Street Journal. The fourth quarter marked accelerated growth for the companies DXP offering in particular, with Optimizely B2B Commerce Cloud and Content Cloud seeing more than 20% growth. Optimizely plans to hire 40+ new employees per month through the first half of 2021 to fuel the company's continued growth. The recent acquisitions have positioned Optimizely to merge content, commerce, personalization testing, optimization and customer analytics and is being viewed favorably by multiple analysts in the space. The added functionalities may position Optimizely to compete more effectively with larger players like Adobe.

HISTORY

Sitecore is a private software company with 1,300 employees. They were founded in 2001 in Denmark with current headquarters in San Francisco, CA. The company has key office locations in Charlotte, NC; Dallas, Texas; King of Prussia, Pa; Manchester, NH and Quebec, Canada.

In 2001, Sitecore was spun off as a separate business that initially sold content management systems only in the Danish market. However, the company has grown into a global provider of customer experience management software targeted primarily to corporate marketing departments and marketing service providers. In 2004, Sitecore began expanding into the US market, the UK in 2005, and Australia in 2007.

Sitecore was acquired by private equity firm EQT in April 2016, and has acquired Stylelabs in 2018 and digital consultancy firm Hedgehog in 2019.

ACQUISITIONS

- In 2018, Sitecore acquired Stylelabs, adding DAM, CMP, MRM, and PCM capabilities that allow Sitecore customers the ability to own the entire content lifecycle.

- In 2019, Sitecore acquired Hedgehog Development. Hedgehog increases the people, technology, and services resources Sitecore offers to support its Solution Provider Partners.

- In 2021, Sitecore acquired CDP vendor Boxever and B2B/B2C experience vendor Four51.

- Also in 2021, Sitecore acquired Moosend, a UK-based marketing automation platform that provides email marketing and campaign management.

PRODUCT

Sitecore Experience Platform
Core Platform Products Include:

Sitecore Experience Manager (XM): WCM system that supports global, multilingual content.

Sitecore Experience Platform (XP): builds on the content management capabilities of Sitecore XM with the addition of customer data, analytics and marketing automation capabilities to nurture customers throughout their journey with personalized content in real-time, across any channel.

Sitecore Experience Commerce: a commerce platform that extends the capabilities of Sitecore Experience Platform with product catalog, pricing, promotion and merchandising management capabilities.

Sitecore Content Hub: a single SaaS-delivered platform that supports content strategy, planning, creation, collaboration and management with modular Digital Asset Management (DAM) and Product Content Management (PCM), Content Marketing Platform (CMP) and Marketing Resource Management (MRM) capabilities that enable marketing teams to own the entire content creation and production lifecycle.

TECHNOLOGIES

Sitecore offers both headless and hybrid headless capabilities, allowing for teams to choose how they wish to use Sitecore in their architecture. The Sitecore Experience Platform started as a set of low-level APIs that converted structured XML content into HTML. The original API provided for Sitecore in 2001 supported headless apps and more advanced APIs have since supplemented these origins, building the higher-level applications used to provide a personalized and relevant end-user experience.

The architecture is modular and pluggable in all areas. Sitecore itself is "built on Sitecore" — the user interfaces all call the same APIs that are accessible to the developer. Many configuration elements are represented as Sitecore items and can be edited rather than requiring access to configuration files.

Sitecore Experience Accelerator provides the capability to build sites on top of their recommended Helix architecture to best practices without

writing code with many reusable components, which are completely customizable.

Sitecore recently added capabilities around hybrid headless applications via Sitecore Headless Services, giving developers the ability to author with Software Development Kits (SDKs) for Javascript, ASP.NET Core, and Next.js consuming the application into Sitecore to enable in-line editing, personalization, etc.

The universal tracker also allows capturing activity not in Sitecore, enabling additional multi-channel marketer scenarios. Partners and customers in turn use these APIs to build web and portal sites quickly and enable an enterprise to focus on their own higher-level application aspirations.

With the addition of integrations into Content Hub, machine learning solutions via Sitecore AI and Cortex, and the xConnect API layer around xDB, Sitecore has built a robust foundation upon which almost any solution can be delivered.

DEPLOYMENT MODELS

The Sitecore platform allows implementers to use their own cloud hosting infrastructure and then deploy in the manner that their operations team requires. Not all elements of the platform have transitioned to microservices, but containers are supported for both local development with Docker and managed orchestration with Kubernetes. Their Platform-as-a-Service (PaaS) offering provides the standard cloud abstraction capabilities and our containerization strategy expands abstraction support to other cloud platforms.

With the introduction of container support, including a Sitecore-provided image repository, Kubernetes specs, and supporting documentation and guides, teams now can have more flexibility and control over their cloud deployments.

Sitecore can be deployed on IaaS (any public cloud), PaaS and fully-managed PaaS infrastructure solutions (with one bill for license, infra-structure, and Azure spend). All integrated Content Hub capabilities are delivered via SaaS.

Sitecore 10 supports Docker, Kubernetes and new Sitecore-provided image repositories, enabling delivery teams to move to a continuous delivery model with rapid infrastructure-as-code deployments and more efficient solution/team onboarding.

PLAYS WELL WITH OTHERS

Stack Integration

Sitecore Experience Platform is architected as a highly extensible, configurable, and open platform. From the pipeline-driven approach, to multiple API layers across the applications, to headless integration options, Sitecore's DXP allows technology teams to integrate with their existing ecosystem.

Sitecore Data Exchange Framework is designed to facilitate the transfer of data between systems. It allows you to define the logic needed to read data from a source system, transform that data into a format that is compatible with a target system, and write the transformed data into a target system. Developers can build connectors that allow third party systems to serve as source and target systems.

With the launch of Sitecore 10, Sitecore Connect for Salesforce Marketing Cloud provides deeper functionality for marketers to leverage visitor analytics data stored in xDB. With the latest update to the connector in Sitecore 10, you can make use of this connection in real-time and have access to a new Sitecore marketing automation activity, specifically for Salesforce Marketing Cloud (SFMC), allowing marketers to configure a real-time event to integrate with SFMC.

They also have an open platform and a marketplace today, although the marketplace does not look very active. One of their core pillars is to increase platform interoperability to put Sitecore at the center of the

enterprise and extend the ease in which their product can be coupled with adjacent technologies and services.

Enterprise-wide integration is enabled via Software AG's Webmethods platform and third-party connectors are available for ExactTarget, Pardot, Marketo, Eloqua, Google Analytics, Microsoft Cognitive Services, Open Calais, and Tealium.

Content & Experience APIs
Currently they offer a GraphQL API as part of Sitecore Headless Services that allows retrieval of content for presentation purposes. This was first released as part of JSS in Sitecore's 9.x release series.

Sitecore's GraphQL APIs support search queries as well as direct item queries, which can retrieve any data from Sitecore, not only content. This enables development teams to query Sitecore data and only use the data you want while also providing marketing teams all the advantages of the marketing tool set, leveraging personalization and optimization on any device or application. Sitecore's GraphQL support is likely licensed separately, but that may be an evolving story and relationship dependent.

Delivery — Content/Assets: Sitecore XP provides REST APIs for headless content access via the Sitecore Services Client (SSC), which allow for retrieval of any asset from the delivery layer. Headless Services, which supports full hybrid-headless delivery, can also be used to retrieve content via the GraphQL API if layout is not required. This functionality was introduced with the Sitecore 9.x series as part of JSS and now has several years of production usage.

Delivery — Marketing/Personalization: Sitecore's Headless Services provide APIs to allow for full personalization of layout and content, enabling hybrid headless marketing solutions. Sitecore's XP Services such as xConnect, marketing operations, marketing automation, etc. also have API endpoints, which allow development teams full control to do real-time integrations.

Delivery — Commerce: Sitecore Experience Commerce provides multiple REST APIs, plugins, and microservices allowing for full extension and integration capabilities. The microservice nature of the Sitecore XC solution enables a vast array of integration points.

ECOSYSTEM

Sitecore has an open platform and marketplace (800+ tools/apps). Their technical partner (ISV) organization is focused on implementing architectural framework design improvements and APIs, along with launching/maintaining important first party and certified partner connectors. Sitecore also is available on the Microsoft Azure Marketplace and is listed on Microsoft's price list for its sellers. Likewise, Sitecore is on Salesforce AppExchange and Salesforce sellers participate in joint sales engagements offering Sitecore CMS, DXP, and DAM solutions.

They will also continue to grow their Technology Alliance Program with a strategic approach to complement Sitecore capabilities through partnerships with third-party technologies. These partnerships include productized, supported connectors for seamless integration across leading best-of-breed solutions.

The Sitecore community is also extremely active in building out new extensions and distributes them either via the marketplace or via GitHub as open source repositories.

Clients

Sitecore's customers include more than a third of the Global Fortune 100, including Microsoft Corporation and Toyota Motor Corporation; close to half of the S&P Global 100, such as L'Oreal and Kimberly-Clark; and many of the Dow Jones Global Titans, including Nestle and Procter & Gamble Co. Sitecore also supports three of the top 10 retailers in the world, 16 of the 18 largest financial brands, half of the largest healthcare groups and six of the 10 largest car manufacturers. Clients include American Express, ASOS, Kimberly-Clark, L'Oréal and Volvo Cars.

Partners

Sitecore has partnerships with hundreds of global, regional, and local SIs, consultancies and digital agencies. They are continuously building their partner ecosystem to help businesses of all sizes succeed with Sitecore, and are continuing to require that every partner is vetted and thoroughly demonstrates its commitment and competency to deliver successful Sitecore projects. They are also focused on upskilling our partners' expertise to align with customers' priorities.

Their partners include ~800 global, regional, and local SIs, consultancies and digital agencies in NA, EMEA, and APAC. All demonstrate competency via Implementation Certification; complete Sitecore sales training; maintain required minimum #s of certified developers and Sitecore architects; complete a minimum number of projects annually with a high c-sat score.

Most Sitecore implementations are managed by partners. Key relationships include Accenture/Avanade, Deloitte Digital, EPAM, Horizontal Digital, IBMix, Publicis (Digitas, Sapient), Valtech, WPP (Cognifide, AKQA, etc.) and Xcentium. Sitecore Professional services provides implementation services to customers who implement without a partner but predominantly operate to complement their partners with services focused on QA, architecture and strategic advisory.

STRENGTHS

- Sitecore's customers span geographies and industries, and range from mid-market organizations to the largest brands in the world. Stakeholders include traditional IT audiences (e.g., developers and administrators), but increasingly is shifting to include business functions in marketing, product category management, commerce, and merchandisers.

- Sitecore's target customers have the need to develop multiple sites and digital experiences across channels and devices as well as geographies and languages, and require the flexibility to integrate with other technologies like CRM, ERP, etc.

- Sitecore 10, released in August 2020, introduced Sitecore Containers. The Docker Containers option means teams can now use infrastructure-as-code deployments for simplified installation and deployment, reduced cloud infrastructure costs, hosting flexibility, and simplified management of multiple Sitecore instances.

- Sitecore AI Auto Personalization enables users to start personalization right away, without manually defining user segments. This new standard offering is included with their XP product with no minimum traffic required.

- Sitecore XP empowers its users to be data-led and data-driven with integrated analytics through the power of the Sitecore Experience Database (xDB), which provides performance analytics and customer interaction data to help Sitecore customers deliver engaging experiences that connect with customers. Sitecore XP offers native optimization, allowing changes to the experience to be tested automatically as part of the workflow and optimizing to the value of the engagement and conversions.Sitecore XP offers native analytics at aggregate (site/sites) level along with going to the individual level, storing all user interactions in the Experience Database (xDB).

- Horizon is the next generation of experience management tools. It utilizes the underlying Sitecore platform capabilities for composing multi-channel personalized experiences.

- Sitecore's DAM is fully integrated with Sitecore XP, enabling users to find, select, and incorporate digital assets from the DAM directly within Sitecore's content and experience editing tools. This provides Sitecore users with easy access to approved, placement-ready digital assets, while providing digital asset management services to the rest of the organization with their digital asset management DAM connector for Sitecore.

  - In addition, Sitecore has integrated with several DAM systems including Aprimo, Canto Cumulus, DigiZuite, and PicturePark. Specific connectors exist for DigiZuite and Aprimo.

- Sitecore XP is capable of tracking in-session or historical behavioral interactions across all channels and from external systems. This data, stored in Sitecore Experience Database (xDB), can then be leveraged for personalization, marketing automation, or machine learning purposes such as predictive outcomes.

- Sitecore AI offers auto-personalization, a turnkey solution that identifies visitor trends and automatically creates customer segments with pre-built algorithms to streamline configuration of personalization programs.

- Native integration of Sitecore Experience Commerce offers merchandise and product management, payments and orders management, discount management, and customer account management intrinsically. Microsoft Dynamics 365 for Retail is also natively integrated to offer end-to-end omni-channel commerce capabilities. Bringing enterprise class e-commerce capabilities natively into the Sitecore Experience Platform offers features like real-time merchandising at the time of sale due to behavioral search.

- Sitecore's DXP is a good fit for orgs with advanced digital marketing capabilities and CX strategy. — Gartner

- Sitecore understands market demands. — Gartner

- Sitecore continues to expand its AI and ML capabilities with auto personalization and auto optimization and content-tagging. — Gartner

CHALLENGES

- Small businesses are typically not a fit. It can be expensive to deploy and operate Sitecore.

- As a solution focused on the needs of mid-market and enterprise organizations, Sitecore isn't ideal for organizations that do not have existing requirements or aspirations to develop an omnichannel digital marketing program.

- Integrators cite issues with the company being overly ambitious and trying to accomplish too much too fast. They also feel the system has a steeper learning curve than other platforms.

- Integrators also cite a shifting licensing model as being a weakness and introducing confusion in pricing.

- Customers express concerns about broad pricing without needed details, of which Sitecore is not always the most open about. — Gartner

- Customers may struggle with product complexities and getting full potential from the platform. — Gartner

TRAJECTORY

Sitecore is continuing in its roadmap to optimize for delivering digital experiences across different channels and form factors. They propose a hybrid model where the presentation information is developed entirely on the consumer side, yet still allowing the layout information (including personalization, and testing capabilities) to be managed within the Sitecore platform. Between their RESTful APIs and JavaScript APIs they are aiming to ensure that the needs of each developer personae are addressed, and customers have the freedom to develop solutions as they see fit. Furthermore, through xConnect, they are enabling customers to create a single, 360-degree view of the customer upon which digital experiences can be personalized - including leveraging the interactions in other systems (e.g., CRM).

They will continue to invest in their "Horizon" editing interface, with plans to further integrate Sitecore Experience Accelerator (SXA) and enhance marketing optimization capabilities with ML-driven contextual insights to drive smarter orchestration and personalization. Horizon uses the under-lying Sitecore platform capabilities for composing multi-channel person-alized experiences, including the ability to aggregate content items from Sitecore XM/XP and Sitecore Content Hub and deliver directly to Sitecore web pages or headlessly to any application.

They will continue to develop AI and ML capabilities through the platform to make it easier for marketers to orchestrate experiences, and they will extend our SaaS offering with Experience-as-a-Service, which will build on the domain knowledge of Sitecore XP and will leverage the new Sitecore Experience Edge capabilities.

Overall, we see Sitecore in pursuit of the business user. Both internal development and a string of recent acquisitions have focused on bringing user-friendly interfaces, content and experience management tools and marketing tools into the fold.

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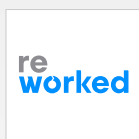
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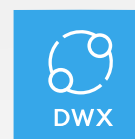**Find out more at** www.reworked.co

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