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# Effective Solutions for Digital Experience Management (DEX)

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# The Rise of Digital Employee Experience Management (DEX)

Traditional IT management practices are primarily business-centric. That is, they prioritize meeting business and IT efficiency requirements over that of user experiences. As such, traditional IT management toolsets natively include few features specifically targeted at improving employee satisfaction and productivity. To achieve modern management goals, IT solutions must address both business and user experience requirements simultaneously.

A new class of management processes and technologies emerged in recent years specifically to bridge this gap. Initially evolving from products designed to support application performance management (APM), digital employee experience management (DEX) was introduced to monitor user experiences, identify opportunities for experience improvements, and proactively remediate any experience issues.

Modern DEX solutions incorporate IT management best practices across a variety of disciplines, including:

- Unified endpoint management (UEM)
- Application lifecycle management (ALM)
- IT service management (ITSM)
- Security management
- Real user monitoring (RUM)
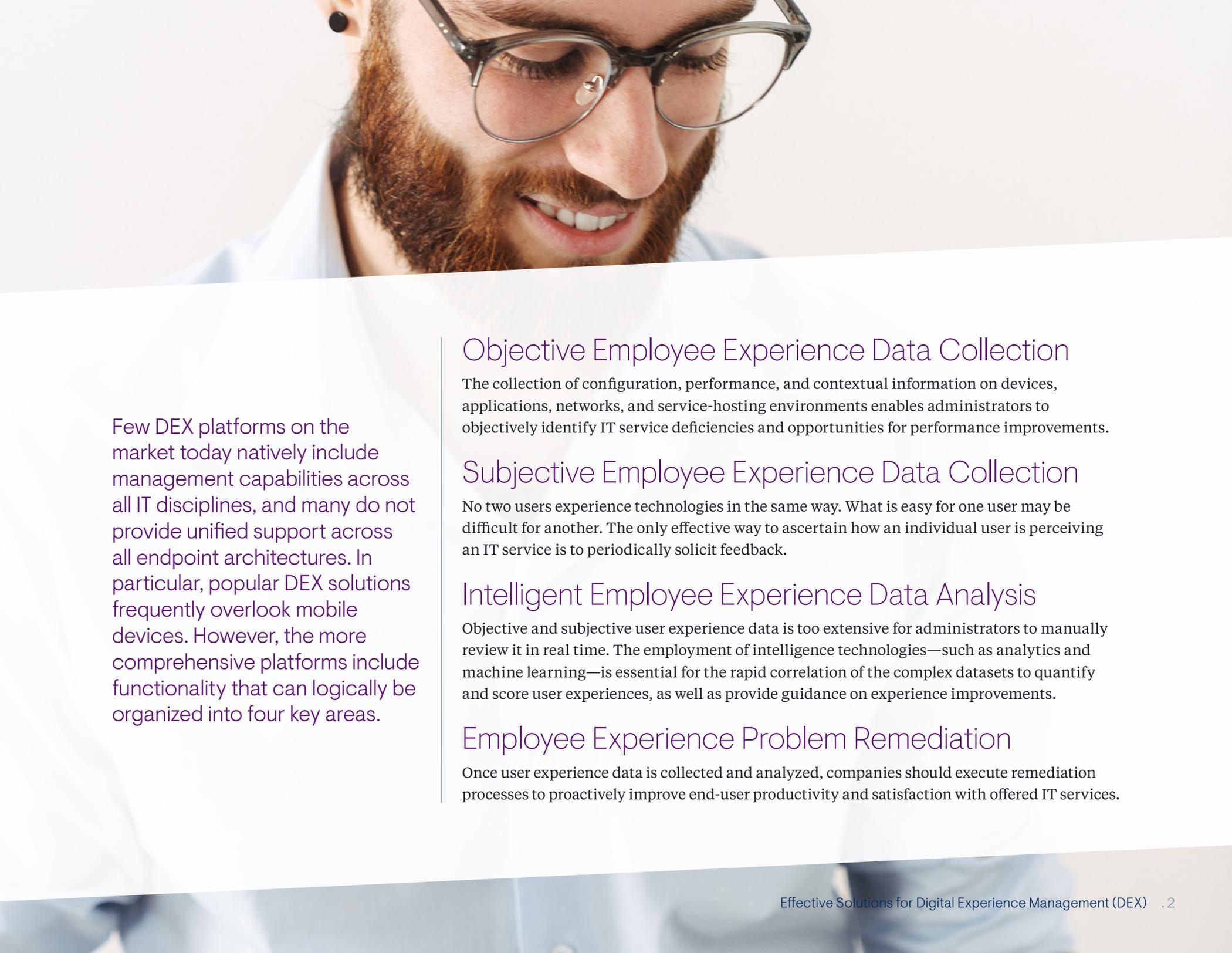
Few DEX platforms on the market today natively include management capabilities across all IT disciplines, and many do not provide unified support across all endpoint architectures. In particular, popular DEX solutions frequently overlook mobile devices. However, the more comprehensive platforms include functionality that can logically be organized into four key areas.

## Objective Employee Experience Data Collection

The collection of configuration, performance, and contextual information on devices, applications, networks, and service-hosting environments enables administrators to objectively identify IT service deficiencies and opportunities for performance improvements.

## Subjective Employee Experience Data Collection

No two users experience technologies in the same way. What is easy for one user may be difficult for another. The only effective way to ascertain how an individual user is perceiving an IT service is to periodically solicit feedback.

## Intelligent Employee Experience Data Analysis

Objective and subjective user experience data is too extensive for administrators to manually review it in real time. The employment of intelligence technologies—such as analytics and machine learning—is essential for the rapid correlation of the complex datasets to quantify and score user experiences, as well as provide guidance on experience improvements.

## Employee Experience Problem Remediation

Once user experience data is collected and analyzed, companies should execute remediation processes to proactively improve end-user productivity and satisfaction with offered IT services.

# Objective Employee Experience Data Collection

It should be self-evident that employee digital experiences are dependent on the performance of devices and applications employees use to perform job tasks. Slow performing and systematically failing IT systems inhibit the performance of business activities. When IT services are not operating as expected, workers become frustrated and are frequently distracted from performing job tasks.

The first step to improving IT performance is to establish holistic visibility across all elements in the IT ecosystem. IT teams must collect information on the performance of devices, applications, networks, and the environments hosting IT services that are accessed. They should also collect contextual information to identify the conditions under which performance degradation events occur. All events and conditions should be centrally recorded so they can be easily reviewed and to simplify event correlation. Additionally, status data can then be historically trended to establish a baseline of expected states. IT teams can then evaluate any variances from that state as a potential impact to employee experiences. This information is critical for enabling real-time problem detection and remediation.

## System Monitoring

The most effective DEX solutions collect a rich set of device configuration and status information from endpoint hardware and operating systems, including:

**Performance statistics**
on CPU and memory utilization, running processes, storage disk states, uptime, and network performance

**Configuration details**
on registry or kernel setting, OS versions, and OS patch levels

**Asset information**
on ownership of the devices, geolocation of the device, and determination of device importance to the business

**Key events**
from logs and crash reports

**Status details**
on cloud and enterprise-hosted desktop virtualization instances, such as the number of concurrent virtual instances and a map of the virtual infrastructure

## Application Monitoring

The collection of configuration and performance information on software components can also proactively prevent employee-impacting issues with device-installed apps, business-hosted applications, web apps, and SaaS apps. Related information to collect includes:

- Application performance information, such as response times, hangers, errors, crash events, memory consumption, exception stack traces, and processing time

- License information to ensure software components are legitimately supported

- Network and browser performance details to ensure the reliable use of web and SaaS apps

Additionally, IT teams may employ real user monitoring (RUM) to support the detailed analysis of user interactions with online services and detect anomalous activities.

# Subjective Employee Experience Data Collection

While endpoint and application monitoring are essential for objectively determining IT environment states, they do little on their own to determine how users are reacting to those states. Different workers utilize digital technologies in different ways, and some are more technically capable than others. They also have different preferences for IT services, and some may tolerate certain types of disruptions better than others. In order to accurately assess employee experiences, organizations must independently query users on their satisfaction and productivity when using offered IT services.

To consistently gauge worker's subjective experiences, companies should regularly conduct user sentiment surveys. According to research conducted by Ivanti,[1] most businesses either have no process in place to gauge user sentiment or rely on basic HR engagement questionnaires. More effective and targeted user sentiment survey campaigns will be conducted periodically (e.g., weekly or monthly), automatically executed after the discovery of a performance issue, distributed following an environment change (such as a new software installation), or initiated by end users at their discretion. Companies should store all survey results in a central location and historically trend them to determine if DEX processes are achieving performance improvement goals.

Optimal DEX platforms natively include the ability to create and execute user sentiment surveys. Ideally, surveys will be easy to build and customize. Individual surveys may be designed to ask general questions about the quality of offered IT services or may target sentiments about specific applications or devices. DEX platforms that include prebuilt and editable survey templates make it very easy for administrators to rapidly prepare new survey campaigns.
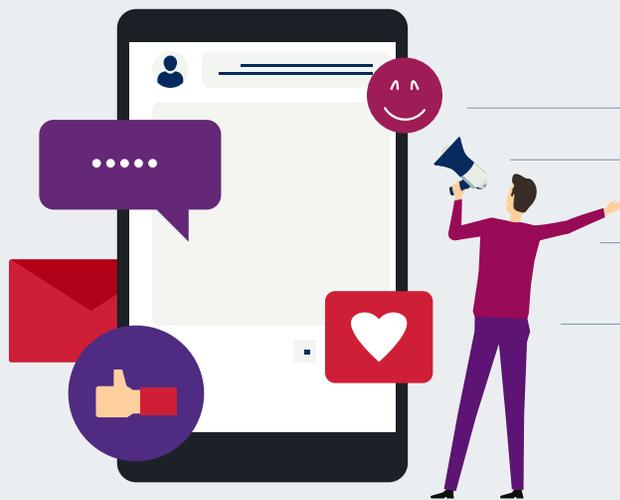
There are many methods with which companies may deploy employee sentiment surveys. The most common include:

**Endpoint Popups** – a window with survey questions appears on supported endpoint devices

**Email Campaigns** – companies distribute surveys or web links to surveys via email and they are tracked to ensure participation

**Chat Integrations** – companies initiate survey polls as part of live or automated chat session to gauge employee satisfaction with remediation services

**User Portal** – employees voluntarily initiate a survey to provide feedback on offered IT services

DEX platforms that include survey orchestration capabilities will allow administrators to schedule surveys to distribute at a particular time, either as a single event or a recurring, periodic campaign. Orchestration also allows survey execution to be incorporated into larger automation workflows.

[1] **"The need for improved digital employee experience,"** 2022

# Intelligent Employee Experience Data Analysis

Collectively, objective and subjective employee experience data sets are far too extensive for administrators to evaluate rapidly enough to effectively improve user experiences. In order to proactively enhance IT service performance, conditions and trends indicating disruptive states must be detected in real time so IT teams can take remediation steps before they impact workforce productivity.

Businesses can only achieve real-time assessment of large, complex data sets with the assistance of intelligence technologies. Collectively referenced by popular media as "artificial intelligence," related technologies include analytics, machine learning, cognitive computing, and natural language processing. The use of intelligence technologies is essential for enabling a variety of DEX functionality. However, listed below are some of the most important applications.

## Calculating an Employee Experience Score

To consistently gauge employee experiences, contextual information on user and device states must be rapidly analyzed and distilled down to a single numerical score. Ideally, these scores will also incorporate subjective information from user sentiment surveys. When scores drop below a predetermined threshold, an investigation or other response may be triggered. Users may also incorporate scores into SLAs or XLAs to acceptable levels of employee experiences or to track performance improvements.

## Synthetic Transactions

Organizations may also use intelligence technologies to simulate user activities on application or IT environments. Synthetic transactions emulate user responses based on collected and trended information. By modeling the environment and replicating common user actions, administrators can proactively identify performance issues before they occur, without impacting production environments or endpoint devices. Additionally, this approach allows administrators to gauge any workforce-impacting issues prior to implementing new services or environment changes, such as the deployment of system updates and patches.

## Root Cause Analysis

Systemic IT failures occur when administrators address the symptom of an employee experience problem but fail to address the root cause. Intelligence technologies may identify the actual event, setting, or configuration that resulted in the issue. By resolving the root cause of the issue, administrators ensure the problem will not recur. This ends the break/fix cycle of reactive firefighting, reducing the frequency of employee experience issues. Further, the identification of a problem's root cause that affects one worker can be used to proactively prevent the issue from affecting other employees.

# Employee Experience Problem Remediation

Once employee experience problems and their root causes are identified, a proactive approach to DEX will ensure remediation steps are rapidly implemented. The goal is to address issues and conditions before they negatively affect employee experiences. While some responses will require administrator interactions, others can be automated to provide immediate resolutions.

## Administrator Remediation Responses

Upon detection of user-impacting conditions, alerts should immediately be reported to administrators either directly from the DEX platform or through integration with a service desk. Administrators can then assess the issue by examining collected digital experience data and recommendations from intelligence technologies to determine the most effect response. DEX solutions that incorporate remote access and control capabilities will allow administrators to diagnose and resolve issues on employee devices more rapidly. While some issues may require the performance of manual remediation tasks, many can be resolved using administrator-executed automation bots and scripts, such as those natively included with unified endpoint management (UEM), service management, and security platforms.

## Automated Remediation Responses

Any repeatable process can be automated, which is especially useful for enabling immediate remediations to known employee experience issues. Boolean if/then policies can be established to execute automated responses upon detection of a performance-impacting state. For instance, updates may be installed, configuration settings may be changed, or instructions may be sent to users. Remediation action triggers enable real-time responses to common issues and can be based on the detection of deficient states, responses to employee sentiment surveys, the crossing of predetermined KPI thresholds, and contextual changes, such as when endpoints are disconnected from the business network or DEX platform server.

While a majority of actions can be simply automated with individual scripts, more complex tasks may require multiple scripts orchestrated into a logical workflow. This allows administrators to define and sequentially order a series of responses, such as shutting down applications prior to a configuration change and restarting them upon completion. DEX workflows can also define when automated responses will occur, such as during maintenance windows or other times when they will not impact workforce productivity.

Ideally, a DEX platform will natively include a comprehensive library of prebuilt automation scripts and workflows, minimizing the number of new scripts that an administrator will need to develop. A script library will also provide templates that users can edit to create new automations. Additionally, it is advantageous if the DEX platform natively includes resources for creating and editing custom scripts and workflows, allowing the business to address any unique requirements.

# Enabling Effective Integration

No single DEX platform—or, indeed, any IT management suite—can possibly collect all of the information necessary to assess employee experiences or enable automated responses without at least some integration with third-party tools. Points of integration across IT services, security, and operations management ecosystems are essential for achieving all four core DEX functionality requirements. Indeed, prior to introducing DEX solutions, most businesses have already invested significantly in systems, services, and security management technologies that duplicate several of the processes required for DEX. It only makes sense to leverage the collected information, automation, and intelligence technologies to enhance DEX performance.

Optimally, points of integration are federated, allowing bidirectional information sharing and task executions between the DEX platform and third-party management resources. The most basic integration points involve the sharing of collected data. However, it is also possible for solutions to utilize a common data collection process to minimize the number of agents required to operate on endpoints. The unification of data across IT management disciplines helps establish holistic visibility and a common frame of reference for disparate IT teams. The ability of a DEX solution to execute automated tasks on third-party platforms (or vice versa) can also be advantageous for creating unified workflows.

IT management resources that most frequently enhance DEX functionality through integration include:

- Directory Services – such as Active Directory or LDAP

- Systems Management Platforms – endpoint management, mobile management, and configuration management solutions sets

- Service Management Platforms – help desk/ticketing systems and change management solutions

- Security Management Platforms – security information event management (SIEM), malware protection, and threat detection solutions

- Log and Data Analysis Solutions – intelligence technologies that ingest and analyze complex datasets

- Business Productivity Toolsets – workforce desktop application sets (e.g., Office 365, Google Workspace, etc.) and communication platforms (e.g., Zoom, Teams, etc.)

Preferred points of integration are those that are prebuilt and included with the DEX platform. These direct integrations require little, if any, development effort to implement, are easy to maintain, and are fully supported by the vendor or service provider. The greater the number of integration connectors a DEX platform offers, the easier it will be to implement across an existing environment.

Of course, it is impossible for any single DEX solution to include connectors for all possible management software components—particularly for those developed in house. To enable the creation of custom integrations, DEX platforms should include a robust set of APIs. Software development kits (SDKs) may also be used to develop custom connectors and integrated components.

# Identifying Solutions for Success

The greatest challenge with introducing an optimal DEX solution is addressing the breadth of requirements across the four key areas of support. Most DEX platforms on the market today focus their management strengths on just one or a few areas of key functionality, such as monitoring, analysis, or automation. Gaps in offered DEX solutions are typically addressed by relying on points of integration with third-party products or the development of custom automation scripts. However, the DEX platforms that will most effectively meet a business's unique requirements are those that will equally and natively support key functionality across all four pillars of support. A unified approach to DEX is easier to deploy and maintain, while also more rapidly achieving returns on investment.

The evolving business requirements for managing employee digital experiences can only be achieved with a unified DEX platform that provides core functionality for monitoring devices, determining employee sentiment, analyzing conditions, and automating effective responses. As an example, the Ivanti Neurons suite of management solutions offers a comprehensive and unified portfolio of DEX functionality. Real-time visibility into devices, users, applications, and IT services,

coupled with flexible employee sentiment surveys, means Ivanti Neurons provides unified visibility of both objective and subjective employee experience states. Collected information is analyzed and calculated into a standardized user experience score, and the included "Smart Advisors" provide prebuilt charts on device and environment conditions while offering actionable guidance on improvements and remediation actions.

Ivanti Neurons provides fully automated remediation functionality. Self-healing scripts, called "bots," run on demand or continuously in the background to perform tasks for correcting performance issues, making configuration changes, and implementing environment improvements. While the platform includes an extensive library of prebuilt bots, it also provides an easy-to-use, low code/no code tool for creating custom bot workflows.

Ivanti's DEX functionality is also fully extensible, enabling integrated support with other Ivanti management technologies supporting unified endpoint management (UEM), patch management, service management, and spend intelligence. A library of connectors is also provided for integrating directly with third-party management solutions, such as ServiceNow, and custom integrations may be created with the use of the provided REST API.