CERTARA

D360 IT Maintenance Overhead

Providing scientists with access to project data and tools to analyze and collaborate is vitally important to improving the effectiveness of rational, data-driven research. This capability must be provided without undue burden or cost on already stretched IT resources. D360 is a scientific informatics tool that meets these criteria. Basic D360 application maintenance for a multi-site organization of 800-1000 users amounts to 2-3 full-time employee weeks per year

Introduction

D360 is designed to be straightforward to administer and maintain. It provides users constant access to their data with minimal IT resources. The D360 application is highly configurable; IT system custodians can quickly and easily implement changes in application behavior and data available to users through the system using straightforward administration tools without the need for code changes/software deployments.

IT overhead for D360

Customers can maintain and support D360 with minimal IT overhead. The maintenance effort described is based on a post-implementation scenario and does not include the initial D360 configuration of the first data sources and catalog. Data presented in this case study was collected from two IT technical resources who had responsibility for maintaining a large scale D360 deployment of 800-1000 users and is based on two years of experience with the deployed system. Both of these people were responsible for many other applications and systems in addition to D360.

Basic system maintenance

As with any enterprise system, D360 requires maintenance over time. It is designed to minimize the time and effort required for maintenance. The most basic maintenance tasks involve monitoring the systems and databases, and dealing with standard hardware/operating system (OS) maintenance. This includes deployment of OS patches, scheduled network or hardware maintenance, and other standard IT tasks. The reference customer spent no more than one hour per week (on average) on application-specific basic monitoring and maintenance tasks. Depending on a customer's existing infrastructure, automated tools can be tied into the existing D360 monitoring and alert mechanisms to minimize the time spent on this task.

Powerful Solutions From Certara

- D360 can be applied throughout the drug development process from discovery to pre-clinical to clinical and translational science

When new updates of D360 are available, most customers evaluate those changes within their environment prior to updating production systems. Certara performs exhaustive system and integration testing prior to each D360 release. The effort required for a customer to perform this evaluation will vary based on the type of update and a customer's desire to verify the changes. The reference customer typically spent between a day and a week evaluating the new release beyond the time spent by Certara in system testing.

A related maintenance task involves deploying new versions of D360 within a customer's environment. IT staff at the reference customer estimated that they spent six hours updating their production environments to a new version. Much of this time was spent on typical change management tasks— dealing with change control standard operating procedures (SOPs), informing users of the upgrade, etc. The technical installation itself was very quick, as it is automated. Efforts in this area will vary based on standard change control/validation procedures within a customer's organization.

Configuration, data sources and new capabilities

Optional D360 maintenance includes configuration changes, data source integration, and improving system capabilities. D360 allows organizations to improve workflows, add new data sources, and provide new capabilities to their users over time.

Basic configuration changes

Basic configuration changes include minor updates to the data catalog (creating new data relationships, changing attributes of fields, etc), implementation or improvements to standard business rules (such as standard color schemes), and definition of new workflow options (such as "Follow-on Queries"). Most of these items were based on requests from users or changes in standard business processes. The reference customer estimated that these activities took, on average, five working days per year and the resource and time required tended to diminish as user requests were satisfied:

- Data catalog maintenance was minimal, and typically involved requests such as exposing one extra data field in the D360 User Interface (UI), updating the descriptions of data, making fields case insensitive to query, or defining pick lists to simplify query filter setup. Addition of entire new data sources or categories of data is described below.

- Updates to business rules, such as color schemes, was requested periodically and is very fast to configure in the system.

- Workflow items, such as follow-on queries and actions, were the most prevalent activities as users decided how they would like to more efficiently navigate between research relevant data views, tie in other in-house tools, and complete their workflows. D360 uses a graphical configuration tool to minimize the time required to enable these actions.

A key capability of D360 is that it supports the auto-discovery of new tests. When a new assay becomes available in a source data system, no D360 configuration changes are required. The new test data is available to users of the system with zero IT effort.

Addition of new data sources

From time to time, most organizations will introduce new systems that provide data or services that are desirable to expose within D360. During the two years the reference customer was using D360, a large commercial database was installed in-house, and integrated into a database that D360 was

configured to access. This was a very large and complex data source, involving over 30 categories of data (entities of interest to the scientist user base). The integration effort took less than one week to publish the data to D360, define the D360 data catalog (data categories and relationships), and make the appropriate configuration updates available to users. More common data integrations (such as the addition of data about new entities from existing systems, changes to the structure of existing data sources, or integration of less complex data sources) were completed substantially faster.

Creation of data queries for users

D360 does not require IT personnel to construct data queries for users. A key goal of D360 is the creation of a self-sustaining user population; all users have access to D360's drag-and-drop query-building tool. Construction of a data query requires no knowledge of the location or storage format of data that D360 is configured to access, merely the scientific context of the data they are interested in. Not all users will want to build queries. Some may want to simply push a button to get to their data utilizing D360's QuickSearch widget capability. More sophisticated users will edit data queries built by others, and more advanced users will build their own queries either for standard reports or for ad hoc data exploration. D360 was designed to accommodate this type of diverse user population through the QuickSearch widget capability.

QuickSearch widgets are a simple facade on a user-built D360 query that allows query execution through a single click and the possibility of exposing one or more parameters of the query for a user to adjust. QuickSearch widgets are displayed on a user's dashboard (what they see when they first start D360) and are generally employed for common tasks and to disseminate common queries to other users through D360's workspace system. By allowing the more sophisticated users to create and edit queries and deploy those to a wider body of D360 users as simple 1-click widgets, user communities can rapidly become self-sufficient without any requirement for IT resources to spend their time on mundane form/query creation and allows them to divert their attention to higher value technology and IT situations.

Conclusions

The overall basic maintenance of a D360 system in a multi-site, 800-1000 user deployment of D360 required 2-3 weeks of full-time IT resources per year.

Key activities for basic maintenance were:

- System monitoring

- Deployment of user follow-on queries

- Minor configuration changes (exposure of additional data fields, setting of corporate color schemes, setting of default aggregation functions, etc)

Key capabilities that ensure low maintenance requirements for D360 include:

- The ability of users to build and share their own data queries and data analysis workflows.

- Automated discovery of new assays and tests.

- Administration configuration tools that allow data from new sources to be quickly configured and made available to the user community.
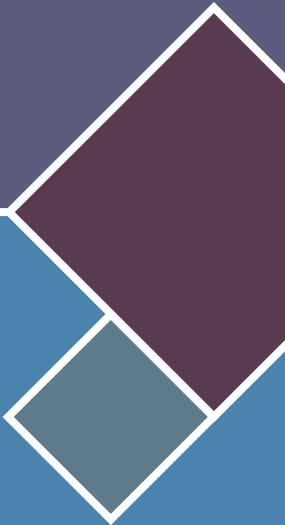
About Certara

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