DesignDataManager Pro

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Engineering data management (EDM) doesn't have to be hard. CSI's DesignDataManager (DDM) is designed to be easy to use, while offering relatively high-end features like document process workflow.

DesignDataManager (DDM) hails from Newbury's very own CSI. Historically, the system was developed to work with PTC's Pro/Engineer but over the years it has been expanded to cover all manufacturing CAD systems and data formats. In the world of engineering data management CSI is one of the 'last men standing' in UK-grown CAD management systems - quite an achievement considering that nearly every single CAD developer, from Autodesk to Dassault has its own home-grown or acquired management system.

Multi-CAD support

One of DDM's strengths is that it is CAD agnostic. That is to say it is happy to control 3D modelling information from Pro/E, Inventor, Solid Edge, IronCAD and SolidWorks, together with 2D systems like AutoCAD and ME10, in addition to many other traditional document types, like Microsoft Word and Excel. Talking with Managing Director Joe McBurnie, you also hear of many totally non-CAD applications that DDM has been put to, just as an in-house document management system. This flexibility, according to McBurnie, is one of the reasons why once inside a company, DDM has a tendency to expand beyond the Engineering department. Indeed, in our experience many of our readers have three or more different CAD systems in-house and all that data has to be controlled. The last thing they really want is three or more EDM systems.

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The quickest way to ensure that a document management system implementation will fail is to install one that's too complex to use, or one that requires lots of training, consultancy and support. DDM's user interface has been developed to replicate Windows Explorer's look and feel, so if you can use Windows Explorer, then you can navigate around DDM. For CAD users, there's a built-in pull down menu, for when you are creating documents, and there's a desktop client and a web client for remote access (which looks very swish).

All the data is stored in a Vault but this is invisible to the user. Like all document management systems, there's an Admin front-end and a client front-end. The architecture of the system is classic client/server, with a floating client management system. The Admin can easily allocate licenses from the server, negating the need to run around installing the application on remote machines. The Admin also gets to set up individual's access to documents and projects, as well as configuring document processes like Engineering Change Orders (ECO). Typically, this functionality is called 'Workflow' and really has been the mainstay of the high-end management systems. DDM incorporates a powerful but easy to use workflow generator that has a wide number of uses, invoking 'actions' at key moments, such as escalating a document that has not been signed off within a specified period of time. Although saying that, workflow is totally optional, but more on this later.

To get deep access to each CAD file format, CSI has licensed various toolkits from each CAD vendor, which enables DDM to read and utilise the engineering data that's in all the key modelling file formats. Many data management developers opt to reverse engineer the CAD file formats, which can introduce errors, limit

functionality and lead to problems when new versions of formats get released.

At the frontline, the CAD system integration is really simple. The DDM menu bar is added to all CAD products and it's here that the engineer gets access to load, export and search. DDM includes a powerful automatic drawing number generator, which provides the Administrator with a flexible way of defining the type of numbering systems your company wants. If you don't want it, you can also turn it off.

DDM includes an Up-Issue/Version and Release State Manager. The system includes a workbench for each user, data can be sent between users in an informal or formal manner, with discreet messages and email notifications. The system also has the ability to manage concurrent working, so when a user checks out (reserves) a part, assembly etc, other users are made aware, but can still use that data for reference purposes. Users can also register their own email notifications and subscriptions to ensure they are kept informed of changes even if they are not logged into DDM.

Powerful search

Engineers waste more time trying to find files than actually creating new designs and so here the power of DDM is really of high value. You can search by any of the properties stored in the Metadata field, whether that's by name, description, file type (part, assembly, drawing, Office doc), date created etc. The system also includes classification tools, so you can assign more meaningful metadata to your parts to assist with the search and retrieval process. For instance you could define an assembly as 'piston', which could be searched on. DDM can search through all models, across multiple projects, to see where particular parts are being used. This also ties in with the Bill of Materials (BOM) management which is derived from the model data structure. Should your model also include a number of non-drawn parts, these too can be included in the BOM and in-turn added to the DDM vault. This flexibility ensures that everything can be represented in the system and the search tools, combined with web and server-client access, distributes your engineering knowledge in a controlled way.

Lifecycle

Workflow is an issue that is talked about a lot but implemented infrequently. When originally choosing an EDM system, perhaps any Workflow capability that's included is seen as a positive but on implementation may not be actually used. This is probably because the cost of doing this with many systems is perceived as being high as it's sold as a consultative service. To deploy Workflow, you need to analyse how you currently work, how documents flow internally and externally, together with the architecture of an organisation. This can't really be taken lightly and is tantamount to preparing for something as demanding as ISO accreditation. In all the systems I have seen the Workflow component is there mainly for the administrator to use, while all those within the organisation get no visual representation of where they are in the predetermined document flow.

DDM's big new feature for this year is a Workflow component that is both easy to use and provides all project participants with a view of not only where they are in the process but also at what stage the document they are working on currently lies. DDM allows the administrator to build in checks and feedback tools to elevate documents that get stuck in the system, together with a number of tools to analyse where bottlenecks occur. Regular management of these processes and process metrics can be used to find inefficiencies and streamline processes. It removes the argument that implementing Workflow is expensive or difficult, however the biggest problem remains and that is the understating and mapping of existing real-world workflows to any system. If you are working inefficiently now, you really don't want to map those processes into your document management system.

On the day that I visited CSI to see the new version of DDM, the walls of the company's boardroom were filled with whiteboards with many workflow diagrams. McBurnie explained that a customer had been in the day before to discuss Workflow implementation and they had brainstormed through how it should be implemented. Workflows can be very complex.

Company-wide

There are two versions of DDM - Pro and Office. Pro comes with the CAD integrations, whilst Office offers everything but. Obviously engineers involved in model creation need Pro and those that simply need to see or access the data, just need Office. DDM integrates into any standard CAD file format viewer, and as there are so many free ones now, you can take your pick. For those outside the company, or on the road, there is a web client version which allows access searches and viewing over the Internet. The software includes intelligent handling of multiple servers at multiple locations, which is totally transparent to the users. Whilst a search result may contain models which reside on a number of servers, the actual model will only be delivered when needed.

Also worthy of a mention is DDM's ERP management utility that provides the ad-hoc or automatic export of Part and BOM data in an industry standard XML data transfer format so it can be read into your business systems, whether that's ERP or MRP. After carrying out a number of bespoke implementations for customers, CSI bundled up its development and included the tools in the product.

Conclusion

The amount of development work carried out by CSI never ceases to amaze. DDM has been around for a number of years and has gone through some massive transformations and now incorporates many features deemed to be high-end. Yet, in spite of all this, DDM hasn't got harder to use, in fact quite the opposite - it's one of the most logical document management systems on the market.

The big selling points have to be DDM's multi-CAD and multi-document support, ease of use (both its Windows Explorer interface and workflow), depth of integration with BOM support, flexibility of implementation from workgroup to enterprise and CSI's inherent knowledge of how engineering firms work. If you are evaluating TeamCenter, Windchill or any other, so called PLM system, DDM should also be on your list – and not just because it's developed in the UK but because it does simply what it's supposed to do.

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