Navigating the CAD/CAM Software Minefield
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Integrated Joinery Solutions Pty Ltd - Supplier Magazine Jan/Feb 2014

Purchasing the right CAD/CAM software solution for your business is critical to your future success. But with so many solutions in the marketplace, how do you find the right one for your business?

The first thing to accept is that not all software offerings are the same. This is a positive as not all businesses have the same needs. However, the variety of solutions available also serves to make the buying process confusing, especially as the solutions often cannot be directly compared to one another.

The key is finding the solution that best meets the needs of YOUR business. Any software, cheap or expensive, is not good value if it does not have the features your business needs.

There are many ways of grouping the different solutions aimed at our industry; functionality, target market & technology are the ones we will look at here.

Functionality
Dedicated Software; Specialise in one aspect of the design & production process, either CAD or CAM. They can provide advanced functionality as the developers are specialists in their field.

On the flipside if you need a complete design to production solution you will need more than one software solution. It is vital that the systems have robust interfaces between them to minimise the loss of data integrity that may occur as you transfer information between different systems.

Integrated Software; cater for both CAD and CAM within the one solution. They provide for complete data integrity as there is a direct transfer from CAD to CAM with no middleware or manual processes involved.

To further complicate the issue some solutions are marketed as "integrated" but in fact bundle software from different providers behind the scenes through a user interface which mimics an integrated system. The same data integrity may not be achieved with these systems as a truly integrated system developed by a single provider.

Target Markets
Industry Solutions; have been developed specifically for the Joinery Industry as opposed to solutions that are used across a range of different industries and contain general functionality. The benefit is the solutions come equipped with specialised joinery functionality and the ability to cater for joinery specific construction methods.

This has the benefit of speeding up both design and production as your software understands the industry you are in.

Niche Industry Solutions; as the name suggests these solutions specialise in a specific niche market within the joinery market eg kitchens, wardrobes etc. They can really benefit businesses that operate solely within that one area of the industry and produce 100% standard work. They can, however, be restrictive for businesses that wish to move into other areas or offer custom units.

Underlying technology
For CAD solutions it is vital to understand the technology being used. There are 2 main categories; 2D and 3D, each with their own benefits.

2D systems; these operate on 2 axes only; either two of length, width or depth. Producing models with 2D CAD can be quick and easy, and there are many low cost solutions available.

The limitations of 2D CAD are highlighted when looking at renderings, workshop drawings and linking through to production.

You are not able to produce multiple elevations from the one 2D model. Each view needs to be drawn separately. If you make changes to the model these will not be reflected in the plan views. They will need to be redrawn.

Client communication can be more difficult as many struggle with 2D designs, preferring to see a 3D plan.

Some 2D solutions do provide a 3D representation of the model, assisting with communication.

When 2D drawings are sent for production, the tooling and machining will need to be assigned to the missing dimension. This will increase time spent at this stage and may also increase errors as this will now be a manual process.

2D CAD was the standard in the industry for many years. It may be suitable for an entry level system where detail in design is not paramount and production is not required.

3D systems; 3D systems operate on 3 axes; length, width and depth. They provide advanced functionality for custom work as well as standard units.

All elevations and views are derived from the **one** model, including 2D views. Being fully associative all changes to the model are instantly reflected in all elevations and views in the plotsheets and rendered images.

3D is the preferred solution for manufacturing integrity as you can see collisions and joins and ensure you get it right in the design phase – less errors and less wastage.

Advanced 3D systems with integrated production are able to have the machining visible on the design, complete with full production information, ready to be sent to the machine.

Most designers and manufacturers use a 3D system for the time saving and accuracy benefits it delivers.

Within the 3D systems there are 2 main sub categories:

Library based 3D systems offer the benefits of 3D technology within a predetermined library of units. This can be a solid option if your business produces 100% standard work but there are limitations if the library does not cater for 100% of your projects.

Ensure the library contains every unit you will need or you understand what is involved in modifying the existing library for any specialised units. This may involve going back to the supplier for them to develop a new unit or learning how to do this yourself.

True 3D systems are those that provide 100% flexibility in design, ensuring that you have complete design freedom including complex curves for those custom projects.

When combined with superior library functionality they can cater for 100% of your business needs; both standard and custom.

These are the systems of choice for joinery businesses that work across markets and need the flexibility to accommodate for custom projects.

Key Questions to Ask:
- Does it understand the business I am in?
- Does it cater for 100% of my work?
- Is it flexible enough for me to move into new markets?
- Will it speed up the design process?
- Are changes to design quick & easy?
- Will it improve communication with clients and the workshop?
- Will it provide accurate production data, reducing errors and wastage?

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