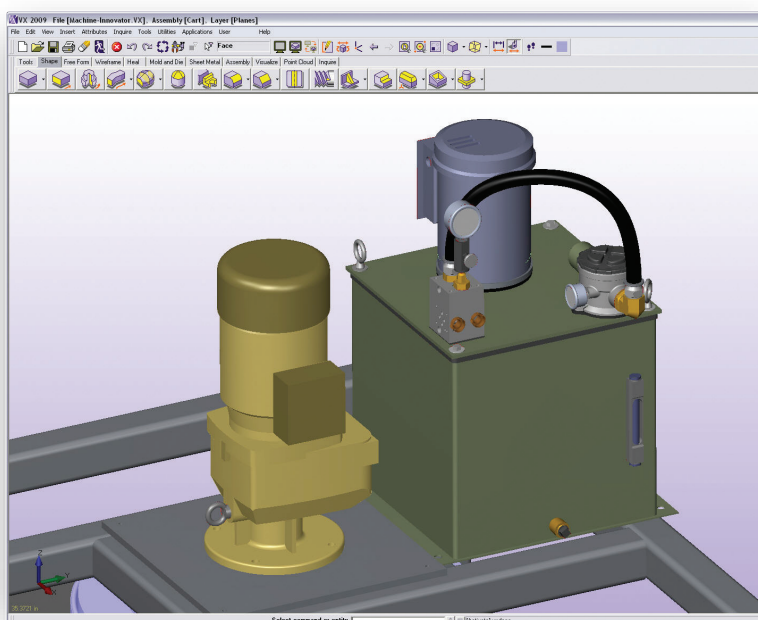
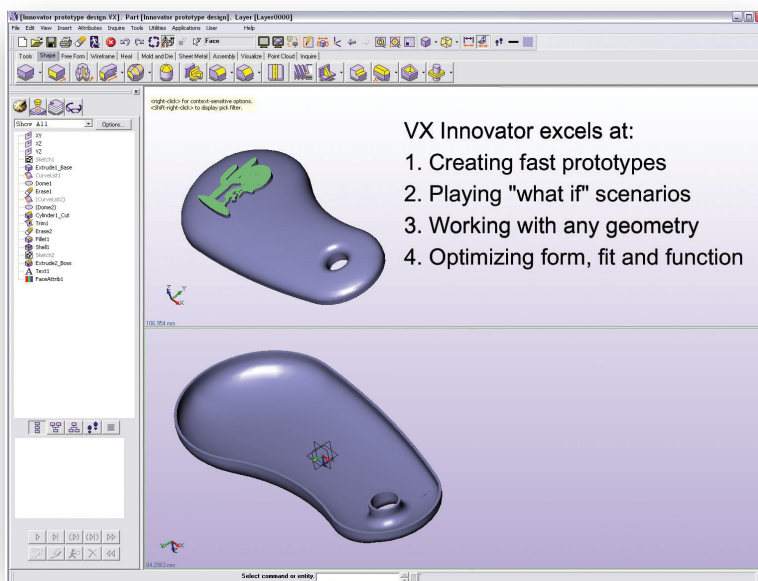


Entry-level innovation

David Chadwick explains how VX's Innovator is a natural starting point for professional CAD/CAM users



Having to review software at all levels, the poor old CAD journalist invariably finds his workstation stuffed to the gills with 2D and 3D modelling packages that he opens up, fiddles around with for a couple of weeks, and then forgets all about until the next version comes along! With such a relatively brief period of acquaintance it can be hard to master all the ins and outs of every piece of software that crosses the desk, but he can nevertheless fathom out the limitations of some of the lower cost products on the market.

That's still not an easy task to do mind you, as the latest and better known packages - such as Alibre, Rhino and SpaceClaim - are sophisticated modelling tools in their own right, and it is not until you start assessing their position in the market against mainstream products that you begin to see why they fail to meet everyone's demands.

It is then that you realise that, whilst they offer great value for money as flexible free-form modellers, when it comes to providing complete solutions that enable users to take the design through to manufacture, they have gaps in their capabilities that can only be addressed by adding other software. Or, in extreme cases, by abandoning the package completely in favour of a more comprehensive solution.

Whilst other software developers appear to have ignored the newcomers, expecting designers to gravitate onto their more expensive and comprehensive solutions once their tastes and needs have matured, VX has spotted an ideal opportunity to corner this end of the market, by offering a start-up solution that can be scaled right through to the top end of the CAD/CAM market.

Innovator, VX's latest offering, released just a couple of months ago, provides a

complete hybrid modelling design tool, with full solid and surface modelling capabilities, that can be extended, once users become familiar with the software, to encompass high-end class A surfacing, die and mold design, and 2,3, and 5 axis machining! And, because it is designed as an entry-level tool, it comes complete with VX's unique built-in learning system - Show-n-Tell - that guides new users through each stage of the design process.

TOOLS FOR CONCEPTUAL DESIGN

Based on VX's own Overdrive hybrid modelling kernel, Innovator is an advanced parametric modeller which can work seamlessly with both solid and surface geometry. It also includes hybrid modelling - open shape modelling that allows users to work directly on both solids and surfaces without reference to the models history tree. Because it also comes with a complete set of translators it can import solids and surfaces, and treat them in the same way - allowing components to be sourced externally for its top-down advanced assembly modelling.

This is where competitive products in the sub \$1000 price range soon fall flat, and have to combine their resources. Alibre uses Rhino to work with imported surfaces, and returns the favour for Rhino when parametric modelling is required.

Imported models with poor geometry can be fixed using Innovator's healing and surface editing tools, which can even work with non-solid geometry - again something that its competitors are unable to handle.

The power of all products at this level, though, is their ability to introduce designers to the tools available to them for developing 3D concepts, combining sophisticated modelling techniques with easy-to-use user interfaces. This is perhaps best exemplified by Space Claim, a freeform modeller that is easy to dive into and create complex models, but which lacks any sort of parametric capability.

VX's Innovator may not be as simple to use as SpaceClaim, but it does come with a larger set of modelling styling and surfacing tools, including basic surface editing, advanced assembly modelling, and rapid concept development tools such as QuickShape and ReadySketch - all of

which are fully explained in Show-n-Tell, the virtual 3D book that comes with the software.

Innovator can also be used to produce 2D drawing layouts of parts and assemblies, including BOMs. It can be used to show section views and detailed and auxiliary views, with complete dimensioning, annotation and ballooning. It can also be used by managers and design reviewers to check drawings and models created using VX's mainline tools - Designer, Mold & Die - or even models created using other CAD systems.

The greatest advantage of the software package, though, is that it can be extended seamlessly throughout VX's entire range of tools, adding such things as shape morphing, Class A surfacing, reverse engineering, rapid prototyping, and so on. VX professional modelling software encompasses all of the requirements of the CAD/CAM market within a full range of dedicated packages.

Designer adds links to FEA, PDM and CMM solutions, advanced 3D modelling and freeform surfacing, assembly and motion studies, sheet metal tools, reverse engineering, photo-realistic rendering and design optimisation and compare. 3D Machinist, another VX package, combines the same set of tools, but adds a range of 2 and 3 axis milling tools, auto-feature tactics, VX QuickMill high speed milling, Smoothflow AFC, a post processor and CNC output manager and solid verification.

VX's Mold and Die package adds all of the tools required to produce molds and dies from VX, or imported 3D models, including core or cavity splits, parting lines, cooling channels, slides, inserts, electrodes and tables. And, for a complete manufacturing solution, all above functions are available in VX's End-to-End solution.

The VX Innovator user can therefore start their learning process at a very affordable price, develop their expertise, and extend their capabilities to the highest level, just by scaling up. No supporting software, no platform changes, no new software packages or methods of working to learn!

SHOW-N-TELL

This deserves a section on its own. Show-n-Tell is built in to VX CAD/CAM software,

providing on-screen step-by-step lessons that graphically show users how to use the different features in the software. It can also be used to automate design review and 3D markups.

Show-n-Tell makes obsolete all other tutorial tools that rely on printed manuals that rapidly run out-of-date, and videos that need to be continually halted to keep in step with the user, or even instructor led training in the classroom. Show-n-Tell is launched by loading a VX file, which is displayed on-screen alongside the model in question. It gives a graphic representation of the function that you want to carry out, and lists the instructions for doing so. The 3D model showing the result can be rotated and zoomed, in order to provide a better understanding of the process.

Users can work at their own pace, and can save tutorial sessions for re-use at a later date. Supporting Show-n-Tell is Quick Tips, which covers common questions and uses videos, stills and text instructions to provide productivity tips. Show-n-Tell tutorials don't currently cover all features of VX software - but they are being extended rapidly. Future tutorials are scheduled to include parametric and open shape modelling, sketching, assembly, drafting, 2x and 3x CAM, automated hole drilling, and a number of other CAM features.

Design reviews and markups can be conducted using Show-n-Tell's authoring facilities. Users merely have to point out problem areas on a model or drawing by creating annotations and then press the record button, which captures the view orientation and zoom state.

Reviewers can play back the recording in exactly the same way that a novice user would use a tutorial. They can even go further and rotate, measure and dynamically slice the model at any point, or zoom in on drawing detail. This is all conducted within VX software and is available even in entry-level Innovator.

So there you have it - a starter solution, complete with on-screen tutorials, that you can take on board, learn, and then scale up to meet the most exacting demands of a manufacturer - and all on the same software platform!

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