

Topic:
Industry
Interviews

The User's View – interview with Greg Sproule of Key Plastics



In the second of our series of interviews with users of Computer Aided Technologies (CAT), we hear from Greg Sproule, Design Manager at Key Plastics, Inc.

iCAD is produced by Business Advantage, a B2B research, business development and marketing consulting practice operating in the global IT, Digital and Telecommunication sectors.

iCAD asked:

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[Key Plastics](#) design and manufacture plastic components for the automotive industry. Based in South East Michigan, it has twenty manufacturing facilities in the United States, Mexico, Canada and Europe. Products include interior/exterior door handles, brake and power steering fluid reservoirs, surge tanks, interior/exterior trim, radio bezels and many more.

What design software do you use?

The software we use is determined by the requirements of the automotive manufacturers. We have seats for UGS, CATIA, I-DEAS and PDGS. We also have a workstation with lots of different types of Finite Element Analysis (FEA) software.

What is the biggest challenge to improving your design processes?

The biggest challenge to improving our design process is improving communication between both our customers and ourselves, and between the engineering and design departments. We need to achieve a more

"We need to achieve a more accurate and efficient flow of communication to speed up the design process as a whole."

accurate and efficient flow of communication to speed up the design process as a whole. Another challenge is trying to find a method to ensure that while we are designing our products, we always have the very latest background data for the surrounding components. One small change to a component near ours could mean a complete re-design of our part. The faster we are aware of this the quicker we can react. A universal PDM system would definitely help us acquire the latest available data.

How are you currently looking to improve the design process?

I am in the process of looking into concurrent engineering by researching VisView software from UGS. This is fully collaborative web based software that will allow 3D mathematical data to be accessed and reviewed by engineers at their own desks rather than them having to physically visit our office to look at designs.

UGS' VisConference software will allow us to have on-line discussions and reviews with our customers and also our plants. For example we could be in a conference room having a conference call while also rotating a 3D part around so that both parties can view the data in real time.....it's basically an on-line design review.

Our research into this solution is in its early days but I can see big advantages by having it. The UGS software has the added advantage that the users do not need to have a CAD seat, they can just see the design from their own PC. This saves money from not having to buy more CAD seats and not having to train more people to use that CAD software.

What do you think have been the most important developments you have adopted in the design process over the last five years?

I'd say the introduction of solid modelling, and the use of finite element analysis (FEA). Solid modelling has speeded up the design process and increased its accuracy both at the design and tooling ends. Accuracy is so important because we use injection moulds to make our products and the data which the design department creates is actually used to cut those moulds. In the past, 2D drawings were used to produce the moulds.....this was much more time consuming and less accurate.



Key Plastics' pressurised bottles

FEA allows us to detect and correct errors early in the design process instead of finding errors in the prototype part. For example there are certain load requirements that will cause a door handle to fail. We can actually predict this load up front before we even manufacture the part. We also do moldflow calculations to optimise all of the moulding conditions such as gate locations, sink marks, knit lines and so on.

What are the main drivers for change at Key Plastics?

For us the greatest drivers of change are our customers. It is not us who choose what software we use. We have to conform to the automotive manufacturers' software requirements because they need to ensure data compatibility with their own systems, e.g. General Motors only uses UGS, and Ford just uses I-DEAS. Our customers also drive methods of data exchange since all data is proprietary information.

To what extent do web based solutions play a role in your design process?

The Internet plays a huge role in our day-to-day data transfers. It makes this process a lot easier and much faster. We currently use a service called "Auto-Web" which is a web-based data transfer system to push/pull most of our data to/from our customers. Key Plastics also has its own internal Intranet on which documents on procedures and lessons learned are posted and accessed company-wide. I think that the role of the Internet in our design process will continue to increase, especially if we use UGS' concurrent engineering software.

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Have you considered renting CAT software?

We purchase licenses rather than rent them. We did look into the option of renting, but concluded that it would leave us too vulnerable if the rental company went bust and stopped supplying the software. The only way that we might be reassured against this would be if there were a written and binding guarantee that if the company went out of business, they would have to allow the customer to use the software for a further 30-60 days, whilst they found a new supplier rather than just leaving them in the lurch.

What is your approach to software upgrades?

Typically our vendors simply send us the upgrades when needed, so our customers again dictate the number of upgrades we have to deal with. One customer is happy with upgrades every other year. Another is demanding them every 4-6 months, which is very hard to keep up with.



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What do you predict will be the major developments in the design process in the future?

I predict that the role of the designer and engineer will merge. In America these roles used to be separate but are now beginning to merge. I can see the industry moving towards using a design engineer to do both engineering and design. Some employers have already initiated this by requiring an engineering degree for any new designers to be hired.

I can see knowledge based engineering (KBE) pushing its way forward in the design field both through demand from users, and from technological improvements in software by suppliers. UGS has launched version 17, which introduces KBE; this equips the software to become more intelligent and actually aid in the design process. I'd like to see all other CAD software follow suit because we anticipate that KBE will shorten the design process. Users who get into KBE early on will be the winners; those who do not will be left behind.

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Many thanks to Greg Sproule for talking to *iCAD*. Please note that the views expressed here are purely those of Key Plastics and do not necessarily represent the views of *iCAD*.

Exclusive research into how CAD/CAM users are using the Internet is also featured in this edition of *iCAD* ([What are CAD/CAM users doing on the Internet](#)).

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