



The Metal Casting MARKETPLACE OF THE FUTURE  
**NETCASTER**

CastExpo Edition  
Spring / Summer 2002

Issue 3, 2002

**buyCASTINGS Deploys OPTICast**

- The latest tool in casting process optimization to cut cost for members

Casting simulation is a computer technology that has matured over the past decade, and is now available to any foundry with a PC. With simulation software the foundry engineer can pour a "virtual casting" on the computer, designing the production process before any tooling is built or sample castings are poured.

The next step in this technology is represented by a new product called OPTICast, the result of a collaboration between Finite Solutions and Altair Engineering. OPTICast uses mathematical optimization to guide the design process automatically.

With most casting simulation software, the user creates a design, runs a simulation, and then evaluates the results by plotting various output data to see if the results are acceptable. If not, a change in the computer model is made by the user, and another simulation is run. This is basically a "trial-and-error" approach. OPTICast, on the other hand, takes an initial process design from the user and then allows the user to specify which aspects of the design are allowed to vary and what the desired outcome is to be. Continued on Page 3

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**Member Recognizes Value in buyCASTINGS**

Interview with Todd Rogers; Sales Manager, Bescast Corporation, Willoughby Ohio

1. How has buyCASTINGS.com added value to your company? The relationship has enhanced Bescast by affording numerous, valuable opportunities to reach new prospects and markets.
2. Have you been introduced to and are quoting new customers? Have you received any new orders? We have been introduced to an array of new prospects, and have been awarded contracts based on our ability to efficiently fulfill clients' procurement needs, and offer practical solutions to their manufacturing dilemmas.
3. Why has Bescast, Inc. chosen to become involved with buyCASTINGS.com? buyCASTINGS.com gives Bescast additional Internet exposure, which augments our marketing and sales efforts on a global scale.
4. Describe how difficult /easy the system is to use and receive request for quotes. When product specifications/requirements are clearly and fully identified (as is usually the case), it has proven to be a system that allows us to effectively evaluate request for quotes by simply reviewing the e-mail questionnaires.
5. Describe the quality of requests that you have received. Have you received requests that do not match your capabilities? Through the purchase requirements versus supplier capability matching process, the inquiries we receive almost always exclusively fit our capabilities.
6. Describe the professional relationship you have with buyCASTINGS staff. We have long been associated with the management of buyCASTINGS.com, even before its inauguration. The staff's experience and technical knowledge of the entire casting supply chain process greatly enhances the value to our prospective customers, our supplier base, and to Bescast.

ENTER Buyers/Designers of metal castings

buyCASTINGS cuts costs and adds value

ENTER Foundries

Reduce cost, access new markets

ENTER Suppliers

to foundries buyCASTINGS expands markets

**Digest**  
See Page 2 to cut costs and increase productivity and Page 3 buyCASTINGS.com by the numbers and upcoming trade shows

**buyCASTINGS to Partner with Castings Reps**  
buyCASTINGS is in discussion with manufacturing and foundry representatives who would like to team up with buyCASTINGS TO INCREASE BUSINESS AND CASH FLOW. Please call Neil, VP Business Development, at 937-259-1317 if you are a rep and would like to GROW YOUR BUSINESS by partnering with buyCASTINGS!



buyCASTINGS Neil & Bob recipient of a Business Challenge Award - April 2002





## CUTTING COSTS

### WHEN YOU CAN'T CUT ANYMORE

Under pressure to cut costs every year, year-after-year...these are challenging times! It doesn't matter if you are a foundry, a supplier, or a buyer of castings, everyone is looking to take cost out. A slow economy, rising soft costs\* and global competition are forcing everyone to cut costs to stay in business. People have been laid-off, departments reorganized, locations closed and you find that's still not enough. **So, what do you do when you've cut everything in sight and it's still NOT ENOUGH?** Answer: **EXERCISE YOUR BUYING POWER** – The power of the Internet is truly in the hands of the **BUYERS** – all buyers, large and small; and, every business is a "buyer". Small buyer purchases can be easily aggregated using the Internet. Here's how we save you money:

buyCASTINGS' members get volume discounts and service discounts from major suppliers of electricity, natural gas, freight, all computer supplies and services like laptops, software, servers, even print cartridges, and health and human resource services like medical, healthcare, retirement, payroll, OSHA, worker's comp... All these products and services can be quoted to any purchasing person at no cost, no obligation, and on a confidential and individualized basis, 24 hrs/day from any location. For a complete customized plan of how much we can save you, please contact Neil Chaudhry at [nchaudhry@buyCASTINGS.com](mailto:nchaudhry@buyCASTINGS.com) or call 937-259-1317.

"Soft-Costs" include health care, legal, freight, worker's comp., utilities, etc –see article in last newsletter:  
[http://www.buycastings.com/newsletter/market\\_share.html](http://www.buycastings.com/newsletter/market_share.html)

**The Industry's TOP FIVE Greatest Concerns in 2002** based on "Outlook 2002 – Signs of Recovery", John Wright, Foundry Management and Technology, Dec. 2001, are:

1. Medical Insurance Cost
2. Lack of Orders
3. Worker's Comp. Costs
4. Imported Castings (tied with #3)
5. Trained Labor



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## What our customers are saying!

Buyer of Castings from St. Louis  
"The initial response from buyCASTINGS was incredible, almost too many options. We typically single-source castings, and buyCASTINGS.com gives us a great tool to work with."

Buyer from Mequon, WI  
Would you try it again for another part?  
"Yes, I would try this on another part. I was pleased with my experience. No high pressure sales, just quotes to start the process with."

Midwest Foundry Sales Manager  
"I have had far greater activity from you!"

## Die Casters Increase Productivity with Reduced Cost – BY USING THE LATEST IN COATINGS TECHNOLOGY

Coatings have come a long way in the past 20 years. Here is an example of potential savings from one of buyCASTINGS new member, SAC International, Inc. of Dayton, Ohio:

Customer:	Automotive Aluminum Die Caster
Parts:	Die-Casting Cores
Avg. Coating cost:	30% of Core Cost
Avg. Gain in Core Life:	200%
Scrap Rate:	Reduced by 80%
Downtime:	Reduced by 15%

The benefits include: cost reduction; increased tool life; higher quality parts; reduced down time and scrap - all adding to your bottom line. A brief background on the supplier of this coating technology: SAC International, Inc. is a developer and supplier of high performance, thin film, hard surface coatings and equipment. In 1993, Daryl A. Blessing, CEO, founded SAC Intl. and invented the deca-elemental, single layer coating Laser-Cut 964. This revolutionary new coating not only had high hardness (4800 Vickers) but also a very low coefficient of friction (.027). These characteristics, combined with the coating's ability to exactly duplicate surface finish, texture and geometry, makes it ideal for the tool & die industry, according to SAC Intl. For more information, call (800) 964-6964 or email [ts@sac-international.com](mailto:ts@sac-international.com) and mention buyCASTINGS.

**REACH YOUR CUSTOMERS AT MINIMAL COST! WITH JUST-IN-TIME ADS: Your Ad is in front of customers everytime they get an order request from our buyers. Now available only through buyCASTINGS.com. Call Bob Dzugan at 937-259-1341 to price your JIT Ad today!**



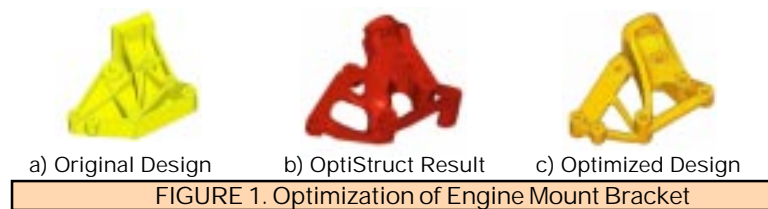
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## SIGNIFICANT COST SAVINGS BY OPTIMIZING PART DESIGN

Traditionally, casting concept designs are based on the experience, history and engineering judgment of the product designer or engineer. One of buyCASTINGS expert supplier's product, Altair Engineering's OptiStruct™ offers additional knowledge to the product designer or engineer that enables them to arrive at a superior casting concept design. The additional knowledge, optimal material layout and utilization, will result in a greatly improved final design in terms of overall structural efficiency (mass vs. strength).

OptiStruct takes a lot of the "guess-work" out of structural design, supplementing existing engineering knowledge with sound technical information on structural load paths. Instead of using an educated guess as to what the shape of the design should be, design engineers can now use topology information from OptiStruct to guide this decision. Also OptiStruct addresses some of the downstream manufacturing constraints such as draw directions for castings, patterns for stamped or injection molded structures, symmetry concerns etc. in order to produce more manufacturable concept designs. This has the potential to speed up the design process and also eliminate unnecessary design changes late in the product design cycle.

Figure 1 a) shows the original design of an engine mount casting. Figure 1 b) shows topology optimization results based on 7 separate load cases. The topology optimization was set up with manufacturing constraints to insure that all structures were of a minimum size and that there were no undercuts so that the part could be made with traditional casting processes. The OptiStruct result was then used as a template to generate the final design as shown in Figure 1 c). The final design saved 20% in weight while maintaining the same strength and stiffness as the original part. For this manufacturer, this generated savings of \$35,000 per year in material savings along with additional energy savings. For more information, visit Altair Engineering's website at [www.altair.com](http://www.altair.com).



## buyCASTINGS deploys OPTICast –

The latest tool in casting process optimization to cut cost for members (Continued from Page 4) For example, the user could specify that riser sizes are to be varied until yield is maximized while shrinkage porosity is held to a specified level. OPTICast will then run a series of simulations using the SOLIDCast package (from Finite Solutions), evaluate each simulation run, make a decision on its own about what to change in the process design, and then run the next simulation. This continues until the desired results are achieved. Thus, the foundry engineer can start the process, walk away from the computer, and come back later to view the optimum process design. This approach can maximize yield and minimize scrap with very little effort, reducing energy and material costs as well as lead times. Numerous in-foundry trials have resulted in up to 20% reduction in pour weight with equal level of casting quality. For more information call Larry Smiley at 513-821-5220 or [Lsmiley1@aol.com](mailto:Lsmiley1@aol.com) - mention buyCASTINGS and receive a 5% member discount.



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## buyCASTINGS by the Numbers

- 413 Foundries Worldwide
- 400+ Buyers Worldwide
- 185+ Suppliers to Foundry Industry
- Over 70,000 "hits" last month
- 100% Focus on the Metal Casting Industry



Visit us at the following 2002 trade shows - we are always looking to bring new business to our Members

- |  |   |
|--|---|
| April 30- May 2<br>SME Rapid Prototyping and Manufacturing<br>Cincinnati, Oh                                       | May 4- May 7<br>AFS CastExpo - Booth 806<br>Kansas City, Mo                           |
| May 14- May 16<br>Modern Investment Casting Seminar<br>Hershey, Pa   | May 22-May 23<br>Job Shop Shows<br>Covington, KY<br>(Cincinnati, Oh)                  |
| Sept. 29- Oct 2<br>Investment Casting Institute's -<br>50 <sup>th</sup> Annual Meeting<br>Booth 405<br>Chicago, Il | Oct 7- Oct 10<br>ASM Materials Solutions<br>Conference & Exposition<br>Columbus, Ohio |
| Dec. 9- Dec. 12<br>Power Generation '02<br>Orlando, Fl   |   |



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