

Publisher's Message

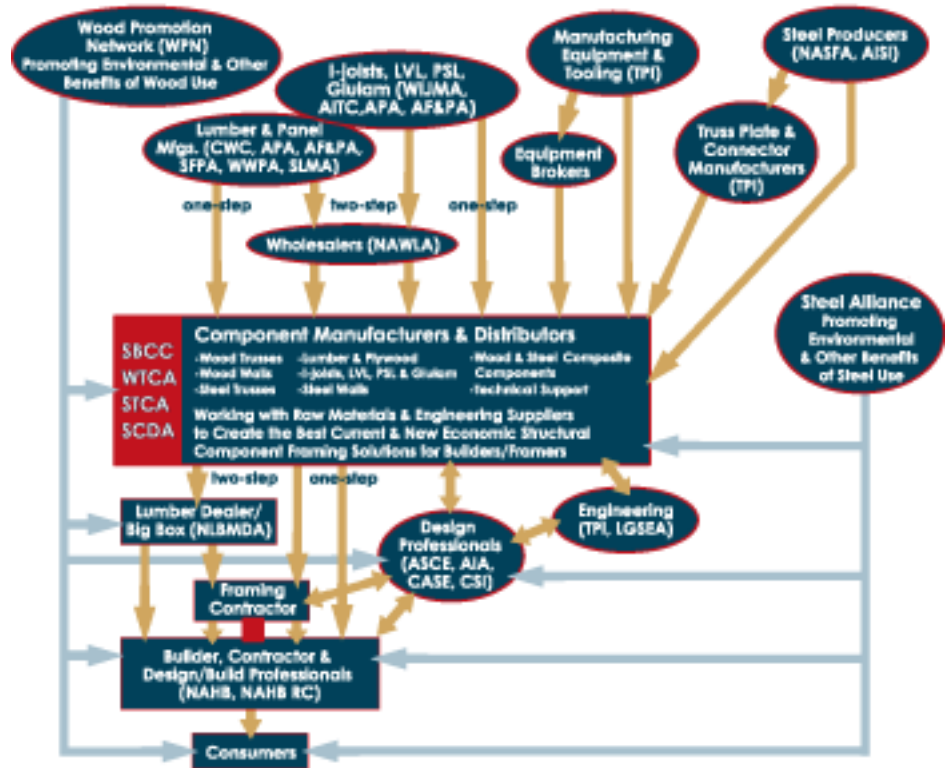


Pondering the Critical Questions by Kirk Grundahl

This graphic of our industry structure is

a very good place to start when thinking about implementing new technologies or making improvements in our business operations, because it forces us into thinking about all segments of our business operations, and then allows us to ponder the critical questions that will help us shape the future of our business and industry. What follows are many questions that come to mind when thinking about greater use of technology in our businesses with the intent to merely stimulate many more questions.

Structural Component Industry Marketplace Structure



How can we apply technology to incoming lumber supply to improve our operations?

- What are the key issues with handling and using lumber in our operation that the application of technology can help to solve?
- Do we know which mills supply us with the lumber supply that minimizes waste and cull? (Those that use WTCA QC have ready access to this type of report.) What about high moisture? What about mold?
- Are wane and knots causing an efficiency problem? Is there too much inventory? Is inventory handling a problem? Are there too many sizes and grades to tend to? How can we streamline lumber utilization?
- In the future, maybe these kinds of questions will be answered about lumber:
 - Can we buy a scanner and attach it to a conveyor that scans the pieces of lumber prior to sawing? The data collected will then be sent to the saw to optimally cut the lumber and minimize quality-reducing characteristics in the plate area. Wouldn't it be nice to have all the lumber cut so that you were certain that there would be no knots or wane in the plate area, and you could then confidently increase your plate design values by 20 percent?

Wouldn't this also provide a manufacturing efficiency increase if assemblers did not have to even think about quality reducing characteristics in the plate area? What could be the cost savings here?

- The next question is that optimal cuts will create waste, right? Well, what about taking all the short pieces and having an in-line structural finger joint operation take all the small pieces that could not be used as a web member in another product and create the longer pieces you need for other component applications?
- Next you say, this creates a grading problem. How about putting a machine grading/evaluating system right after the finger jointer and re-grade?
- Or better yet, have all the incoming lumber embedded with a magnetic grade along the entire length of the piece, so that you will always know the grade of any cut piece through a simple scan of the segment of lumber.
- Taking the magnetic grading concept to its logical next step, if each piece of incoming lumber had a magnetic grade along its length that gave you the actual properties of that piece at that location, couldn't you integrate all your incoming actual lumber grades into your design software for the trusses you are going to build?
 - Wouldn't it be fairly easy to sort the lumber through the design process to optimize lumber design property use, prior to cutting? Couldn't that have economic value?
 - What if this design property optimization process allowed you to drop down on lumber size or eliminate the use of one web or eliminated web-bracing requirements?
 - How much savings could there be if one could fully use the actual and specific lumber design properties of each piece, rather than the pooled properties that exist through the current visual and MSR/MEL lumber grading technology of today?

So there are a few questions about our lumber raw material. What about truss plates?

- What, if anything, is going to replace the truss plate? The one element that changed the component manufacturing process forever is now over 50 years old. When is it going to be retired?
- What about adhesive and finger joint technology? Does that have any potential? What other technology is out there, maybe in another industry, that could change the face of the truss manufacturing industry again?

For those of you manufacturing steel trusses and components, what are your raw materials challenges? If you were going to apply technology to this process, what would you do?

- How about beginning with a roll of sheet-steel and form the specific required structural section automatically to your specific specifications?
- The formed section would then be moved into a vertical jig where all the chords and webs making up the truss or wall panel were automatically set in place.
- A vertical line of connector guns would then pass by all the joints, automatically connecting each joint with the proper connector number and location.
- What about automated spot or compression welding at each joint?
- The finished truss is then placed onto an automated stacking system.
- All this is done with the steel component being built, stacked and stored in a vertical position.

This is just the beginning of the questions that can be asked using the marketplace framework as

a point departure. Additional raw material issues where similar questions should be asked include all the product lines that we distribute (e.g., I-joists, LVL, hardware, glulam, plywood, raw lumber, bracing material, nails and screws). How can we automate the storage, handling and cutting, and provide special customer processing and delivery of each these items?

Finally, an increasingly critical area to look at in our business is the engineering/building design area. We know that the engineering/design technology is increasing exponentially. Will we be able to tie engineering/design technology to manufacturing technology and make the sum of the parts much greater than the whole? Or will manufacturing technology continually lag behind? This then suggests the next set of critical questions:

- Are we commodity suppliers of manufactured structural building components? How many of us will be able to be the lowest cost, most highly automated producers of structural building components?
- Or are we value-added suppliers of structural building components that will eventually undertake the entire building design process and essentially become a sophisticated design, structural component manufacturing, and installation/build firm?
- Or are we somewhere in between?

The answers that our industry's companies give regarding all the questions that could be asked using our business structure graphic will surely shape the future of our industry. Our hope is that by seeding the question process, there will be many more questions asked and answered that will help our industry evolve in ways that are exciting and valuable to everyone that makes their living in our industry.

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