

State of the Electronic Cable Industry: An Interview with Cerco's Cable Guru André Sabourin

We sat down recently with Cerco Cable's Vice President of R&D, André Sabourin, to reflect on his experiences in the electronic cable industry over the last 25 years and also to discuss his thoughts and predictions for the future in a period of profound global economic and social change.



Question #1

What is the biggest change you've seen in the cable industry over the last 25 years?

Sabourin

The biggest change has definitely been the increase in the amount of data & telecommunications cable. If you went inside a building 25 years ago you really only had power and telephone lines to worry about. Today everyone has a computer, printer, cell phone, TV and almost every building has several of each so the demand for specialized cable to connect and power all these new devices has been growing rapidly.

Another thing that has changed a lot is quality control with the introduction of ISO 9000 standards as well as environmental regulations such as RoHS (Restriction of Hazardous Substances) which restricts the use of specific hazardous materials found in electrical and electronic products, as well as the Waste Electrical and Electronic Equipment Directive (WEEE) which sets collection, recycling and recovery targets for electrical goods.

The construction and size of cable has also changed a lot in the last 25 years, since custom cable wasn't as popular back then due to the minimum production required by manufacturers. It's now a much more open market since there are a lot more manufacturers to provide specialized cable. Things like high-temperature, data-communications, fiber optic etc...

We now have much smaller gauges and wider bandwidth due to the improvements in manufacturing facilities. Specifications such as impedance and capacitance are a lot easier to respect today than they were 25 years ago. Innovation in different types of high performance insulation like foam, PVC and polyethylene has also resulted in more precise performance. Manufacturing techniques can now ensure the copper is precisely in the middle of the insulation which also helps to meet specifications.

Question #2

How will the price of oil and the rising demand for energy affect the cable industry moving forward?

Sabourin

I think the biggest impact will be on the cost of transport, which could result in production being brought back closer to home. Cheaper overseas cable will become too expensive to import due to rising freight costs.

Jeff Rubin, the former Chief Economist at CIBC World Markets has predicted that once the economy recovers, oil prices will skyrocket to more than \$200/barrel -- and globalization, as we know it, may end. Today, almost everything we use is made possible, in some way, by abundantly available oil. But oil reserves are disappearing, never to return. Consequently, he says international trade and long distance driving, among other things, will become luxuries. But Rubin also believes that industries, such as steel and agriculture, will be revitalized; carbon tariffs will increase productivity; mass transit will be rethought; and local communities will be strengthened. [Click here to read more](#) about Rubin's theories.

Cable manufacturers will, therefore, need to look for innovative ways to improve energy efficiency as we continue to become more environmentally conscious. They may also need to improve their production processes to use less oil. For example, hospitals now use cable with expensive mineral insulation instead of cheaper PVC because certain building codes require fire or flame retardant cable.

A 14-gauge PVC-insulated cable is about 23 cents per metre, whereas a 14-gauge mineral-insulated cable is somewhere between \$2 and \$4 per metre. But who knows, in ten years there may not be much of a difference in cost due to the price of oil, which is a primary component in the production of PVC insulation.



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The cable industry always has and will continue to adjust to the needs of different requirements and applications. For example, we're starting to see the use of high and low temperature superconductor cable as well as new types of insulation that can dramatically improve the amperage rating and reduce the dimension of the cable itself.

Question #3

What are some of the things that you think will necessitate these different types of innovations?

Sabourin

As our cities continue to grow the real issue will be whether we have enough space for all the cable that will be needed to manage the increasing demand for power and communications. We'll need to be able to replace a hundred old cables with one new high-performance superconductor cable that can handle much more power while taking up a lot less space. This will also save the costs associated with digging out or destroying infrastructure just to re-pull more cable in a few years.

That's the main reason why we will most likely see a lot more fiber optic cable being used for data-communications applications – because they take up a lot less space. It's too bad they are not able to transmit power, but I think we'll eventually figure out a way to use laser technology to transmit power. It sounds like science fiction today, but the need is there and as the old saying goes, "where there's a will, there's a way".

Question #4

How will the move towards things like electric cars, wind and solar energy affect the cable industry?

Sabourin

We'll need more power lines because cars consume a lot of energy in a short period of time. Superconductor cable will become the pipeline of the future to bring electricity from the power plants to the end user.

And once again the use of superconductor cable would come into play to reduce the environmental footprint and improve capacity by reducing the heat and decreasing energy resistance. In Long Island, New York they installed the longest section of high temperature superconductor cable to date. It can conduct 150 times the electricity of similar sized copper wires, using much lower voltage than copper. [Click here to read more](#) about superconductor cable and how the U.S. Department of Homeland Security is handing out funding for these types of programs.

Even with the use of wind turbine, hydro power and portable photo voltaic cells that can be used in automotive and building applications, there will still be a need for power cables to transmit that energy to a car's motor or to a building's HVAC system. These technologies may allow buildings to generate their own power or even contribute energy back to the grid. With the cost of photo voltaic cells falling every year the potential is certainly there. [Click here to read the article Building Sustainability: How Buildings Can Power Our Future.](#)



Question #5

Will we need as much data and telecommunications cable in the future or will new wireless technologies replace it?

Sabourin

There will always be a need for cable. It will just have to be produced and used differently, i.e. smaller and more powerful. We have no way of knowing though, because there are always limitations. For example, we may start to have problems with GPS systems in the next three or four years if they don't replace the satellites so companies and governments are spending a lot of money trying to fix that problem.



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That's why I'm a bit suspicious about wireless as well. It's not just that I'm from the old school, but I feel more comfortable with a reliable back-up system to get power or communications via copper or fiber optic cables.

Question #6

Are you saying that going completely wireless would be a bit too risky?

Sabourin

Yes, I sure am. Even with efficient systems, reliability is often the most important thing. I wouldn't want to be on an operating table at the hospital if all the communications and power systems were wireless because there is always the risk that they go down for extended periods of time. Even if they are more efficient it's not worth the risk that they won't work properly.

If you have a power failure and you're using copper wire, at least the back-up generator can supply the power that is needed. And when it comes to security and other mission critical applications I don't think we'll be going completely wireless anytime soon. It's just too risky. Just imagine if a hacker (terrorist) found a way of knocking out communications for an entire city. We can live without power for a while, because you can always back it up, but imagine the chaos if we weren't able to communicate? No communications means no cameras, no fire department, no police, no traffic signals.

Question #7

What advice would you give to customers who are considering retro-fitting an existing building or to city planners trying to predict future needs?

Sabourin

I always suggest they think about the near future (5-10 years) rather than twenty-five years ahead because too many things can change in that amount of time. It's more important to plan for what will be needed in the next five years. That's why I usually suggest to my customers that if they are using Cat 6 or data/telecom wire, they should probably install fiber optic cable at the same time because they're almost certainly going to need it sooner than they think.

Fiber optic cable can be installed at the same time and if they need higher communication speeds later on the additional capacity is already there. They won't have to pull out and replace that category 6 or category 5 cable. If you look at how quickly bandwidth requirements have increased over the last 15-20 years we've gone from Cat 3 to Cat 6 in a relatively short period of time, which has meant a lot of expensive upgrades and retrofits.

Ten years ago they were saying Cat 5 was going to be sufficient for up to 25 years but it's already been replaced by Cat 6 and fiber optic cable due to the need for more bandwidth. While fiber is still more expensive than copper the overall cost is actually much less when you factor in the cost of retro-fitting and replacing cable that is no longer sufficient.

For example, who could have predicted the massive growth in security products and communication systems brought about by 9/11? That was only eight years ago and we now have cameras all over the place, which take up a lot of bandwidth. Space will always be an issue so I think fiber optic cables will eventually be the norm because they handle much higher bandwidth and take up much less space than copper and are extremely efficient at the same time.

Installing fiber optic cable used to be very expensive because it required expensive equipment and highly qualified technicians but the termination these days is virtually plug and play so I definitely see fiber optic cable as the future for communications networks.

Should you have any questions or comments regarding this interview, please call your Cerco Cable representative at 1-800-361-5961.