

# The 61<sup>st</sup> John Arthur Wilson Memorial Lecture

## The Road Ahead

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The chemical profession has made innumerable contributions to the leather industry and the ALCA represents the best technology we have to offer. As creators and suppliers of leather, in honor of John Arthur Wilson, we take a moment to look back at all we have achieved. Despite the most recent couple of years of pandemic and the disruptions to our collective industries, there is much to celebrate. Let me first reflect on the history of leather.

Leather has been a noble profession for a thousand years, dating back as far as Stone Age, 400,000 years ago.

- Starting with the Bronze Age (pre-3000BC) leather making became more specialized and purposeful as veg tanning came to Greece in 200BC.
- Rome (600BC) used leather heavily in the military and in the Middle Ages (1300AD), bringing the first mechanical equipment to help produce.
- In the Renaissance Period of 1500AD we saw dramatic increases in specialty upholstery as the first tanning associations were started.
- In the Enlightened Age of 1700AD, control of production and raw material supply were prevalent. In North America the English forced the American Colonies to use British hides only restricting local trade.
- The Industrial Revolution (1800s), leather mechanization like splitting and drying were used to reduce the amount of labor.
- In the Victorian Age (1875+) Chrome Tanning was invented. This replaced veg tanning as it was faster, thinner and softer. The first synthetic leather (Presstoff) made from paper pulp was commercialized.
- The Progressive Era 1900-1950 saw the invention of plastics and rubber impacting leather demand. The term “Patent Leather” was used that described the new glossy finished leather.
- In the Modern Era (1950+) plus we saw a shift of production to lower cost regions as well as “Leatherette” made from PVC.

The tanner is a unique profession, one where the need to understand both physical properties and chemical reactions baffles lay persons to this day. The uniqueness of every single hide and the goal to produce a standard article from each unique raw material, is the alchemy output.

As we continue our efforts in uncertain times, we must also, as technicians, not forget that our work ultimately brings innovation and value. We must be the promoters of leather through these innovations. We need these innovations to become the history of our industry to compete with other materials, especially when many surface materials are commonly self-proclaimed as “leather-like”.

John Arthur’s book, *Modern Practice in Leather Manufacture*, is over 700 pages of facts and practices that we still use today. It is in many ways the Bible of leather manufacturing. This book documents not just tanning of leather, but definitions that we use commonly like Heavy Natives, Light Natives and Colorado’s. It also talks about Government controls and purchasing of “foreign” materials, to Chrome and Veg tan while it touches on new technical tanning concepts like Aldehyde, Tungsten, Syntans. This area of alternative tanning is where we need an updated version of the “Modern Practice”. Today, foreign material would be considered somewhat comical as our world and Wilson’s world are vastly different due to globalization and the “shrinking” of the world through social media, real time communications, and the difficulty of understanding what is accurate and what is “fake” or “bot-created”.

I am happy to write about a subject I have been involved in for nearly 20 years of my career – Leather Manufacturing. I am NOT a technical tanner. I am however in the small group of professionals that know how to make the material, stemming first from a great tannage and finish technology, and converting those routines into a high quality, repeatable product that our customers demand. I’ll present interesting facts about disruptions in the leather market for automotive and share some company marketing information we have developed for Electric Vehicle trends. I will also touch on sustainability, as we cannot ignore the perceptions and reality of our industry. I want to talk to you about how Sustainability and Lean Manufacturing are really connected to a core philosophy of waste elimination. And finally, I will give you some parting thoughts on your work in supporting ALCA and opportunities to Promote your magnificent work.

If we turn to the very first chapter, the first page of John Arthur’s work, we will see the major topic the industry has been challenged in the media amidst the opposing voices that speak so loud, we get drowned out.

The message sent by the leather industry back then is the same as it is now.

Meat determines the production of leather, presuming that meat demand exceeds leather demand. If that last presumption is not true, then hides go to a landfill. This scenario has happened over the last 5 years or so, an unprecedented recent reality.

Part of my message is for us to help our industry bring that awareness to the forefront of our customers' minds.

Pause, Portray and **Promote the Truth** about leather is the ultimate message. The work we do in this industry, and this association, forms the foundational content of our ability to compete. Converting a waste product into a luxury product is the poster child for Sustainability and Environmental Stewardship.

As we weave in the word "Sustainable" into leather nomenclature, leather is already the ultimate example of sustainability. Promoting Sustainable products and processes has now become the imperative optic of our industry.

Pangea and other auto leather companies have studied the consumer perception of leather. We've asked our customers, leather consumers, and we've crossed referenced research that has been done globally. These further statements are not anecdotal. This is statistically valid information of thousands of people in Europe and Asia and the United States. There are some interesting takeaways, showing consumers believe our product is premium and desirable.

The first thing we notice about consumer statements is: Leather is still seen as a luxury material, and they expect it in certain applications. When a customer buys a car with a surface material that is leather-like, they think it is authentic leather. Very, very few of them ask for Animal-Free surface material that feels like leather.

In fact, if they are in the premium car market or shopping for high-end sofas and chairs, consumers see it as a necessity. It is like a stamp of authenticity. Leather meets all expectations.

Back to the properties that Tanners create with this material, consumers want natural material for comfort, durability and cleanability. What does this mean?

Comfort and Durability: Pride of ownership results from this material and its natural feel and strong resistance to degradation.

Cleanability: And of course, in the modern world we're obsessed with cleanability due to things such as the pandemic.

These are the facts about consumers' desire for the real thing.

Finally, the studies show that consumers will pay for this material. In many markets from auto to furniture, people are paying for leather, only to find out they have PVC or PU. I can give you a dozen examples of dealerships vehemently saying PVC is leather.

At Pangea, we performed an internal and exhaustive study of the Electric Vehicle (EV) market amidst the concerns that EV means plastic-synthetic surface materials, led by the Tesla drive for animal free interiors.

Electric Vehicles in modern times, are a "re-start" of those developed in late 1800s. Production units were made in the teens and through the early 1930s where at one time EV's garnered 30% of personal vehicles. They declined rapidly with the introduction of the Ford Model T in 1910 and the discovery of cheap crude oil in Texas.

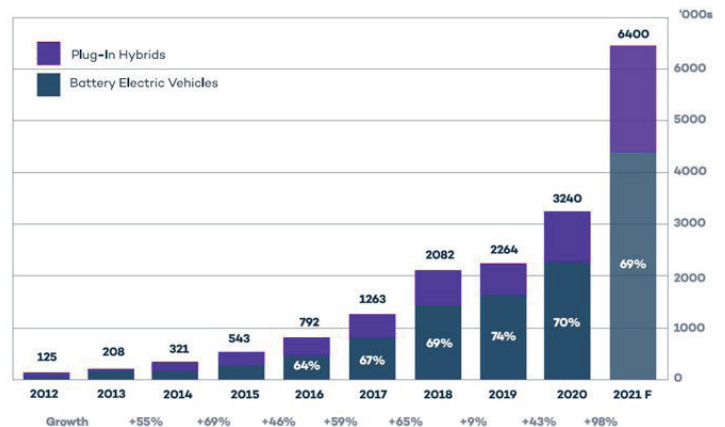
Therefore, EV's lost in the market due to higher cost and poor infrastructure.

With the recent rise of electric vehicles, and consumer awareness on sustainability, at Pangea we wanted to know: Does EV mean PVC surface material? We talked directly to consumers and our Original Equipment Manufacturer (OEM) customers to understand a little bit more about what the EV market looks like. We looked at this from a consumer profile point of view and how it may shape perspectives on leather. We have all seen the announcements:

- Honda pours \$40B into Electrification,
- GM plans to tie executive compensation to volume,
- Ford claims to go all in.

The sheer amount of capital investment into this segment will be the final deciding factor on how this chart of volume will look over the next 5 years, as well as Government incentives for infrastructure and consumers to buy.

Global plug-in vehicle sales



From our studies, what do consumers say about EV's and leather?

Consumer interest in EV's is shifting every day, in an increasingly supportive direction. But how does it look across the generations? The first overall observation is that the interest is strong across all age groups.

- 78% of Millennials (roughly 27-45 years-old) are interested in buying an EV.
- Current purchase statistics show that of the people who have purchased an electric vehicle, are millennial and Gen X's (roughly 46-57 years-old).

Now surprisingly, as it notes here, baby boomers have bought into the broader mix of green vehicles, Electric, Hybrid, Plug-in Hybrid, and Fuel Cell vehicles, whereas the stats above from Truecar are for electric specifically.

We can presume that Baby Boomers like the idea of a back-up to an All-Electric-Vehicle and hence the desire for Hybrid. The downside to Hybrids: two powertrain platforms.

The topics within these market trends are tightly tied to one another. Sustainability is all over the news, as well as is veganism. There's a growing awareness, trend, and desire for sustainability in all products.

Next, there are many who believe that vegans are a high-profile market driver of electric vehicles. Veganism as a movement has been around for many, many years and for this market segment and industry there are two things that stand out.

First, activists, no matter what they stand for, are very, very vocal.

But second, when you peel back and do the research, you find that statistically there's not more than a few percent of people per

population that are vegans. And of those, many do not stay vegan, and fall off the bandwagon over one to two years.

We need to pay attention to how Veganism is used. It is a mistake to put vegan and animal activism into the same bucket. One does not require the other. In conclusion, vegans simply prefer not to eat meat and their numbers really do not impact the buying volume for leather.

There certainly are a few OEMs that are Animal free in philosophy, and Polestar was one of them.

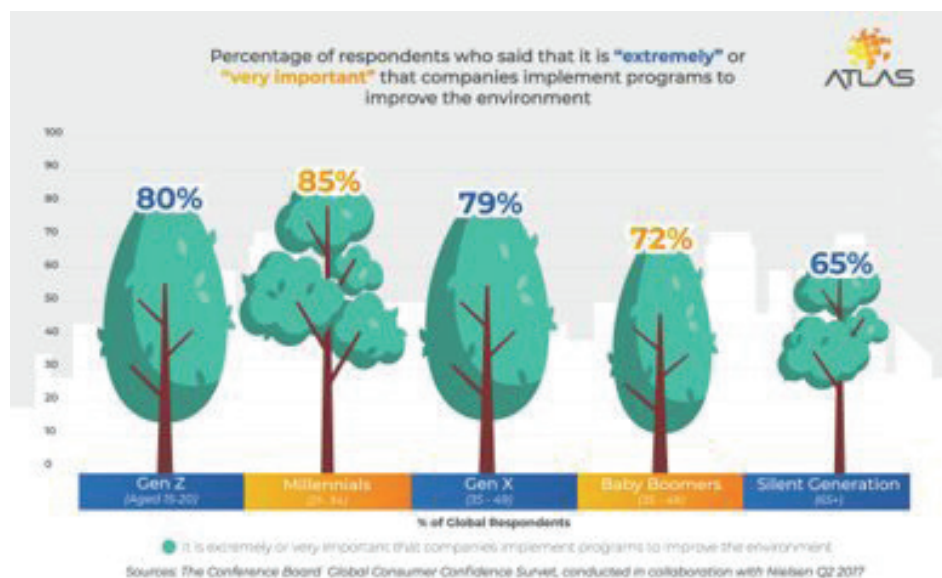
Polestar made a big deal about animal free interiors, but recently did a public turnaround in La Conceria "*The vegan car that quietly returns to leather*". Polestar is now offering Napa leather with sustainability credentials.

In Sweden, Polestar officials said that relying on synthetic materials has challenges in terms of sustainability, while on the other hand, leather is a solution for quality and environmental issues.

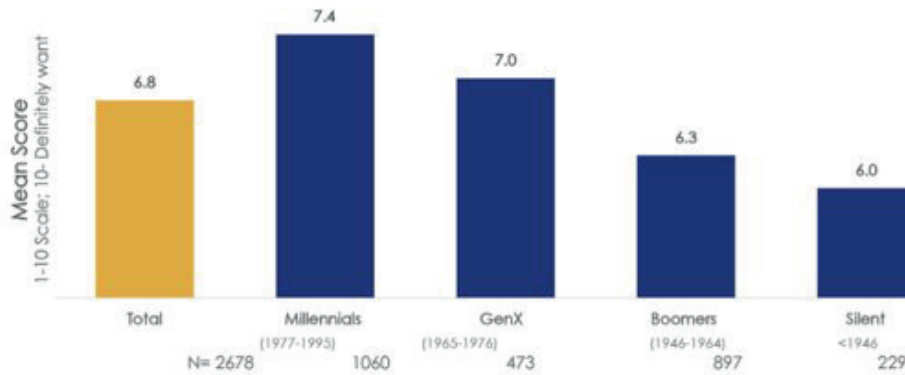
Industry executives frequently impress subjective opinions on the products they manufacture. Here I think, the market asked them to reconsider. Polestar listened – and shows a good sign for our industry.

The quotes here are the points we, as an industry, have been driving for. Polestar may lead the breakthrough and cause other nameplates to follow suit.

As in the previous discussion on generations and EV interest, we follow this same in this chart, where EVERY generation believes companies should focus on more environmentally friendly products.



### Importance of leather versus generations



This chart is looking at consumers and their willingness to choose sustainable alternatives – and pay for them - slicing the data by generation. Taken together, this research can give us some idea of what’s going on with the general population. Over all generations, almost 60% of all consumers said they’re willing to change and consider and think about their purchasing habits just to help reduce waste and environmental impact. I know of no one in the world who doesn’t want clean water, vast open ranges, healthy air, less waste in the dump.

Leather and Generations: Let us look now at two different pieces of research. We looked at the same population group and asked 2 questions, the one on the left side is about sustainability and the willingness to pay up for it. And interestingly, the chart on the right is also by generation, it is the importance of leather to consumers and the willingness to pay for it.

The social chatter today about leather would suggest there is a negative correlation between the desire for EVs (Electric Vehicle) and Leather. Our research shows that leather is desired by all generations, as is an interest in more sustainable products.

So, our conclusion is that Electric Vehicles and the desire for leather are not in conflict. All generations want more sustainable products and all generations like and want leather.

Next, Autonomous Vehicles will benefit the leather market due to their cleanable and comfortable and durable physical properties.

Wards Automotive had a symposium and panel discussion about autonomous vehicles, their future on interiors, growth, and the role those different manufacturers can play.

One of the things that they found is when they talked to people about their thoughts about autonomous vehicles the most important things for the interior was that the surface was its cleanability and softness. Leather satisfies these requirements; cleanability, overall comfort and a match in softness.

Regardless of the electronic content in the car, there being no driver, and being able to wirelessly connect your phone - at the end of the day, you are going to be sitting in a vehicle. Consumers want that experience to be like a luxury sofa or chair. They want a clean and comfortable experience.

In current times, Ride Sharing means the use of a smart phone to connect with a driver and his vehicle. It also may mean sharing that ride with another passenger. This concept is quite different than that of the TAXI days, but the experience during the ride can be very similar.

When you take a cab, you know it’s a public space. It is typically a little unpolished frequently dirty, and mostly uncomfortable. And so, you try not to think about it. You sit there with your hands on your lap, and you just get where you’re going, and get out.

But when you’re requesting ride sharing, you’re sharing a personal vehicle. You may think about the look and feel more, AND pay more for a nicer ride (Uber Black, or Lift LUX)

Truthfully, ride sharing is another market for automotive leather.

The overall drive for non-leather surface material manufacturers is they want to promote a false idea that their material is leather. This is a core issue for our industry. In a free competitive market where most of the world supports, government regulation is intended to be used to create free competition. Synthetics are using unfair practices to achieve their business objectives.

When we look at companies that produce leather imitations, they shamelessly steal the noble name of leather and find a way to include it in the brand. When was the last time you heard one of these alternatives say, “Our is the best Poly Vinyl Chloride Material made from petroleum jelly in the market – buy ours”? They simply are embarrassed to tell you what their product truly is. Later I’ll speak to regulatory efforts.

Outrageous as it sounds, consumers are so confused on this concept of vegan leather that:

- 30% of them believe vegan leather is from the hide of an animal.
- And over half believe PU leather is also from the hide of an animal.

How? They have been purposely misled, and our industry has been slow to respond. So leather, truth, honesty, and materials suffer.

Our industry, due to its 400,000-year existence, contains a lot of negative baggage, and the pundits have taken advantage of this and are driving a negative leather narrative.

The reality is that many consumers have a perception of what leather is and it is our responsibility to change this largely untrue and negative narrative. Likewise, it is our responsibility to drive more awareness into the plastic-based alternative material.

In economics, there is a term called *externalities*. Think of externalities as negative byproducts. But these economic byproducts are generated when you are producing a good.

There are effects of production that are not captured into the price a consumer pays for the product. Consider a factory that uses water and electricity and does not clean its own water after use. Because of current regulations, that externality is not being paid for, except by the environment or local utilities.

These are External Costs that regulations and Sustainability are now addressing.

Moving beyond Externalities and Sustainability movements now, relative to hides – the best use of a hide is to find an additional product one can make versus landfilling. We have seen over the last couple of years, for the first time, that low grade hides have been dumped into landfill because the value of the end hide has a higher cost than to simply land fill. Landfilling costs of hides are not paid for if leather is not made, and from an environmental perspective has become an externality. Back to Wilson’s comment... “The demand for meat drives the production of leather” - and my premise to add is - so long as demand stays strong with leather.

If indeed hides go into landfills the billions of pounds of waste could be staggering. And even with our best efforts today, not every hide gets made into leather. However, every hide that we do save from the landfill provides economic value.

Hides and leather are not the only byproducts or waste streams from converting cattle for beef.

Many parts of the animal that have nothing to do with the actual beef production are useful to society, and they provide value because they have a profit proposition. If leather demand drops precipitously, then hides will flood into other uses until those markets are saturated with supply. Ultimately non-leather use for hides is a finite market. People want the products that are made from parts of the animal (Such as vaccines, medicines, cosmetics, etc.) that are not converted into beef.

So long as the demand for meat continues to grow, supply of hides will fill a market *or fill the earth*. As leather professionals, we need to work to make sure that the inherent demand for leather is fulfilled, and not filled by materials that claim to be leather. To be clear, our studies confirm that there is plenty of demand for leather, sadly some of that demand is filled by deceptive material marketing practices.

Moving on to technical terms and branded terms, look at the words we use in our industry. To the lay person, these terms are mostly not understandable.

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|------------------|-----------------|
| • Alkalibacteria | • effectelastin |
| • barkometer     | • enzymes       |
| • bateweight     | • extract       |
| • bisulfited     | • fatliquoring  |
| • chloride       | • fibers        |
| • chrome-tanned  | • fixation      |
| • chromic oxide  | • grade         |
| • collagen       | • hair          |
| • delimiting     | • lime liquors  |

I challenge you to shift your own paradigms of technical terms and innovations to drive more mutual understanding of the value they create to people and organizations.

Many companies do an excellent job of branding innovations. In our industry we could be more sensitive to branding, to drive market understanding of what these technologies do for the industry.

If there is one additional thing all companies in this space can do, it is to use marketing and social media to advance the cause of Leather and Chemistry Innovations.

Consider brand names used by chemical manufacturers. The names, colors, and symbolism. It’s not a chemical compound composition, it’s brand positioning.

When you see the words ECO, New Vero, Bio, Neo, Evo - you see words that are all indicative of support of this continued march towards sustainability and it's not only positioning from a brand, but also celebrating achievements in that area as well.

Let us talk about waste and waste elimination. Lean Manufacturing, I call The Lean Enterprise, derived from the Toyota Production System, is all about elimination of waste in the value stream. Lean practices and tools are open source. Any company can use what is out there. The key to a Lean Enterprise is not in the materials and tools of lean, it is the effectiveness of implementation of these tools.

My premise is that Sustainability is the same thing as the 7 wastes of production. The Lean concept of waste is that in the value stream of producing the product, there are losses in efficiency that can be eliminated if you are able "to see" them. They are categorized as:-

- Material Movement
- Inventory
- Waiting Time for material flow
- Defects in the process
- Producing more than needed at one time
- Man moves that are excessive
- Doing too much to the product

What is interesting is if you look at the papers that were written and presented to this ALCA conference, we see the number of papers that have to do with sustainability and waste.

I am not sure they were the same topics in Wilson's time, but it sure shows that we're right in tune with sustainability. We're right in tune with waste elimination.

And now a discussion around Lean and the 7 wastes and Sustainability. The lack of Sustainable products and Carbon foot reductions in plant operations should be considered as a form of waste. As continuous improvement engineers work to eliminate waste, we need to change our paradigm of sustainability as a form of waste to eliminate, hence the 8th waste

Our organizations need to implement metrics around the 8th waste to incentivize designers of products, facility and equipment engineers, plant managers to continuously drive the elimination of costs in product and process that makes us less sustainable. It's not just altruistic that we look at economic interests. It's not just because it feels good. It's not just because it seems to be the popular thing. Reducing waste is a terrific business proposition.

The business proposition is if you reduce waste, it's a cost reduction and a reduction the external costs we are exacting onto our world of limited resources (energy, people, material).

To conclude the conversation about Sustainability, it makes business sense to do it, and it drives our industry into a stronger narrative about our product globally. In Automotive Leather, competitors are among the most environmentally sensitive companies in the world. We are not the tanneries of 100 years ago. We are conscious, and we care. I am convinced that all the leather industries in different markets care as much about our environment as automotive does.

One of the goals of coming out of this paper, and at Pangea, is: part of our work is to publicize our efforts and take credit where credit is due.

Technical people can also drive the narrative of our product to increase demand. Synthetics are here to stay based on their cost proposition. We, as leather professionals, should not be okay with those products being called, either directly or implied, 'Leather' and letting a consumer think it is.

Europe has done the best job of driving regulation surrounding the use of Leather and spin-offs of the term. Legislation in some European countries is supporting the Leather description and banning the misuse of the term. Austria, Belgium, France, Italy and Lithuania, Portugal, Spain now prohibits using the word "leather" in non-leather applications and trade. In Italy, certain labelling is required on shoes describing what material is in the upper, sole, and lining.

Affiliated meat and hide associations are working on the same project in the United States to add labeling regulations in Washington DC.

Current US FTC Regulations have documented guidelines for Leather, but they omit Auto, furniture and clothing. There is much work still to be done, and there is a major effort to get these changed in the US to follow suit for what is happening in Europe. There are also similar efforts in industry groups in Asia.

The foundation of this regulation is already well done to reference cow hides as leather, it just needs to be driven into the rest of the industries that must follow. Deception is a tricky thing to prove unless it is outright done. Ignorance is deception, but harder to call it such. Therefore, consumer education is needed. To maintain an industry, we care so deeply about, we must drive innovation in product development and sustainability

We need to continue to provide a place for technical people to share their innovations and ALCA is a critical link in the chain of our

industry. Just as importantly, the ALCA needs to take the lead in helping our technical innovations in the industry and challenge our members to add a responsibility to promote them.

Challenge your companies to take your work and find a venue to promote it for the good of the industry.

Our story is a good one. The story we've got is more than powerful. It's compelling. Using another quote from Wilson's book, "When the history of progress is written, it will be found that the leather industry ranks high in its fundamental contributions to knowledge"

When Toyota welcomed the US manufacturers to learn about the Toyota Production System, they enriched themselves and the entire automotive industry. They gave it away.

That's what you need to do. Give it away and make the industry stronger. Seth Godin, in his book "Lynchpin" posits that the more of your knowledge and wisdom you give away, the more indispensable you become. As an industry, we need to become indispensable.

Social Media has a bad name for technical people like us. Marketing feels fake sometimes. The 4 big industries of Shoes, Furniture, Automotive, Apparel by themselves are a small industry of customers and professionals within those industries. Let me speak

about the Auto space as it relates to connecting with our customers about innovations and leather truthfulness.

Let say there are 30 significant automotive OEMs across the world. Within those companies, there are 20 or so major influencers of decisions whom drive product planners to specify leather or alternative material. Doing the math, that means there are 600 people in the world that strongly influence leather specifications. Double it and call it 1000 or even 2000.

Now look at how many of you are connected to a few of those influencers. Imaging if every one of you had the data, innovations, sustainability stories, and connected your information to these 2000 thought leaders. One of you know a dozen of these leaders. If everyone connected on their network and their networks network, imaging the influence and truthfulness we could get to those thought leaders. This is the power of Social and as technical leaders of the leather industry, this is your platform to drive innovation and truthfulness.

We don't need to go negative on synthetics, our product speaks for itself in performance. But our product does not speak as well as our opponents speak negatively about us. Find your Social voice to promote innovation and truth.