2016 William T. Hogan, S.J. Lecture

"The Future of Steel"

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The William T. Hogan, S.J. Memorial Lecture Award is presented annually at the AISTech President's Award Breakfast. The recipient of the award serves as the keynote speaker for the event. This year's recipient was Mario Longhi, president and chief executive officer of United States Steel Corporation. Longhi delivered his lecture on Tuesday, 17 May to a crowd of 1,200 industry leaders and personnel at AISTech 2016 in Pittsburgh, Pa., USA. This award was established in 1990 in memory of the late Rev. William Hogan, director of Fordham University's Industrial Economics Research Institute. Rev. Hogan taught generations of students about industrial interdependence and the steel industry's vital role in economic development.


AIST

Good morning, everyone. Thank you, George, for this kind introduction. I would like to congratulate you, Ron Ashburn, and the AIST board for putting together another successful AISTech. Every year, this event gets bigger and more dynamic. That's a testament to your leadership and vision. Congratulations, and thank you for inviting me to speak today.

I would also like to personally congratulate all of today's award winners. Your work has really taken our industry in exciting new directions, and we thank you for that.

I was honored and humbled when I was asked to serve as the Father William T. Hogan lecturer this year. I am honored to join a list of industry leaders, past and present, who have shared their views here. And I am humbled to be doing so in the name of a man who dedicated much of his life to helping our industry.

I also find it enlightening that AIST chose to honor Father Hogan by naming this lecture after him, rather than the more obvious choice of a scientist or an engineer. Choosing the world-renowned industrial economist known as the "Steel Priest" showcases why AIST is so important to our industry. This organization is committed to fostering and promoting all kinds of innovation, not just in science and technology.

Given the host organization, today's audience and this keynote's namesake, I decided to focus my comments on the future. More specifically, I plan to examine trends in the global economy that are driving change and creating unprecedented opportunities for all businesses. I will also explore how our industry and the company I lead are both supporting and benefitting from these opportunities and the innovation that is associated with them. And finally, I will discuss one specific disruptive force that is a significant challenge to our industry's future.

Today, the world around us is changing at a remarkable pace. Industries and businesses, like the ones represented in this room today, have to adapt just as quickly and develop solutions to deal with this disruption. If we don't, we run the risk of becoming an answer for a Jeopardy! category called "Things That Don't Exist Anymore." I don't know about you, but I would prefer steel to be the answer to the following question in Final Jeopardy!: "What material is widely viewed as the lynch pin for the 21st century industrial revolution?"

So what is really driving all of this change?

Recent studies and CEO surveys conducted by widely respected economic experts, consultants and journals have examined the global trends, or disruptors, affecting businesses today. Their definition of a disruptor is something that impacts, or changes, what companies sell, whom and where they sell to, and how production of its products is impacted. The 10 most commonly cited disruptors are, as follows, in no particular order: urbanization; technological advancements; demographic changes, especially aging populations; the interconnectivity

of trade, data, finance and people; the increasing impact of emerging markets on global economic growth; shifts in global capital and finance, especially the emergence of private equity and sovereign wealth funds; constraints on the availability and use of natural resources; shifts in global talent and labor forces; changing and unpredictable policy and regulatory environments; and last, but not least, consumers empowered through social media.

If businesses want to survive, they must find ways to respond to these trends and drive value for their stakeholders. That is especially true for manufacturers and the suppliers we work with. Advances in areas such as robotics, 3D printing, automation, nanotechnology, artificial intelligence, and much more, are creating tremendous opportunities for manufacturers.

There is also a revolution underway in advanced materials — a race to discover and commercialize new materials that are lighter, stronger, more energy-efficient or more versatile. This will likely include so-called "smart" materials and coatings. These materials may use less energy or retain it better. They may be self-cleaning or self-repairing. They could have enormous strength, be extraordinarily small or even retain memory.

In our industry's case, we must change how we view innovation so we can take full advantage of these kinds of changes and opportunities. Make no mistake: we need to create the next generation of solutions to ensure steel remains the material of choice in a variety of applications. However, in my opinion, change and innovation includes so much more than this. We need to foster innovative relationships with our stakeholders, including our customers, suppliers and employees. And we need to develop new approaches to everything that we can control in our day-to-day business.

I'd like to share a brief story about a time in my career that really opened my eyes to the power of change. It also highlights the differences between innovation leaders and followers.

At a certain point in time, I was part of a team that had the opportunity to work on a project that would lead to a solution to the latest aircraft being developed at the time. This team sat in full control of more than 90% of all the alloys for that particular material that had been applied to solutions for decades. We were very, very comfortable that we were going to get the project and that we were going to have decades of benefit from participating in that venture. But it was to our surprise that, one morning, we got a call from our customer basically telling us that we had lost the order. And the incumbent lost to the first major application of carbon fiber in the commercial aviation environment. That was a profound eye-opener that impacted decades of what was to come going forward.

This is why the steel industry cannot accept the status quo. I'm sure none of the industries we compete against are sitting around waiting to see what we do next. Their sole focus is on meeting the needs of the markets they already serve, as well as the ones they want to begin serving.

We must adopt the same mindset and take full advantage of the opportunities today's global disruptors are making possible. Historically, our industry has benefitted from numerous technological breakthroughs, going back to the Bessemer process, the open hearth furnace, the basic oxygen process, the electric arc furnace, continuous casting and so many others. These and other innovations allowed us to improve safety, efficiency, quality, environmental performance and more at our companies while lowering costs.

They've also allowed our industry to be a significant disruptor ourselves through the development and

commercialization of new steels. In the 19th century, the development of steel manufacturing ushered in the Industrial Revolution and much of the products, progress and innovation that evolved from it. Steel was the Revolution's engine of growth. It enabled the tools, machinery and infrastructure to double global GDP per capita between 1850 and the 1900s. Today's steel products are still essential to building and maintaining a modern society.

Advanced high-strength steels remain the fastest-growing materials in the automotive segment. These products are allowing our automotive customers to meet increased safety and fuel economy standards faster without incurring increased manufacturing costs often associated with alternative materials.

Studies continue to show that canned foods offer substantial health benefits for adults and for children. And much of the food we eat — canned, fresh or frozen — is still harvested by steel-intensive equipment. Our nation's critical homeland infrastructure still depends on steel. This includes everything from our roads and bridges to the pipelines that extract and deliver our water supply, oil, and natural gas. Steel also remains a core component in building construction, ranging from homes to high-rises. And much of the equipment at today's construction sites — that's made of steel, also.

The list goes on — household appliances, jewelry, watches, computers, robotics and other automated equipment. Steel is in all of these things. The bottom line is that steel makes our lives safer, easier and much better.

Up until now, the pace of change in our industry has been slow at times. However, that trend must reverse. We must fully embrace the disruption happening all around us so that we can continue to be disruptors ourselves.

At U. S. Steel, a commitment to understanding and harnessing today's disruption is a key component of what we call the Carnegie Way. At a high level, the Carnegie Way is our approach to examining and transforming all aspects of our business. Our aspiration is to return our great company to the ranks of true business icons. We intend to do that by creating a high-performing organization capable of earning an economic profit across the cycle and delivering value in everything we do. Our focus on becoming a more market-facing organization is driving much of what we do. And that begins with our decision to combine our commercial operations into commercial entities, or CEs, as we call them. In just over one year, they've built better customer relationships by focusing on solutions that create value for both of us, and our customers are beginning to notice. This ranges from technical collaboration on steel grades and product design to discussions about our supply chain and everything in between.

One of the most exciting byproducts of this effort has been increasing innovation across our company. We've expanded our portfolio of products and solutions, giving us access to new markets and opportunities. This includes the development and commercialization of Gen III advanced high-strength steels. We've also increased our capabilities and expanded beyond our traditional research and development activities. This includes collaborating with universities and other organizations to explore alternative materials and advanced manufacturing as we work to push steel's capabilities even further.

The driving force behind all of this is our employees. I've encouraged them to use innovation to find new ways to do their work, and they have embraced the challenge. More and more, they view problems not as roadblocks, but as opportunities to make us better and create value for all of the stakeholders. More than 10,000 of our employees have received specialized training, with more completing classes every week. As a result, energy, authority, and capabilities are being driven down to the shop floor, and collaboration is on the rise.

Their use of Carnegie Way methodologies in our reliability-centered maintenance process is leading to improvements in safety, quality, delivery performance and facility reliability. Those improvements are also positively impacting the bottom line. Our employees are accomplishing what many said could not be done, and I would like to thank them again for their efforts.

Unfortunately, a lot of their great work during the last year has been overshadowed by challenging business conditions, largely driven by the biggest disruptor and threat to the steel industry — global overcapacity that is creating historic levels of unfairly traded steel.

We believe market-distorting practices by foreign governments and steel companies are driving this growth, not market demand. One thing that is particularly frustrating is how imports continue to affect our industry's future. The short-term impact on our financial results is bad enough, but when we can't generate enough profit to properly invest

in technology and innovation, and the development of our people, our future competiveness will be jeopardized.

Today, we remain an industry in crisis, but we're fighting back. Our company has taken a leadership role in these efforts by using different, innovative approaches in doing what people told us would never work. Last year, we successfully advocated for the passage of the Leveling the Playing Field Act in the Trade Adjustment Assistance bill. This represents the first time in decades that U.S. trade laws were revised and clarified to align with the original Congressional intent. This includes using multiple relevant factors to determine material injury, not just operating margins. One of those factors is our ability, or lack thereof, to properly invest in research and innovation efforts.

The interpretation and enforcement of these new laws has already been reflected in preliminary determinations in the three major cases that we elected to pursue with other steel companies in 2015. Last month, we also became the first steelmaker since 1978 to file a complaint with the U.S. International Trade Commission requesting an investigation under Section 337 of the Tariff Act.

We are alleging three specific causes of action by China's largest steel producers and distributors. They are: the illegal conspiracy to fix prices, the theft of trade secrets and the circumvention of trade duties by false labeling, more commonly called transshipping. This is a powerful tool for American companies because the remedy goes beyond the usual imposition of duties. Instead, the unfairly traded products are excluded from the U.S. market. We expect the ITC to make its initial determination on 26 May 2016.

The bottom line is we cannot allow non-market-based foreign steel companies, using illegal actions, to seize this critical part of our nation's health and welfare. We must preserve and defend our way of life by ensuring that all American industries can compete vigorously and unencumbered by harmful and illegal foreign practices.

The law entitles us to a level playing field, and we will continue to use every tool at our disposal to pursue our rights under the law.

In closing, Apple co-founder Steve Jobs once said, "Innovation distinguishes between a leader and a follower." And if we want our industry to be viewed as a true manufacturing leader, and not just the fast follower we have been at times, then we must fully embrace the change and disruption happening around us today. And we must drive innovation and disruption in everything that we do going forward. The path ahead won't always be easy. However, the work being done by all of you gives me hope that we can achieve this goal and much, much more. Thank you very much. ✦

U. S. Steel