accenture

# FIVE INCONVENIENT TRUTHS

## FOR THE GLOBAL STEEL INDUSTRY

Remarks by John E. Lichtenstein
Strategy Managing Director and Global Metals Lead
Accenture

Steel Survival Strategies XXXII
Panel 1: International
June 27, 2017
New York City, NY

# INTRODUCTION

Today, trade and overcapacity are such dominant issues for the steel industry that they tend to push other issues into the background where they are largely ignored. This is particularly true for problems that challenge conventional industry wisdom, or that are believed to exist only in the distant future.

It is safe to say that conventional wisdom has not always served the industry well, especially when it comes to judging the speed at which the future is bearing down on the present.

So, shifting the focus away from the trade topic, I will outline five inconvenient truths that industry leaders need to acknowledge and begin to address, not in the distant future, but in the next few years.

# THE FIVE INCONVENIENT TRUTHS

## ONE

### GLOBAL STEEL DEMAND GROWTH IS SLOWING DRAMATICALLY.

Over the decade prior to the Great Recession, global demand grew at an annual rate of approximately 5 percent.[1] Looking at the next 20 years, we estimate growth of only 1.1 percent per year, resulting in 2035 global demand of 1.87 billion tons.[2] This represents a total increase of less than 300 million tons from today, which of course is less than the amount of excess global capacity that currently exists.

There are four principal reasons for this.

- First, the long-term decline in overall steel intensity is accelerating due to material substitution, shifts in design parameters and steel-makers' own success in producing lighter, stronger steels.
- Second, China's rapid ascent that drove global demand growth during the previous period was a unique phenomenon, not replicable by other countries.
- Third, the growth of the circular economy, together with changes in consumer preferences, is already starting to disrupt and reduce demand for end products such as automobiles.
- And fourth, future economic development in emerging economies will be far less steel-intensive than in the past due to the first two factors and a shift to new development models.

# TWO

## THE OVERCAPACITY PROBLEM WILL PERSIST FOR YEARS, PROBABLY DECADES.

Like Sisyphus,[3] the steel industry seems to be condemned to labor at a never-ending task, with progress continually being stymied by overwhelming forces.

There are four main reasons for this.

- First, reductions in China's excess capacity are unlikely to keep pace with the decline in demand, which is at peak and is expected to decline by an additional 50 to 100 million tons by 2035.[4]
- Second, China is adding to excess capacity outside of its borders. The "One Belt, One Road" strategy calls for the construction of new steel and other heavy manufacturing plants in neighboring countries—in part to compensate for domestic closures. China is also adding to global excess capacity by building and acquiring unneeded plants outside of Central Asia.
- Third, globally excess capacity is being created elsewhere around the world in countries where there is local demand growth or the desire to diversify economic activity.
- And fourth, capacity creep—normally 1-2 percent per year[5]—will be amplified in the coming years as companies deploy digital technologies to increase mill productivity.

# THREE

## THE INDUSTRY REMAINS TRAPPED IN A DOWNWARD VALUE-CAPTURE SPIRAL.

By definition, lighter and stronger steels reduce the mass of steel required in a given application and in so doing, create value for customers. As the amount of steel has been reduced, so too has the relative value of the steel, measured as a percentage of the total value generated by the steel users. In 1947, iron and steel accounted for 45 percent of the value of motor vehicles; by 2014, the value contribution had declined to less than 6 percent.[6] Data from other steel markets tells the same story.

Not surprisingly, this decline in the relative value of steel has weakened the pricing power of producers. Even with advanced steel products that carry price premiums, the premiums barely compensate for lower tonnage due to lighter gauges. Often, they are also insufficient to generate adequate returns on the investments required to produce these steels.

The industry will continue to be weakened by this value-consuming spiral as long as steel is priced by the ton. Shifting to value-based pricing is a lot easier said than done, but the need to do so is becoming more urgent in light of the other trends being discussed here.

# FOUR

## DIGITAL PLATFORMS WILL BECOME A DOMINANT CHANNEL FOR STEEL COMMERCE IN THE COMING DECADE.

Industry participants point to the failure of steel marketplaces during the dotcom era as proof that "it can't happen to us." The argument is that steel specifications are too heterogeneous and service requirements too exacting for online marketplaces to work.

These attributes have not diminished in the ensuring years, but there has been a quantum leap in the technologies underpinning marketplace platforms.

The availability of enabling technologies will not, in itself, drive the development of marketplaces. The driving forces will be increased transparency and the potential for step-change improvement in supply chain efficiencies leading to shorter lead times and reduced overall inventories—the same objectives of the early dotcoms. And as technology has advanced, so too has market readiness, as steel buyers' experience with B2C platforms shapes their expectations for B2B commerce.

Platforms will also connect the full set of stakeholders and value-chain participants, from the design stage through the manufacture and recycling of end products. In so doing, they will upend today's commercial and operating systems and disrupt the boundaries between "mill business" and "service center business," with both sets of players vying for a common set of customers.

# FIVE

## INDUSTRY SCALE ECONOMIES ARE BEING DISRUPTED.

Scale has long been a source of competitive advantage in the industry. Even as EAF mini-mills overthrew the hegemony of blast furnace production for long products and many flat roll products, the pursuit of operating scale has continued.

Yet, so too has the trend for the development of advanced, smaller scale configurations, such as CMC's micro mill in Oklahoma[7] and Nucor's CASTRIP process, which is now being deployed in Mexico and China.[8] The mandates of the circular economy and climate change will encourage the proliferation of reduced-scale plants that have smaller footprints and are sized to match new low-carbon production processes and renewable energy sources.

Further disruption comes from outside the industry where a host of startups and major end-use manufacturers are rapidly advancing the capabilities of additive manufacturing technologies. A year ago, the predominant view was that it would work for small, precision-machined components made from high cost alloys, but not for larger volume carbon steel applications. Today, that view is being challenged.

# WHAT DO THESE INCONVENIENT TRUTHS MEAN FOR THE INDUSTRY, COMPANIES AND STAKEHOLDERS?

## LET'S LOOK AT VARIOUS GROUPS.

### RAW MATERIAL SUPPLIERS.

Global iron ore demand is likely to peak during the next decade as steel demand growth slows and the EAF share of production increases in response to circular economy and climate-change mandates. The seaborne market will come under particular pressure as blast furnace-based production declines in China and grows in iron ore-rich India.

### EMPLOYEES.

The size and required skillsets of the steel industry workforce will shift dramatically. Digital disruption will reduce steel company headcounts through automation, machine-to-machine integration, analytics, robotics and remote monitoring/control. The main driver is not the cost savings associated with smaller payrolls, but rather the increase in reliability, efficiency and productivity that derives from harnessing the power of digital technologies.

While the entire workforce will be impacted, reductions in management and other non-represented headcounts could be proportionately greater than for shop-floor workers. Streamlined and automated business processes delivered in the cloud and expert machine-based planning and decision-making will render much of today's support organizations unnecessary.

### STEEL PRODUCERS.

All of these factors will put further pressure on company margins and threaten the viability of existing steel company business models. Executives will have to fundamentally rethink what it means to be a steel company. Industry incumbents will also need to proactively embrace marketplaces or risk even further marginalization at the hands of platform heavyweights—notably Alibaba and Amazon—once they decide to take a major step into this market.

### SERVICE CENTERS.

Service centers will face even more profound disruption. Steel marketplace platforms will undermine traditional business models that rely on ready inventories and price arbitrage as core elements. Service centers will need to find new ways to create value for customers, producers and other supply chain actors—or else disappear.

# CLOSING

These five inconvenient truths are already starting to shape future industry conditions. They demand attention today, not sometime in the future, even if the details on how they will unfold are not yet clear.

This means that strategic decisions must be made within a framework of fundamentally shorter time horizons. Innovation that pushes the boundaries of existing business models is essential. Corporate agility will become as important as operational agility. And capital investments that lock companies into today's configurations and business models should be approached with extreme caution lest they restrict the flexibility to pivot toward new opportunities.

Addressing unfair trade remains a priority, yet this must not become a distraction or an excuse for ignoring the deeper strategic disruptions that are just around the corner. Neither is there room for complacency that might arise from trade battle victories, especially since history teaches that the spoils of victory are usually ephemeral.

Most steel executives have come to see the transformative power of digital when it comes to their own operations, and many are stepping boldly into this world. This is both necessary and admirable, though it is not enough. They need to recognize that everything about their businesses—including the nature of the businesses they are in—will change, and they need to develop effective responses starting today.

THANK YOU.

## REFERENCES


**1** Accenture Strategy forecasts using historical data from the World Steel Association.

**2** Ibid.

**3** In Greek mythology, Sisyphus was noted for his trickery. His punishment, for eternity, was to push a large boulder up a hill, only to watch it roll back down just as it reached the top of the slope.

**4** Accenture Strategy forecasts using historical data from the World Steel Association.

**5** "Global Steel Equities," Credit Suisse Securities Research & Analytics, September 6, 2012.

**6** Accenture Research analysis of data from the U.S. Bureau of Economic Analysis and the U.S. Bureau of Labor Statistics.

**7** "CMC Starts Construction of Oklahoma Micro Mill," Industrial Heating, May 3, 2016, http://www.industrialheating.com/articles/92862-cmc-starts-construction-of-oklahoma-micro-mill (accessed June 1, 2017).

**8** "Castrip LLC Signs Licensing Agreement with the Shagang Group," PR Newswire, August 5, 2016, http://www.prnewswire.com/news-releases/castrip-llc-signs-licensing-agreement-with-the-shagang-group-300310037.html (accessed June 1, 2017).


## ABOUT THE SPEAKER


### John E. Lichtenstein


John Lichtenstein is a Managing Director for Accenture Strategy and the global lead of Accenture's metals practice. He has more than 30 years of experience as an industry executive and consultant to the global metals and mining industries. He works with leading companies in the areas of strategy, technology, mergers and acquisitions, globalization and business transformation. John is a recognized specialist on industry issues, has written numerous articles for industry publications and regularly appears as an invited speaker at World Steel Association, China Iron and Steel Association and Brazil Steel Institute events, as well as the Steel Survival Strategies conferences.

## ABOUT ACCENTURE

Accenture is a leading global professional services company, providing a broad range of services and solutions in strategy, consulting, digital, technology and operations. Combining unmatched experience and specialized skills across more than 40 industries and all business functions—underpinned by the world's largest delivery network—Accenture works at the intersection of business and technology to help clients improve their performance and create sustainable value for their stakeholders. With more than 411,000 people serving clients in more than 120 countries, Accenture drives innovation to improve the way the world works and lives. Visit us at www.accenture.com.

## LEARN MORE

Visit us at **www.accenture.com/naturalresources**.

Read our blog at **www.accenture.com/naturalresourcesblog**.