“Farm-to-Table” Becomes “Maker-to-User”: How a Manufacturing Movement is Emerging
In one of the best sketches from the early 2010s comedy show “Portlandia,” the scene comes up on a corner restaurant in the show’s namesake of Portland, Oregon, in which two hipsters sit at a table drinking white wine.

The server arrives, introduces herself and asks if the guests have questions. One pipes up. “I guess I do have a question, about the chicken…if you could just tell us a little bit more about it.”

The server replies that it’s a heritage breed, woodland-raised and fed a diet of sheep’s milk, soy and hazelnuts.

“This is local?” the other guest chimes in.

“Yes, absolutely,” says the server.

“I’m going to ask you just one more time, it is local?” the guest presses.

“It is,” comes the answer, which gives way to a fusillade of questions about whether the hazelnuts are local, what type of “organic” certification the chicken has, and where exactly the farm is, among others, which results in the server returning with the chicken’s file folder — we learn the chicken’s name was Colin — that includes his photo. The exchange ends with the guests asking if the restaurant can hold their seats while they quickly go check out the farm.

This brilliant scene encapsulates “farm-to-table” in a nutshell (even if through a hyperbolically satirical lens). Many of us have undoubtedly run into characters such as these, who take farm-to-table to perhaps its more extreme ends.

However, the basis of the notion can tell us a lot about what consumers and producers care about — and what is already happening in other U.S.-based industries.

Defining and Applying Farm-to-Table to Manufacturing

“Farm-to-table” is defined as a movement that promotes serving local food “as a means to connect consumers to the source of the ingredients in their meals,” preferably through direct acquisition from the producer, according to the Lexicon of Food. Specifically, a farm-to-table hallmark often hinges on a form of food traceability where the origin of the food is identified to consumers.

It became a movement on the heels of such influential chefs as Alice Waters at Chez Panisse in Berkeley, California, mainly because advocates and practitioners of the farm-to-table model cited fresh, local ingredients becoming more scarce and small family farms disappearing; along with the backdrop of a highly centralized food-growing and distribution system, they saw these as potential dangers — and motivators for their decision to adopt a more “locavore” approach to the food system, according to BusinessWeek and a study authored by the Culinary Institute of America and the Harvard School of Public Health.

This begs the question: can the farm-to-table model apply to manufacturing supply chains?

The value of supply chain traceability is arguably one of the strongest pillars of localizing the sourcing and supply chains of U.S. manufacturing. Conflict minerals traceability, as the post-Dodd-Frank era has shown us, is just one example of a massive compliance effort that U.S. manufacturing firms have had to embark upon. Not being able to trace the provenance of your Chinese sub-tier suppliers’ raw materials, for example, is an issue not only for OEMs but for socially conscious consumers as well.
Of course, bringing manufacturing closer to “home” on a national or regional level has been a trend for a couple decades. Reshoring and nearshoring have been two movements that have gained steam on the back of economic arguments such as improvements in a manufacturer’s total cost of ownership, among many others. Based on that rationale, as of the end of 2017, the total number of manufacturing jobs brought to the U.S. from offshore reached over 576,000 since the manufacturing employment low of 2010, according to the Reshoring Initiative.

Although reshuffling the global supply chain footprint to manufacture locally has myriad challenges for large firms (as it has in the food movement as well) the incremental moves to make it happen — especially on a local or hyperlocal level — have to include both economic and cultural shifts.

“There needs to be a mindset shift on the consumer’s part of buying only certain things that are made well, made here, and support the community that I live in,” said Toby Davis, who has worked in the textile industry for three decades and is the founder and president of a knitwear company in Long Beach, California, in a 2016 interview with MetalMiner. In other words, both sides need to think of it all as “more of an investment,” Davis said.

Therefore, to “directly map” the equivalents of the food supply chain to that of manufacturing, it may necessitate a shift in consumer mentality more than returning to the dollars and cents of it all — the latter having, arguably, already been proven out.

Beyond consumer preference, localization has other benefits to the overall economy, starting with the notion that it provides a foundation for everything that is built on top of it. After all, if we don’t have strong healthy basic industries, we aren’t going to have strong value-added manufacturing industries. Moreover, the economics are compelling as well. Consider how most manufacturers procure steel – the rule of thumb is to source (from a producer or service center) within a 300-mile radius of where the steel is consumed to minimize freight costs.

There are many examples of how the corollary of the “farm-to-table” movement in manufacturing has already begun, and how the benefits of such a movement touch all aspects of the value chain.

Read on!

**Local Sourcing, From Maker to User**

Impact to the local economy, jobs, consumer convenience — all of these are basic, positive arguments for local sourcing. Procuring parts or raw materials from relatively nearby is much easier than getting it from across the country (or, from another country).

However, beyond even those factors, there is a hard dollars-and-cents argument to be made vis-a-vis metals.

According to U.S. Census Bureau data tracking after-tax profits by industry, the iron, steel and ferroalloy sector is operating in an entirely different world than other sectors — such as computer equipment, chemicals or pharmaceuticals, for example.

<table>
<thead>
<tr>
<th>Industry</th>
<th>After-tax profits (as percentage of sales)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apparel and Leather Products</td>
<td>0.1</td>
</tr>
<tr>
<td>Chemicals</td>
<td>0.2</td>
</tr>
<tr>
<td>Computer and Peripheral Equipment</td>
<td>0.3</td>
</tr>
<tr>
<td>Iron, Steel &amp; Ferroalloys</td>
<td>0.3</td>
</tr>
<tr>
<td>Nonferrous products</td>
<td>0.1</td>
</tr>
<tr>
<td>Pharmaceuticals and Medicines</td>
<td>0.2</td>
</tr>
</tbody>
</table>
Looking at after-tax profits (as a percentage of sales), the computer and peripheral equipment sector came in at 30.4% in Q1 2018. Meanwhile, pharmaceuticals and medicines hit 21%. The chemicals sector hit 15.3%.

What about the iron, steel and ferroalloys sector? That checked in at just 3.5%, down from 3.7% in fiscal year 2017. In fact, that after-tax percentage has not reached 4.0% in any single year over the last decade, and in some years has dipped into the negative (-7.7% in 2009, -3.4% in 2015).

The quantity of imports — the important penetration ratios of various sectors — has a lot to do with that. In steel, for example, finished steel import market share hit 30% as of June 2017, according to the American Iron and Steel Institute. That percentage fell to 22% by the end of the year, but rose again as foreign producers aimed to offload product before the imposition of the U.S. steel tariff (hitting 29% as of April 2018).

Many of those steel imports come from countries in which national governments contributed the following: electrical subsidies, free or below market natural gas, free land, free or reduced input costs, interest-free loans particularly for the SOEs (state-owned entities) and a lack of expectations for corporate profitability, among others.

A March 2017 study by Fariha Kamal, of the U.S. Census Bureau, and Mary E. Lovely, of Syracuse University's Department of Economics, included data on U.S. firms' imports from “low-income countries” as a percentage of sales. The furniture sector's percentage rose from 1.663% in 1997 to 8.092% in 2012. For food, the percentage jumped from 0.459% in 1997 to 0.595% in 2012 (after hitting 0.909% in 2007). The percentage for chemicals rose from 0.823% in 1997 to 1.8% in 2012. The paper also includes data for intermediate goods, which show increases — albeit on a smaller scale — in many industry sectors. For example, intermediate goods in the textile mills sector rose from 1.431% in 1997 to 2.814% in 2012.

Based on our research, the iron and steel industry is near the top of the list when it comes to imports as a percentage of total sales (or import penetration). Additionally, according to an analysis by Dr. Sheng Lu, of the University of Delaware, important penetration of apparel imports continues to rise.

This puts some of our basic industries at financial risk.

Imports, whether in steel or other industries, have to an extent impacted profitability for U.S. firms — but what about the impact on the consumer?

In addition, what arguments can made for local sourcing beyond dollars-and-cents considerations?

**Local Sourcing vs. Offshoring**

The argument has been made that local sourcing results in more ethical supply chains. Some more high-profile examples of products subject to ethically murky sourcing include cobalt, most of which is mined in the Democratic Republic of the Congo, and the issue of child labor. Similarly, Thailand’s seafood industry is rife with scrutiny regarding the use of slave labor, as a Human Rights Watch investigation revealed in early 2018.

Naturally, tracing a part or material from a few counties or states over is much easier than doing the same for an item traveling to the U.S. from thousands of miles away. Plus, just like with food, a shorter distance from source to delivery also benefits the environment and leads to a lower carbon footprint by virtue of less fuel burned in getting the product to its user.

In addition to the environmental and ethical benefits, local sourcing offers shorter lead times for the user, plus removes exposure to the vagaries of currency risk.

While the satirical “Portlandia” sketch mentioned at the outset takes the farm-to-table mindset to the extreme, like many things, it’s funny because it’s embedded with a kernel of truth. Just like there is peace of mind for many in knowing the conditions in which the food on their plate was raised, a procurer can rest easier in knowing their supply is nearby and reliable. (On top of that, there are positive impacts of local sourcing on the local economy, manifested by jobs and the resulting local tax revenues generated).
Loss of Capacity

As we’ve seen in recent decades, the migration of U.S. manufacturing has had a devastating impact on towns across America.

In every industry, offshoring and the rise of globalization at large has had a destructive impact on U.S. manufacturing and the working class. As The New York Times reported in 2015, Maytag, for decades the largest employer in Galesburg, Illinois, shut down its refrigerator factory and relocated to Mexico — of course, this is just one of many similar stories across the United States.

According to the aforementioned study by Kamal and Lovely, the number of U.S. manufacturing jobs fell by approximately 6.2 million between 1997 and 2012 (after holding at around 17 million throughout much of the 1990s). And though some would argue productivity gains contributed to that decline (and we’d concur), offshoring and nearshoring undoubtedly cut these numbers further.

The U.S. levied tariffs of 25% on steel and 10% on aluminum this past spring. While it is still somewhat early to truly analyze the results of the trade remedy, there has been good news for domestic industry, as U.S. Steel announced it would be restarting blast furnaces at its Granite City steelworks in southern Illinois, bringing back jobs to the community that so depended on steel.

Import Scope

In addition, it’s worth taking a look at the list of Chinese products being targeted for tariffs under the aegis of the United States Trade Representative’s Section 301 investigation.

In mid-June, the USTR announced $50 billion in tariffs targeting a total of 1,102 separate tariff lines. The scope of the products includes everything from turbines to airplane engine parts, agricultural equipment to dishwashing machine parts, boat propellers to parts for dairy machinery and milking machines.

In short, it’s a list that covers a wide range of uses, from industrial or agricultural application to everyday life in the home. Of course, it should be noted that the products listed in that investigation only address China, and don’t even begin to address imports of other countries.

As such, what we see is a picture of a country that has increasingly relied on foreign imports for a wide range of materials, a development that has hit the aforementioned working class and compromised the country’s ability to produce many of these necessary products.

New Life and Innovation

Sourcing locally can be a remedy, injecting life into small towns, regions and even entire states.

As Texas Iron and Metal, a Houston-based metals buyer and seller, notes — while advocating for the use of local steel in the Houston area — there are a wide range of considerations tilting the scale in favor of local sourcing: immediate availability, not having to meet minimum orders (as opposed to minimum order requirements that are often required by larger, more distant suppliers) and better customer service.

The growth of a farm-to-table movement can be found throughout the manufacturing sphere (certainly not just in metals).

In the furniture industry, for example, a July 2018 Vogue article quotes Kyle Hoff, co-founder and CEO of furniture manufacturer Floyd, who says: “Making our products in the U.S. allows us to be far more nimble in the development process ... We’re able to distribute to our core markets weekly, allowing for same-day delivery. Those relationships are a huge part of what keeps Floyd efficient.”

Another wave within the wave, so to speak, is the rise of additive manufacturing, which has been used for many years but has recently picked up speed in pace with the growth of technological capabilities.

Fast Radius is a leader in this space, offering 3D-printed plastic and metal parts to manufacturers for just-in-time production. On top of that, they can ship in less than 10% of the time it takes a container to arrive from China at a U.S. port of entry.

The Question of Cost

We mentioned the farm-to-table movement in terms of the food movement — the steak on your plate or the accompanying vegetables around said steak.
So, how does farm-to-table manifest itself in terms of the world of steel?

When it comes to steel, for example, cost is often the factor at the top of the list. Why source locally when cheaper steel can be imported?

Well, take, for example, government construction. According to a BIS Shrapnel report cited by the Australia Workers’ Union, a “local content policy,” which achieves 90% sourcing of local steel, results in “$61 to $80 million annually in extra costs to the public sector,” representing an extra 0.2% of total construction costs for public projects (this follows the assumption that local steel is 10% more expensive than imported steel).

With that said, the report says a move to local sourcing would “add a cumulative $1.3 billion to real GDP over the next five years.”

The 2015 report, shared by the Australia Workers’ Union, paints a picture that should be familiar to the American business landscape: “severe pressure from rising imports” and supplies of steel being dumped into Australia at a less-than-fair price.

“The bottom line is that the small extra cost to government from a local procurement policy is far less than the cost of inaction, which could ultimately lead to severe costs to jobs and the economy if one or both steelmakers shut down,” the BIS Shrapnel report argues.

### Tariff Impact on Middle Market Manufacturer

<table>
<thead>
<tr>
<th></th>
<th>Current Spend</th>
<th>Current Spend + Tariffs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Revenues:</td>
<td>500,000,000</td>
<td></td>
</tr>
<tr>
<td>Metal Spend or Metal COGS:</td>
<td>28,500,000</td>
<td></td>
</tr>
<tr>
<td>Steel Cost</td>
<td>15,000,000</td>
<td>18,750,000</td>
</tr>
<tr>
<td>Stainless Steel Cost</td>
<td>8,000,000</td>
<td>10,000,000</td>
</tr>
<tr>
<td>Aluminum Cost</td>
<td>5,500,000</td>
<td>6,875,000</td>
</tr>
<tr>
<td>Metal COGS</td>
<td>28,500,000</td>
<td>35,625,000</td>
</tr>
<tr>
<td>Metal Cost Impact on COGS:</td>
<td>5.70%</td>
<td>7.13%</td>
</tr>
</tbody>
</table>

Much has been said about the U.S.’s tariffs on steel and aluminum and their impact on cost for manufacturers.

But what do the numbers say?

Take, for example, the impact of higher steel prices to a middle-market food service equipment manufacturer with annual revenues of $500 million.

With a steel cost of goods sold (COGS) of $15 million, a stainless steel COGS of $8 million and an aluminum COGS of $5.5 million, add a 25% tariff on carbon steel, plus the 10% tariff on aluminum, and what do you get?

The metal content COGS for the food service equipment manufacturer increases from 5.7% to 7.13%.

If materials costs alone are a manufacturer’s only concern, then perhaps this increase might not be appealing. Of course, cost, while typically at or near the top of manufacturers’ concerns, is by no means the only production factor worth considering — lead times, reliability and flexibility comprise the holistic panorama of considerations.

Lower labor costs in other countries, primarily China, have long been a basis for offshoring. But as a 2015 paper — by Robert N. Boute, of the Vlerick Business School in Belgium, and Jan A. Van Mieghem, of Northwestern University’s Kellogg School of Business — shows, Chinese wages had doubled from 2008 to the paper’s publication. In addition, a 2011 five-year plan called for a 13% annual minimum-wage increase. While the labor cost disparity between the U.S. and China (among other countries) still exists, with respect to China, at least, it is not as much of a draw as it used to be for U.S. manufacturers aiming to cut costs.

**Conclusions**

The maker-to-user movement, like its farm-to-table sister, has undoubtedly gathered steam.

The Trump administration’s tariffs accelerated that process, but didn’t cause it. Whether supply chain traceability, concern for the environment, desire for a level playing field, or the need to bring high-paying jobs back to the U.S., it appears as though manufacturing could follow the same path as the food supply chain.

Ironically, companies that have established local supply chains may actually find themselves with a competitive advantage.

"Roughly 90 percent of our steel and aluminum needs in the United States are procured locally," Honda Senior Managing Director Kohei Takeuchi said at an earnings briefing July 31. "Overall we’re not seeing a big impact (from tariffs) so far." In fact, Honda posted its highest profits in 10 years as a result of improved North American sales.
About MetalMiner

Sourcing & Trading Intelligence for Global Metals Markets

MetalMiner is North America’s largest metals information site. This go-to resource for metal-buying organizations identifies metal market trends and price direction, provides daily metal market analysis and commentary, and offers insight and strategies to mitigate risk and reduce costs. MetalMiner is operated under management company Azul Partners Inc.
Metal prices fluctuate. Key is knowing when to buy.

Improve your metal purchase timing and mitigate price risk: Use MetalMiner’s buying strategies and pinpoint when to adjust your metal spend.

The monthly Buying Outlook reports give you insight, expert recommendations and specific buying strategies (including real-time alerts) for 10 metal types:

- Aluminum
- Copper
- Nickel
- Lead
- Zinc
- Tin
- Hot-Rolled Coil (HRC)
- Cold-Rolled Coil (CRC)
- Hot-Dipped Galvanized (HDG)
- Steel Plate

“MetalMiner empowers metal buyers to be more intelligent when making metal purchases.”
- Jack Bellissimo, Sourcing Manager, Hubbell Incorporated

“My success in controlling and reducing our costs last year was directly attributable to the information I obtained through MetalMiner.”
- Bill Chapin, Procurement Manager, Watson, Inc.

Visit MetalMiner.com to Start Your Free Trial Now!