**Technology: A Re-directive Force in Food Production**

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In order to discuss the role of technology in the consumer packaging and food processing industry, we must first describe what technology is, and what it can be. Technological historian Leo Marx describes a common misconception about technology, exemplified in broader social discourse. Marx notes that our belief in technology as an autonomous, self-driving force results in “accounts of ‘the direction technology is taking us’ or ‘changing our lives’” (Marx). According to Marx, this framing obscures the true nature of technology- that its fundamental nature is of relations between people, and that “Technology, as such, makes nothing happen”. With this in mind, we can ponder the meaning of technology to the material conditions of modern industries such as consumer packaging and food processing.

Like our understanding of technology, to truly describe industries as they exist, we must acknowledge the inherent complexity of what industry is and how it operates. It would be far easier to think of the food industry as a factory in which raw goods enter, then workers use technology to turn those goods into products, which then reach consumers. However, even companies large as Tyson Foods do not operate autonomously, and the way they harness and apply technology is dependent on suppliers and cooperation from other industries. For a processing plant, the machine equipment must come from a supplier, who used technology to design their equipment and produced it in a factory using other forms of existing technology. The way these machines are used is also its’ own form of technology, as the ways in which you arrange equipment in a production line utilizes technology to produce radically different resulting products. These decisions are made by skilled workers who use technology to decide the methods of production, which results in firms within the same industry producing radically different products.

Ultimately, the generation of technologies as well as the methods of its application can be reduced to its essential quality as interactions between people, by individuals sharing a common goal and using engineered methods to produce a desired result. This also accounts for the expense of labor, as even automated processes cannot exist without the physical labor of those who construct these machines, as well as the intellectual labor of those who ensure they run smoothly. Truly, without the power of human effort, technology alone does nothing.

Economist John Maynard Keynes predicted in his 1930 paper “Economic Possibilities for our Grandchildren” that as technological capital improved, the efficiency of our systems of production would surpass our need for labor, leaving us with the spoils of technological progress with a stark decrease in our need to work. Keynes specifically applies this concept to food production, saying that “We may be on the eve of improvements in the efficiency of food production as great as those which have already taken place in mining, manufacture, and transport. In quite a few years-in our own lifetimes I mean-we may be able to perform all the operations of agriculture, mining, and manufacture with a quarter of the human effort to which we have been accustomed”. (Keynes 361) Nearing 100 years since the publishing of this paper, we see increases in automation replacing jobs that once required warm bodies and busy hands, and for the consumer packaging sector of food production, automation has easily replaced human hands in the printing of cardboard and the extracting of plastic trays. In the handling of livestock and the work of turning it into the food we eat however, we can see on the production lines that there are many jobs which have not been phased out. This is not out of altruism, firms simply keeping jobs so that more people could collect a paycheck. Cost-cutting is too crucial in competitive industries to allocate profits for charity. No, these jobs continue to exist because they cannot be replaced, and because the presence of automation demands human labor which is qualified enough to increase the efficiency of the machines which they work alongside. Again, we see the importance of technology lies not in its ability to replace human labor with pure efficiency, but that advanced technology relies wholly on skilled laborers who understand how these processes work, and whose effort makes the machines around them more efficient. In food packing, the role of technology in transforming a side of beef into a dozen different cuts of steak has not eliminated a single unit of labor. Instead, our use of technology has concentrated the know-how that may require 10 workers into a single job for a person who knows how to increase efficiency tenfold. The labor of ten steelworkers making blades to separate meat from bone has been synthesized into the work of a single engineer who uses their knowledge of computer software to create machines that can create the same end-result. Technology in this case has not eliminated the effort of making the food we eat, but instead has concentrated the labor of many laborers into that of a few skilled technicians.

The importance of the technology we use in industry is not that it replaces human labor, but that it takes the effort of many and redirects that effort so that it can be guided by only a few. The key concept is redirection of labor, for just as building a watermill alongside a river doesn’t eliminate the effort of engineering or maintaining the mill itself, it uses specialized human knowledge to redirect the force of a river to replace the labor of many millers pushing a grindstone. Without those who understand the technology of harnessing the power of water, or those who understand how to transform milled grain into food, the mill does nothing but turn. Without the human dimension of technology, there is no bread. Even in the technologically inundated food processing plants of today, this principle of production through redirection remains true as ever. To return to the words of Leo Marx, “Technology, as such, makes nothing happen”.

Sources Cited

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