Quantum Value Chains

Michael Rozyne, Red Tomato

Value chains (and values-based value chains) are now part of the national conversation about how to save farms, build local and regional food systems, and make high-quality affordable food accessible to millions of people. This is important because if we are not able to turn public excitement about *locally-grown* into effective wholesale marketing, then most people will be left behind. The impact on family farms and rural communities will be limited to those small farms that sell directly to consumers.

If value chains are a proven way to add economic strength to mid-size family farms, while reaching millions of people with healthy, local food, then bring 'em on! How do we create lots more of them? What's in the way?

First, what's a value chain? A value chain is a type of supply chain. A *supply chain*, according to Wikipedia, is a network of interconnected businesses involved in the ultimate provision of products and services required by end customers. A *value chain* is a concept first described and popularized by Michael Porter (Harvard Business School) in his 1985 best-seller, *Competitive Advantage: Creating and Sustaining Superior Performance.* A value chain is a chain of activities for a firm operating in a specific industry…that gives the products more added value than the sum of the added values from each activity alone. *Values-based value chains (v-b vcs),* according to Fred Kirschenmann[1], are "…value chains in which all participants work as partners to grow and market products of superior value, sharing the risks and rewards."

There is room for confusion here: food system practitioners sometimes speak of the *value* in a v-b vc to mean "value added," as in highly differentiated products moving at significant volumes. We also speak of the common *values* (such as farm and farmland preservation) shared among the strategic partners in a value chain. The distinction is not always clear.

Steve Stevenson[2], one of the nation's leading researchers and writers on farm-based value chains, says: "I may not be able to offer a single definition that covers every value chain, but I sure can recognize one when I see it." I'm not there yet.

It's unclear to me, at times, when a supply chain becomes worthy of the name value chain. I see supply chains in which growers sell undifferentiated product to customers that treat farmers decently, with some transparency, advance planning, commitment, in a proven long-term relationship. It doesn't meet the definition of a value chain, but the relationship has resilience and is a valuable part of a diversified marketing strategy. I

[1] Fred Kirschenmann is a pioneer organic farmer in North Dakota; an author/philosopher; distinguished fellow at the Leopold Center for Sustainable Agriculture (Ames, IA); and is president of Stone Barns Center for Food and Agriculture (Pocantico Hills, NY).

[2] Steve Stevenson is one of the leading U.S. researchers on food value chains, and a Professor of Sociology(?) at the University of Wisconsin/Madison.

have also observed farmer cooperatives in which growers are owners, yet receive inconsistent and sometimes poor treatment along the supply chain.

Why do these distinctions between supply chain, value chain, and value-based value chain even matter? In the typical wholesale supply chain for farm fresh products, farmers are price takers; they're typically not 'at the table' when prices are set; they hold most of the risk; there's little or no price discovery process before a transaction, and little or no feedback after; the space between farmers and ultimate consumers has been large and growing, in both miles and knowledge; and, the growing gap between rising costs of production and prices received by growers is not part of the conversation. It doesn't matter. In these kinds of supply chains, products are pure commodities, farmers are not in mutually beneficial relationships with buyers, and farmers are typically at the losing end of the deal. Farm loss among mid-size wholesale farmers is dramatic, and has been for decades. These distinctions matter because a values-based value chain is one of the few places where a buyer and grower work together to address these market tensions.

But values-based value chains don't really exist in the world the way a car does, or even the way a supply chain does. You can't kick them or count them accurately. They exist more the way beauty or love exists, undisputedly real, yet ephemeral, constantly changing, bankable only some of the time. This is where quantum physics comes in.

The Newtonian world view—growing from Sir Isaac Newton's 1687 treatise *Principia*—has dominated Western thought for nearly three centuries. It goes like this: the world is a machine, best understood by studying its parts. Every event has a cause, and events are predictable and controllable, as long their outcomes can be measured. Most everything in business and science can be measured. Thinking is linear, deterministic. Change is resisted.

In the earliest part of the 20th century, the Newtonian assumptions began to unravel. Whereas in classical physics, a thing (matter) was assumed to be made of particles or waves, Albert Einstein, among others, observed how light existed as both particle and wave, at the same time. He won the 1921 Nobel Prize in Physics for his work. The new way of thinking, called quantum theory, required a total deconstruction and reconstruction of how we think about the world. In the new quantum world, the focus is on the whole, and on the interconnections and relationships among the parts. Multiple realities are possible. Thinking is non-linear. Not everything can be measured with endless precision, and the act of measuring one thing, changes the next one. Change is embraced.

Values-based value chains live in this quantum world. They are fields of energy, fields of relationships, bound together by intention and commitment, with a nucleus or a driver —often the party directly touching the farmer—acting as the glue that holds the value chain together. Through Newtonian eyes, we picture a chain of players, each one supplying the next, from the farmer through to the ultimate consumer. Through quantum eyes, we see a more complicated web of relationships. Each principal in the value chain is surrounded by critical relationships with other customers and their own suppliers, any

one of which might significantly impact on the performance and even the survival of the value chain in question.

In the Red Tomato experience, the most crucial characteristic of a v-b vc is the dual accountability on the part of the driver to both farmer and customer. Without accountability to the customer, there's simply no reasonable business. However, in a v-b vc, equal or serious attention is paid the farmer. And that makes all the difference. It creates a tension, an economic squeeze that changes the nature of business.

Red Tomato has been the driver of value chains in which all players—retailer, growers, truckers, Red Tomato—are enthusiastic and committed, *except one*, the distributor that supplies the retailer. That distributor is Red Tomato's direct customer. They foot the bill. The reason the produce distributor can be less than enthusiastic, especially at the start, is because we ask them to pay more. *And,* because we complicate things. We also replace an existing relationship and supply chain they depend on to serve other customers, a relationship that "isn't broken" in their minds. Often, the product we replace may come from the same geographic area—i.e. it looks, feels, and smells as local as ours. However, it's not part of a local/sustainability program; there's no or little accountability built in, and no story that's been produced to make it readily promotable. While these things matter a lot to the retailer, they matter less to the distributor.

The produce distributor may or may not perceive value in the Red Tomato offer. Even when the retailer, the distributor's customer, has approved the higher price, it annoys the distributor to no end to be part of a transaction that is "artificially" set above market price. The higher price makes it difficult for the distributor to offer RT products to their other customers. It may even lower the distributor's space efficiency as they are holding an additional SKU of a similar product.

This kind of value chain feels decidedly more fragile than others we are part of. It makes me wonder if perishable product value chains (produce, seafood, fresh meat) are inherently more fragile, more perishable, than value chains for grains or processed dairy or shelf-stable groceries. Prices and market conditions never stop changing. Weather impacts performance day to day. The seasonality that characterizes fresh products can undermine competitiveness by limiting supply to partial year service.

Red Tomato's experience in these more fragile value chains suggests that the leading economic value created by a value chain, the ultimate measure of success, is resilience, the resilience of mutually-beneficial relationships in the face of change over the long-term. Resilience is more important than gross sales or short-term profitability. Keeping a v-b vc alive and healthy is an exercise in relationship and change management. Sales volume, fair prices, and short-term profitability are elements of resilience, as are continuous supply and quality control.

It would follow then that an inferior price and/or reduced profitability constitute reduced performance of a value chain, rather than outright failure. If the value chain lives on, there is time and relationship enough to right the course.

Value chains can collapse altogether from the inside, or from the outside. Examples of internal causes include a change in key personnel; or, the loss of a value chain participant, such as a strategic and cheap backhaul arrangement. Examples of external causes include severe weather; one shrewd competitor; changes in consumer preference; a corporate policy or decision coming from the top of one of the principal players; or, a prolonged recession economy, if you can imagine that.

Let's return to the starting questions: If value chains are a proven way to add economic strength to mid-size family farms, while reaching millions of people with healthy, local food, then bring 'em on! How do we create more of them? What's in the way?

In a Newtonian answer, we'd put the value chain under the microscope—prices, products, agreements/contracts, management, finances, etc—and we'd ask where can improvements be made? How can we replicate the success elsewhere?

In a quantum answer, we'd stand back and look at the value chain in its surroundings. What accounts for growth? What's in the way of growth? What does it take for a value chain to compete effectively in this fast-changing world? What kind of environment would enable new value chains to be born?

These two approaches *are mutually exclusive* for physicists. They require one unified theory that explains how the entire world behaves.

For our purposes, the two approaches are not mutually exclusive. We can put value chains under the microscope and dissect them, and we can examine their context and external relationships at the same time. Each pursuit enriches the other.

I do think we should abandon that Newtonian notion of machine-like replicability of studied success stories, and replace it with a quantum notion of everything in context. Resilience requires that the functioning parts of a value chain be in balance with the whole around it. And that the leaders see and understand that whole.