

UNDERSTANDING VALUE WEBS AS A NEW BUSINESS MODELING TOOL

Capturing & Creating Value in Adhesives

Robert W. Smith

Director, New Business Development

Dr. William E. Broxterman

Chairman and CEO

Daniel S. Murad

President

The ChemQuest Group, Inc.

Cincinnati, Ohio

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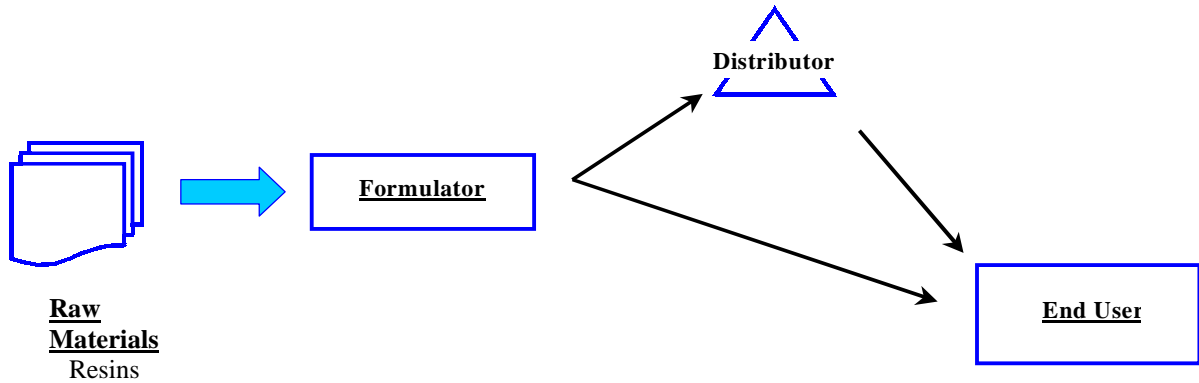
Adding Value has become almost an anthem in the business world, and it's no different in our industries. Whether a raw materials supplier, a formulator, or a customer, you are likely focused on finding ways to add value to your customers and to your bottom line. However, this is often much easier said than done. We see many business and strategic plans that talk about "adding value" and most have developed strategies and tactics to do so, but few have identified and quantified what this value is and where it will come from, other than in the most general terms. The new concept of VALUE WEBS attempts to consolidate related VALUE CHAINS to identify and quantify specific opportunities to EXTRACT or CREATE meaningful value to customers. Value Chains are two-dimensional. Value Webs are Multi-Dimensional.

Value Chains

Most organizations can easily relate value enhancement as improvement in profit margins, operating profit, pre-tax earnings, and a rise in share price. Therefore, strategies to add value must be measured in monetary units. Value Chains were developed to graphically represent the logical flow of goods, services, and by extension, value from basic raw materials to the ultimate consumer. In the most simplistic form, a Value Chain could be represented by Figure 1.

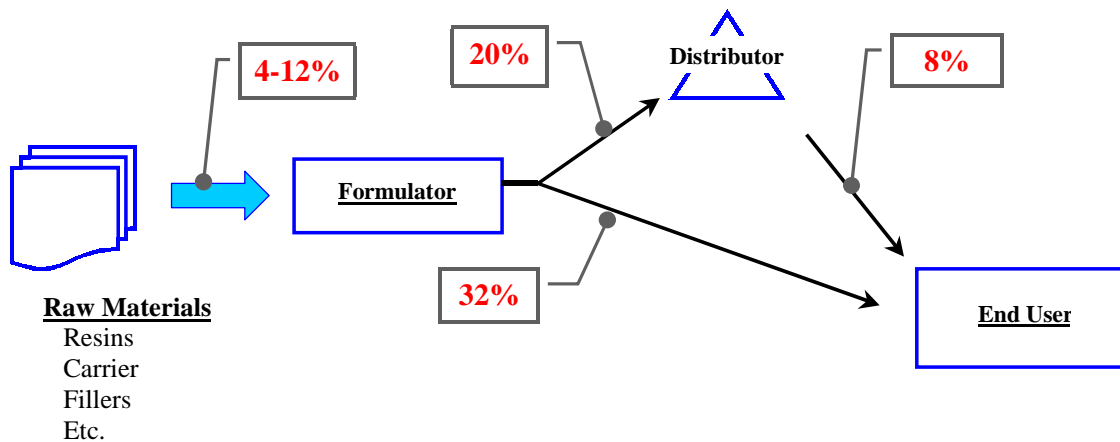


Figure 1: Linear Qualitative Value Chain



In the above Value Chain, the flow of value is simplified to show the movement of materials from raw materials to formulator to end-user. In this particular case, a distribution option has been included to dramatize the options for diverting the value chain. Clearly, this shows the basic flow of goods and related services, but does not quantify the value realized with each transaction. Figure 2 adds this value dimension by inserting a measure of Value, in this case Operating Profit before Tax (OPBT), as a percentage of net sales.

Figure 2: Value Chain Showing Operating Profit Before Tax For Each Transactional Element



With this value dimension added, you can begin to see the importance of understanding where value really resides. In the above example, the impact of using a distributor in the chain is clearly shown as diluative, but could offer valuable logistic services or access to market making this a symbiotic relationship.

Typically, the Power Position in a given value chain is the one making the most profit. Usually the participant in a Value Chain making the most money has the highest level of control in the chain with more opportunities to direct value distribution. With time and maturity, this power usually shifts in the direction of the ultimate end user. Thus, in commodity markets little of the power resides adhesive or sealant manufacturers, and even less with raw material suppliers, unless something occurs to dramatically change the Value Webs associated with the final product.

Often, once a Value Chain is understood, participants have been able to extract value from upstream or downstream participants, usually by vertical integration or mere cost cutting. However, these value enhancement methods rarely create sustainable value, they merely shift value, often temporarily. Such value enhancement strategies are not Value Creating, they simply shift value up or down the chain. The downstream participants seldom see Value Enhancement themselves so continue to pressure upstream participants for more of their value.

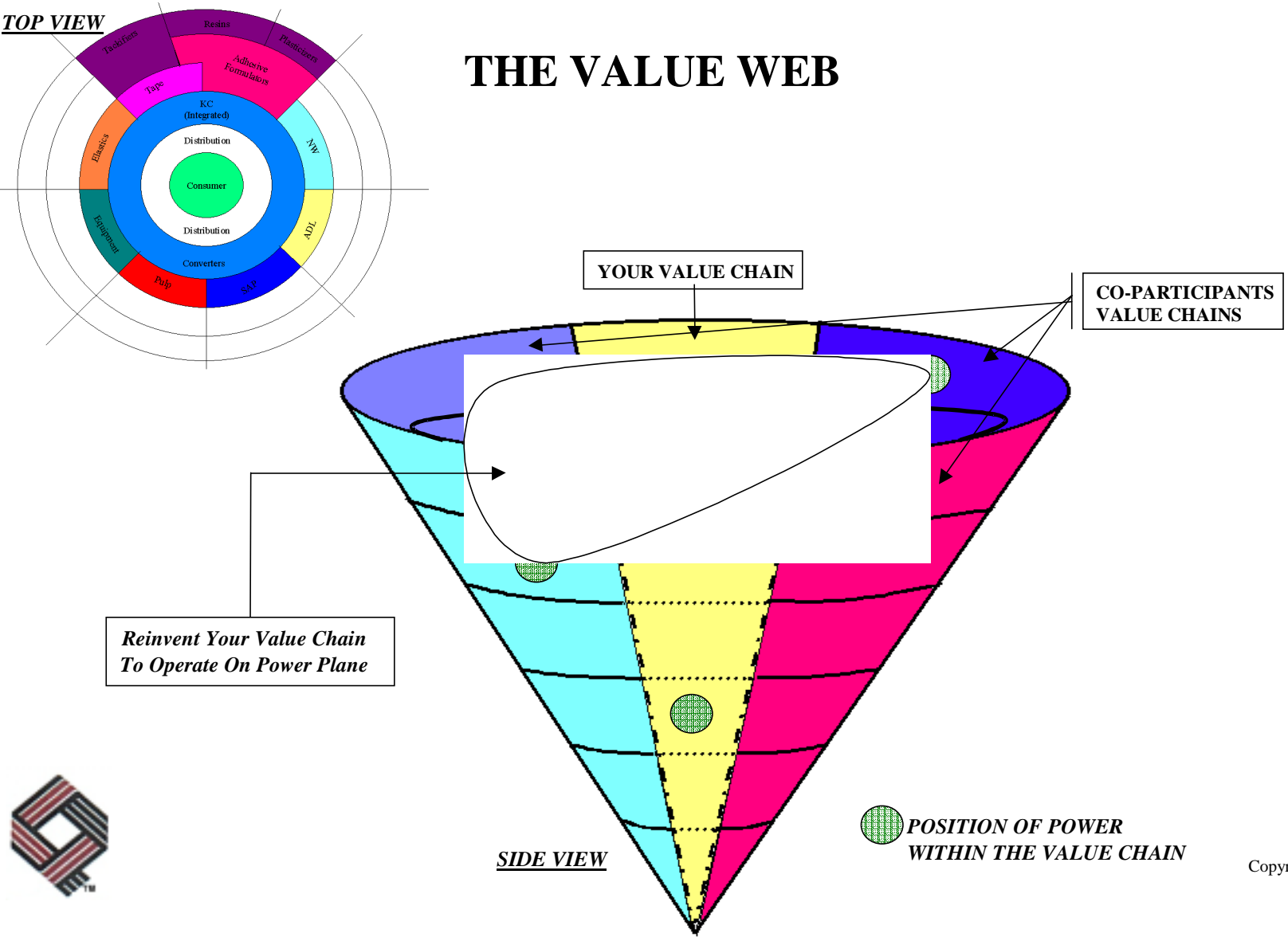
Herein lie the true importance of Value Chains and the more powerful concept of Value Webs.

Proper use of the Value Web process can reveal potential new paradigms, which might otherwise lie undiscovered. Figure 3 shows a simple 3 dimensional representation of a Value Web and how it may be viewed.



Figure 3 – Value Web Schematic

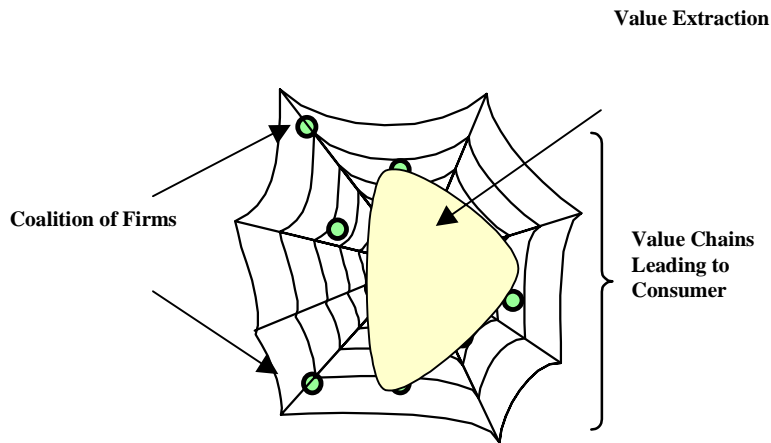
THE VALUE WEB



In this case, the Value Web is comprised of 5 inter-related Value Chains, each with its own Power Position. Linking the positions of power together into a POWER PLANE provides clues as to where value may be found and liberated with the proper strategy.

Figure 4 schematically presents the Value Web concept in its true spider web form.

Figure 4 – New Paradigm Value Web



Perhaps to more clearly explain the Value Web concept, a simplified theoretical case could be developed to demonstrate the process.

In this instance we will examine the use of an adhesive in a fictional product assembly application, the assembly of the *Disposable Medical Gizmo Gadget* using a particular brand of *Super Duper Glue*.

In this example, the adhesive is used to bond a metal tip to a molded thermoplastic body. The assembled device is then packaged in a unit use pack and then packed in cartons and cases for shipment to the distributor or end user. The application is highly automated and the annual volume is 100 million units. This example will use 4 interrelated Value Chains to form the final Value Web.



Chain A represents the Adhesive formulation and sale to the assembler of the device. This chain closely resembles the Value Chain described in Figure 1, but for simplification would not include the use of a distributor.

The second Value Chain, B, would represent the supply of thermoplastic molding resin to the manufacturer of the device and the process of forming the plastic body of the device. Value Chain C, the third chain will be quite simple and merely covers the purchase of the preformed metal “tip” which will be bonded to the plastic body with the adhesive purchased from the supplier from Value Chain A. Value Chain D represents the processing steps and packaging the assembler will undertake, including application of adhesive, cure of adhesive, sterilization of the assembled device, packaging into the unit use primary package and finally secondary packaging into the shippable case of multiple units.

To develop a Value Web, the step-wise flow of all materials and each process must be mapped to show the individual and interrelated Value Chains, forming the Value Web similar to Figure 3 above. However, this is only the first in a series of important steps required to use the Value Web as a strategic tool for liberating value from this particular set of processes. All costs associated with each step must be identified and verified to understand where value resides and where potential value can be liberated.. Table 1 summarizes our fictional example.



Table 1

Super Duper Glue to Assemble Disposable Medical Gizmo Gadget

	Adhesive		Device Manufacturer			
	\$/Lb.	\$/100 Assembled Units	Plastic Bodies \$/100	Metal Tips \$/100	Assembly \$/100	Total Cost incl. Adhesive \$/100
Selling Price	\$ 1.120	\$ 0.61674				\$ 14.50
Cost of Goods Sold	\$ 0.505	\$ 0.27792	\$ 0.43603	\$ 0.14053	\$ 2.26022	\$ 3.47202
<i>Raw Materials</i>	\$ 0.390	\$ 0.21476	\$ 0.33200	\$ 0.10700	\$ 0.00000700	\$ 1.0557471
<i>Direct Labor</i>	\$ 0.100	\$ 0.05507	\$ 0.06640	\$ 0.02140	\$ 0.43780000	\$ 0.5256000
<i>Mfg Overhead</i>	\$ 0.002	\$ 0.00110	\$ 0.02213	\$ 0.00713	\$ 0.14593333	\$ 0.1752000
<i>Utilities</i>	\$ 0.001	\$ 0.00055	\$ 0.00553	\$ 0.00178	\$ 0.03648333	\$ 0.0438000
<i>Freight, storage</i>	\$ 0.012	\$ 0.00644	\$ 0.00996	\$ 0.00321	\$ 0.00000021	\$ 0.0316724
<i>Sterilization Process (assembled device)</i>					\$ 0.47000000	\$ 0.4700000
<i>Primary Packaging (inclusive of pkg mtl.)</i>					\$ 0.63000000	\$ 0.6300000
<i>Secondary Packaging (inclusive of pkg mtl.)</i>					\$ 0.54000000	\$ 0.5400000
Gross Profit	\$ 0.615	\$ 0.33882				\$ 11.0280
Gross Profit %	54.9%	54.9%				76.1%
Selling, Advertising & Promotion Expense	\$ 0.134	\$ 0.07401				\$ 3.4800
R&D and Admin Expense	\$ 0.090	\$ 0.04934				\$ 0.8700
Operating Profit Before Tax OPBT %	\$ 0.391 34.9%	\$ 0.21547 34.9%				\$ 6.6780 46.1%



From the data one can see the adhesive supplier seems to be in a strong position of generating an Operating Profit Before Tax (OPBT) of almost 35%, but only by truly understanding the Value Web would you realize the device manufacturer holds a more powerful position generating an OPBT of over 46%. Understanding that dynamic opens huge opportunities for leveraging power IF they were aware of it. Further, understanding this potential weakness could lead the adhesive supplier to develop new paradigms to try to capture a larger share of the value.

Once this data is generated and understood, an VALUE OPPORTUNITY table can be generated to show potential Value Liberating Strategies. In this instance, that table might look something like Table 2 below. In the following table the values are estimated based on the annual volume of 100 million units of the device.

TABLE 2 – Value Opportunities

OPPORTUNITY	POTENTIAL VALUE
Totally eliminate the use of adhesive in the assembly, perhaps utilizing ultrasonic welding.	\$610,000 for the device manufacturer
Utilize the adhesive curing process to effect sterilization	\$470,000
Potential to supply the adhesive pre-applied to the metal tips could save assembler processing costs	Up to \$ 437,800

These three potential value liberating opportunities can be identified from this highly simplified example. All of these opportunities could be of interest to a number of participants or potential participants. Clearly, if the study of this value chain was undertaken on behalf of the device manufacturer, these opportunities to liberate value would be at the expense of the adhesive supplier in the case of maybe two of the identified ideas. If the adhesive supplier had undertaken the analysis, they might be able to develop new products that could be used to eliminate the sterilization process or simplify the adhesive application and in that instance could clearly command the control to liberate a large share of this value for themselves. Similarly, a new adhesive supplier armed with this information



might well capture the adhesive business in this application by offering the customer new value that was previously unavailable. Thus, the power of using Value Webs as a strategic management tool is both an offensive and defensive weapon capable of identifying Value Liberating strategies to maintain business, improve profitability, or to gain new business otherwise out of reach.

One of the most powerful elements of the Opportunity Table is the ability to identify both Value Extraction and Value Creation Opportunities. Value Extraction is the more traditional mode of value enhancement undertaken by organizations. In this mode, a business would typically extract value from an existing level of the current value chain – often at the expense of another participant. Value Creation is a more complex process where value is found through new operational models or processes. For example, an adhesive formulator might create new value in the Value Web by developing an adhesive capable of curing faster or at lower temperatures, thereby reducing their customer's overall costs. In such a situation, the shrewd formulator will share this additional value with his customer assuring a more sustainable value proposition.

Once a Value Opportunity Table is developed, strategies can be mapped out to analyze what steps are required to realize the Value Extraction opportunity and assess its probability of success and the costs associated with implementing the strategy to capture that particular value.



Decision & Risk Analysis

After Value Liberating opportunities have been identified using the Value Web process and potential strategies mapped out for liberating this value, a shrewd manager will develop an understanding of the statistical risk associated with each potential strategic move and develop a detailed Decision & Risk Analysis model before electing to proceed with a particular strategy or group of strategies. Although beyond the scope of this presentation, several reliable methodologies exist to develop sound financial models based on statistical probabilities of various complex interrelated events occurring and the net present value outcome of various potential options. These methodologies are intensive and are very useful in assessing the true financial impact of several optional strategies a business may consider pursuing so they invest their valuable resources where they have the highest potential for return on their investment.



Summary

In summary, Value Chains and their derivative Value Webs offer a new disciplined methodology for identifying potential opportunities to capture value, create new value, or defend one's current position in the Value Chain. By necessity Value Webs force a business to look at where value resides in the transactional process and truly understand what value their products and services actually provide downstream participants. Value Webs can be used equally as well in defensive and offensive growth strategies. However, Value Chains and Value Webs are not an end all. Once value liberating opportunities are identified and quantified, sound strategies must be developed and deployed to capture this value in a manner providing adequate return on the required investments.



Questions or request for additional copies of this paper may be directed to the authors at:

The ChemQuest Group, Inc.
8150 Corporate Park Drive
Site 250
Cincinnati, OH 45242

(513) 469-7555

(513) 469-7779 – FAX

www.chemquest.com

