

# **Managing Contribution**

**Adding Real Value to  
Products and Services**

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# Managing Contribution

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# 1. Introduction to Contribution Analysis

**“It's not what you pay a man, but what he costs you that counts.”**

**Will Rogers**

## 1.1 What's Your Contribution?

Do you know? What do you contribute to your customers' products and services? To your shareholders?

If you asked this question of your employees and co-workers, could they answer? What would they say:

- I don't know;
- Nothing, I'm overhead;
- I'm in the X department but I don't know what it does;
- I do such and so but I don't deal with customers;
- I'm in R&D, not sales or support;

Or would it be:

- I make the widgets that go into the product and I just tracked down a production problem that caused one late day per thousand delivered parts;
- I provide the systems that are used to support our service and my new time tracker gives instant (rather than weekly) accountability for support calls with new email follow-up;
- I handle customer support dispatching which reduced service rep response time by 5% this quarter;
- I recruit sales and support personnel and if I get the candidates I've spotted, our sales and support same day fulfillment should improve by 10% each;
- I'm working on a new product which should cut customer field costs in half;

Of course, everyone prefers the latter answers.

## 1.2 Does the Customer Know?

Yes and No. The customer doesn't know detailed local contributions at each part of the organization. How could he? The customer only touches the organization at certain points of delivery. He cares most about is the products and services delivered there. He wants delivered value and what he sees is what he gets. If you deliver as expected, he is unconcerned with how it is done.

## Managing Contribution

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### 1.2.1 The Customer Values Execution...If You Deliver

If you don't execute as expected, your value to him falls dramatically. Let's give an example. You go to the auto parts store and ask for a battery. You expect the right battery to be in stock. If it is, you buy it and if it works OK, your chances of buying there go up because the value you were expecting was delivered.

If you go to the auto parts store and ask for a transmission, you might not expect it to be in stock. If it is, you are delighted, you buy it and chances really go up that you'll buy there again. If not, what happens next is very important.

If the auto parts sales clerk says, "we can back order this. If you order today before five o'clock, it will be shipped from the warehouse in Dallas tomorrow. It will be the following day after three o'clock." If this is OK, you place the order and two days later, after calling first, you stop by to pick up the transmission. The chances of your buying there again go up because the value you expected arrived at the time promised.

If you call after two days and the transmission is not in, you ask, "when?". If the answer is vague or insincere, you ask, "what's the problem?" If they don't know or you get a number to call, you keep probing and probing. As the time and effort costs of the service go up, your satisfaction goes down and the chances of your buying there again dwindle. Even if the part arrives, the value to you has already diminished by the disruption it caused in your own plans. Even if the price is right, it is inconvenient to buy there.

### 1.2.2 The Signs Were There

How would the auto parts store see this destruction of customer satisfaction and desire to return? Look for the shortfalls in delivering the **value of the transmission to the customer**:

- **Delayed Satisfaction**, as shown by **not immediately filling the order** (first time fill) caused by the failure to maintain inventory;
- **Further Delays**, as shown by the **missed delivery date**, caused by a through a failure to deliver;
- **Interruption of Plans**, as shown by **repeated requests for status with no answer**, caused by undependable execution;
- **Increased Uncertainty in Planning Information**, as shown by **inability to explain** where the order was in the process and inability to supply detailed assurances, caused by lack of visibility of execution; and;

## Managing Contribution

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- **Increased Uncertainty About Future Sources of Parts**, as shown by his **taking his business elsewhere**, caused by the failure to perform as a source of supply.

The signs were there and one only had to see them.

Jim MacInvale, the owner and TV ad pitchman for Gallery Furniture in Houston, TX, which offers “same day” delivery, made a fortune by holding up a backorder slip asking viewers, “did you buy furniture and get told to sit on a backorder slip?” Convenience counts. The customer didn’t want to know all the back order process details until those processes failed. As his doubts increased, his need for detail did also. That cost the customer and the supplier lost value.

### 1.3 Who do I Contribute to?

Surprisingly, you can find individual and organizational contribution simply by asking. Asking is the easy part. Asking the right questions is the hard part.

Ask an employee or organization, “what do you do?” and you will usually get a fairly detailed answer. Most of these activities actually contribute but often some do not.

If you name a customer deliverable and ask, “what do you contribute to that deliverable?”, the answer might be a bit more interesting. Most people know they contribute somehow but are not quite sure how. They don’t understand their contribution the big picture and the final delivery. They can usually tell you what product or service they deliver to a nearby organization or supervisor. Their products and services eventually comprise or serve some final deliverable inside or outside of the organization. It should be a simple matter to stitch together these local contributions until we get to the final customer, stockholder or other beneficiary.

#### 1.3.1 Contribution Chain Links Contributor(s) to Beneficiary

We call the path, from source contributor to final beneficiary, the **Contribution Chain**. A contribution chain begins at a specific contributing activity and shows what is contributed to successive activities until a delivery is made to a beneficiary. Technically organizations are more accurately modeled as **Contribution Networks or Systems** because contribution are made not along a single path but is usually made along multiple paths. A contribution chain is a single sequence of contributing activities from a single contributor to a single beneficiary. An activity is

## Managing Contribution

included if its output is a function of an activity output already on the path and its output impacts the expected delivery of value on a delivery opportunity. The **Contributing Activities** that respond to the source contributing activity (the contributor of interest) eventually end in **Delivering Activities**, that actually deliver the product(s) and/or service(s) to the beneficiary.

Some of the activities and contributions can go from very specific to very general. A production line worker who tightens bolts on widgets is very specific. A product distributor for an entire line of business is very general. Still, there is a contribution chain between them.

### 1.3.2 Example Contribution Chains for Two Beneficiaries

The contribution made by any organization depends both on the level of that organization and the type of beneficiary receiving the contribution. Figure 1.1 shows the general idea for **two beneficiaries**:

1. the Customer and
2. the Shareholder;

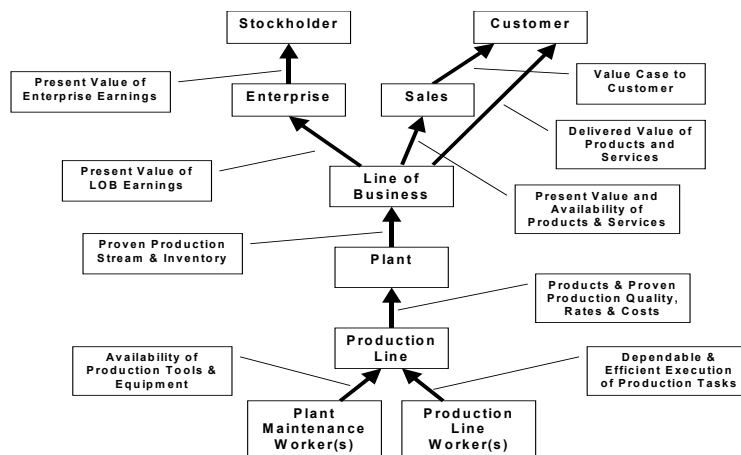


Figure 1.1. Contributions to Selected Beneficiaries at Various Organizational Levels

## Managing Contribution

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and **two source contributors**:

1. Plant Maintenance Workers and
2. Plant Production Workers.

We can identify the conceptual contributions that lie between these contributors and beneficiaries.

At the top levels are the:

- “**Customer**” of a line of business and
- “**Shareholders**” of the enterprise.

These are two different high level target beneficiaries.

At the bottom are

- “**Production Line Workers**” and
- “**Plant Maintenance Workers**”.

These represent the source contributors.

Let us trace the contribution from each source contributor to the two high-level beneficiaries of their contributions as follows:

- The “**Production Line Worker**” contributes to the “**Production Line**” activity dependable and efficient execution of production tasks according to written procedures;
- The “**Plant Maintenance Worker**” also contributes to the “**Production Line**” activity the availability of production tools and equipment;
- The “**Production Line**” contributes to the “**Plant**” activity its products and proven production quality, rates & costs;
- The “**Plant**” contributes to the “**Line of Business**” a proven production stream and inventory;
- The “**Line of Business**” makes contributions to three different beneficiaries;
  1. “**Sales**”, where it contributes proven value and the availability of products and services;
  2. “**Customer**”, where it contributes delivered value of products and services; and

## Managing Contribution

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3. “**Enterprise**”, where it contributes the present value of line of business (LOB) earnings;
  - The “**Sales**” activity also delivers to the “**Customer**” a customer-oriented value case or value proposition,
  - The “**Enterprise**” contributes to the “**Shareholder**” the present value of earnings from all earnings.

The activities and contributions trace out how plant maintenance and production workers contribute to customer and shareholder value.

Do not confuse “**reports to**” with “**contributes to**”. Organizations are structured, in theory, so that contributors “report to” the management chain best able to maintain their ability to “contribute to” the appropriate stakeholders. The individual contributor may support and/or supply products and services to many organizations, of which only a few may actually lie within its management chain.

### 1.4 Estimating Contribution

#### 1.4.1 Net Present Value of Deliveries and Returns

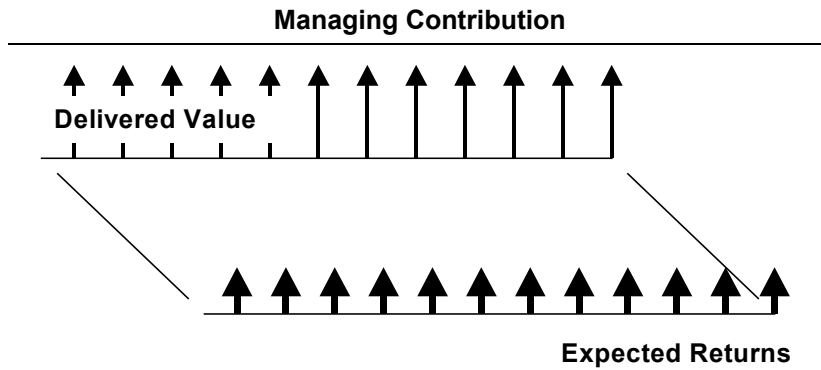
Contribution requires a definition that leads to a quantifiable metric. By focusing on a specific deliverable, the Net Present Value (NPV) of that delivery can be estimated. The contribution of a process is the improvement in the NPV of that delivery.

Since value deliveries and their returns are made over time, their NPV can be estimated using standard formulas. Although we can deal with pure deliveries with no return (pure beneficiary) and pure returns with no deliveries (pure donor), the most common case is the customer with both deliveries and returns. As we will discuss later, there are value delivered and value returned as the supplier sees it and as the customer sees it.

To illustrate the idea, consider the steady stream of value deliveries and expected returns shown in Figure 1.2. Each value delivery (product, service or both) is expected to give rise to some return to the supplier, displaced by some amount of time. In this ideal relationship, the value deliveries and returns are all consistent and timely.

The delivered value to the customer can be written as:

$$NPV_C = \sum_i \frac{V_i}{(1+r_i)}$$



**Figure 1.2.** Ideal Value Deliveries (to Customer) and Corresponding Expected Returns (to Supplier).

where:

$NPV_C$  = Net Present Value to customer of the stream of value deliveries  $V_i$ ,

$V_i$  = Expected value to customer of  $i^{\text{th}}$  delivery ,

$r_i$  = Market interest from now to the time the value is delivered,

The net present value of these returns to supplier is:

$$NPV_S = \sum_i \frac{R_i}{(1+r_i)}$$

where:

$NPV_S$  = Net Present Value to supplier of the stream of returns  $R_i$  ,

$R_i$  = Expected value return on a value delivery  $V_i$  ,

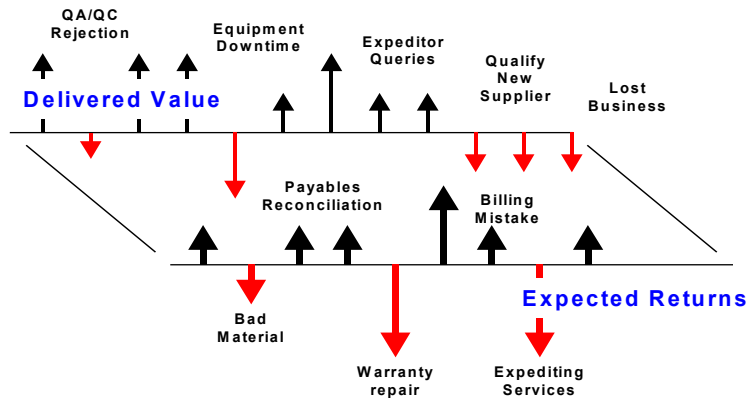
$r_i$  = Market interest from now to the time the return is received,

Figure 1.2 represents a well run company with constant value deliveries and as a result, constant and timely returns on those deliveries.

Figure 1.3 shows a more realistic expectation. In this case, supplier processes are expected to be inefficient or compromised by other problems and, as a result, the delivered value to the customer will be diminished in

## Managing Contribution

various ways. The NPV to the customer of such a pattern of delivery would be less than for timely, full value deliveries. Similarly, the expected NPV of the returns to the supplier are also decreased by the pattern of return value deliveries from the customer and support and collection costs required to complete the total transaction.



**Figure 1.3. As-Executed Delivered Values and Expected Returns.**

In other words, we are considering all activities in terms of how they influence the value of a specific product or service (value) delivery or of the final (value) return from that delivery. The calculation is done relative to the interface with the customer or other beneficiary.

### 1.4.2 Customers and the Customer Interface

Customers represent a special case of beneficiary who both receives value deliveries and returns value deliveries. In general, process contributions can flow toward and received benefits can flow back through various contribution chains with or without a quid pro quo<sup>1</sup>. Any entity can be a beneficiary of delivered value without compensation to the contributor. For example, a value delivery can be made to a charity, a political party or a government (tax).

Similarly, an organization can also be the beneficiary of contributions without a return payment or consideration. The government can provide public services and public facilities (roads, bridges, etc.). Volunteers can

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<sup>1</sup> quid pro quo: One thing for another; an equivalent.

## Managing Contribution

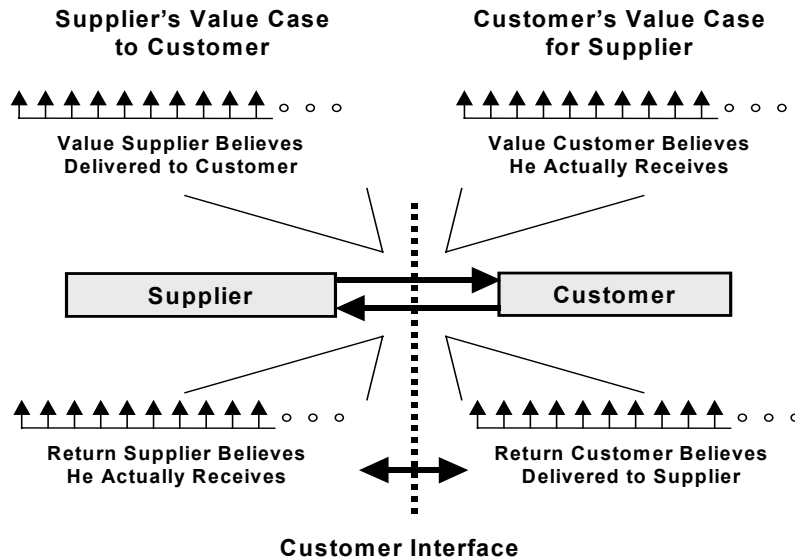
donate their services. Certain software and other content can be downloaded for free from the Internet.

What makes a supplier and its customer unique is that they are both a deliverer and receiver of value and the deliveries are connected by an obligation of some kind. In this way, a customer is a special case of beneficiary in that there is an expected return delivery of value and there is a relationship between deliveries to and returns from the beneficiary customer.

It is that quid pro quo that turns the political contribution into a bribe, and the politician into a (albeit shady) customer. Something is given and something expected in return.

Customer and Supplier satisfaction is determined locally, where the product or service is delivered and the returned value received. Hence, any expectations that suppliers and customer might have about value exchanges should be measured by the final performance expected at the customer interface. Perceptions often differ on what is delivered and received at this customer interface.

Figure 1.4 shows the different views on the transaction. The supplier expects to deliver value and the customer expects to receive it. The supplier



**Figure 1.4. Supplier and Customer Perceptions at the Customer Interface.**

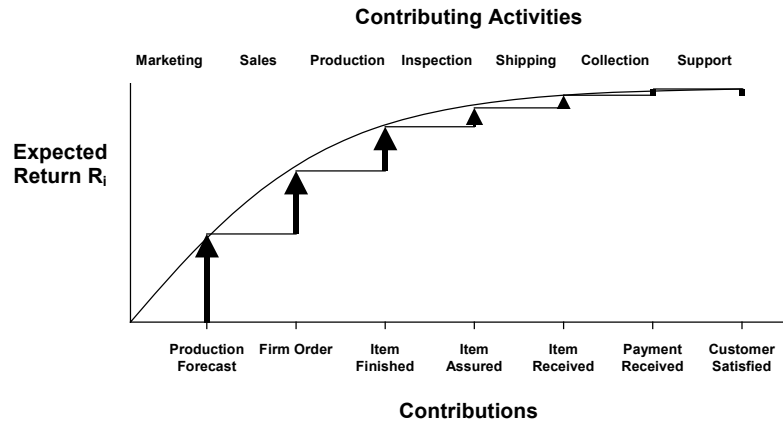
## Managing Contribution

expects to achieve a return on the “sale” and the customer expects to pay it (deliver it). There are four expectations about two different value deliveries to be made in the “sale transaction”. Because of this symmetry, some writers refer to the supplier and customer together as **trading partners**.

### 1.4.3 Changes in Expected Value from Activity Contributions

The expected present value of any particular value delivery or any resulting return also changes as individual contributions are made. As processes contribute positively to some delivery or return, the expected return on a delivered value increases. In most cases, one expects the increase in value made by each activity to be quite different.

Figure 1.5 shows how the expected **return** might change as various



**Figure 1.5. Contribution to Expected Return on Delivery Opportunity of Contributing Activities.**

contributions are made to a delivery opportunity in an ideal manufacturer. The contributing activities and contribution for this example are:

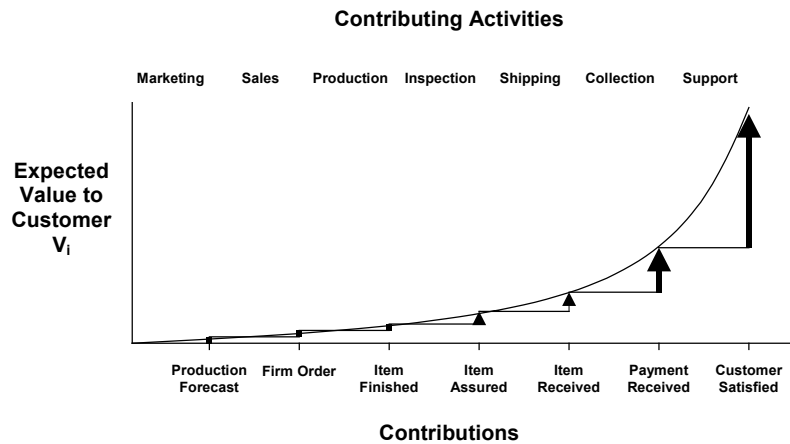
Activity	Contribution
Marketing	Opportunity Forecast
Sales	Firm Order
Production	Finished Item
Inspection	Assured Item

## Managing Contribution

Activity	Contribution
Shipping	Received Item
Collection	Received Payment
Support	Satisfied Customer

In this model confidence is high in the organization's ability to execute. As early contributions are made, the expected return jumps quickly at first, as marketing and sales qualify and close a sale for the deliverable. Later increases taper off as production, delivery and support processes are executed because there is increasing certainty in the ability of the supplier to deliver and get paid as the delivery date nears.

In contrast, in an organization whose product value is well established with the customer, the incremental contributions in expected value of the **value delivery to the customer** is quite different (see Figure 1.6). The marketing



**Figure 1.6. Contribution to Expected Value on Delivery Opportunity of Contributing Activities.**

and sales processes do less to raise expectations of final delivered value than the actual delivery of a working part or competent service and post sales support (In fact, there is growing effort to provide customer visibility into supplier processes in an effort to increase value expectations earlier). The larger jumps in expected delivered value occur closer to the delivery

## Managing Contribution

date, when more and more assurance has been built into the product or service, as it is prepared for delivery.

The point is that expectations change of both the return by the supplier and the value by the customer as each process is applied to the delivery opportunity. If you want to know how much value a process adds to the customer, shareholder, or any other stakeholder, you have to understand how much the expected return to that stakeholder is changed by the execution of that process.

### 1.4.4 Total NPV vs Change in NPV

Computing the total expected value as a result of all contributing processes is a tall order. There are many contribution chains in the contribution network leading to deliveries and returns. Their individual contribution to the value at the customer interface must be considered. Progress has been made toward this goal by such techniques as Cost Accounting, Activity Based Costing and Economic Value Added Metrics.

We can usually get good results from assessing the impact of a single contributor or from one or two changes in performance metrics. The sensitivity of the delivered value to such changes can be estimated from past data or using a number of analytical techniques. The following example illustrates how this is done.

### 1.5 Example: Two Source Contributors and Two Target Benefactors

It is suggested that \$100,000 worth of licensing and training on an internet portal for use by plant maintainers and spares procurement personnel might contribute to the bottom line of a manufacturer and finally to the value of the company in the market, as shown by market capitalization. A possible contribution chain might be:

<b>Contribution</b>	<b>Before</b>	<b>After</b>	<b>How Estimated</b>
Spares Procurement Turnaround	48 Hours	24 Hours	Internet portal allows same day ordering, cutting one day
Equipment Repair Turnaround	48 Hours	48 Hours	Simulation of new internet portal based procedures
Production Up Time	90%	95%	Analysis of production statistics with new procedures
Plant Output Per	2,000	2,100	Production line rate

### Managing Contribution

<b>Contribution</b>	<b>Before</b>	<b>After</b>	<b>How Estimated</b>
Shift			times new up time
Proven Cost Per Item	\$1 Mil	\$ 950.00	Assuming material costs hold at new rate of demand (one shift)
Gross Profit on Line of Business	\$2 Mil	\$2.205 Mil	Assuming material costs and sales price hold at new rate of supply
Annual Earnings per share	\$1.00	\$1.05	Normal financial accounting assuming all else constant
Share Price	\$10.00	\$10.50	Assuming Price/Earnings Ratio of 10
Capitalization	\$10 Mil	\$10.5 Mil	1 Million Shares Outstanding

These numbers indicate that a \$100 K worth of training would deliver \$500 K worth of value to the company, a 5 to 1 payoff for the shareholders!

But what about the increased value delivered to the customer?

<b>Contribution</b>	<b>Before</b>	<b>After</b>	<b>How Estimated</b>
Spares Procurement Turnaround	48 Hours	24 Hours	Internet portal allows same day ordering, cutting one day
Equipment Repair Turnaround	48 Hours After	48 Hours	Simulation of new internet portal based procedures
Production Up Time	90%	95%	Analysis of production statistics with new procedures
On time Delivery	96%	98%	Analysis of production and inventory statistics with new up time
Client Inventory	1500	1200	Analysis of client item needs against delivery time variance
Client Inventory Costs	\$3.0 Mil	\$2.4 Mil	Client financial analysis

The payoff to the client in this example would be \$600K in reduced inventory, a 6 to 1 ratio!

Thus, in this hypothetical example, there are two different returns for each of two contribution chains, one to the stockholder and one to the client. The contributions made along the chains differed, as well as the type of analysis that would be made to estimate them. In this case, the change in returns was the goal, not the total return.

Note as well, that these contributions had clear and highly representative metrics. This is not always the case. The choice of metric can be critical to managing the contributing processes so that the best final return is achieved. This is aided by knowing the contribution chain of interest in the time.

### **1.6 Remainder of the Book**

The rest of this book shows how to get to such numbers. The contribution chain tells us the contributing processes between a single contributor and a single beneficiary. Various techniques make the processes more visible. Metrics are chosen to indicate the performance of that contributing process. Current (and improved processes) are measured or simulated. Finally, value delivered or received by the contributors in the contribution chain is found for a particular beneficiary. Similar value deliveries and returns can be found for customers, government regulators, suppliers, i.e., all contributors, beneficiaries and customers of the enterprise.