

## Profit Velocity and Data Quality

### The Data Quality Spectrum

“Garbage in, garbage out.” This phrase, so commonly used, is perhaps the simplest way to sum up the weaknesses of even the most sophisticated information systems.

As every experienced manager knows, there’s no point in implementing software unless you have data of sufficient quality to feed it. No system is stronger than its weakest link. Great software cannot make up for bad data. Truly useful information systems bring together good data and good software. One without the other is a waste of time and money.

But in real businesses, just as there’s no “perfect” data, there isn’t much pure “garbage” either. If “perfect” data rates a score of 10 and “garbage” a zero; then, like most things in life, most corporate data spans the quality spectrum from 1 to 9.

### Transaction Data vs. Derived Data

Where a particular data set lies along the quality spectrum is usually driven by the type of data itself. “Transaction Data” is captured record-by-record from tangible events like orders and shipments. “Derived Data,” on the other hand, is summary level information; a collection of totals, averages, and percentages calculated from underlying “transaction data.” Unfortunately, it is all too common for various departments of the same company to use different—often undocumented—calculation methods to create “derived data” from the same “transaction data,” causing inconsistencies and gaps that undermine the perceived reliability of that “derived data.”

In sharp contrast, “Transaction Data” is likely to be of very high quality. Why? Because companies must accurately record transaction-by-transaction details just to stay in business.

Customers are quick to point out errors. So order, shipment, and invoice data tend to be of extremely high quality. Product codes, prices, quantities, and dates may not be absolutely perfect, but are usually quite accurate. Consequently, most companies possess “transaction data” that is at the high end of the data quality spectrum, while their “derived data” may be of questionable quality.

### The Corporate Data Spectrum



### PV Accelerator™ Uses Transaction Data

Recognizing the real world challenges of data quality, the *PV Accelerator* software requires only “transaction data.” At a minimum, just 8 data elements are required. If available, other optional data elements can be fed into *PV Accelerator*, but only 8 data elements are actually needed:

#### Required Data Elements

Data Element	Source
1. Sales Order Number	Invoices
2. Ship Date	Invoices
3. Product ID	Invoices
4. Quantity	Invoices
5. Revenue	Invoices
6. Customer	Invoices
7. Direct Cost by Product ID	Purchasing Records
8. Units per Hour by Product ID	Production Records

## Six Elements of Invoice Data

The first 6 required data elements (sales order number, ship date, product ID, quantity, revenue, and customer) are taken from the invoice file and are of very high reliability.

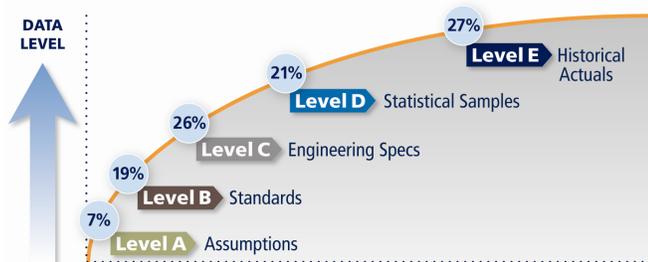
## Direct Cost by Product

The 7<sup>th</sup> required data element is direct cost per unit by product type. In most cases, this is raw material cost but in some cases, companies may decide to supplement their raw material cost data with data on freight, energy, etc. to allow the calculation of total direct variable cost per unit. The quality of these data elements can vary. But generally, transaction data from purchasing records is of high quality.

## Production Speed by Product Type

The 8<sup>th</sup> required data element—production speed by product type—is the only one that challenges some companies. Depending on the situation, a manufacturer’s production speed data will fall into one of five quality levels. In PVS’s experience, 74% of companies have data at Level C or better. But any of the five levels can be processed by *PV Accelerator* to reveal significant profit gain opportunities. Of course, when more precise productivity data is available, smaller, more subtle profit gain opportunities can also be identified.

### The Production Speed Data Spectrum



## Sources of Production Speed Data

### A. Estimates

Production and operations experts provide their best estimates of production speeds by product based on their experience.

### B. Standards

Product cost analysts gather standard run rates by product for costing studies.

### C. Engineering Specs

Expected production speeds are based on engineering test runs and often used for scheduling purposes.

### D. Statistical Samples

Statistically valid samplings of actual production runs for products made on specific machines are often prepared by engineering.

### E. Historical Actuals

Records of each production run of each product on each machine, including downtime and yield by reason code, accumulated over an appropriate time range, are captured by production control and MES systems.

## Make the Most of the Data You Have

By requiring just a few elements of readily available, high quality “transaction data,” *PV Accelerator* is designed to help you avoid costly and frustrating “data cleansing” projects.

Your team can immediately exploit the profit-enhancing information hidden in the transaction data you have on hand today. If your company is like the many others using *PV Accelerator* to make more money, your data is neither “garbage” nor “perfect.” It is somewhere in between. And with *PV Accelerator*, you can make the most of that data, as it is today, to uncover significant profit gain opportunities.