

10%

The One Percent Solution
How demand drives financial performance.

► executive summary

Strict regulatory requirements. Highly competitive environments. Globalization. Ever-growing amounts of performance data. Increasing pressure to do more with less. The imperative to be demand driven. It's no wonder that measuring, reporting and overall business performance are hot topics. Companies in every industry are seeking ways to get a clear, accurate view of operational performance. Essentially, they need an effective, reliable approach to connect operational performance to financial results.

To advance the general body of knowledge pertaining to corporate performance management, SSA Global™ commissioned Rod Clarke, an independent consultant with extensive experience as an IT executive, to research the topic. Clarke has produced “The 1% Solution,” an executive report with a proposition as profound as it is simple. The concepts here apply to all companies, but have particular relevance to those in the manufacturing sector.

In “The 1% Solution,” Clarke focuses on what truly represents corporate value. It is not share price, as some believe. Instead, the truest measure of corporate value is return on capital employed (RoCE), a calculation showing return on its assets before taxes and interest. A similar measure of value, return on assets (ROA), calculates earnings after taxes and interest.

In “The 1% Solution,” Clarke identifies seven core operational measures that can be leveraged to fine-tune a company's enterprise-wide business processes and achieve a higher return on capital employed. He found that each of these core measures positively affects the financial state of a company, in addition to its overall performance.

The seven core measures, critical to the smooth and profitable running of any company's business processes, from design through manufacturing to distribution, are: demand forecast accuracy, the perfect customer order, lead-time reduction, velocity, right first time (quality), schedule achievement, and on-time new product introduction. All of these measures are key performance indicators of how well a company is able to operate a demand-driven supply network (DDSN) and let customer demand drive its entire enterprise — a business objective that, SSA Global believes, has taken on increased importance in today's global economy.

To get started, companies may want to pick a subset of the seven core measures that are most critical to their particular industry, and implement those measurements quickly, to prove ROI. For example, SSA Global has identified these critical “vital few” priorities for several sectors of the manufacturing industry — including aerospace and defense, electronics, automotive, and industrial machinery and equipment industries — four sectors in which SSA Global has amassed considerable domain expertise. (See page 37, section 10 of this document.)

Based on expected efficiencies and cost savings linked to improvements in the seven core areas, it has been demonstrated that even modest gains in these measurements can act together to spur a significant increase in RoCE. If the level of performance against each core operational measure rises by just one percentage point, for example, it can be shown that RoCE could nearly double.

Table of Contents

1	Introduction: Back to Basics – An Expert’s View	4
2	The Value of Performance Measures	5
2.1	What is value?	5
2.2	"Good" measures and "bad" measures	7
3	Real-world Performance Measurement	8
3.1	The core measures	8
3.2	Core measure definitions	9
3.3	Consistency, coherence, and relevance	12
3.4	From the vital few through the core measures to operational measures and process indicators	15
3.5	The cumulative financial effect	16
4	Value Measurement in Different Industry Sectors	26
5	Implementation Issues and Guidance	27
6	What and Why – Cause and Effect	29
7	SSA Corporate Performance Management (CPM)	31
8	SSA Global and the Demand-Driven Supply Network (DDSN)	33
9	Pick what’s critical: Prioritizing Core Measure Implementation	35
10	About the Author	39
11	Appendix A	40
12	Appendix B	41

» introduction: back to basics — an expert's view

1 If we needed evidence that the current ways of measuring “success” in a business need evaluation and updating, then there is plenty for all to see. There are many recent examples of businesses that abandoned the old fashioned disciplines and argued that the old order was dead. Now perhaps it seems that at the core nothing may have really changed. The time has come to return to the tried-and-tested measure of corporate success — Return on Capital Employed (RoCE) – a true measure of corporate value, comparable in all industries and across industry sectors. In the end, if we aren't achieving a RoCE greater than can be achieved by putting our cash on deposit, then what have we really achieved? But the issue is deeper than just going back to RoCE. Even RoCE is a historical measure — it describes past performance, but gives little view of likely future performance. And this is what all management teams and investors would love to have – a predictor of future performance. This can only be achieved by developing an enterprise that is both agile and focused on excellence, where strategic intent becomes operational reality through the ability to measure and manage performance. The challenge for most enterprises is what to measure and what actions to take. After all you can't improve what you can't measure and you can't measure what you can't see.

This report will show how any business can operate just such a set of predictive, operational measures, and how corporate performance measurement from SSA Global can help deliver this capability. It has been written from the perspective of more than 20 years experience of designing, implementing, and operating performance measures in major corporations.

To successfully implement and operate such measures, the critical issues are universal:

- How can performance measures be used to monitor success in achieving the corporate strategy?
- How can they guide and motivate our employees?
- How do they inexorably predict future financial performance?
- How can they be easily defined and implemented using standard data analysis tools?
- How can they help any business transform its performance?

►► the value of performance measures

2 2.1 What is value?

Every employee is faced with decisions and choices every day. Empowerment is key, allowing them to make the smaller, day-to-day decisions themselves. But they must be provided with guidance to enable them to make decisions consistent with the corporate goals. An effective set of measures will give them the necessary framework — is customer service the overriding ambition? — or is cost reduction the priority? — how about production efficiency, quality, new product introductions?

Well-defined, well-understood measures provide a fact-based approach to managing the business every day. Performance is no longer measured by anecdote. Action plans to improve performance can be well targeted as the true underlying level of operational performance — and the reasons for it — are understood.

Connecting the measures for success in the boardroom with activity at the shop floor and with the customer is achieved by cascading the measures through the organization and measuring what is done in a relevant, achievable way.

But if the mechanics of performance measurement are well documented and easily available, why are so few organizations seeing business benefits?

The real test — as with all good business practice — is making performance measures work by demonstrating to people why they are important. Answering the “what’s in it for me?” questions. Showing that the senior managers are going to do what they say everyone else must do — use the numbers to understand and improve the business.

A few real examples of behaviors clearly show the problems we face:

- If you measure me irrationally, then I will behave irrationally.
- If you change the way you measure me, I will change the way I behave.
- If you don’t explain how you are measuring me and why, no one will know how I will behave, including me!
- If you beat me when I report the “truth” as I see it, then I will find a way for the “truth” to match your expectations.

An early manager of mine (I’m talking about 25 years ago, so he was definitely of the “old school”) told me most days that his maxim was “what gets measured, gets done.” This was his explanation for the enormous amount of checking and rechecking that he did of everybody’s work. It wasn’t that he didn’t trust them — but if he didn’t “measure” then they wouldn’t “do.” However, I, along with all his other staff, quickly learned that the answer to this approach was simple. You didn’t have to do your job the “right” way, or even the best you could — you just had to make sure that the things he “measured” were seen to be “done.” The power of measures is seen every day and everywhere — in the salesman’s commission structure, the production operators’ bonus pool, the purchasing agent’s personal objectives. And every day we see the dangers of “what gets measured gets done.” If you measure the wrong things, you get the wrong things done — extremely effectively!

the value of performance measures

Another pitfall is “death by a thousand measures” — the set of measures is added to year by year, so that everything is measured (because “what gets measured, gets done”!), and no priority is given to any particular measures. In any business situation, an employee can make many different decisions. If he is trying to balance so many measures that he can’t remember what they are, or those he can remember appear to be in conflict, what does he do? Well, we hope he does his best — based on his judgment, experience, etc. But if we have been very careful in identifying the most important measures, which override everything else in the business, which are totally consistent with the business vision and strategy, then we can expect the decisions he makes to contribute to our strategic direction, every time. And be confident that this will be true in all circumstances and at all times — achievement of our goals will be by design and not through serendipity.

But it is not enough to designate simple sets of measures that cascade from the boardroom to the shop floor, that provide direction and guidance to our people, and that are fact-based and driven from our enterprise applications transaction engine. The way that the senior managers respond to the performance levels reported to them is what will actually set the seal. If they use the reports to understand the true level of performance and to diagnose the action plans needed to improve — then they will see honest reporting and business improvement. If they start to shoot the messenger, using the performance measures as a stick to beat individuals or parts of the business — well then they will deserve what they get!

And don’t forget — our employees are nearly always smarter than we give them credit for! It won’t take them long to work out what the real rules of the game are, and to play accordingly — so the business now spends time and money generating performance measures that no one really believes in, and the purpose of the activity is survival of the individual, not improvement of the whole.

The enthusiasm of people will be clear when they see real measures, honestly reported on every notice board in the company. Please see **Appendix A** for an excellent example of an effective approach to employee communications.

2.2 “Good” measures and “bad” measures

There is more that can be done to increase the chance of success. There certainly has to be focus on all the human issues previously discussed. But if we are smart in designing and defining “good” measures, then real opportunities to succeed are created.

So what are “good” measures? They are ones that have an inextricable link with the business strategy. They have a process focus — looking at the impact on the business as a whole, not on an individual or a single function. And they are “output” focused — they look at the effect of performance on the outside world, rather than measure internal activity.

Good Measures . . .

	Number 1 innovator in the market	VISION
↓		
	Develop exciting products for the customer	OBJECTIVE
↓		
	98% of new products on-time Time to market reduced from 12 months to 12 weeks	PERFORMANCE MEASURES
↓		
	Time to market will be reduced to 9 months by December this year and to 6 months by end next year	IMPROVEMENT TARGETS

As for “bad” measures, they often share the following traits:

- Accountancy metrics in isolation
- Backward looking
- Focus on efficiency
- Encourage functional behavior

►► real-world performance measurement

3 3.1 The core measures

There are a small number of “core” operational measures that are universally applicable in a variety of manufacturing industry sectors and are potentially relevant to many others. If these measures are regularly reported, reviewed, and used as the basis for improvement planning, the evidence shows that improved business performance follows.

These measures are as follows:

- Demand Forecast Accuracy
- The Perfect Customer Order
- Lead-time Reduction – sales, production, logistics and suppliers
- Velocity – all activities, all functions
- Right First Time (quality) – production and suppliers
- Schedule Achievement – production and suppliers
- On-time New Product Introduction

The direct relationship between these operational measures and the financial health of a business will be examined later in this report. Each of these measures is critical as part of an overall “health check” for a manufacturing company. Each measure requires a detailed definition covering the following:

- Definition – how the measure is calculated
- Purpose – why we measure this activity
- Horizon – the time periods we measure (days, weeks, months)
- Source of Information – where the data resides
- Reporting – how the data is reported (for example, online, printed reports, graphs, etc.), levels of detail, frequency and timing, and recipients
- Accountability – who is accountable for generating the information and for the level of performance
- Process – the steps we follow to report the measure, review performance, and decide on action plans

From the core measures, every business must select its “vital few,” based on the industry sector, business environment and strategic goals of the organization — the vital few will then provide all our people with the guidance and direction they need every day. **See Appendix B** for a discussion on the relationship between the core measures and the value disciplines.

3.2 Core measure definitions

The Perfect Customer Order

The Perfect Order is defined as one that has all the following characteristics:

Quality – to the prescribed, agreed-upon quality.

Time – delivered to the customer on the agreed-upon day and specific time if defined.

Quantity – the exact quantity delivered, within any measuring tolerances agreed upon with the customer.

Place – delivered to the agreed-upon location.

Form – delivered in the agreed-upon physical form, including packaging.

Paperwork – with all agreed-upon paperwork required by the customer available, including any manufacturing record, batch record, dispatch and delivery notes, and sales invoice with correct pricing and terms.

We measure each individual element in isolation to perform root cause analysis and implement improvement action plans. For each element the measure is reported as follows:

$$\frac{\text{Number of orders meeting agreed standard for this element}}{\text{Total number of orders in period}} \times 100\%$$

The broader “Perfect Customer Order” measure is reported as follows:

$$\frac{\text{Number of orders meeting agreed standard for all elements}}{\text{Total number of orders in period}} \times 100\%$$

Demand Forecast Accuracy

The accuracy of a demand forecast can be simply calculated:

$$\frac{\text{Actual demand for the period}}{\text{Forecast units sold for the period}} \times 100\%$$

The tricky thing is to define the level at which demand forecast accuracy is to be measured (for instance, at individual item, product family, etc.), the length of the periods in which the measurement should be carried out, and the “horizon” at which the accuracy of the forecast should be measured. Also note that actual “demand” should be used and not sales, which will be affected by ability to supply, on-time delivery, etc.

These elements are very specific to the individual business situation — the product range, the manufacturing capabilities, the lead times for production and raw materials, the competitive position, etc.

Lead Time Reduction

Here the focus is on continuous reduction in all sales, production, logistics, and supplier lead times. Targets should be set for (at least) annual reductions in lead time, with the focus on the overall supply chain lead time, not the individual elements.

$$\frac{\text{Average Lead time this period}}{\text{Average Lead time last period}} \times 100\%$$

Right First Time (quality)

A simple, well established measure:

$$\frac{\text{Defects x 1,000,000}}{\text{Units processed}} \times 100\%$$

This simple measure can be applied to all activities in a manufacturing business, not just the traditional ones of production and purchasing. It can be applied just as effectively to sales order capture, warehouse picking, accounts payable schedules, etc.

Schedule Achievement

Again this measure can be applied in all circumstances where a schedule has been developed and approved across the business, so that others are relying on it. This includes the usual production and purchasing schedule, but can also apply to engineering schedules (for both maintenance and new product development work), product launch schedules, promotional campaign schedules, etc.

$$\frac{\text{Number of orders/activities completed on time}}{\text{Number of orders/activities scheduled for the period}} \times 100\%$$

In every case, the quantity and quality of the order or activity must be correct for it to be considered “complete.”

Discussion will be needed within an organization to establish the appropriate “periods” for the measurement to be applied to, and also the “horizon” at which the schedule to be measured against is captured.

On-time New Product Introduction

It is sometimes argued that this should not be a separate measure, but is merely one example of the Schedule Achievement measure already defined.

However, the need for complex inter-disciplinary activities, together with the failure of many organizations to manage this critical activity well, lead me to define it as a separate “core” measure.

Measurement for On-time New Product Development is:

$$\frac{\text{Number of new product milestones completed on time}}{\text{Number of milestones due}} \times 100\%$$

Velocity

While the Lead-time Reduction measure gives an indication of the improvement in each element of the supply chain activity, velocity is focused on eliminating all non-value added activity in all processes.

It can be calculated as follows:

$$\frac{\text{Time where value is added}}{\text{Total time for activity}} \times 100\%$$

When first measured, this is a real test for any organization and its senior managers — the results are almost always uncomfortably low, often in single figures. Think about an airline journey from London to Paris — actual flying time around 40 minutes. How long do we spend on this journey in total — what is the velocity factor?

3.3 Consistency, coherence, and relevance

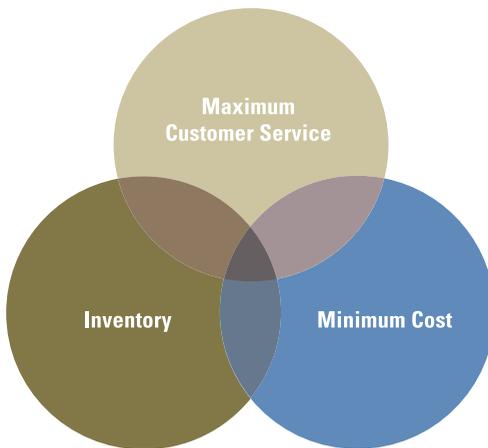
In selecting the vital few it is critical that the consistency and coherence of the measures are carefully considered. Once again, what may seem simple and obvious in the boardroom must be tested across all levels and activities in the business. It can be assumed that the board members know what the corporate goals are — the key is to ensure that the employees do, too.

Many businesses select their critical measures as being customer service, cost reduction and inventory reduction. (And usually with that degree of precision!)

The difficulty is in translating performance measures into the day-to-day actions that must be taken to achieve them. If the cause and effect required to achieve the desired result isn't understood in the boardroom, how can the employees be expected to know what is required of them?

A simple diagram demonstrates the lack of clarity that often results:

Where is the Priority?



What is the guidance provided to the employee when faced with a decision — should customer service or cost take priority? Where does inventory fit?

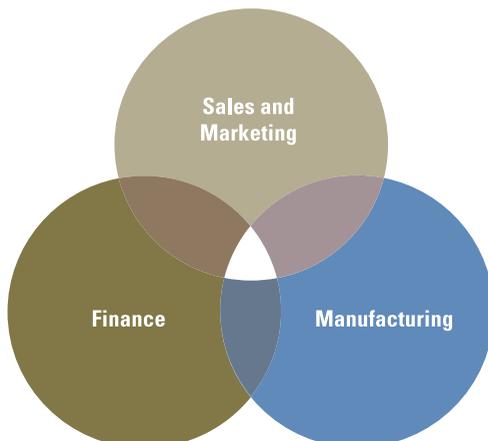
Yet, this made sense to the senior managers at the time they put the measures in place — if only they had asked the staff.

Similarly, conflicts between functions must be minimized (or even avoided altogether in an ideal world). If each function is allowed to set its own measures, targets, and priorities without reference to the “core operational” measures or the vital few, conflict is almost inevitable.

Again, a simple example:

Conflicting Functions

A sales success is a manufacturing nightmare and a financial disaster!



real-world performance measurement

A frequent example is the promotional campaign. Sales and marketing are measured on increased sales or market share, so they decide to run a special campaign, which will increase volume, and may even require special packaging. They do not talk to manufacturing about this, and the increased demand hits unexpectedly — resulting in late deliveries, overtime costs, additional raw material costs, etc.

Suddenly, the campaign is causing problems with customers, while simultaneously reducing the gross margin of the business. And the post mortem will allow every one to blame each other!

And the final test is relevance. How do the measures map against the organizational groups in the business — will every area of the business see that its performance is measured by at least one of the vital few? A good way to test this is to look across the organization to see how each core operational measure fit

Core Operational Measures and Functional Areas

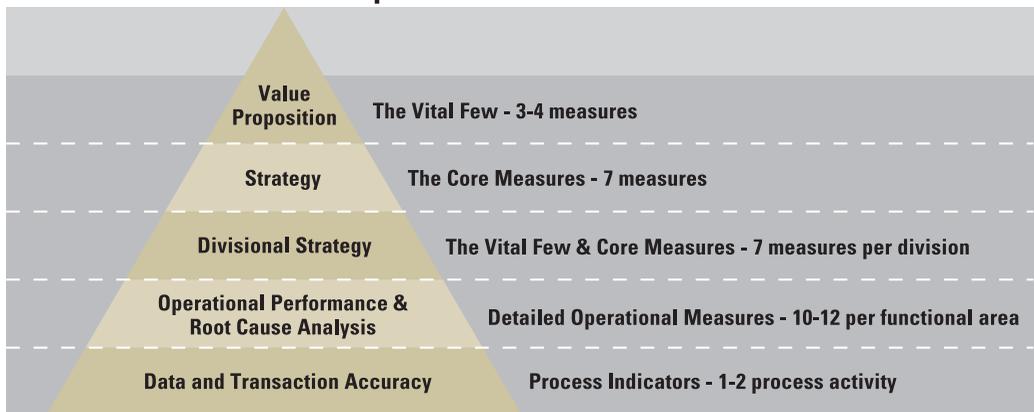
Measure/Function	Sales	Purchasing	Inventory	Manufacturing	Finance	Research & Development
Demand Forecast Accuracy	○					
The Perfect Customer Order	●			○	○	
Lead-time Reduction	○	○	○	○	○	○
Velocity	○	○	○	○	○	○
Right First Time (quality)	●	●	●	●	●	●
Schedule Achievement		●		●		
On-time New Products Introduction	●					●

This matrix can also help test the vital few selection to ensure that all employees see a direct contribution to the corporate goals.

3.4 From the vital few through the core measures to operational measures and process indicators

The need to have a consistent, coherent cascade of measures from the corporate level, with the vital few, through to the daily operational level is critical if there is to be clear direction to the employees in their day-to-day decision-making.

From the Vital Few to 300+ Operational Measures



This hierarchy shows how the cascade flows. The vital few and core measures have already been defined and at the corporate level need no further explanation. The divisional level is important in many organizations that operate as multiple businesses. This level translates the corporate vital few and core measure priorities into ones appropriate to the division — this is critical as most employees are faced with “divisional” rather than corporate decisions each day. Below the level of the core measures lies a large number of much more detailed operational measures and process indicators. The detailed operational measures are analyzed at a lower level than the core measures — for example, the individual elements of the Perfect Customer Order, the site-specific elements of quality, etc. The precise number of measures at this level will vary between businesses — the critical thing is that each is consistent with and contributes to the core operational measures. This ensures that the day-to-day measures build up to divisional and corporate performance reports, enabling detailed trends and root cause analysis to be carried out.

At the lowest level are the process indicators. There are likely to be hundreds of these (300 is typical) — monitoring the effectiveness of each process area at a detailed level. In themselves, they are not measuring the performance of the business, but the health of the process data and transactions. However, as everyone who implements enterprise applications is well aware, the underlying accuracy and timeliness of the data and processes is crucial. Examples include inventory accuracy, number of suppliers, changes to short/medium term production schedules, etc. Again, it is critical that these indicators are designed so that they are consistent with the hierarchy above them — each should contribute to a measure, and consequently performance, at a higher level.

3.5 The cumulative financial effect

Most organizations focus on their financial measures and ratios — revenue, profit, cost, working capital, cash, and earnings per share. And these are crucial; they are key indicators for the external stakeholder — the investor, banker, and supplier. Financial ratio analysis enables comparison with other companies in the same industry and across industries.

However, financial measures on their own are the result of business management and not the means to manage the business itself. In this context, purely financial measures fail the “good measure, bad measure” test.

The proposition offered by the core measure approach is as simple as it is profound. Namely, that modest improvements across all the core measures can transform the financial health of an organization as measured by its RoCE. To see why this is the case, we should first look at the correlation between the core measures and the balance sheet elements that are cumulatively expressed as RoCE.

Map Operational Measures to Achieve Improved Results

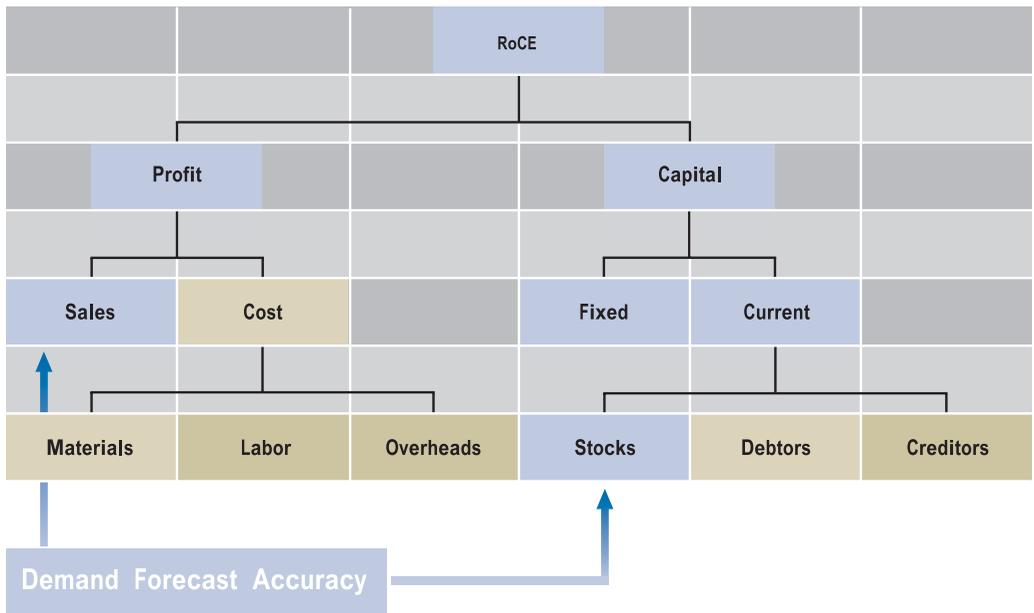
Measure/Results	Sales	Material Cost	Labor Cost	O'head Cost	Fixed Asset	Debtors	Stock	Cash	Creditors
Demand Forecast Accuracy	○				○		○ →		
The Perfect Customer Order	●	○				● →	○ →	→	
Lead-time Reduction	○						○ →		
Velocity	○						○ →		
Right First Time (quality)	●	●	●	●	●	● →	○ →	→	
Schedule Achievement			○	○			○ →	←	○
On-time New Product Introduction	●			●			● →	←	●

This matrix shows the impact of improved performance in each of the core measures on the key elements of a company’s financial statements. For instance, improvements in the Perfect Customer Order measure lead to increased sales (as repeat orders increase, business is gained from less reliable competitors, etc.), reductions in material costs (as less reworking is needed to meet urgent orders) and reduced debtors/receivables (as on-time deliveries and “perfect” paperwork can help eliminate many reasons for late payment).

So making a modest improvement in Perfect Customer Order performance can lead to improvements across several areas of the financial statements.

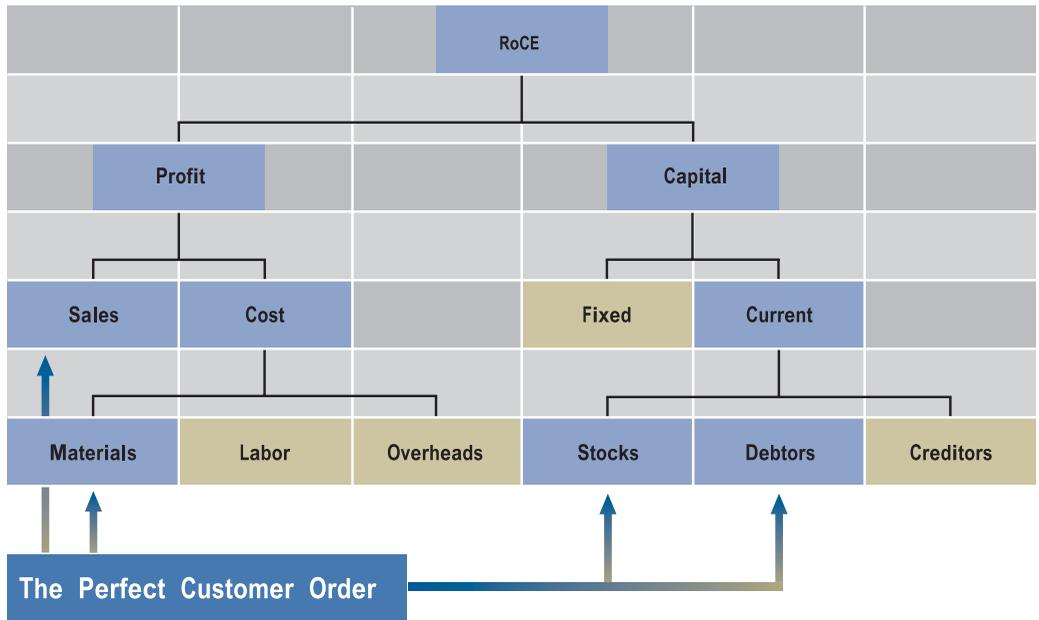
Demand Forecast Accuracy

Improving the accuracy of demand forecasting can lead to increased sales, as the sales effort is focused on the channels, products, and customers where success is most likely. It can also lead to a reduction in stock levels as less redundant finished product is produced to meet unforecasted sales.



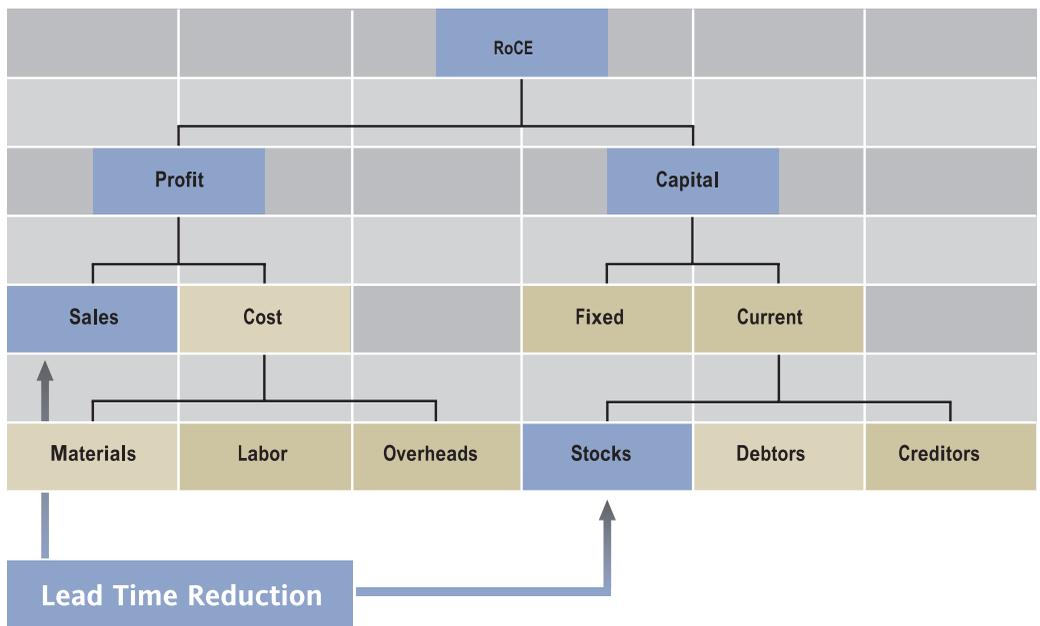
The Perfect Customer Order

An improvement in customer delivery performance (the Perfect Customer Order) can lead to improved sales (through increased market share), reduction in materials cost (through reduced rework for delayed orders), reduced stocks (as lower inventories will be held), and lower debtors (as cash can be collected with fewer disputes).



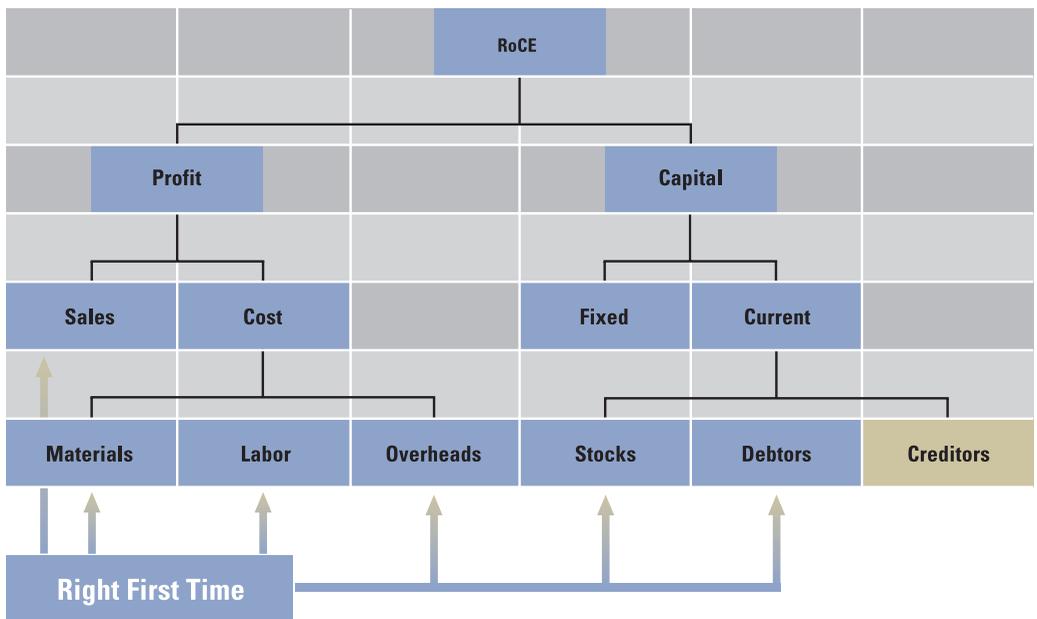
Lead Time Reduction

Next, reductions in lead time can increase sales through improved competitiveness and reduce stocks through shorter response times to demand.



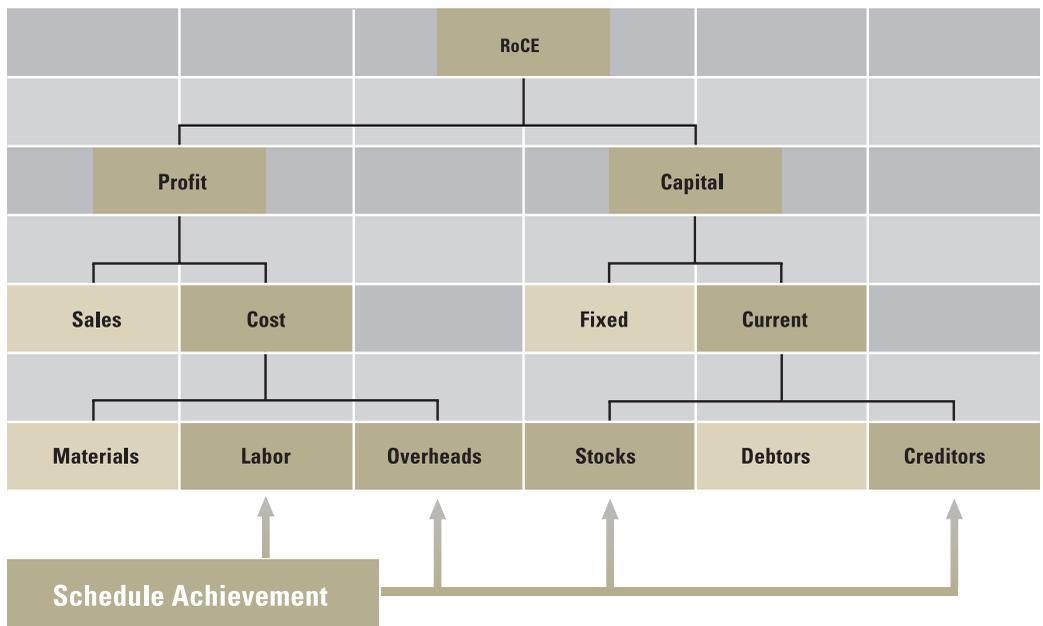
Right First Time

Increasing the ability to achieve Right First Time quality can lead to improvements throughout the organization. Sales can increase with the reputation for quality. Material, labor, and overhead costs can fall, as less rework and waste is generated. Stocks can fall as allowances for scrap and waste reduce. Debtors or receivables can reduce as increased accuracy of accounting makes collection easier, and fixed asset requirements can fall, as less machine time is needed for rework.



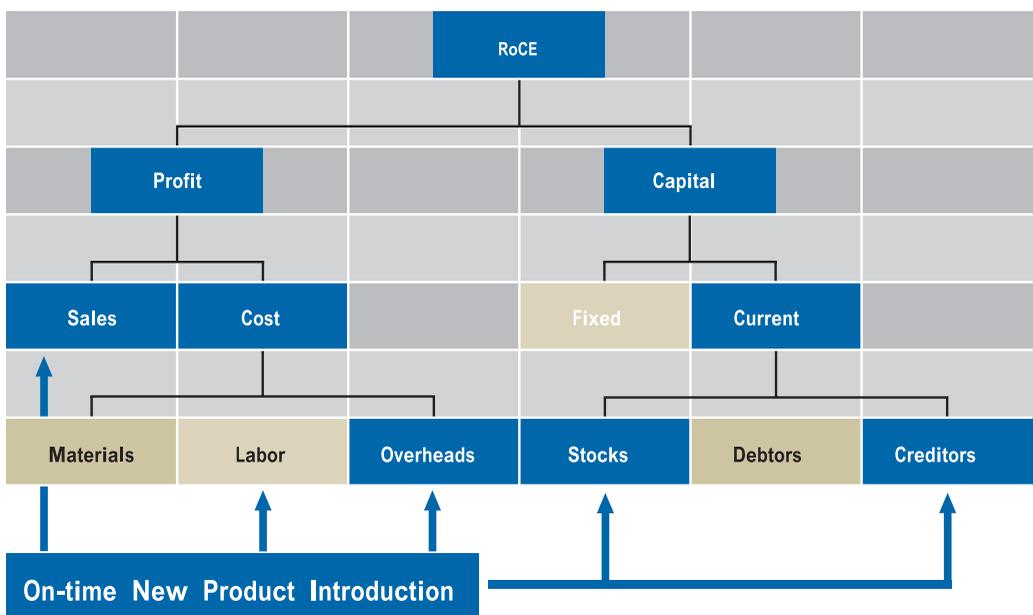
Schedule Achievement

If the production and purchased items schedule is consistently achieved, improvements can be seen in labor and overhead costs (through reduced overtime) and lower stocks (through lower work in progress and raw material stocks). There are also opportunities to reduce creditors or payables, as improved planning of material purchases enables renegotiation of payment terms.



On-time New Product Introduction

Finally, delivering new products on time can result in increased sales, as new markets and segments can be entered. Reductions in overhead can be achieved as development time reduces. Stocks can be lowered as less inventory of new products is required before launch. Payables can be reduced, as improved management of new material suppliers enables better prediction of requirements and contract term negotiations.



The core measures provide the radar that senior management and the whole business rely on to see how well they are performing today, this week, this month. And as has been demonstrated in this report, there are direct relationships between the level of performance achieved at the operational level and the resulting financial measures. Everything else being equal, improved performance in any one of the areas will lead to a financial improvement.

The core measures, therefore, provide a good predictor of future financial performance – not perfect because of the impact of external events such as economic cycles, new competition or rising material costs – but a strong trend in an operational core measure can lead to strong financial results, all other things being equal.

►► value measurement in different industry sectors

4 Although every industry faces its own challenges, a consistent approach to measuring performance is possible through the deployment of these core operational measures. This provides the critical method of measuring and improving performance across all manufacturing sectors.

SSA Global has tested and validated this approach on industrial enterprises in a number of core market sectors, including:

- Automotive
- Aerospace and Defense
- Industrial Equipment and Machinery
- Electronics

The core measures apply in their entirety to every sector, and there are no top level or vital few measures that are unique to an industry sector. Where additional measures have been identified, they can be seen as lower level, operational measures rather than of corporate importance. A robust performance measurement process must address these issues effectively if it is to be valuable. And the process for defining, generating and reporting these additional measures must be consistent with the core measures.

However, each of these industry sectors has different challenges and issues facing them, as do the enterprise organizations within each sector. This will lead to a different focus on the vital few of each industry and this is examined in the following section.

The vital few and industry sectors

As a leading enterprise application provider, SSA Global has validated the 'vital few' and 'core operational measures' within several key industry sectors. Each one faces its own challenges and issues, and the application of the core measures has been reviewed to ensure that they provide the breadth and relevance necessary to assist management in such businesses.

No two sectors are identical, or two businesses within a sector. Consequently, while the core measures apply universally, the vital few in each industry are different. For each industry sector, the vital few are identified, as shown in the Conclusion, the SSA Global perspective, together with any critical lower level measures that must be in place to enable performance to be measured effectively.

► implementation issues and guidance

5 Implementing a major enterprise application— such as ERP, CRM, SCM, or PLM— often is hard work. It generally requires real stamina, focus, and determination to complete such a transformation in the basic transaction engine of any business. The whole issue of management reporting and performance measurement is often neglected. Even when it has been considered at an early stage, it is a convenient and seemingly discrete activity to be delayed if the overall project starts to take longer or cost more than planned. How often is "Management Reporting" seen as a key element in the "Post Implementation" priority list?

However, these issues should be seen as a critical part of the initial implementation. The thinking is simple — if we don't have good reporting and performance measurement, how can senior management answer business questions like — are we making money, are we meeting our customer promises, how effective is our manufacturing? And similarly, how will we answer project questions like — how well are our new processes operating, where should we be focusing our efforts in refresher training, are there areas where further redesign is needed?

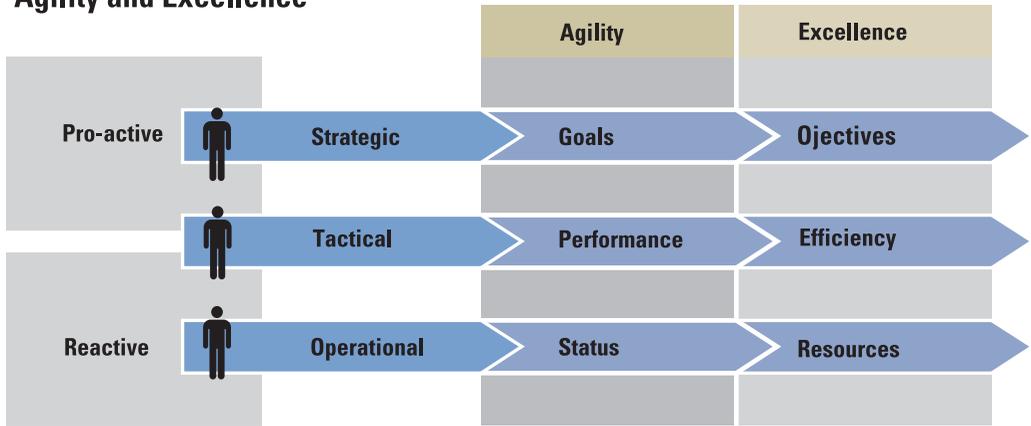
So defining performance measures has always been an integral part of the process design phase of any project. The vital few, our business strategy, our business vision and targets — all these should influence the process design. Including performance measures as a key part of that design ensures their inclusion from day one. As we cascade the vital few through the full set of core measures to the complete set of operational metrics used throughout the business, we can enhance and integrate the entire process model. We are driving our design by focusing on the output and results we desire, rather than indulging in the "recreational" design, which so many project teams carry out. Another reason for starting to work on performance measures early in a major redesign project is that it creates an opportunity to start to build an understanding of current levels of performance. Until the full enterprise application is implemented, collecting the data may be difficult, but this should not be an excuse. We can generate data to the new definitions and start to report performance levels through the organization. This is a tremendous way to create a real feeling of change through the business — far more effective than any number of change management processes, newsletters, etc. And we will almost certainly start to see some early improvements — real business benefits being generated before the new system has even been implemented.

Most manufacturing companies already have an enterprise applications transaction engine, which is used to record and plan all the detailed operational activities of the business — sales orders, purchase orders, manufacturing plans, capacity, dispatches, receivables, payables, and so on. If the data held in that transaction engine can be harnessed — thousands of transactions every day — and transformed into relevant, useful, manageable information then the benefits from the enterprise applications investment can be delivered at last. And there will be a direct link between the way we measure and understand the business and the detailed transactions that are needed (and probably need to improve) to make it operate.

implementation issues and guidance

The significance of performance measurement becomes even more evident when we recognize that all companies strive to be both excellent and agile. Agility is characterized by the proactive selection of business goals and the definition of objectives and the timely reaction to changes in resources. Excellence can best be defined as the efficient and effective deployment of available resources across the organization to deliver the set objectives. It is the ability to define and measure performance efficiency that forms the link between strategic intent and operational execution.

Agility and Excellence



By addressing these two fundamental management challenges, an organization can identify the investments it needs to make in implementing an enterprise application or adding a performance measurement capability to an existing implementation. Once the gap between actual and desired performance has been identified and the root cause analysis completed, the appropriate level and focus of investment is seen much more clearly — the decision becomes "fact-based," rather than based on intuition or anecdote. And, of course, assessment of benefits after implementation is much simpler as the target performance has been defined.

► what and why — cause and effect

“you can’t improve what you can’t measure . . .
. . . and you can’t measure what you can’t see.”

6 Building an understanding of the true levels of performance is a good start, but in itself doesn’t lead to improvements in operational effectiveness or financial results. It is the underlying analysis and action planning that is developed followed by effective action that achieves the right result.

The simple approach is to ask two questions — what and why? If we focus on the delivery element of the Perfect Customer Order, then these two questions would look like this:

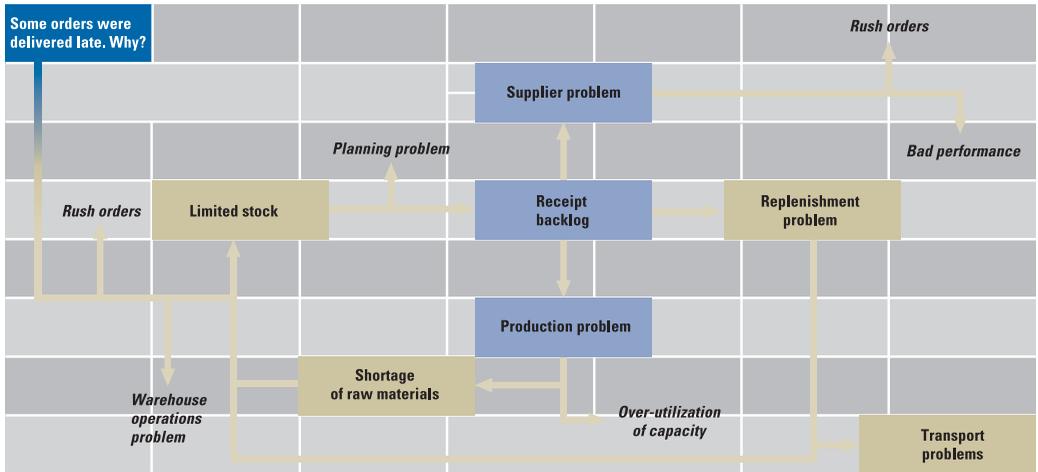
- What was the delivery performance (on time) last month?
- Why did the orders that we delivered late fail to meet our standard?

The first question — What? — requires the ability to analyze the data in many different ways. At the senior management level, a company-wide summary may be sufficient. Within the sales department, analysis by customer or channel may be needed. In marketing, there will be a desire to review performance by product, item, or group. Manufacturing will want to look at performance at a plant, or even work-center, level; and logistics will need to review data at a warehouse and transport partner level. It is critical that these data sets are not prepared independently, otherwise, there will certainly be disagreements as to the cause and accuracy at each stage. Without consistency, more time will be spent reconciling and arguing about the numbers — little time or energy is then left to analyze and develop improvement plans. What is required is a multi-dimensional management information model focused on the business issue of “customer delivery performance.” In other words “analytics” providing answers in a variety of forms to suit the needs of the information consumer.

A single database commonly known as a data warehouse, driven from the enterprise applications, is able to provide all these analyses of the base data. Each part of the organization is able to review the measure in a way that is relevant to them. Senior management can be confident that the overall analysis is based on a “single view of the truth” and that the action plans being proposed are consistent across the functions.

what and why — cause and effect

Some Items Were Delivered too Late. Why?



The second question — Why? — is typically answered by a process of diagnosis to map out the cause-and-effect relationships behind the performance issue.

Cause and effect

Following such a decision tree allows us to diagnose the cause of each missed delivery promise and identify the root cause. Once again the purpose is not to apportion blame to individuals or functions, but to understand and develop action plans to improve. And the key is that a single root cause diagnosis and action plan is developed across all functions for this measure. This ensures a single consistent approach to improvement and a cross-functional effort to improve.

Such diagnoses are at their most powerful when they are presented in summary form to the senior management team, along with the performance measurement data. It is always useful to look at the trend over time (say 12 months) of both the performance level and the root cause analysis. This enables senior management to focus on the trends, rather than get involved in detailed operational issues in a single period, and to review the effectiveness of the agreed-upon action plans.

The ability to quickly and accurately carry out this multi-dimensional reporting and produce root cause analysis helps ensure that up-to-date information can be reviewed and spur the right actions.

▶ SSA Corporate Performance Management (CPM)

7 Most vendors of enterprise solutions claim to provide the sort of analytical tools — data warehousing, report creation, multi-dimensional data cubes, etc. — needed to measure and manage corporate performance. The difference with SSA Global is that it truly understands the dynamics of performance management and makes analytical tools an integral part of its offering, rather than an afterthought. In this report, SSA Global recommends a practical approach to CPM deployment that allows companies to identify and connect operational measures to financial success. SSA Global believes that progressive companies in all types of industries must know in advance which performance measures to monitor in order to impact future financial results, and must help all departments work together to drive short- and long-term financial success.

SSA CPM is a single-source performance management solution integrated with core SSA ERP applications and powered by market-leading Cognos® BI and Planning tools. Pre-defined integrations and content allow SSA Global to deliver on its vision to make CPM work in today's demand-driven business environment.

SSA CPM is comprised of:

SSA Planning and Budgeting provides sophisticated driver-based modeling so that companies can define goals and objectives based on the best business scenario. Real-time aggregation means that forecasts and budgets can be continuously updated and plans realigned according to business needs, not planning calendars. Personalized data entry and a choice of Web browser or Microsoft® Excel interface provide deployment flexibility. Planning and budgeting cycles are simplified and reduced through workflow-managed processes.

SSA Financial Reporting is an enterprise consolidation and financial reporting solution offering Web and Excel interfaces. It provides multi-source data collection capabilities and pre-defined integrations to SSA Global solutions, including other SSA CPM components such as SSA Enterprise Analytics. Cross-dimensional allocations support a variety of accounting measures and methods. Sophisticated currency conversion allows companies to work with a wide variety of international exchange rates, convert unlimited input currencies to one reporting currency, and see exchange gains or losses. Versioning enables an unlimited number of annual data submissions, such as budgets, actuals, adjustments, or adjusted actuals in both functional and reporting currencies.

SSA Enterprise Analytics creates a series of business-oriented data marts designed to answer more than 3,000 questions based on best business practices and covering the areas of sales, finance, procurement, production, inventory, and asset management. Consistent metrics and definitions across all areas form a single version of the truth. Integrations with SSA ERP offer data integrity and accuracy to enable deployment in weeks rather than months, while pre-defined content allows immediate business use.

SSA Business Intelligence offers reporting, analysis, and monitoring to meet all decision support and information delivery requirements, providing an efficient, Web-based environment for business and production reporting and ad hoc queries. Advanced authoring capabilities enable creation of dynamic, multi-object reports with flexible layouts and pixel-perfect presentation. Multilingual and currency conversion capabilities allow reports to be published once and deployed globally. Designed for high performance and scalability, the solution is based on open architecture that leverages existing security models and facilitates guided exploration and analysis of information pertaining to all dimensions of business, regardless of where the data is stored. Managers and users can analyze and report against online analytical processing (OLAP) and dimensionally aware relational sources. They can also access personalized, cascading scorecards delivered through a zero-footprint Web interface, as well as view indicators individually, by owner, or by project. A metrics watch list notifies them by email or PDA of any change in metric status. Strategy maps display key links and communicate corporate goals, while process diagrams represent cause-and-effect relationships.

► ssa global and the demand-driven supply network (DDSN)

8 As with corporate performance management, SSA Global has articulated a vision for the demand-driven supply network (DDSN), based on the premise that customer demand should drive an organization's supply chain, suppliers, products, and its entire enterprise.

According to DDSN precepts, companies seeking to increase their profits must shift their focus from a “sell-what-we-make” approach to a “respond-to-what-customers-want approach” built on processes, infrastructure, and information flows that are able to sense changing customer demand and react in real time. Unlike the linear, factory-based, internally-oriented supply chains of the past, DDSN gives companies the visibility and freedom to act simultaneously in three strategic business domains — demand management, supply management, and product management — across a collaborative network of customers, suppliers, and their own employees.

By incorporating DDSN and optimizing the critical business processes that increase responsiveness, speed, and agility across their value chain, companies can achieve marked improvements in their financial performance as indicated by faster revenue growth, higher profitability, and greater capitalization. In particular, they can achieve a greater percentage of perfect orders, hold less inventory, and experience shorter cash-to-cash cycle times.

To become demand driven, SSA Global recommends that companies focus on four key priorities:

- **Order accuracy** — strive to make every customer order a perfect order — not just from a fulfillment viewpoint after the order has been taken, but by considering the entire order lifecycle. This requires the ability to sense, shape, and respond to demand signals at the moment they occur using real-time, event-driven marketing and sales capabilities that allow a customer to be uniquely identified (regardless of the communication channel used), his/her preferences and history quickly established, appropriate new and unique offers presented on the spot, and appropriate follow-up offers made through direct mail, e-mail, phone call, or other means. Once captured, the perfect customer order requires seamless integration of purchase orders for raw materials, work orders for the manufacturing line, transport orders for trucking, and pick orders for the warehouse. Benefits include: shortened lead times, more timely invoicing and collection, more accurate freight calculations, and more responsive customer service.
- **Forecast accuracy** — aim for more reliable forecasting by aggregating multiple forecasts from different parts of the organization (including marketing and sales) and from multiple channels (including retail, wholesale, and online), while taking into account demand variability and unpredictability. Benefits include: the ability to respond faster and more profitably to customer demand in all its forms.
- **Inventory management** — move beyond practices of the past that were limited to warehouse operations and focus on supporting upstream and downstream supply chain execution processes and leveraging hidden opportunities for efficiency in inbound and production logistics when dealing with both raw materials and work in process inventory. This can be accomplished through improvements in velocity, lead-time reduction, and right first time (core measures discussed earlier in this report). Providing such value-added services will require investments in paperless technology, RFID, and other highly accurate and comprehensive technologies designed to capture and serialize data. Benefits include: reduced total lead times, faster and more frequent inventory turns, lower inventory carrying costs, and improved cash conversion.

- **New product development and introduction** — validate that innovations satisfy true customer demand before launching a new product development initiative. Then work on closing the loop between the customer and product development by requiring cross-functional participation in the design process and linking design, engineering, marketing, sales, manufacturing, fulfillment, shipment, and servicing processes to customer demand. Benefits include: product launches that are better orchestrated and that phase in warehousing and inventory more effectively; the ability to capture the right customer requirements and fulfill them faster, more cheaply, and more perfectly than the competition.

DDSN and the four key priorities provide a normative framework for making the changes necessary to become more demand driven. The seven core measures outlined in this report — demand forecast accuracy, the perfect customer order, lead-time reduction, velocity, right first time, schedule achievement, and on-time new product introductions — will then serve as key performance indicators of how well a company is implementing DDSN in the various stages of the DDSN maturity model.

This is the new business imperative, SSA Global believes, for companies that seek to become market leaders in today's global economy. Based on AMR Benchmark Analytix data, the most advanced demand-sensing companies have 15% less inventory, a 17% better perfect order performance, and a 35% shorter cash-to-cash cycle time. AMR Research has also found that DDSN leaders have 10% higher revenue and 5% to 7% better profit margins than their competitors.*

► pick what's critical: prioritizing core measure implementation

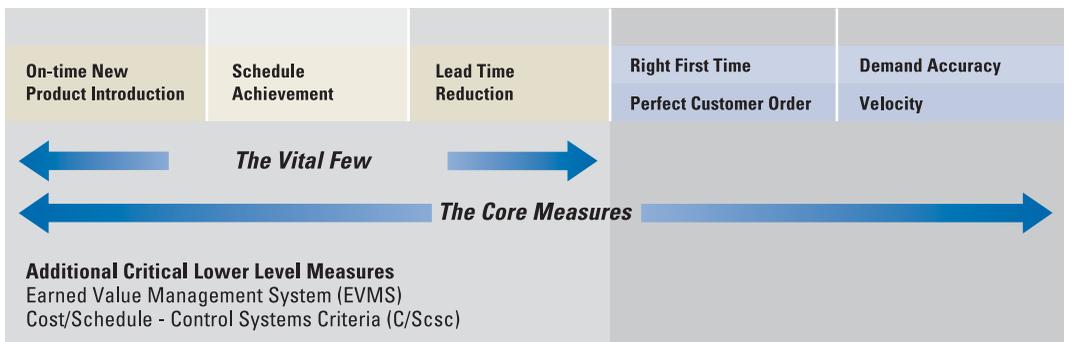
9 Companies in the automotive, aerospace and defense, electronics, and industrial equipment and machinery industries all face their own challenges, and based on its in-depth expertise with each of them, SSA Global has identified three especially salient core measures for consideration as focal points to measure, monitor, and model cause-and-effect relationships that can reveal root operational problems. Once a gap between actual and desired performance is measured and root cause analysis is complete, a fact-based level of investment targeted at cross-functional performance improvement can be determined.

Aerospace and Defense

For aerospace and defense, Lead-time Reduction, On-time New Product Introduction, and Schedule Achievement are the “vital few” – or most critical -- core operational measures. Products manufactured by A&D companies are some of the most highly engineered and complex in the world, requiring time-consuming design and manufacturing cycles. Those cycles can be made shorter by identifying, measuring and analyzing configuration changes and supply-chain weaknesses to avoid waste and gain efficiencies. Reductions in lead time can increase sales by strengthening competitiveness, and can reduce stocks as a consequence of faster response to demand.

The introduction of technologically complex products can be fraught with pitfalls, from missed design deadlines to configuration delays, to process incompatibilities and supplier problems. Avoiding those pitfalls and successfully delivering new products on time can result in increased sales, smaller overhead expense as development time is cut, less inventory, and a reduction in payables as better supplier management enables more accurate predictions and contract negotiations.

Schedule Achievement — the third and last of A&D’s vital few core operational measures — can help a business realize improvements in labor and overhead costs through reduced overtime, as well as decreased stock levels resulting from less work in progress. Better planning of material purchases also can lead to more advantageous payment terms.

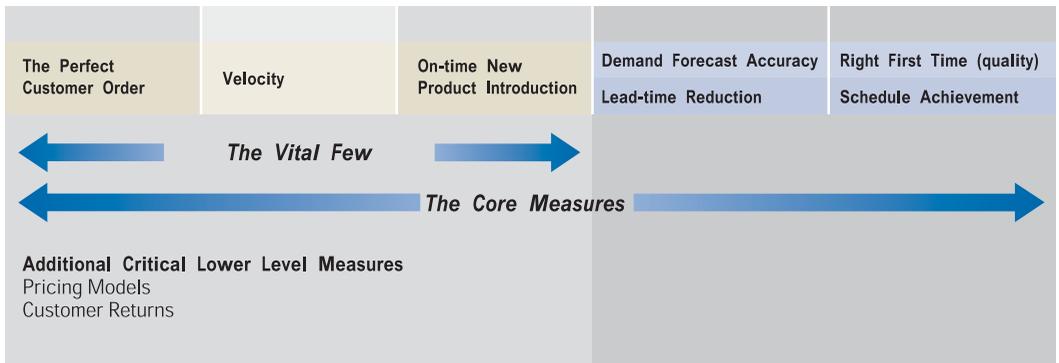


pick what's critical: prioritizing core measure implementation

Electronics

In addition to On-time New Product Introduction (see below), SSA Global believes the electronics industry’s vital few core operational measures include the Perfect Customer Order and Velocity. Measuring and monitoring critical customer elements like quality, quantity, time, and place can help identify weak points and reduce errors, leading to a higher rate of on-time order deliveries and customer satisfaction. That, in turn, can lead to more sales and increased market share, lower supply costs because of less rework, smaller inventories, and quicker payment by satisfied customers.

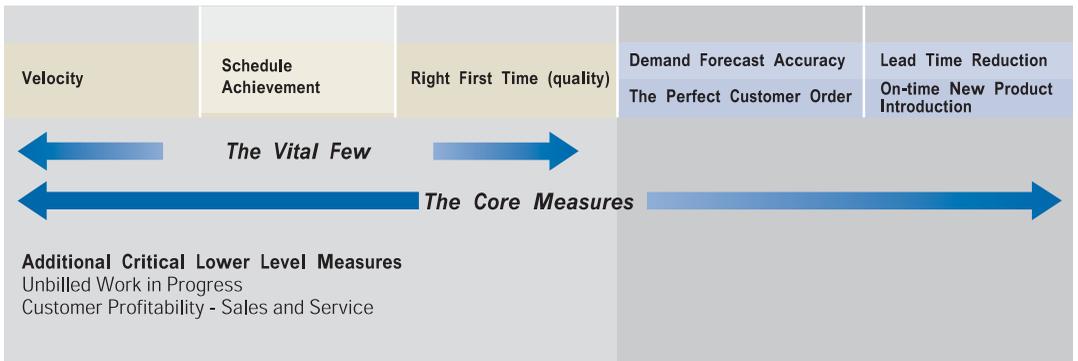
The positive financial effects of improved velocity also manifest themselves across an electronics company through greater responsiveness to the marketplace — which means more sales — and reduced stock expense as less material is held in waiting areas.



Electronics

Industrial Machinery and Equipment

Velocity and Schedule Achievement (below) also are two of SSA Global's selections as the vital few core operational measures for IM&E companies. But without the third, Right First Time, or performance to specification, it doesn't matter when your product gets there, or how fast. Avoiding costly penalties means getting it right the first time, and that entails precision testing to ensure the passing of every customer requirement. Improved quality leads directly to increased sales, as well as savings in costly rework and waste — a primary cause of high labor and material costs. Stock levels also may be expected to fall as allowances for scrap and waste decrease, and fixed asset requirements will be reduced as less machine time is scheduled for rework.



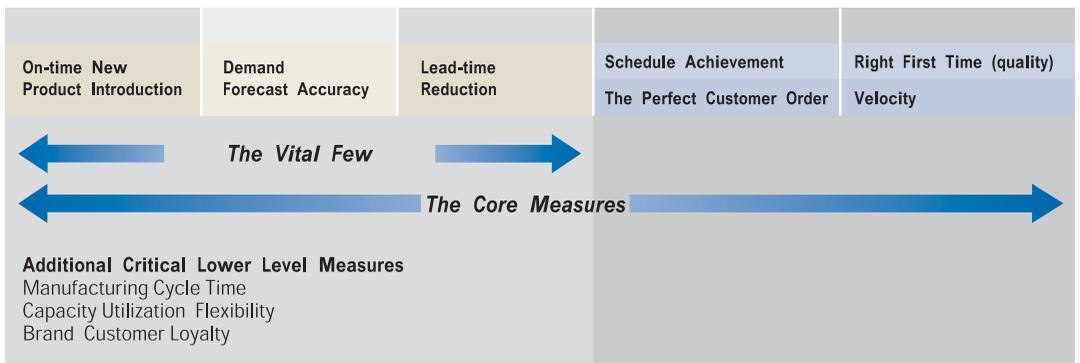
Industrial Machinery & Equipment

pick what's critical: prioritizing core measure implementation

Automotive

Along with On-time New Product Introduction and Lead-time Reduction (below), SSA Global considers Demand Forecast Accuracy to be one of the automotive industry’s vital few core operational measures. Just as shorter product introduction cycles can lead to more revenue, manufacturing over-capacity can lead to less. Production line inflexibility has led to the construction of more and more factories, and keeping all of them running often means unsold stock — a consequence of inaccurate demand forecasting that nearly always triggers costly incentive programs.

Accurately identifying demand and adjusting manufacturing schedules accordingly can involve the monitoring and analysis of a sea of information, but the payback can be significant. Improvements in forecasting can lead to the identification of an organization’s most profitable channels, products, and customers – strategic information that can be used to increase sales. Accurately predicting demand also can result in reduced stock levels and the cost of warehousing.



Automotive

▶▶ about the author

10 Rod Clarke provides guidance, advice, and support to businesses in successfully applying IS/IT in support of their business goals. He brings a pragmatic and business-focused approach to the development of IS/IT strategy and the evaluation, selection, implementation, and exploitation of information systems that underpin world-class performance.

He has been an independent consultant since 1999, and his clients include a global life science company, a UK Ministry of Defense agency, a major consumer products company, a global IS & Strategy consultancy company and a major manufacturing software package vendor.

Rod has worked in supply chain management and IS/IT since the mid-1980s. In this time, he held senior management, project leadership, and operational management roles in three of the world's largest chemical and pharmaceutical companies. In each of these roles he led the drive for measure-based performance improvement.

He is a Chartered Secretary by profession and also a member of the Institute of Operations Management and the Institute of Management Consultants.

Rod is a founder member of The Delos Partnership Limited.

The Delos Partnership was founded by eight highly experienced professionals with practical knowledge of helping companies achieve success and improve long-term profitability. Their knowledge is based on in-depth managerial experience, as well as a proven track record in bringing about change within client companies. The Delos Partnership practice extends across many industries, including pharmaceutical, chemicals, FMCG (Fast Moving Consumer Goods), heavy and light engineering, and aerospace and defense. This range of industry experience enables Delos to quickly gain a real understanding of each client's business and to help clients look at their business in a different way so that they can put into action new approaches that bring fast improvements. Delos is an independent partnership, with no links to any software vendor, implementation consultancy, or any other organization. Delos offers a blend of assessment tools, public and in-house courses and workshops, and consulting and coaching tailored to enable our clients to look at their business another way.

www.delospartnership.com

Why Measure?

Whenever I visit an organization, I always look at the notice boards. I find that they give an instant and accurate picture of how the workforce sees the business and how their management sees them.

Notice boards full of yellowing “Investors in People” certificates and out-of-date, scruffy, incomprehensible charts indicate a work place where managers do not see communication with the employees as a critical activity. Invitations to join a lottery syndicate demonstrate the employees’ response!

A notice board with a few simple, up-to-date performance measures, often prepared by the employees themselves, details of action plans and improvement teams, and clear statements of corporate and local goals demonstrates a work place where there is a common understanding of what is needed and a determination to succeed.

This example came from a real notice board — actually on every notice board in a large site — and was accompanied by two or three clear simple measures that were relevant in each area. I have never seen a better example.

Why Measure at All?

1	To dollarize the problem
2	To do a better job at problem solving
3	To get recognition
4	To show how big the problem is
5	To help remove hassle from the job
6	To promote continuous improvement
7	To identify what causes the problem
8	To be positive, show you care
9	To give argument/proof/weight to the problem
10	To make things better
11	To determine work priorities
12	To gauge customer satisfaction

The Vital Few and Value Disciplines

The Value Disciplines developed by Michael Treacy and Fred Wiersema are an increasingly popular way for corporations to identify and communicate the basis on which they compete in their chosen markets. They provide a clear and simple method of focusing the priorities of the business and this enables them to be a powerful way of helping provide direction to employees.

There is a clear correlation between the value disciplines and the vital few. The selection of a value proposition points to the vital few for the business and can help ensure consistency between the value proposition at the strategic goal level and the performance measures that can be used at the operational level. Together they define the "differentiators" for the business at a strategic and operational level.

To further complement the value discipline approach, the remaining core measures are still required and can be thought of as reflecting the general competitive requirements underpinning the strategy.

This diagram shows examples of the "vital few" selection for each of the three value propositions, emphasizing that all the core measures remain key to overall monitoring of the business.

Each business utilizing the value disciplines approach must review the vital few to ensure that they are appropriate in their circumstances, including the industry sector within which they operate.

Value Disciplines and the Vital Few

Strategy					
Customer Intimacy	The Perfect Customer Ord.	Demand Forecast Accuracy	Lead Time Reduction	Right First Time (quality)	Schedule Achiev.
				On-time New Product Intro.	Velocity
Product Leadership	On-time New Product Intro.	Demand Forecast Accuracy	Right First Time (quality)	The Perfect Customer Order	Schedule Achiev.
				Lead Time Reduction	Velocity
Operational Excellence	The Perfect Customer Ord.	Velocity	Schedule Achievement	On-time New Product Intro.	Right First Time
				Lead Time Reduction	Demand Accuracy

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