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Team, Traction and Momentum: Manufacturing Improvement Projects that Pay Off

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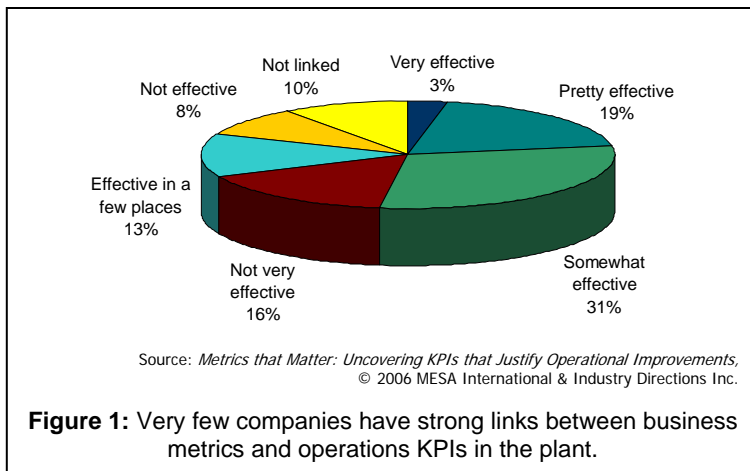
For most manufacturers, the need to maintain or improve financial performance is urgent. This is leading many companies to close manufacturing facilities and either move production operations offshore to low-cost countries or to outsource manufacturing to other companies. However, many other manufacturers are surviving and thriving in North America, Europe, Japan, and other high-cost countries.

Effective manufacturing improvement projects – focused on areas of urgent business need – are a critical component to these manufacturers’ success. Leading manufacturers are meeting requirements at every step that make their plant projects successful, starting at conception and following through its entire lifecycle. Successful manufacturing improvement projects can spell the difference between a profitable plant and one that’s history.

Most of the keys to success for an operations improvement project are not new, but the need to get on with them is more pressing each year. Companies that opt to remain in manufacturing – with its expensive assets and complex requirements – must be excellent at it, or fail as a business.

Making the Case

In today’s lean business environment, companies make investments only after a thorough review of likely costs and benefits. Many companies prioritize projects based on issues that their performance metrics highlight as major problem areas. Building the



business case for any improvement project can be a challenge, but in plant operations, justifying investments can be even more difficult.

A major reason is the gulf between operations and finance. This gap reflects the background and mindset of the people. Differing terminology, priorities, and metrics make it challenging to even communicate, much less ensure alignment. In concept,

performance measurement means that every group will contribute to corporate and financial goals by improving on local metrics. However, that is often far from the truth in manufacturing companies.

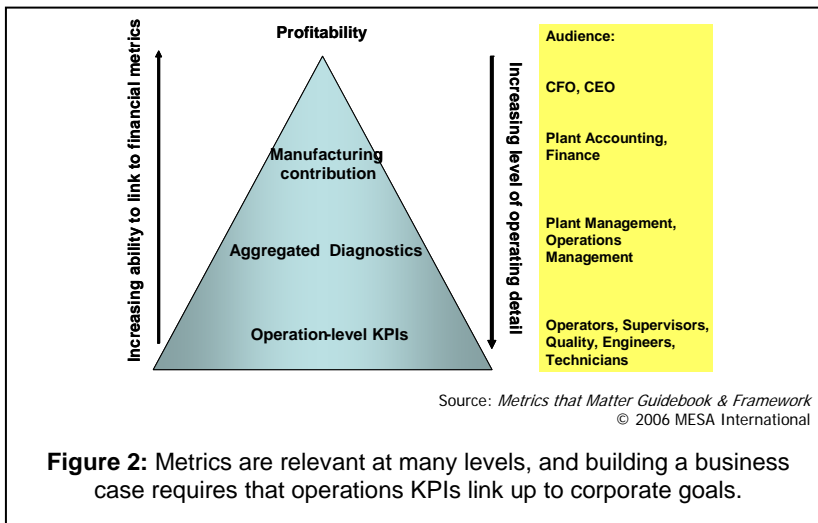
A recent study conducted by Industry Directions in conjunction with MESA International shows that only 3% of respondents believe their plant and business metrics are very well linked, as shown in Figure 1. Slightly less than 20% feel the links are pretty effective. On the other end of



the spectrum, 10% indicated that operations and financial metrics are not linked at all. A further, 24% indicated they are not effective or not very effective.

This means that most companies' management does not have performance views that accurately represent plant progress and contribution. Even when an operations improvement project might have a major impact on company results, most companies can't tell that because the metrics in operations are not clearly linked to financial performance.

With that backdrop, operations managers looking to justify an improvement project must do some work themselves to create those linkages. Top-level business and financial metrics tend



to center on a few fundamental topics: profit or earnings, return on assets, costs, customer service, market share and cash flow. The operations manager must create links through several levels to develop an effective business case for a plant floor project. While a new piece of equipment may address this in hard numerical terms such as an increase in possible good products per shift, it's rarely so obvious for process improvements and information systems.

While the plant manager may see the need to increase throughput or increase process quality, the business case may come down to market share or return on assets. As shown in Figure 2, the levels of metrics generally include at least:

- the detailed metrics at one operation, such as parts per hour or scrap rate
- aggregate plant KPIs, such as overall equipment effectiveness (OEE) or defects per million opportunities
- plantwide financial contribution figures, such as revenue per employee
- corporate metrics, such as return on net assets (RONA) or profits

Ideally, the plant controller or another financial person assists with creating a business case that is both meaningful and credible to management. The champion for a project in the plant may find that the controller not only knows how to translate operations gains into a dollar value, but also can help explain the financial impacts of gains outside the plant or beyond the operations KPIs.

For example, the largest benefit of a plantwide tracking system, such as a Manufacturing Execution System (MES), may come in white collar time. These benefits include eliminating time spent manually entering data from job tickets, travelers, and spreadsheets into the enterprise system; tracking down materials and orders by walking around the facility; and



correcting errors. Customer service often gains from this type of system; the visibility allows them to answer queries in far less time and more accurately. This may also result in higher customer satisfaction and even more repeat business from key accounts.

Be aware of key challenges associated with building a business case for an operations improvement project:

- indirect labor time is often part of an aggregated overhead pool, not currently counted by the hour for specific types of work
- data entry, reporting and customer service people may not be eliminated as a result of improved efficiency but rather redeployed; so while eliminating non-value added time is a benefit, it may not result in a reduction by the full dollar value of those employees' time
- many gains are specific to the situation, such as better control and fewer errors in dynamic or high-mix situations – but not as clear when production is more stable and lower mix; costing is usually aggregated across time spans that represent various situations
- some of the benefits are likely to be cost avoidance such as minimizing risk of regulatory non-compliance fines; unless these have happened recently, they will be difficult to quantify.

The task here is to review all of the likely benefits and convert them into financial gains and positive steps toward corporate goals. Even high-level “soft” goals such as customer service, quality, market share, product innovation, and compliance are ideally turned into quantifiable financial gains.

The other side of making a business case is to estimate costs. As the project proceeds, these will become much clearer. However, the business case requires a comparison of estimated costs to estimated benefits. Costs will include not only payments to outside solution providers, but internal time to execute the project, integrate new processes and systems into existing ones and re-train people. It's best to over-estimate costs, particularly internal costs, in making a business case.

Gaining Commitment

Most successful project leaders point to executive support as a leading factor in gaining momentum and propelling projects throughout the process. Enthusiastic executives will push others to participate fully, and they have the authority to dedicate resources as well as keep the project a high priority throughout the enterprise.

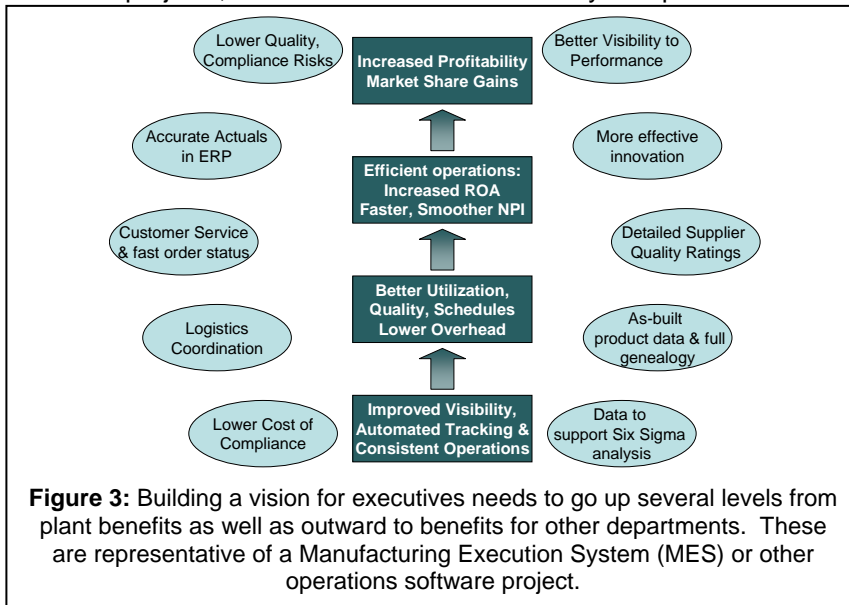
Paint a Vision. Getting executives committed is an important first step in building the case. Projects that pay off can be critical to the top executives' ability to achieve their goals of increasing profitability and company financial success. The key is to help them envision how the company can improve based on the project – and from their viewpoint, not that of a plant employee. There are three major aspects to that:

1. Building up through the levels of metrics (similar to the view in Figure 2)



2. Expanding out to illustrate benefits to other departments and trading partners, not just the plant floor
3. Educating leaders through attendance at seminars to help build the case for the project

It's usually best to start with the benefits your team will gain, then build up and out based on what you can envision, as shown in Figure 3. Use any case histories you can find from similar projects, and think about who relies on your operation to do their job successfully. Gains in

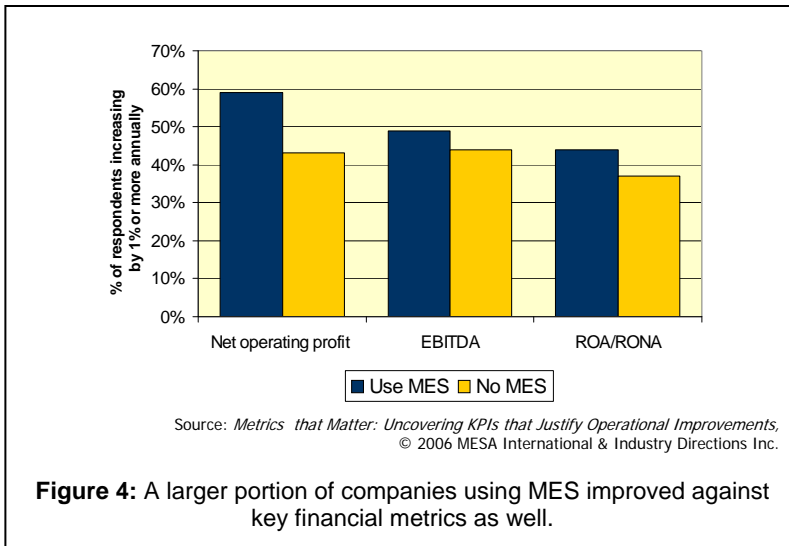


regulatory and customer compliance can impact financial performance relatively directly. Most plant operations projects have far-reaching impacts on the supply chain group, product design and engineering, and also sales and customer service. However, few in any of those groups know it. A project champion must take the time to visualize these benefits and then quantify them both financially and in metrics those other departments use to measure their success.

Painting a clear vision for executives is the foundation for getting them excited. Once key executives include the gains from a project into their strategic vision for the company, they will be fully committed. Sometimes operations managers don't receive quite that level of support, but it is critical that the executives at least remove obstacles and back the project.

Request Resources. One of the main areas of backing where executives can assist is in ensuring resources. The financial resources are one aspect, as laid out in the section on building the business case. At least as critical – and often more challenging to get – are the human resources to make the project succeed. Those employees with the deepest knowledge and experience are the ones projects need to succeed. Executives can ensure good people are assigned to the project for appropriate amounts of time.

Set Realistic Expectations. At the early stages, it's important to color the vision with what to expect in various timeframes – both from a benefit and a resource need perspective. Benefits require many changes to fully appear in most cases. Even after the project gets “implemented” there are often further business process changes and mindset shifts that needed to move from initial gains to broader business-wide performance improvements. Finally, some of the benefits will be challenging to ascribe exclusively to one project. Still, there is evidence from Industry Directions research that those who improve operations, for example through implementing MES, are more likely to gain on financial goals as well, as shown in Figure 4.



As mentioned in the section on making the business case, it's always wise to over-estimate your time and resource requirements. Solution providers and consultants can be the best guide to estimating resource needs. If the outside assistance is not already selected, part of the expectation to set with executives is that the project will get a more detailed scoping later and that specific resource decisions will occur at that time.

Commit to Reporting. One of the best approaches to keeping

executive support for a project is to report successes early and often. Executives with the vision will share excitement at meeting milestones and seeing improvements. More importantly, asking top executives for permission to keep them posted throughout the project – and doing it – can help maintain others' support. This gives you an easy route to gain assistance in getting past roadblocks that others will inevitably throw into the project path.

Building the Team

Many manufacturing companies run extremely lean these days, with the best people tugged in many directions. Gaining the human resources for a project team is a major challenge – and on the critical path for project success. Projects need the best people, who are not usually readily available.

The more dedicated team members the better chance of project success. Because companies run so lean, many projects may only have a few people completely dedicated to the project on a full-time basis.

A project manager dedicated full-time generally is critical to success. Beyond organizational and project management skills, the ideal project manager fully understands the current situation from a cross-functional perspective. Further, the project manager must have the respect of not only direct team members but also those in other departments who will need to cooperate or participate in the effort. The project manager must be capable of acting as an effective change agent.

One of the most critical aspects to forming a team is to ensure that collectively the team has deep domain knowledge across all of the major areas that the change will impact. In the case of a software system, IT is important, but projects also require production, manufacturing engineering, quality, compliance and other expertise. The best team members will convince their peers and reports of the value of the project, and work with the project manager to affect needed changes.



It is important to include people from multiple levels and departments of the organization on the team. Operations executives, mid-level managers, supervisors, and operations plant hourly workers are often all directly affected by improvement projects or new systems. Without

representation from all levels, the project may lack support or fail to meet specific needs. The same is true from a multiple department perspective – include at least temporary team members representing other groups whose jobs and business processes are likely to change as a result of the project.

Selecting a Solution Partner
<ul style="list-style-type: none"> • Solution offering <ul style="list-style-type: none"> ○ Fit for all levels & departments ○ Current & future needs
<ul style="list-style-type: none"> • Domain Expertise & experience <ul style="list-style-type: none"> ○ Vertical industry ○ Business issues
<ul style="list-style-type: none"> • Attitude & cultural fit
<ul style="list-style-type: none"> • Viability – not size but health
<ul style="list-style-type: none"> • Value – price/capability ratio
<ul style="list-style-type: none"> • Reference Accounts – <ul style="list-style-type: none"> ○ discuss all aspects of project ○ drill in on ongoing satisfaction
<p>Figure 5: Choosing the best consulting or software partner for a project can be critical to success; they must fit into the team</p>

Outside solution providers are key team members, and a core team should make that selection early. The outside consultants (whether from a service company, a software company or both) have much broader experience to help set achievable goals and structure a realistic project plan. Selecting the right outside solution provider must go far beyond their technical capabilities, as outlined in Figure 5. Remember however, that your internal team members are the experts in your business, your products and your processes.

One of the keys to success is to have synergy among team members. This is not the same as consensus. In fact, if everyone is contributing in good faith and demonstrates a desire to improve the company and its welfare, disagreement within a project team can help raise important issues. Sometimes the senior level people on the team – or an executive sponsor – will need to decide the best course based on a broader company view.

Setting Goals & Planning Work

The business case should form a foundation for setting goals. While few companies measure the return on their improvement projects, executives will look for benefits based on the vision a project champion helps to paint. While the vision is global, the plan, actions and deployment must be local or the project will stall for lack of reality.

Keeping the business indicators of success in mind, most projects are best implemented in phases. The phases should be structured to balance two elements:

1. achieving top priorities for the business
2. generating quick results

Define project success based on the metrics used in the business case to justify the project. Change the business case metrics if needed.

Generating quick results may seem challenging, but it is by far the best way to establish the worth of a project and generate excitement. Generally it's more important to show progress quickly but ensure business priorities are still in view. Again, think global but act local. Gaining quick results is both a planning and an execution challenge.

The plan must divide up the project into meaningful segments or phases with useful deliverables at the end of each phase. The first



phase is usually to roll out an improvement or system to one area, one product line, or a subset of the changes or functionality. Once the issues are worked out there, the project can expand as a proven solution. To gain quick results with software often means using it more or less as offered, configured for the plant, but not customized.

During **project execution**, the team must stay focused and close to the plan. As multiple departments will be involved, the team must minimize unplanned, unmanaged changes of scope. Another discipline involves settling for and employing “good enough” results, not striving for perfection. The goal in each phase must be to show a positive result.

One of the most critical aspects of a project plan is defining success. For most operations projects, that should appear in an improvement in performance to key metrics. The metrics used to develop the business case should also be the guideposts for the progress of the project.

If it becomes apparent during project planning that the metrics used in the original business case are not complete or appropriate, create a new business case should with the actual metrics by which the project team will gauge its success. This helps keep executives’ expectations and vision aligned with the project as it proceeds.

Keeping Momentum

Showing results from each phase of a project can keep excitement high and executive commitment strong. Quick gains also tend to silence the naysayers of the project.

Communication is important to keeping momentum. The project team should update everyone in the company regularly about project goals and progress, and in terms that express particular job benefits to them, not just some general view.

- **Project Team:** Since some members will be part-time or temporary, it’s critical to have regular communication with all team members to ensure their full participation and ongoing enthusiasm.
- **Operators & Supervisors:** Those who will execute the new business process as a result of the project must know early on what is happening and why. They also need to know who represents them on the team and how to voice concerns. They may need training and time to try out the new system or approach with no fear of damaging the operation’s performance.
- **Managers & Controller:** Anyone for whom performance expectations change must fully understand the project and how it will help them achieve these new goals. Those on the team from the manager level and up should craft these messages.
- **Other Departments:** Just as all affected departments are incorporated into the vision on which the business case rests, everyone must understand the project, and know how they can leverage the changes. This may require the team members from a particular department to help express the gains in terms that matter to those other groups.
- **Executives:** Those who helped sponsor the project definitely need to be updated regularly – and in financial terms.



If the results from each phase can be quantified into financial gains, these can help fund subsequent phases. Setting up a project to be self-funding is attractive to risk-averse executives and also keeps the team focused on achieving goals at each phase.

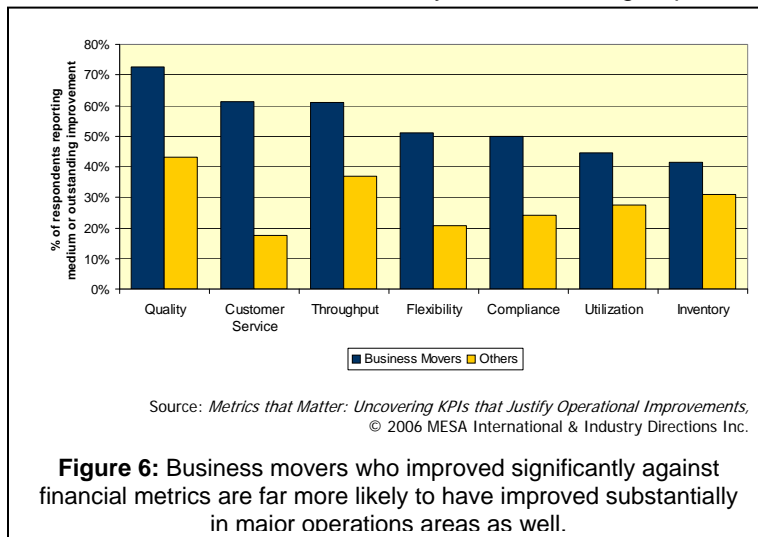
Every project must be ready for challenges that stall momentum. Having executive support will help get through some of those. Experienced solution providers can also help avoid problems during the planning and execution process. As long as everyone supports the vision and experiences some successes, the project should be able to overcome those challenges and continue to move forward successfully.

As changes to company strategy, operational realities or overall priorities shift, the project team must re-shape the project – or at least the way it’s described – to stay at the center of what is strategic. No operation is static, and projects must somehow keep up with those changes. Substance, style and messages may all need to shift, particularly for projects that roll out over several fiscal quarters.

Show Financial Impact for Success

Successful operations projects require team, traction and momentum. Getting a project off the ground can be an enormous challenge. Keeping a project moving forward successfully is no small feat either. As with most things in business, it comes down to financial impact.

In the *Metrics that Matter* study, we defined a group of companies as *Business Movers*. This



group, comprising 45% of total respondents, improved either 10% on one or more business metrics or at least 1% on over half of the business metrics in the study. Figure 6 shows that Business Movers are also far more likely to have improved in key operations areas. In fact, 80% of those who improved their operations substantially also were Business Movers and saw similar gains against business metrics.

While operations metrics often do not tie directly to financial benefits, successful visionaries will make that connection at the outset and drive the project to those goals. Making a financially sound business case that creates a vision of what is possible for executives is an essential foundation. With that business view, the right team – including the right solution providers – can set realistic goals.

Showing concrete gains against specific metrics can help knock down barriers and silence those who doubt the project’s worth. Many improvement plans are designed for corporate rollout, starting line-by-line or plant-by-plant. When a project team can show financial gains at each



phase of the project, the momentum naturally builds toward success. The same successful project couched only in operations terms may not maintain executive support.

Think global and act local is an excellent recipe for project success. A cross-functional, multi-level team with deep domain expertise is critical too. What is often missing is the tie between all elements of project success: making a clear connection to financial gains. That is how you gain traction with executives, motivate a team, plan for a series of successful phases and keep momentum throughout.



About Cambashi

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