Focused Improvement System (FIS)

The aim of this document is to outline how a Focused Improvement System should be implemented at all levels of an organisation, to support the mission and objectives of the organisation. In particular this method is a radical and effective development of generalised improvement systems such as Total Quality Management (TQM) and Kaizen, which provide the improvement tools but not the improvement direction. As such they are wasteful. (The thing they were designed to avoid).

Links to other best practices and training at bottom of page.

Contents

1. Introduction
   - The Goal of Focused Improvement
   - Problems
   - The Control process

2. Objectives of a Focused Improvement system

3. Introduction of a Focused Improvement system at company level at process level

4. Performance measures check lists

5. What should be measured?

6. Choosing measures of performance

7. Conclusion

Notes

A Setting strategic objectives

B Setting measures (at company / business unit level)

C Context / hierarchy of performance measures

D Data collection

E Communicating goals

F Rewards and punishment

G Reporting and action

H Empowerment

I System review

J Identification of opportunities and target setting

K An example of measure of performance design
1. INTRODUCTION

The aim of this document is to outline how a Focused Improvement System should be implemented at all levels of an organisation, to support the mission and objectives of the organisation. It is proposed that a cross-functional team be set up to implement the Focused Improvement system and as such the guide is aimed at them to guide them through the implementation process. The team has the responsibility to ensure that the whole system is implemented and working.

Though the chapter guides the user through the implementation of an entire Focused Improvement system it also highlights how to set measures and as such can be used at all levels of an organisation.

The guide can be used in any organisation. However manufacturing examples are used as illustration in the guide.

The Goal of Focused Improvement

If you want to improve performance you must measure it.

The aim of measuring performance is to assess how well the organisation is implementing strategies and action plans. The setting of performance measures should complement the setting of new strategies and objectives and the implementation of action plans. These activities should be carried out together as highlighted in this guide. All companies use financial measures of performance. However, they suffer from a number of problems.

The Problems

Traditional financial measures of performance:

- don't support strategies and priorities to beat the competition;
- don't reflect customer requirements;
- identify problems not their causes;
- don't support problem solving and improvement;
- reflect traditional functional structures not business processes,
- are inflexible;
- often inhibit innovation;
- encourage activity (not useful activity).

It is therefore necessary to implement a new Focused Improvement system to counter these problems. A new Focused Improvement system, as outlined here, will have greater relevance to shop floor workers whilst ensuring strategic relevance thus providing a significant tool to assist improvement towards organisational objectives and overall prosperity.

The Control Process
In order to control any activity there must be a control system. The elements of control include:

Have a plan or target.
Allow a tolerance deviation from the plan or target.
Measure the actual.
Compare actual to plan, identifying areas and opportunities for improvement
Feedback significant deviations from the plan.
Take corrective actions.

This process of control should underpin all Focused Improvement activities. Without each of these, a process can not be said to be fully in control.

*NB Performance measurement is worthless without taking action*

2. OBJECTIVES OF A PERFORMANCE MEASUREMENT SYSTEM

The main objective of a Focused Improvement system is to:

**Assess performance against targets, identifying corrective action in order to improve.**

If implemented properly a Focused Improvement system should help to:

**Achieve goals**
- beat the competition;
- reflect customer requirements;
- reflect critical success factors (measure what is desired)

**Communicate**
- communicate goals;
- ensure that strategies are kept up to date and that tactical decisions meet objectives.

**Improve**
- stimulate improvement & innovation (identify opportunities and motivate employees):
- locate problem areas.

**Report and feedback**
- allow comparison with world best practices:
- record achievements and enable goal setting
- supply feedback after decisions are implemented and actions made allowing direct cause and effect feedback;
- allow control to be pushed down the organisation (empower employees).

3. INTRODUCTION OF A PERFORMANCE MEASUREMENT SYSTEM

At company level

1. Set up an implementation team

- Set up a multi-functional team which will be responsible for the implementation of the new Focused Improvement system.

2. Commitment

- Commit to improving performance.
- Sell the system to senior and middle management.

3. Set Strategic Objectives (See note A)

- Translate the mission statement into a local context.
- Undertake competitive comparison surveys.
- Undertake customer requirements surveys.
- Define critical success factors.
- Define strategy to improve performance.

4. Set Measures (See note B)

- Define performance measures and constraints for each key business process 1 operating unit. I.e. convert strategic objectives into tactical and operational objectives (devolved from critical success factors).
- Identify middle managers' views of what the critical processes are and what they perceive to be valid measures of performance.
- Reconcile conflicts.

5. Ownership

- Assign someone to be accountable for each key performance factor.
- Define the boundaries and objectives of the process especially where it crosses functional barriers.

At process level

1. Sell

- Sell the Focused Improvement system to everyone emphasising objectives and benefits.

2. Understand

- Understand the critical processes.
- Understand drivers of performance and the context of the performance measure (see note C).
- Understand the local constraints.

3. Design the Focused Improvement System
- Set performance measures, through agreement, with workers and management (Refer to check list and 'What to measure').

- Design a data collection system (See note D).

- Specify measures in detail.

- Resolve conflicts between measures.

- Decide reporting frequency for each measure.

4. Implement the Focused Improvement System

- Assign responsibility.

- Communicate goals to everyone (see notes E and F).

- Check that everyone has a common understanding of the goals and how they affect them.

- Reconcile any differences.

- Report performance on time to the right people / places (See note G).

- Empower all employees to act on the information provided (See note G).

- Take action

- Institutionalise Focused Improvement (see notes F and I).

- Get rid of the old system of measuring performance.

- Resist the implementation of other measures.

5. Improve

- Benchmark and set targets (see note F and J).

4. PERFORMANCE MEASUREMENT CHECK LISTS

A CHECK LIST OF WHAT MEASURES OF PERFORMANCE SHOULD BE:

Appropriate

- consistent (giving a balanced view, relating to financial performance, customer satisfaction, internal efficiency and improvement);

- relevant to the activity they are trying to measure and to those who can influence it,

- valid;

- operational, not necessarily of a financial nature;

- uncomplicated and understood by those being measured,

- easy to collect data and calculate;

- implemented at as low a level in the organisation as possible;
- measured on an appropriate scale (e.g. parts per million for component defect rates); objective rather than subjective.

**Strategic** (See *World Class Change Management*)

- based on strategic objectives, making general goals more specific;
- a reflection of short and long term objectives,
- oriented towards objectives or business processes (relate to internal customers) not department or functionally oriented,
- restricted to a few strategically important things.

**Dynamic**

- used to stimulate improvement;
- independent of the financial accounting system to free it from tradition, the existing way of doing things and legislation (consideration of the hierarchy of performance measures should ensure the financial implications are taken into account (see note C));
- dynamic i.e. revisited at least annually as a part of business planning to ensure that they reflect business priorities (See note 1).

**Communicated** (See *Culture Development Methods*)

- integrated into the management process and reward/punishment systems (see note F);
- a reflection of the interests of all the stakeholders involved;
- agreed, not imposed by management;
- communicated (prominently displayed at the work place and explained to the workforce, including the Rationale behind it) (See notes E & G);
- owned by someone (ensuring that they concentrate efforts on improvement).

**Factors to be aware of**

Defining measures of performance in relation to business processes and objectives will lead to conflicts within functionally organised companies. For example the purchasing function will support all business processes and will therefore have conflicts about which process to give priority to. This can only be solved by the setting and communication of clear objectives.

**MEASURES OF PERFORMANCE SHOULD NOT:**

- encourage local optimums NB inappropriate measures cause people to follow inconsistent objectives;
- be costly to collect or implement, i.e. if the improvement needed is obvious and expensive it should not be measured, e.g. a new piece of capital equipment;
- be trivial or viewed as trivial;
- conflict with other measures without prioritising;
- produce misleading information;
- be short term;
be within a standard framework of performance measures. A Focused Improvement system should be unique to the organisation or business unit being measured, reflecting critical success factors and business processes.

MEASURE OF PERFORMANCE DESIGN

For each measure of performance the following information should be compiled and communicated to everyone who is affected by the measure. An example is given in note K:

- What is the measure?
- What is the objective of the measure?
- What is the required output from the measure?
- What is the required input?
- How is the measure calculated?
- Who owns the measure?
- Data collection information
- When
- How
- From where / Who
- Reporting information
  - To whom
  - Where
  - How
  - When
  - Records

5. WHAT SHOULD BE MEASURED

The measurement of performance within organisations should be based on the priorities indicated below:

The Financial Perspective

Profitability and long term prosperity

Customer Perspective

Based on:

- Quality
- Price
- Delivery speed
- Delivery reliability
- Flexibility
Internal Efficiency

based on:

- Quality
- Cost
- Delivery speed
- Delivery reliability
- Flexibility
- Innovation and learning

Product and process development

Note: The innovation and learning perspective will affect the performance of processes and how they are done but in some industrial contexts can also be a competitive priority.

Each business process within the organisation should be measured in terms of:

Quality relates to the quality of the goods and services offered to the customer. (Dimensions of product quality are performance, features, reliability, durability, serviceability, aesthetics and perceptions. For service quality they are reliability, responsiveness, assurance, empathy and tangibles). The dimensions of product quality will relate to how the product is designed and conformance to that design. The main operational measures of quality will be measures of conformance to specification.

Cost relates to productivity as well as the reduction of costs, waste and non-value-adding activities with consideration given to outputs as well as inputs. Cost considerations and budgets should no longer be the over riding priorities.

Delivery Speed relates to reducing lead times in order to compete on time,

Delivery Reliability relates to reliability of due date compliance.

Flexibility relates to the ability of the organisation to respond to changes in customer demands (New product, Mix, Volume and Delivery date), supplier performance (material availability) and process reliability (sequencing and re-routing). Each type of flexibility should be measured in terms of the degree of change that can be accommodated (Range) and the speed and cost of accommodating change (Response).

Further measures contribute to the performance in terms of these perspectives and should be measured at strategic level as they facilitate good performance. These include:

- The performance innovation and development of human resources.
- Supplier performance and development.

(See "World Class Manufacturing") - A definition

World Class Manufacturers are those that demonstrate industry best practice. To achieve this companies should attempt to be best in the field at each of the competitive priorities (quality, price, delivery speed, delivery reliability and flexibility). Organisations should therefore aim to maximise performance in these areas in order to maximise competitiveness. However, as resources are unlikely to allow improvement in all areas, organisations should concentrate on maintaining performance in 'qualifying' factors and improving 'competitive edge' factors (as defined in note A). The priorities will change over time and must therefore be reviewed.

Factors to be aware of

Though costs will still be monitored and controlled it must be ensured that cost reduction does not remain
the overriding priority, as is often currently the case. Organisations should give attention to all of the priorities as stated in the definition of World Class Manufacturing.

6. CHOOSING MEASURES OF PERFORMANCE

The following considerations should be taken into account when identifying measures of performance:

- Analysis to ensure that priority is given to measures that are important to the organisation and in which performance is poor. Pareto analysis should be used to rank measures in terms of their effect (See 'Process Quality Management' in 'A Guide to Benchmarking');
- Assessment of the benefits to be gained from improvement of a variable against the cost of collecting data and reporting its performance;
- If measures are too costly to collect, alternatives or substitute measures should be sought;
- Assessment of the practical problems and implications of collecting the required data;
- If a person has ownership of more than one measure their priority should be made clear.

Factors to be aware of

A Focused Improvement system does not have to produce a multitude of measures of performance. Too many measures:

- cause confusion;
- are costly and time consuming to collect.

Assessment of the number of measures should be made in terms of the number reported to each person. If a variety of measures are used management must reconcile any conflicts between measures that might exist. Management should summarise the effects of measures ensuring that they support strategy in terms of quality, cost delivery (speed and reliability) and flexibility. A top down approach to the communication of objectives and hence the setting of performance measures should assist this process (see note C).

Measures should be categorised into 'active' and 'passive' measures.

- Active measures will be those that relate to the critical success factors that require improvement. These will be the relatively few key active measures of performance for which targets are set and improvement efforts should be concentrated.
- Passive measures of performance relate to areas where improvement is not the highest priority, taking into account all areas of activity. For these measures control limits, within which performance is acceptable, should be applied. If performance falls outside these control limits these passive measures should become active and improvement action plans implemented.
- Where active and passive measures are used everyone must be aware that all improvement effort should be concentrated on the active measures.

7. CONCLUSION

This guide clearly identifies how to implement a Focused Improvement system. The resultant system moves organisations away from traditional financial measures of performance towards measures that relate more closely to the organisation's operations and objectives. The resulting measures should provide the information required to improve individual processes in line with organisational objectives. The Focused Improvement system will be a major stimulus for improvement provided that challenging but realistic targets are set, action is taken on the information provided and employees are motivated to improve.
**NOTES**

**Note A - Setting Strategic Objectives**

**Understand and interpret the mission statement**

- Take the mission set at executive level, defining goals in terms of market share and profitability (if none exists one must be set).
- Interpret and translate the mission into the context of the process or business unit.
- Define target markets and customers given the core competencies of the process.

**Define Critical Success Factors**

- based on competitors' survey and customer requirements survey;
- in terms of quality, cost (price), delivery (speed and reliability) and flexibility;
- in terms of 'qualifying' and 'competitive edge' factors for the target market.

For each target market there may be factors at which organisations must excel in order to exist in the market, these are 'qualifying' factors. For example in some industries compliance to safety standards is a prerequisite.

'Competitive edge' factors are the dimensions of performance that, if improved will improve customer satisfaction and sales. These are the factors upon which improvement should be concentrated.

Set a strategy to improve performance so that the critical success factors are optimised.

*Factors to be aware of*

The mission and objectives should be set by senior management and communicated throughout the organisation. This will ensure that everyone in the organisation is working towards the same organisational objectives.

**Note B - Setting Measures (at company / business unit level)**

Performance measures constraints and performance factors should be defined in terms of the strategy that the organisation is trying to achieve and the key processes required to achieve them.

It is also necessary to establish proactively and independently the view of middle management. This should identify what middle managers' view as being the key processes and what they view as the important measures by which their performance should be measured.

Any differences that occur must be reconciled through debate between top and middle management. Differences may occur because top management may not fully appreciate the complexities of the process being measured whilst middle managers may not fully appreciate the strategic objectives that are being followed.

**Note C - The Context / Hierarchy of Performance Measures**

[Focused Improvement Systems A development of TQM and Kaizen](http://www.smthacker.co.uk/focused_improvement_system.html)
All measures of performance should fit within a framework that identifies the context in which they are to be found. Thought should be given to:

- The effects of manipulating variables on high level performance;
- The significance of this effect;
- The positive or negative nature of the impact;
- Long or short term nature of the impact;
- Impact on other performance indicators;
- The drivers of performance for a given measure.

This facilitates

- Reporting through a hierarchy;
- Allocation of ownership and accountability;
- Company wide common understanding of goals;
- Manipulation of variables;
- Identification of areas requiring improvement;
- Prioritisation of measures;
- Resolution of conflicts between measures;
- Understanding of the impact of measures on overall performance and profitability;
- Strategic relevance of measures.

Factors to be aware of

Consideration should be given to conflicts and trade-offs between objectives and measures of performance. Where trade-offs occur, reference to objectives should provide the solution.

Note D - Data Collection

- Data collection should be as simple as possible.
- Data collection and methods of calculating the performance criterion must be clearly defined and understood by those being measured.
- Data must be collected and reported quickly to ensure relevance of the information.
- Check what information is currently being collected within the organisation, ensuring use is made of relevant information and that information that is not used is no longer collected.
- Ensure that everyone understands what information is available.
- Data accuracy should be checked. It must be accurate otherwise it is pointless making measurements.
- Where possible, performance data should be collected by those whose performance is being evaluated. This will facilitate greater trust in the accuracy of the data.

Factors to be aware of

Data collection is expensive. The system should be reviewed regularly to ensure that all the data being collected is being used.

The old data collection system should be completely closed down with measurement transferred to the new system to ensure that all measurement is integrated. Current channels of information and measures of performance should be accommodated within the new Focused Improvement system where appropriate. Time should be taken to pick the existing performance measures that remain relevant. The scrapping of old Focused Improvement systems can only be done when there is confidence in the new system. To gain this there may be the need to run the new system in parallel with the old one.
Note E - Communicating Goals

Communication and goal congruence will be one of the key factors determining the success of the implementation of a Focused Improvement system. This note provides a checklist for communicating goals. The managers of the process or business unit should do the communication of goals not the team implementing the Focused Improvement system.

Everyone in the organisation must know and understand:

- The mission statement;
- The company's strategic objectives;
- The key competitive priorities and critical success factors;
- Tactical objectives;
- The operational objectives of the activity they undertake or are responsible for;
- How all of these objectives and priorities relate to their job;
- What they are being measured on and why;
- What makes good and poor performance.

To ensure goal congruence the organisation should survey workers' perceptions of the objectives highlighted and take action to close any gaps between actual and perceived objectives.

Common understanding of priorities throughout the organisation will reduce the occurrence of trade-offs caused by:

- Conflicting competitive priorities;
- Incompatible performance measures;
- Conflicting functional objectives.

Where conflicts or trade-offs arise, the objectives should be consulted to confirm priorities.

Communication should be honest and quick - uncertainty is a de-motivator

Care must be taken when communicating bad news. To accept the bad news, employees must understand:

- the problem;
- the actions being taken.
- the benefits to the organisation;
- the effect on the individual.

Employees will only buy into the Focused Improvement system if:

- they understand the purpose of Focused Improvement;
- they see the data being used for that purpose;
- they see some benefit from doing it;
- they don't see it as a threat;
- it is relatively easy to do.

Factors to be aware of

Employees at all levels of the organisation respond to their perceived measures of performance regardless of what they are actually measured on. When looking at the Focused Improvement system, it is important to consider informal and unspoken measures and measurement systems. (See "Culture Development Methods")
Note F - Rewards and Punishment

The aim of a Focused Improvement system is to promote improvement, therefore good performance should be recognised and poor performance penalised. However reporting accuracy is absolutely essential. If penalties for poor performance or rewards for good performance are too great, it will encourage inaccurate measurement, which will mean that there is no point measuring at all. Monitoring of the accuracy of reporting and data accuracy is required with severe penalties for abuse of the measurement system. People will always be able to cheat. You must try to stop them from doing it. To avoid cheating it is necessary to communicate properly the objective of the measure as well as the measure itself, whilst ensuring that measures are balanced. For example people do not consider it to be in their best interests to report scrap, as they will often be heavily punished for the poor work that caused it. However not recording scrap will result in inaccurate inventory records which will lead to poor parts availability. This highlights the need to explain why a measure is important and why data accuracy must be ensured.

Organisations should try to create a culture in which personal incentives and fear for their job are not the only reasons why individuals want to improve performance. If accurate data is to be collected by those being measured, it is important to gain their trust and convince them that the system is not going to be a stick with which to beat them.

**Factor to be aware of**

Cheating will be encouraged if rewards and punishments are too excessive.

Different people are motivated in different ways so reward and punishment should be as geared to the individual as possible. This may include such things as recognition and peer pressure not just rewards and punishment.

Note G - Reporting and Action

- Data should be displayed in a clear and easily readable manner.
- Graphs should be used as they quickly and easily identify improving and deteriorating performance.
- Displaying performance measures 'publicly' can often motivate people to improve out of shame and peer pressure.
- Information should be available for constant review when required.
- In general, measures of performance should be averaged out to give overall trends. Random abnormal measures should be disregarded.
- Reporting should include information on the occurrences of problems and their effects, as well as hard 'cause and effect information', showing the actual causes of problems, to facilitate action.
- Performance measures should complement regular performance review meetings, focusing attention on areas of improving and deteriorating performance i.e. a control system.
- Reporting should be monitored to ensure that it is timely and directed to the right place.

**Factors to be aware of**

- If you measure something, it implies that it is important and should be improved, so reporting of measures should be limited to the key 'active' measures. This will also reduce the time and cost of calculation. However periodically critical success factors and hence the active measures will change. In this instance it will be desirable to have historical data for comparison.
- The reporting of new measures, even passive ones, will highlight to workers where improvement can be made and can lead to improvements with little effort.
- Measures of performance must influence people's behaviour or there is no point measuring.
**Note H - Empowerment**

Empowerment moves decision-making down the organisation:

- improving flexibility and responsiveness,
- freeing management to consider more strategic issues;
- allowing more performance measures to be used without giving managers 'indigestion' and analysis paralysis;
- motivating employees, as they will often feel they are making a greater contribution.

To empower employees you must:

- give them the tools to make decisions (education and training);
- define what they are going to be accountable for;
- give workers the authority to act on the measures;
- take action to motivate for improvement;
- encourage managers to delegate responsibility;
- encourage workers to question all variances and look for solutions;
- encourage workers to identify their own measures that reflect changing activities and environment.

**Factors to be aware of**

Employees must understand what they are empowered to do. Authority and responsibility for improvement will be given in relation to the processes they are responsible for. Empowerment must be controlled to prevent interfering with other processes. (See "Culture Development Methods")

**Note I - System Review**

Every time the critical success factors are reviewed so should the Focused Improvement system. This should consider:

- continuing relevance of measures;
- whether a measure continues to be a valid measure of the performance of the group or individuals being measured;
- adoption of new measures that relate to changing environment, processes and conditions;
- continued goal congruence throughout the organisation;
- compatibility of performance measures used in all functional areas;
- accuracy of data collection;
- target achievement;
- how challenging and achievable targets are;
- whether too much data is being collected and reported;
- whether all the information collected is being used;
- review of the active and passive to ensure that they are still in the same category;
- whether measures have been institutionalised into the reward and punishment system;
- whether all performance measures are being used not just ignored;
- whether action is being taken on the results.

**Factors to be aware of**

Flavours of the month must be avoided. Once set measures should be allowed to settle and give useful information before being changed.
Note J - Identification of Opportunities and Target Setting

- Benchmarking. See the Introduction to benchmarking.
- Current Tasks. Performance measurement and improvement should always begin with a review of all current operations and processes to establish the following:
  - Is it necessary?
  - How does it support the company's strategy
  - Is the specification of the output too high or low?
  - Is the output what the customer (internal or external) wants?
  - Is there another way of accomplishing the same result?

This should include flow charting to ensure the process is logical:

- Industry Standards.
- Engineered Standards
- Work Simulation identifies the performance that is possible from a process if ideal circumstances (such as inputs and facilities) are employed.
- Time Usage Surveys identify how time is spent or wasted allowing comparison with how it should be spent.
- Comparative Analysis (or Internal Benchmarking)
- Do It Yourself. A good way for managers or supervisors to gain an understanding of what it takes to do a task is to do it themselves.
- Historical Analysis.
- Waste Analysis.
- Operations Variance Analysis looks at faults within the system that prevent a task from being completed as well as was intended, looking at deviations from normal conditions.

The Half-Life concept suggests that the rate of improvement of many variables can be expressed in terms of the time it takes to halve the problem.

It is important that the targets set are challenging to stimulate performance but are deemed as achievable. None of the above techniques should be used exclusively as each may have a greater benefit in a certain area of the organisation.

Targets should be constantly reviewed to ensure that they are still challenging and have not been achieved.

Note K - An Example of Measure of Performance Design

The following example highlights the information that should be identified and displayed when implementing a performance measure. The example given is for scrap

What is the measure?

Scrap level in relation to production

What is the objective of the measure?

Improved quality

What is the required output from the measure?

% scrap

How is the measure calculated?
Number of units scrapped in a given time period

divided by

Total units output in the given time period

What are the required inputs?

- Number of units scrapped in a given time period
- Total output during the given time period

Who owns the measure? 

Cell leader

Data collection

When Monday 8.00am

How On to standard forms

From where Cell quality records / Final test records

Reporting (Reported at 2 levels)

- To whom Cell personnel Operations manager
- Where Cell work area Monthly executive meeting
- How White board Monthly report
- When Monday 9.00 am update Monthly in report
- Records File data collection forms File monthly reports

The above paper was produced as a part of the 4-year UK EPSRC funded research project into Performance Measurement & Benchmarking of manufacturing control systems in conjunction with UMIST. Further companion guides are available on request:

- "Guide to Benchmarking" (available electronically)
- "Improving your business through effective manufacturing planning and control systems (Workbook- Mini Version)"(paper version only)

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The following further best practice articles were also mentioned in this paper:

- Culture Development Methods
- "World Class" Definition
- World Class Manufacturing
- Introduction to Benchmarking

The following training workshops deal with Continuous Improvement using FIS. Go to:

- C1 Focused Improvement Systems
- S5 World Class Change Management

For more information or if you are experiencing difficulties contact us at enquiries@smthacker.co.uk

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