CHAPTER 14

PROCESS EXCELLENCE

Introduction

A business's success depends primarily on its ability to achieve the quality, cost and delivery performance that will create loyal customers; customers who return enthusiastically, bring more business and recommend it to others. And this requires consistent excellence in both the processes that deliver customer value, and the processes that feed and support them.

Figure 14.1: Operational process in context

Processes are the building blocks of sustainable success

Delivering what the customer wants – be it a product, a service, software, valued knowledge, information, or a particular experience – requires a process; a series of steps that have been proven to consistently deliver the promised outcome.

Processes are the building blocks of the system required to deliver sustainable high performance, and those processes need to be effective, individually and collectively.

What process excellence means

Process excellence is the design, management and improvement of processes so that they:

- Create loyal customers
- Produce the right thing, in the right amount, with the right quality, at the right cost, at the right time
- Do this without waste (unnecessary steps, delays, resource or expense)
- Be stable and in control, producing results that are predictable and repeatable
- Have the resilience and flexibility to handle fluctuations in demand and other short-term challenges
- Have the agility to adjust to longer-term strategic change and to remain relevant and competitive

Why process excellence matters

The quality of the process is the biggest single influence on results. People's contribution is determined by the quality of the processes they work in. It is impossible for colleagues to consistently outperform a poor process.

> *'If your business requires heroism from your employees to keep customers happy, then you have bad service by design. Employee self-sacrifice is rarely a sustainable resource.' (John Seddon)*

Effective processes allow front-line colleagues and managers to do their jobs efficiently and well, and to produce controlled, predictable and sustainable results. Without effective processes, even the best people will struggle, there will be problems with the basics, and people will become frustrated and disengaged. Managers, instead of managing the people and the process, will then be at the mercy of process problems (and the people problems created by the process issues), and will be less able to achieve consistent performance and results.

Process excellence is the bedrock of Business Excellence and is therefore of strategic importance. So understanding it, and being able to lead and engage colleagues in designing, managing and improving processes, is a fundamental management responsibility.

Achieving process excellence

Throughout the business, starting at the top, achieving process excellence requires the right:

- Mindset – understanding of, and commitment to, the overarching principles, key concepts and standards
- Understanding of the practical tools and techniques that allow for successful implementation
- Discipline and accountability, built into the management system, for the design, management and improvement of the process

A key part of the mindset in process excellence is aiming for perfection. While perfection is unlikely to be achieved, the constant striving for improvement will achieve excellence and provide an advantage over competitors that are not similarly committed. The danger in failing to set the business's sights on perfection is that this can breed a 'good enough' mentality that opens the door to complacency and its attendant dangers.

Key aspects of process excellence

Process excellence is an expansive topic, and in some businesses it can be highly technical and specialised. Here, however, are 14 core, interrelated factors that are relevant to just about every process in every organisation:

1. Understand value (VoC)
2. Build in quality and minimise the cost of poor quality (COPQ)
3. Flow
4. Evenness
5. Operate within capability
6. Dynamic resilience
7. Balance
8. Standardise
9. Prime and maintain
10. Resource effectively
11. Error-proof
12. Pull
13. Measure
14. Manage and improve

Let's explore these in turn.

1. Understand value (VoC)

'Value' is the utility or benefit the customer wants from the product or service and is willing to pay for (i.e. what they want it to help them to do, achieve or experience). Value is defined by the customer, but many businesses *assume* they know what the customer wants, rather than developing a continually evolving, clear and accurate understanding. There are significant dangers in this.

So the first step in process excellence is to understand the VoC in sufficient depth and clarity.

From this, the purpose of the process should be defined. Purpose is also often assumed rather than properly thought through. For example, the purpose of a contact centre could be defined either as 'to achieve KPIs for high productivity and minimum call duration', or as 'first-time call resolution'. These are very different definitions of purpose and have significantly different implications for how the process would be designed, measured and managed – and, ultimately, its performance.

When the purpose has been defined, measures should be designed and aligned with the VoC. Misalignment between the VoC and the process measures can have

serious consequences. At the extreme, we could have a process that is efficiently producing a technically excellent offering with perfect quality, on time, that insufficient numbers of customers actually want.

Finally, it is important to remember that it is not just the needs of the end-user that must be understood. Our direct customer may be an intermediary, such as a reseller. And most internal processes serve internal customers – the people who perform the next step in the value stream.

2. Build in quality – minimise the cost of poor quality (COPQ)

Defining quality

External quality means providing what matters to the customer and delivering it or making it available when required. But quality does not necessarily mean the highest technical specification. The customer may not require something 'gold-plated', but may instead value ease of use, longevity, durability, reliability, low running costs, compact size, or value for money. Adding features, or over-engineering any feature that the customer didn't ask for, doesn't want and won't pay for, constitutes waste rather than value.

As Seth Godin observed, 'When enough features are added, the system breaks down and fails.' More options and functionality may add little or no value, can make it harder to navigate and to access the small number of key things the customer wants, and create more opportunities for failure.

Internal quality (or process quality) is ensuring that the internal processes are capable of efficiently and effectively delivering what the customer wants, right first time, every time. And continually improving, and adapting to evolving customer needs.

Quality is free

Philip Crosby argued that, far from being expensive, quality is free. That, indeed, it pays to get process quality right, because, self-evidently, it is cheaper not to have to put things right that shouldn't have gone wrong in the first place.

Figure 14.2 illustrates his point:

- The activities required to prevent problems add up to less than 15% of operating costs. These include all the value-enabling activities of effective planning, organising, communication, developing people, process-priming, process management and process improvement. (All the activities that are the essence of working smarter, not harder)
- If we 'save' time and money by not doing these activities, and instead allow avoidable problems to occur, the costs of inspection and fixing problems that are detected internally, or found by customers, amount to around 40% of operating costs. (Not including what Deming called the 'unknown and unknowable' costs associated with getting disgruntled customers back onside or replacing those that don't come back)

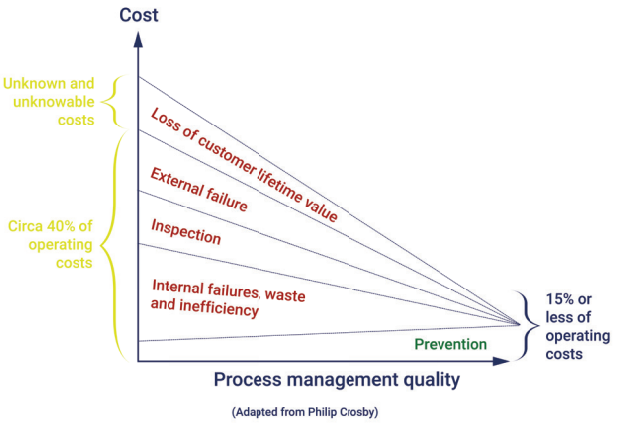

Figure 14.2: Cost of quality

So improving internal quality reduces costs because a job done right first time requires only the planned time, activity and materials (customer-driven demand), not the additional labour and material costs associated with rework and recovery (failure-driven demand).

But if a manager has either no concept, or no measure, of COPQ, it is likely to remain unnecessarily high, unmanaged and problematic, limiting the success of the business.

Build in quality

There is a crucial distinction between:

- **Quality assurance,** with its emphasis on 'after the event' inspection and compliance, and
- **Quality improvement,** with its emphasis on 'before the event' process quality and improvement

The key point is that quality cannot be 'inspected in'. Inspection, as invaluable as it is in many circumstances, can only catch problems once they have occurred. Quality must be built in. That is, the process must be designed, measured, managed and improved to achieve and maintain the capability to consistently deliver the level of internal and external quality required.

3. Flow

What flow is and why it matters

Flow is the movement of work (material and information) through the value stream, with the output from one part of the system matching the input requirements (timing, volume and form) of the next.

Flow is a crucial concept in process excellence. The aspiration is perfect flow – for the work to move through the entire value-adding process end-to-end, within, and between, all process steps without error, delay or unnecessary processing: to get the in-process time to be the same as the processing time.

In other words, the process should do exactly, and only, what is required. And only when it is required to meet customer need. Any activity or resource use that does not add value is what Ohno called waste (or 'muda'); inefficiencies that create unnecessary cost, hassle or delay.

Waste damages processes and limits their potential because it reduces:

- Productive capacity, restricting business growth (because Productive Capacity = System Capacity minus Waste
- Profitability (because Profitability = Price minus Cost to Make minus Cost of Waste)
- The time that managers spend on strategy, growth and improvement (because they are being sucked into dealing with avoidable operational problems and, consequently, managing one level too low)

The other side of the same coin is that the removal of waste is often the easiest and lowest-risk way to increase profitability, enhance productive capacity and free up management time for higher-leverage strategic activity.

Improving flow by removing waste

There are various ways to identify process problems and limitations. The best way of finding those with the biggest impact is to look for barriers to flow. Removing these offers the most direct and certain route to increased process efficiency and reliability.

Ohno identified eight categories of process problems that create 'waste' (or 'muda'):

1. **Defects/rework:** Work that does not meet customer requirements and has to be redone (failure-driven demand).
2. **Transportation:** Unnecessary movement of material or information, which takes additional time and effort and could increase the chance of something getting damaged, misplaced or forgotten about
3. **Inventory:** Excessive stock or work in progress
4. **Motion:** Unnecessary physical, mental or emotional effort (including stress) in accomplishing a task
5. **Waiting:** Idle time while people await information, materials or decisions. Or when the process stops, slows down or is otherwise disrupted for any reason
6. **Over-processing:** Unnecessary work, detail, features, paperwork, forms, checks, reports, bureaucracy etc. Value-add is activity that changes 'form, fit or function' in ways valued by the customer. But any activity that does something that the customer neither asked for, wants or will pay for is waste
7. **Overproduction:** Producing more volume (of anything) than there is known customer demand for
8. **Underutilised human potential:** People lacking core skills, not being sufficiently enabled or empowered to make decisions or contribute improvement ideas, or otherwise unable to develop or perform to potential

To Ohno's list we can usefully add the following:

1. **Space:** Excessive floor space, shelf space, desk space, or any form of inefficiently used physical capacity
2. **Energy:** Wasted heat, light, fuel, electricity, gas, battery power etc.

3. **Transaction costs:** The time and effort it takes to foster cooperation, collaboration and innovation. Low trust increases transaction costs, while mutual trust can lower them dramatically

Making value flow by removing the above wastes optimises process:

- Velocity
- Quality
- Cost
- Lead time
- On time in full (OTIF) performance
- Profitability
- Value-adding capacity
- Agility

Waste can be present for so long and be so resistant to repeated attempts at solution over many years that it becomes deeply embedded, systematic, invisible and normalised. Once this happens, it is ignored until there is a crisis – either an instantaneous failure or, more usually, a slow-motion disaster. So reviewing the above list regularly, and taking appropriate corrective action, is important if we are serious about excellence.

4. Evenness

Evenness is the dynamic matching of capability and demand, to maintain flow and consistently deliver to promise in the face of fluctuations in various internal and external factors.

Unevenness (or 'mura') can potentially result from anything that introduces variation. This includes:

- Anything that disrupts flow (i.e. the 11 wastes listed above)
- Fluctuations in demand, including:
    - The **nature** of that demand. For example, new work vs familiar work: complex work vs straightforward work: lots of small, bitty jobs requiring frequent changeovers vs a long uninterrupted run of doing one thing
    - The **timing** of the demand. Is there confirmation well in advance, or is it last-minute? Are there constant tweaks and modifications to order volumes or specifications?

  - The **frequency** of demand. Do orders arrive at regular intervals (or to a predictable pattern), or irregularly and unpredictably, creating gaps, lulls and surges?
  - The **volume** of demand. Are volumes reasonably steady or are some orders significantly bigger than others, or some times of year significantly busier than others?
- The support processes failing to provide the right resources at the right time, every time (raw materials, tools, consumables, supplies or information required to do the job)
- Equipment unavailability or breakdowns; IT problems
- Inconsistencies in approach through a lack of agreed standards, existing standards not being followed, or people being asked to do tasks they haven't been trained to do
- Any process steps that could create a single point of failure (SPOF). For example, a specialist process that only one person is trained to do, which becomes vulnerable if that person leaves or is absent. Or if there is only one specialist machine, which is oversubscribed and has become a bottleneck
- The front end of the process not being managed well and, as a result, the later steps being rushed to make up for lost time and to 'get stuff out the door'
- Expediting – unplanned reactive changes by managers to schedules or activities

Unevenness, in turn, can create various problems:

- It can, in and of itself, disrupt flow
- Gaps or lulls will mean the process is over-resourced relative to demand, and thus inefficient and incurring irretrievably lost cost and productive capacity
- Surges in demand that take the process beyond its capability will drive the process into overburden (this is discussed further in the next section)

Evenness can be enhanced by:

- Matching process load to capability, by managing demand and skilful scheduling
- Ensuring staff are flexible – sufficiently skilled and confident to step into other roles successfully
- Ensuring that the process is properly designed, maintained and error-proofed (see the sections below on 5S, TPM and error-proofing)
- Increasing process flexibility to allow capacity to be adjusted to meet fluctuations in demand

Unless it is infinitely resourced, there are, inevitably, limits to process capability. The capacity, flexibility, responsiveness, reliability and resilience desired are all strategic choices that should be informed by the VoC. There are always trade-offs to be made and these must be recognised, understood and managed. If they aren't, we can end up in the fantasy world of offering the customer things that we can't deliver reliably and profitably, which will in turn create further dangers to long-term profitability, reputation and growth.

5. Operate within capability

Process capability is defined by a number of factors, such as the available time, space, tools, equipment, materials, and people's abilities (including their ability to work effectively under pressure or in adverse circumstances).

Overburden occurs when the demand on the process exceeds capability. It can result from unevenness tipping the process beyond the point where it can run efficiently and effectively. Or it can be a result of deliberate policy to push the process beyond its limits ('maximisation' – see sidebar). Organisations are particularly prone to this when:

- They take on work opportunistically without full consideration of its impact on process performance and profitability
- A strong focus on cost and productivity metrics creates a risk of under-resourcing processes and making them vulnerable to unexpected problems (e.g. absence) or increases in demand

When any process is pushed beyond capability and into overload (or 'muri'), it degrades and risks:

- Quality and delivery performance being adversely affected, increasing failure-driven demand (rework and complaint-handling costs)
- The impact on flow reducing process capability, creating a vicious circle of overburden that gets increasingly harder to escape
- Customer loyalty being adversely affected, making it harder to retain customers and maintain reputation
- Squeezing out value-enabling time, which means that planning, review and process improvement gets less time and attention. This increases the odds of further avoidable problems occurring, and leads to waste and inefficiency becoming embedded

- Needing to spend more time and resource than should have been necessary on process recovery to get things back on an even keel. Or, worse, if overburden is acute and does not allow enough time to reset the process to properly start the next cycle (day, week etc.), people will be repeatedly set up to fail
- Capability degradation:
    - Equipment being damaged because maintenance is missed, or because it is pushed beyond operating limits
    - People becoming fatigued and disillusioned by their managers' unwillingness or inability to manage effectively, leading to disengagement and an increased risk of conflict, grievances, disciplinary proceedings and the best people leaving, diminishing the pool of skill and experience available to the business

All of this can compound over time and lead to permanent degradation of systems, equipment and infrastructure, culture, trust, the skills pool, and goodwill. In the longer term, this can lead to the business:

- Gaining a reputation as being not sufficiently trustworthy to give repeat business to (far less new opportunities)
- Being progressively drawn into carrying excessive stock, equipment and other resources. Thus waste becomes embedded and institutionalised
- Being at significant risk to long-term competitive advantage if improvement capability does not exceed the rate of change in the business environment

All of this makes over-driving processes (either as policy, or through mismanagement) expensive, risky and self-defeating.

A high-performance system needs to run with a sufficient safety margin to protect it from overburden: a time and resource buffer that gives it enough capability to make in-flight adjustments and fix itself as it goes so that it can function optimally in the face of a range of challenges. This buffer is also crucial for long-term success, because it provides the time and space for people to work to increase the capability of the process and adapt it to ongoing changes and opportunities in the business environment.

The rule of thumb is that a well-designed manufacturing process should not be run at more than 95% of capacity (because of the risk that the inherent variation in any process could easily tip it over into overburden). Excellent service processes (with higher inherent variation in the nature and timing of demand) would typically not be run at more than around 80% of capacity.

It is possible to game the process for a while, by pushing it routinely into overburden and pretending that this is strong, ambitious management. But, for the reasons outlined, that approach will invariably be inefficient in the short term and hobble profitability and growth in the long run.

Learning to design, manage and improve processes for excellent, optimised performance is the only route to excellence.

OPTIMISATION VS MAXIMISATION

Optimisation

Systems have an optimum level of performance; the highest level that they can run at sustainably without tipping into overburden, and do that cycle after cycle.

Excellence is reaching and maintaining this level and, where possible and desirable, enhancing capability to increase it.

This requires not just building core performance capability, but also building in resilience; the ability to:

- Be disruption-resistant; to function in the face of a degree of difficulty
- Recover when disruption does occur

Resilience requires:

- An 'anticipate and prevent' mentality/practice to find and remove vulnerabilities before they are exposed
- A 'stop and fix' mentality/practice to spot and correct problems that do arise before they become disruptive
- Time and resource to provide the capability to:
    - Absorb/buffer enough of the inherent variation and foreseeable problems to stop them tipping the process into overburden
    - Detect and diagnose problems early and carry out running repairs
    - Improve the process to remove vulnerabilities

This does not mean adding expensive, redundant 'just in case' capability (which would just be waste). It is about assessing the nature and level of risk to the

process, gauging the right amount of time and resource required to buffer it, and deploying this resource strategically and intelligently.

(Think of an aircraft engine. It needs to be, by design, as lean as possible; light, safe, efficient and reliable. So resilience is built in through design and build quality, problem detection capability and a maintenance schedule that replaces critical parts well before the end of their projected life cycle.)

Maximisation

Maximisation, theoretically, means pushing a process hard to extract every last drop of productivity. The reality, of course, is that not knowing or respecting the limits of the process may (or may not) squeeze out some measurable short-term performance gain, but will definitely increase the risk of process elements degrading, and risk tipping the process into a downward spiral of compounding lower quality, reduced output and, possibly, eventual system failure.

Maximisation is based on a 'break and fix' mentality. But waiting until a process breaks to intervene incurs:

- Immediate, irrecoverable loss of production (in ways that are potentially unpredictable and uncontrollable)
- Higher repair costs if what fails creates secondary consequences that would not have otherwise occurred (e.g. a vehicle engine is destroyed because the timing belt was not replaced as per the maintenance schedule)
- Collateral damage – to colleague morale, customer confidence and wider reputation

(There's also 'break and walk': allowing systems to degrade by failing to invest in resilience, using the 'saved' cash to inflate short-term financial performance figures and continuing to push systems until they are seriously compromised, in perpetual crisis or collapse. And then walking away and leaving the mess to someone else.)

The difference between strategies (as with all 'work smarter, not harder' issues) depends on the vertical development level of managers; their level of understanding of complex, dynamic systems, and their ability to foresee (and care about) the long-term consequences of their decisions.

6. Dynamic resilience

Following on from the above, the process should be resilient in the face of the challenges that the customer might reasonably assume they are paying us to deal with.

Dynamic resilience (maintaining resilience in a changing operational and strategic context) requires building:

- **Productive capacity:** As discussed above, the ability to routinely and consistently meet the customer's needs (including the projected variance in them) without hitting overburden
- **Recovery capacity:** The ability to restore homeostatic balance, i.e. to:
  - Routinely get the system reset, primed and ready for each cycle
  - Restore capability and get back on track after disruptive setbacks
- **Absorptive capacity:** The ability to identify, assimilate and deploy relevant new information, knowledge, concepts and ideas. (This determines how fast and well the business can learn)
- **Adaptive capacity:** The ability to maintain allostatic balance – to evolve thinking and practice to successfully respond to emerging threats and opportunities (and, indeed, to create new opportunities or lead the development of industry best practice)

7. Balance

A balanced process is one where each stage runs at the same speed, so that no steps are either a bottleneck or are waiting too long for material or information from preceding steps.

Poor balance can mean inefficiency in one part of the process and, simultaneously, overburden (and all the problems associated with that) in other stages of the same process, thus potentially affecting end-to-end flow and overall process quality, efficiency and cost.

8. Standardise

Why standardise

A standard is simply the best (or least worst!) way that the business has currently found to do something: the hymn sheet we're all meant to be singing off.

Capturing and consistently following standards is the foundation of the business's ability to reliably produce the best results it is capable of. Standardisation prevents the avoidable and unnecessary variation in the system that might result from things being done in different ways by different people. (Such variation, of course, contributes to inconsistent quality, inefficiency, unnecessary cost, unevenness and overburden.) Standardisation also makes it easier and quicker to share information, collaborate and coordinate.

Standardise what?

It is often useful to standardise:

- Tools and equipment (to reduce changeovers and to simplify training, maintenance and procurement)
- Methods (to reduce variation and facilitate better teamwork and multi-skilling)
- Training (rather than have people trained or assessed in different ways by different people)

Setting and evolving standards

It is important that the standards are relevant and accepted. To increase the chances of this, the people who use them should be involved in their design, implementation, monitoring and continuous improvement.

Finally, standards provide the baseline from which the value of any suggested improvements can be properly tested and proved. Any proposed improvement must make a measurable, meaningful and sustainable difference to one or more of the key process measures, such as quality, cost, delivery or safety, and must not have any significant unintended negative impact on the others.

9. Prime and maintain

To allow people to begin work immediately at the start of the day/shift and work effectively to the end of it, without unnecessary interruption, processes must be

properly primed and maintained. This means ensuring the availability of tools and equipment that are in working order and able to last the full working day without downtime or loss of efficiency.

Two key disciplines that support this are 5S and total productive maintenance (TPM).

5S

5S ensures that everything necessary to do the job right first time without delay or interruption is available and accessible. It involves colleagues in maintaining an organised, efficient, safe and clean workplace. The five S's are:

- **Sort:** Dispose of the unnecessary. Bin what you don't need. Red-tag if not sure. Store other things that are not immediately needed
- **Set in order:** Ensure that there is a place for everything and that everything is in its place. Arrange things according to frequency of use
- **Shine:** Clean and check – ensure that everything is ready for use immediately
- **Standardise:** Having established the best way to sort, set in order and shine, make that a standard in itself. Communicate and manage it
- **Sustain:** Establish all of the above as habit and review and improve regularly

TPM

Total productive maintenance maximises equipment availability/uptime and overall equipment efficiency and effectiveness. This includes ensuring that tools and equipment are:

- Properly maintained
- Calibrated
- Charged/fuelled up
- Available where and when required

TPM and 5S are the basic disciplines upon which efficient performance is founded (what can people do if they don't have working tools and equipment?) While it is clearly common sense, it is equally clearly not common practice. Many businesses struggle every day with such avoidable issues, and often have a poor (and sometimes unprofessional) attitude toward being reminded to keep things clean, tidy and in order. Make sure that you and your team completely understand the importance of 5S and TPM and that following them is an ingrained habit.

10. Resource effectively

Processes also need to be effectively resourced at the start of, and throughout, each day to allow people to work without unnecessary interruption due to the unavailability of materials, consumables or information, and to ensure that the process is adequately staffed with the right numbers of people with the right levels of skills and experience.

This requires attention to the input processes that feed into the core value-adding process, including:

- The supply chain feeding in the right quality and quantity of raw materials (and other relevant supplies) at the right time
- Management processes feeding in the right information regarding demand, schedules etc. to the right people at the right time
- HR (and managers) ensuring that there are enough trained people available

Many resource issues, such as out-of-date technology and under-skilling, may not give rise to problems immediately, but they are likely to hobble the long-term strategic development of the process toward excellence, so it's important to keep one eye on how things will need to develop strategically to anticipate future resource needs.

11. Error-proof

Process steps that could be especially vulnerable to mistakes should be error-proofed so that they:

- Are easy to get right
- Are difficult to get wrong
- Highlight clearly when errors are made

This helps prevent safety or quality problems, particularly in situations where a momentary loss of concentration might cause a significant issue. Error-proofing can take many – sometimes creative – forms, depending on the nature of the task. For example:

- Clear labelling
- Floor markings to indicate walkways, storage areas etc.
- Colour-coding to quickly identify that the wrong tool, wrong component, or something else is in the wrong place, e.g.:

  - Only red-painted tools go on the red board, blue on blue, etc.
  - The adjustment nut on the machine is painted green and only the spanner with green tape on it is the proper size for it
- Physical shape, size or orientation to stop the wrong thing going in the wrong place, e.g.:
  - An HDMI connector that can only be plugged into the right socket, and the right way up
  - An unleaded fuel nozzle that won't fit into the pipe on a diesel vehicle
- Shadow markings to depict what goes where on floors, benches, shelves, in cupboards or on toolboards, and what way round they should be for ease of use
- Confirmation prompts, e.g. 'Are you sure you want to delete this file?'
- Warning lights or buzzers, error notifications
- Warnings on packaging, e.g. 'Open other side!', 'This way up!'
- Automatic cut-outs that trigger when safety is breached, e.g. the dishwasher stopping if the door is opened during operation

12. Pull

A key aim in process excellence is to achieve just-in-time (JIT) performance: providing exactly, and only, what the customer wants, exactly, and only, when they want it. This requires:

- Perfect flow
- Getting demand information (i.e. what we need to do, when) to the right parts of the process, accurately and in good time

The pull concept is based on the 'supermarket model', (or 'kanban' system) where the customer picks exactly what they need when they need it, triggering a chain of events that replenishes what was used in good time; i.e. demand is pulled through the process, with downstream activity (starting with the customer) providing a full, accurate and immediate trigger for the next upstream stage (and then rippling further back upstream).

The alternative is a push system where scheduling is determined by a centralised process, and possibly based on forecasts and estimates. The dangers with this include:

- Overproduction – creating excessive inventory that might not get used, will lie around taking up expensive storage space, and may go out of date
- Underproduction – missing opportunities because the system cannot respond fast enough
- Delay and error in the information-management process may compromise process responsiveness, quality and cost performance

Consequently, for process excellence, activity should be pulled by external customers and internal processes wherever possible, and pushed only where absolutely necessary.

13. Measure

Effective measurement is fundamental to understanding, managing and improving processes both tactically (in real time), and strategically (over the longer term).

Effective measurement will include both output measures and in-process measures. Output measures show overall process performance and are likely to include the QCD measures. They are lag measures, showing the results of actions already taken. (The lag, of course, could vary from minutes to months, depending on the frequency of measurement.)

In-process measures are real-time measures that provide an early warning system, allowing problems to be spotted and course corrections made immediately ('in-flight'). These lead measures ensure better control of the process and more accurate prediction of process performance.

Effective process measures also help the team to develop a deep understanding of how the process works: what the process variables are and how they interact to shape the results. This, in turn, allows for better, faster and more accurate identification of process problems and their root causes. Effective process measures also allow the impact of improvement actions to be objectively assessed.

Measures, particularly in-process measures, are not necessarily numerical, nor presented at a central location. They can include visual or auditory signals that allow any aspect of the process to be understood, managed and improved by the person doing the job, enabling them to make informed, autonomous decisions and take timely, effective action. For example, indicator lights, dials, gauges, or floor markings that indicate where material, equipment or people should (or should not) be.

Measures should also be:

- Aligned with the purpose of the process and the VoC
- Relevant and sufficient (conveying useful information, and measuring all key factors in the process)
- Useable, providing actionable information that is easy to understand and act on immediately
- Accurate and up to date
- Visible – immediately accessible

14. Manage and improve

There are three main pillars to effective process management and improvement:

- Daily meeting
- Gemba walk
- Improvement time

The daily meeting

The daily meeting is the engine of process management. The excellence mindset is that every day matters: that every day is a day when we need to simultaneously deliver, improve, pick up and sort the small issues that could quickly grow into disruptive problems.

The daily meeting will typically follow the core agenda of:

1. Review and learning:
    - **Planned:** What was planned for yesterday?
    - **Actual:** How did it turn out?
    - **Variance:** What was the difference between planned and actual (on any factor in any direction)?
    - **Reason:** How do we explain the difference, and what can be learned from it?
    - **Action:** Is any corrective action to be taken today as a result?
2. Planning for a successful day, including corrective actions and other value-enabling activities

Beyond sticking to basic meeting discipline it should be fairly informal, and always positive: focused on performance and improvement.

This is probably the single most important forum for colleague engagement, and running the daily meeting, and running it consistently and well, is a statement about, and demonstration of, a manager's commitment to process excellence and colleague engagement. As is a failure to run it consistently and well.

Gemba walk

The gemba walk is where a team leader physically walks the process to ensure that all looks and feels well, and checks in with the people involved, picking up and discussing any emerging issues. (The gemba is 'the place where the productive activity happens'.) Where a physical walk is not possible, this can be achieved by regular short check-ins with people. The frequency of these should be determined by the speed at which problems can go from small to serious. (So, weekly or more frequently.)

Improvement time

Time should also be purposely created to work on improving the process. (It won't happen otherwise.) This is likely to involve some combination of smaller kaizen projects or longer/larger/more strategic improvement projects. A typical standard for excellent organisations is about 5% of working time, or ca. two hours per person per week. That might sound a lot, but is usually comfortably less than the time lost to failure-driven demand and other wastes and inefficiencies.

Summary

Process excellence underpins operational excellence, the basis of the business's competitive advantage. The ability to engage people in the design, management and improvement of processes is a vital management responsibility and competence.

Though each business is different, applying the following key concepts will provide a strong foundation for process excellence that can be continually built on and refined:

1. Understand value (VoC)
2. Build in quality and minimise the COPQ

3. Flow
4. Evenness
5. Operate within capability
6. Dynamic resilience
7. Balance
8. Standardise
9. Prime and maintain
10. Resource effectively
11. Error-proof
12. Pull
13. Measure
14. Manage and improve

While process maximisation is counterproductive, as it runs the constant risk of overburden, process performance can be optimised to run more effectively and efficiently and to continually improve, with greater resilience and with less downside risk. This can only happen when everyone understands the above thinking and the process excellence criteria.

To close, a powerful quote from Seth Godin that neatly captures the essence of process excellence:

> *'If your customer service strategy consists of reacting to problems and mollifying angry customers, you'll always be behind. Life becomes a fire drill and work becomes an endless chore.*
>
> *'The alternative is to invest in cycles that lead to better systems. Because better systems put out the fire when it's really small. And to invest in design, because better design leads to clearer promises, which are easier to keep. And to invest in quality as the focus of production, because keeping your promises creates delight and lowers costs so much, it pays for itself.'*