Understanding Organisational and Personal Behaviours to Sustain High Productivity and Safety

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ABSTRACT

Although Australia's coal mining industry is currently experiencing a pleasing period of price relief, long-term trends toward lower real prices will surely continue. Higher price levels attract expansion by existing operators and market entrance by new operators. History clearly demonstrates the relentless long-term march toward ever lower real prices.

Therefore, the need for economic returns applies constant pressure to improve productivity. To be sustained, high productivity requires a systematic response based on a solid understanding of critical productivity determinants.

The most powerful determinant of productivity is now widely understood to be workplace culture. Culture largely comprises a combination of behaviours, symbols and attitudes. This paper will examine and review science's latest discoveries in human behaviour. It will provide a proven, practical framework for understanding behaviour and applying this knowledge.

Significantly, it will highlight why conventional approaches toward improving productivity often provide disappointing economic returns.

The modern understanding of behaviour factors will cover coal face operations. More importantly, because executive and managerial levels in coal mining have significantly greater impact on industry and mine productivity the paper will concentrate on leadership.

Particular emphasis will be placed on use of modern systems and in particular use of what are by far the most powerful drivers of behaviours – measurement, analysis and reporting systems. The paper and presentation will show how conventional systems rooted in antiquated American legislation from the early 1900s stifle productivity improvement and drive suboptimal and even counterproductive behaviours. These commonly used systems will be compared with accurate and effective modern methods for assessing performance to improve productivity. These principles are proven in all industries and effective application in mining will be highlighted.

Actual results will be used to demonstrate practical approaches successfully applied in both metal and coal mining in Australia and overseas.

PRODUCTIVITY AND SAFETY – CONSCIOUSNESS, LEADERSHIP AND ACCOUNTABILITY

Sustainable high productivity is the key to commercial survival

Although Australia's coal mining industry currently enjoys a period of price relief, long-term trends toward lower real prices will surely continue. Higher prices attract expansion by existing operators and market entrance by new operators. History clearly demonstrates the relentless long-term march toward ever lower real prices.

The coal industry is not alone. As the world shrinks with more competitive transport and rapid technology transfer in all industries, global markets are increasingly competitive. In the automobile industry, major international markets are enjoying record sales, yet 40 per cent of car-making capacity is idle. Only Honda and Toyota are making adequate returns on investment.

The law of supply and demand and many decades of history show it is to this situation the coal industry will inevitably return.

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Only producers with sustainable superior productivity will produce returns commensurate with the cost and risk of investment.

The need for economic returns applies constant pressure to improve productivity. To be sustained, high productivity requires a systematic response based on a solid understanding of critical productivity determinants.

Improving productivity involves understanding and improving the efficiency of core business processes and understanding and improving human behaviour. The latter is particularly important in mining since labour costs can be up to 50 per cent of operating costs.

Even in mines with proportionately low labour costs, productivity is determined by the efficiency and effectiveness in using human physical, mental and emotional energy. A significant amount of this energy is wasted or misdirected or at best not managed optimally. This clearly represents a huge opportunity for improving productivity and safety and for influencing education of future executives and managers.

The most powerful determinant of productivity and safety – organisational culture

Indeed, the most powerful determinant of productivity is now widely understood in all industries to be workplace culture. Culture is essentially the combination of behaviours and attitudes, ie what people do and how they feel toward what they do.

Please note that for the purposes of this paper, behaviour is defined as the observable manifestation of human physical, emotional and mental energy.

Consciousness and the use of human energy – accountability

Effective and efficient use of human energy and time requires all people to make clear, conscious choices in using their energy and when managing other people's energy. Consciousness, is the key to productivity and safety.

The ability to proactively make conscious choices also affects levels of accountability.

Consciousness and leadership

Leadership is exercised by influencing people to choose to use their time and energy productively to achieve a shared purpose. Effective leadership is about the conscious, committed use of human energy and time. It is about the way people choose to use these precious resources. It's about choices. It's about a high level of conscious awareness.

Therefore, this paper asserts that effective leadership starts with a solid understanding of human behaviour and organisational performance. The task of leaders is to apply that understanding effectively to inspire and lift people's vision, standards and performance. The paper will provide a proven, practical foundation for providing effective leadership and successfully managing change through understanding science's latest discoveries in human behaviour combined with age-old wisdom readily available to all.

THE CHALLENGE TO IMPROVE SAFETY AND PRODUCTIVITY

Australian mining has a justifiably proud record of technological prowess. Nonetheless, many mines are not performing to their expected capability. In attempting to address this, managers often initially attempt technological and/or commercial solutions. Experience and success in mining and in other industries revealed the need during the 1980s to address cultural issues and better manage the human resource. It is against this background that a broad overview of traditional approaches to productivity improvement is now being reconsidered.

Hiding behind delusion of increased capital investment, new technology and blind cost cutting

Conventional approaches to productivity improvement fail in three main ways. The first two involve hiding behind capital investment or new technology as a panacea to increase theoretical production capacity. In the 1980s General Motors (GM) embarked on a 21 billion dollar automation campaign to increase productivity. Due to lack of understanding of core assembly line processes this project resulted in robots welding other robots. GM's Japanese competitors though were using older technology yet had superior understanding of core processes via simple process based measurement, analysis and reporting systems. As a result they continued to outperform GM.

Thirdly, cost cutting by blindly reducing head count has been counterproductive when processes are not understood. In the 1990s Australia's then largest underground mine reduced head count by 30 per cent for the directors to proudly proclaim annual savings of 100 million dollars. Just two years later the site's new executive general manager reportedly stated that for each dollar saved in cost cutting, it was costing two dollars due to lack of maintenance and curtailed mine development.

Clearly, wise capital investment, effective new technology and productive cost-effectiveness campaigns can work. It is obvious though that to improve efficiency of resource usage, managers need to improve core processes. Yet conventional accounting systems prevent understanding of processes. Capital investment can then be inefficient or even squandered. Cost cutting can reduce cost-effectiveness. Kaplan and Cooper (1998) and a growing number of authors provide ample evidence supporting this conclusion. Worse, conventional accounting systems drive counterproductive executive and managerial behaviour.

Derailed attempts to improve organisational culture

Another approach is the attempt to change organisational culture. When attempting to lead organisational change, executives and managers are often exhorted by consultants, authors, human resources advisers and/or psychologists to embark on extensive campaigns to change people's attitude in the belief that attitude change will lead to behaviour change and thereby higher productivity and improved safety. Consequently, in attempts to improve productivity and/or safety, people have been packed off to numerous training courses to develop skills in teamwork, leadership, communication and interpersonal relationships.

Take the example of attempting to develop teamwork in an organisation in which formal and informal systems measure and reward individual performance. Once executives and managers realise teamwork may potentially be more productive they can choose to send people off on courses in which participants are cajoled or threaded through rope nets, abseil down cliffs or paddle down white-water rapids. Yet back in the workplace, systems remain the same and still measure and reward individual performance to drive individual behaviour. Managers then wonder why such courses actually fail to develop teamwork. They face disappointed employees who understand the projected benefits of teamwork yet still misunderstand how ingrained and habitual systems drive individual behaviour.

The point is that if the systems are not changed, even the most effective training and communication will not produce a change in behaviour. Pre-existing behaviours continue. The underlying assumption that enhanced training and communication will then change attitudes which will in turn then change behaviours is flawed. Worse still, it is sometimes based on the invalid assumption that it is possible to change people.

Many adventures in managing organisational change have fallen dismally short of expectations. This, however, does not mean people are not the key to profitability and safety. To the contrary, even unsuccessful examples of managing change have confirmed the importance of people. The conclusion is that in order to be successful, leaders in Australian mining need to concretely understand human behaviour and process improvement.

Conventional approaches to improving productivity rely simply on doing more of the same; working harder and improving technical skills and knowledge. There's more to improving productivity than cutting costs and increasing capital, physical effort, skills and technology. Bringing in more production resources, spending more capital, working harder, increasing training and boosting communicating at best have limited impact on productivity and at worst can reduce productivity.

Systems driving counterproductive behaviour

In this context a system is identified as a collection of actions or elements that provide a specific method, procedure or guide. A system is simply anything that drives ways of doing things.

Commonly in organisations, some formal systems may have been built consciously. Others may have been built deliberately yet unconsciously. Many systems may be informal and even undefined. In many organisations these have evolved unconsciously in an ad hoc way.

Systems that can drive counterproductive behaviour and/or lead to compromising safety include: conventional measurement, analysis and reporting of performance; conventional performance appraisal systems; poorly designed 360 degree feedback systems; lack of process and behavioural standards; ineffective communication and planning systems; organisation structures cutting across processes preventing adequate control and undermining accountability; overly prescriptive or vague roles and responsibilities.

By far the most powerful system for driving behaviour is the measurement, analysis and reporting of performance. In many organisations this system has changed little since those developed in the early 1930s in response to antiquated American legislation based on fear arising out of the Great Depression. This is still the case despite significant changes in business and society in the last 70 years. As a result reactive managers use their limited valuable energy to unconsciously stifle other people's energy or managers waste energy chasing their own tails, or managers give up and succumb to apathy.

Organisation structures are often based on systems developed during the industrial revolution. These were in turn based on earlier systems used by the early military and early church. Such systems essentially go back 2000 years to the days of the Roman Empire and the barbaric values of the ancient coliseum – a period filled with fear and ignorance. These systems were designed to control people and thus prevent true accountability and ironically undermine effective control.

Many managerial systems are based on now discredited assumptions about human behaviour; assumptions discarded forty years ago in the 1960s or even earlier.

Derailed leadership

Partly because of these counterproductive systems, traditional styles of leadership are out of touch with the diverse and dynamic reality of organisational life. Traditional styles of leadership are often based on a lack of understanding of core processes and human behaviour. Conventional approaches to improving productivity and managing change often have limited impact or, worse, can be ineffective and even detrimental. People want and deserve much more.

Sadly, although many humans naturally yearn to continually improve tasks and processes, in some organisations increasing productivity has become something that stimulates fear. The stress and resulting physical and emotional damage is widely recognised as a huge cost with ongoing and long lasting consequences. This is a terrible waste of resources at a time when high productivity is vital.

UNDERSTANDING HUMAN BEHAVIOUR

There is an easier and more effective way to manage organisational change successfully. This is based on first changing behaviours, which is relatively simple and straightforward. Consequently, at an organisational level, instead of living in the past, leaders need to build and use systems that live in the present so they are conscious of how they use their own energy and other people's energy.

The main drivers of human behaviour and underlying needs

In a practical sense there are five main drivers of behaviour. These are:

1. genetic makeup,

2. personal patterns developed in early years of childhood,

3. past work experience,

4. the organisation's systems, and

5. leadership.

These five broad drivers of behaviour determine how a person's energy is used and, importantly, influence whether a person's response to a situation is made from conscious choice or unconscious, habitual reactions. Whether the person's energy is used consciously or unconsciously, all behaviour is motivated by people's attempts to fulfil an underlying unmet conscious or unconscious need or maintain fulfilment of needs currently being met.

Turning now to the first driver of behaviour – genetics. Clearly once a person is hired it is too late to do much about genetic makeup! For this reason, the paper will move now to discuss the remaining four broad drivers of behaviour.

Habitual unconscious personal reaction patterns

Over a period of half a century Maria Montessori (1948) made the most extensive and detailed observations of human development during childhood. Her discoveries included her observation that 'the principal years for formation of both character and intellect are from zero to six'. This early formative period's primacy in developing reactive patterns is confirmed by science's latest discoveries in brain development and human behaviour (Goleman, 1996; Childre, 2000). These and other scientific advances confirm the teachings of Buddha 2500 years ago and observations by the ancient Greeks 3000 years ago.

Reaction patterns are built into the formation of the brain during childhood. A person's reactions to situations at work, in the home and in the community are largely built before puberty and especially during the first six years.

The human brain's rational neural network is designed to search out patterns in the person's environment. This inherent ability is used in maths, language and behaviour. Children pick up behaviour patterns from their environment, especially from significant adults in their lives. The adult neural network carries patterns of behaviour shaped over many years, especially during early childhood.

As well as picking up patterns, in every moment of their life people have feelings coursing through their body. These feelings are intimately associated with the release of internal chemicals such as hormones, internal electric currents and electromagnetic fields, variations in pressure within the body and other means of internal bodily communication. Feelings trigger these movements of energy within. Feelings are a core part of each person's internal communication system.

Clearly, humans are very complex creatures – yet the basics are simple. The brain consists of neurones which extend throughout the body as the nervous system. Nerves are enmeshed in tissues – intimately part of almost every fibre of the human being.

Humans are hard-wired with a fight-or-flight reactive mechanism. It can cause even highly intelligent, highly rational people to be hijacked by their emotions; for example: road rage, screaming at the kids, the boss going off his brain, a partner sulking or withdrawing. These reactions are often unconsciously triggered by underlying anxiety or fear. As a result, energy is wasted unconsciously for no productive or personal benefit.

Individual learned coping mechanisms seen as habitual reactions to a situation could include shutting down, shying away, embracing changes, rejecting changes, laughter, aggression, denial or submission to name just a few. In response to an event or situation two people can experience contrasting feelings. One may feel happy, the other upset. One may feel stimulated, the other overwhelmed. One may become aggressive, the other run away and yet another may be calm and cool. Clearly happiness, sadness and indeed all feelings come from within. Feelings are generated within.

Essentially for many people, reactions are not conscious, ie their energy is directed unconsciously. Yet as Goleman (1994) and Thomsen-Moore (2004) state, emotional intelligence is a far more significant factor in personal performance than is IQ. Emotional intelligence can be summarised as the ability to be self-disciplined, develop understanding and empathy for oneself and others and develop personal connection with others. Essentially, in the workplace emotional intelligence is about using feelings intelligently to detect, understand, manage and express feelings and emotions productively.

Underlying feelings are associated with met or unmet needs. In essence, on a personal level, needs give rise to feelings which in turn drive either unconscious emotional reaction or, in some more aware individuals, conscious choices.

Note that use of the word feelings is not meant to be associated with Hollywood's use of the word as mushy, soft, vague underpinnings of vulnerable emotions. In reality, at every moment of their lives all humans experience feelings which reflect real movement of energy within the body. Their conscious or unconscious response to such feelings determines personal effectiveness.

When feelings are not recognised by a person's conscious awareness, that person can experience reactive e-motions being 'energy in motion'. These emotional reactions are patterns developed in early childhood and can represent substantial waste or blockage of energy. Alternatively, when people are conscious of underlying feelings coursing through their body, they can then link them to underlying real needs and thereby consciously make choices on how to use their energy most productively.

In this sense, consciousness or conscious awareness is the root of 'response-ability', which simply means the ability to choose a response.

Additionally, feelings affect natural vibration frequencies within the body's primary electrical generators – the heart and brain – which continually radiate electromagnetic energy. Such energy can be measured up to three metres from the heart. It can be transmitted large distances via changes in vocal tone and via micro-muscular and colour changes in the face. Childre and Martin (2000) discuss how the frequency of such vibrations depends on the feeling experienced. For example, anger generates a vastly different vibration frequency than do feelings of calmness and confidence.

Humans automatically broadcast or radiate these feelings. Humans automatically receive or take in these feelings from others. In essence, the human body is a natural antenna for broadcasting and receiving energy in the form of vibrations associated with specific feelings. In this way, feelings within one human can radiate and trigger feelings and unconscious reactions in the human receiver.

Many people experience a loss of personal power in organisations, especially when there is a lack of consciousness of the source or true cause of their feelings and reactions. By identifying and acknowledging feelings though people can reclaim their power. This is why leaders need to understand unconscious human behaviour.

Past work experience

Clearly people bring to a current employer their experience developed in previous work environments. This influences their behaviour, or use of energy and time. For now, there is no need to expand on this other than to say that in the absence of clearly defined systems a new employee will tend to maintain behaviours developed in the past in previous organisations.

Systems drive behaviour which shapes attitude

As has already been established in this paper, systems drive behaviour. Remember the earlier example – if, as managers, we want teamwork yet measure and reward only individual performance, people will focus on individual performance.

A significant example of systems driving behaviour and changing attitudes is the impact of random breath testing to curb driving under the influence of alcohol on Australian roads. Prior to the introduction of random breath testing the attitude in Australia toward drink-driving was generally one of indifference bordering on pride. To reduce drink-driving, state governments tried logical advertising quoting, for example, fatality rates associated with drink-driving. That failed dismally. Next they tried emotional advertising since as many advertising executives, union delegates and politicians know emotional messages have much stronger impact on people. Emotional messages raised awareness but did not change drivers' behaviour.

Victoria then became the first state in the world to introduce random breath testing of drivers. Immediately, behaviours changed and noted Australian social researchers such as Hugh Mackay now attribute a substantial change in social behaviours and attitudes to the introduction of random breath testing.

It is important to emphasise that the legislation did not attempt to change attitudes. It merely put in place a system that changed behaviours. Subsequently, attitudes changed to align with behaviour. Humans do not go through life with a certain belief while behaving contrary to that belief. Rather, if the changed behaviour is maintained, experience and scientific research confirm that attitudes change to align with and justify behaviour. This effect has been used by many organisations including political parties and unions to develop behaviours and attitudes aligned with the needs of the organisation and/or its leaders.

Please note that although the example of random breath testing is an example of a punitive system, the use of process-based systems drives productive behaviours constructively.

The conclusion is firstly that communicating and/or training alone are not adequate. Secondly and importantly, system change does drive behaviour change. Thirdly, when system change is supported with effective training and communication such behaviour change is accelerated.

Deep down, intuitively, many managers know systems drive behaviour. Yet many just don't seem to know it on-the-job. Instead, many managers seem to be trying to buy change off-the-shelf as a one-size-fits-all package without looking within to understand. That's unconscious.

To change organisational culture it is necessary to change the systems driving behaviour. While it is difficult, indeed impossible to change people, it is possible to change behaviours which will lead to a change in attitude. A change in behaviour and attitude produces a change in culture.

Leadership

Leaders through their own modelling of desired behaviours provide a positive example. People tend to emulate the behaviour of their leader or at least focus on what their leaders focus. This applies especially with leaders people respect and trust. On the other hand, if leaders ignore people and focus mainly on, for example, technological aspects, most people throughout the organisation perceive a lack of importance of people issues. This has important consequences in management of safety and productivity.

For instance, it is becoming increasingly clear that leaders focusing blindly on cost-cutting can consciously or unconsciously drive people to cut costs in ways that are not cost-effective, ie in ways that reduce productivity.

PRACTICAL SOLUTIONS

In summary then, to effect culture change and to successfully manage organisational change, leaders need to be aware every individual has deeply ingrained personal patterns that can be very difficult to shift. With one exception discussed below, it is not possible to change people. Rather, individuals change themselves in response to personal searches for consciousness. In groups though, people change behaviour in response to changes in systems accelerated with effective communication and modelling by leaders. This behavioural change then leads to attitude change and thus culture change.

Leaders particularly need to become aware of their own learned personal patterns which shape their leadership style and influence the systems they design. In this way, the leader's awareness of personal patterns has many impacts on the whole organisation.

Instead of the outdated, flawed and ineffective HR model, approach behaviour from the perspective of energy consciousness and energy use, ie use a practical approach of changing systems to change observable behaviour.

Improving organisational behaviours and attitudes

To improve productivity and safety, leaders need to observe people's behaviours to understand use of energy in the organisation. Then identify systems driving behaviours. These are occasionally designed consciously. Many more are often built deliberately and yet unconsciously. Others just grow in an ad hoc way in response to various past executive decisions, past events, unions and other influences. To be effective, leaders need to define specific desired behaviours and then design, build and implement systems to drive those desired behaviours.

By way of emphasis, it is necessary to restate that by far the most powerful system for driving behaviour is the measurement, analysis and reporting system. Because it is associated with people's sense of achievement and worth it is even more powerful than remuneration systems, including performance bonuses and monetary incentives.

Other basic systems include organisation structure (including roles and responsibilities), communication systems, planning systems, behavioural and process standards, personal feedback and performance development systems. Systems on the next level of drivers include remuneration systems, systems for involving people, recognition systems, methodologies for process and productivity improvement and the organisation's plan for organisational change. The detailed interaction and integration of these systems is beyond the scope of this paper and is introduced in Roberts (1995). Additional systems include, for example, safety systems, administration systems, selection and preparation of people (recruiting), office layouts, computer systems, environmental management systems, quality assurance systems, document systems and policies and procedures.

To drive productive behaviours aligned with the business' core process and purpose leaders need to consciously design and build simple, solid conscious systems to drive behaviours aligned with and supporting core processes and the business' purpose.

To describe these systems in detail here is beyond the scope of this paper. Examples of their benefits though include the more than doubling of roadway drivage rates in an underground nickel mine through adoption of process-based measurement, analysis and reporting. At an American dredge mining operation an increase in production equipment availability from 89 per cent to 94 per cent through changing the organisation structure immediately produced over two million US dollars in annual benefits from increased recoveries and additional unmeasured benefits in terms of greater teamwork at all levels.

Take the example of aligning measurement, analysis and reporting with the core process and aligning all basic systems to focus on performance improvement and teamwork. In the early 1990s Australia's largest longwall mine achieved development rates close to double the next best Australian performance under similar conditions. It also achieved longwall face productivity 30 per cent higher than the next best Australian face. Significantly, this represented productivity double that of the next best mine operating under similar conditions. These records were achieved without a performance bonus system. Industry figures in NSW and Queensland show the mine enjoyed by far the best safety performance of all large underground coal mines in Australia. This was driven essentially by leadership commitment to safety and the use of proactive safety performance measures.

A small longwall mine doubled productivity with reduction in equipment used. A large Australian surface mine increased recoveries by three per cent while simultaneously improving throughput and industrial harmony. Such improvements go straight to the bottom line.

To successfully manage organisational change leaders need to develop a plan for changing systems. After all, most people, including managers would not build a building without a plan. Yet even though culture has a far greater impact on productivity than do buildings, the use of project management techniques and plans to change systems to build productive cultures is rare. Such use though is proven in practice to be highly effective.

Additionally, solid, well considered plans reduce people's uncertainty and fear since such plans meet people's needs for certainty by providing direction, clarity, reassurance and confidence.

Measurement, analysis and reporting of performance

Conventional measurement, analysis and reporting systems drive reactive behaviour and/or apathy and stimulate counterproductive corrosive or benign leadership. Even though accurate understanding of variation is the key to accurately identifying the greatest opportunities for productivity improvement, conventional measurement, analysis and reporting ignores variation and misleads managers and executives.

Instead, to be effective the measurement, analysis and reporting system needs to provide an understanding of variation and clearly identify the two main causes of variation – inherent natural variation and process change. This is the key to effective deployment of assets, especially executive time and energy. Such a system provides better understanding of performance. It enables quicker and more accurate identification of opportunities for improving productivity and dramatically increases executive productivity. Significantly, it improves managerial behaviours so that managers focus more on leading and supporting processes and people within those processes. At all levels within an organisation it develops true accountability.

Developing leadership and personal emotional mastery

When building systems it is important to recognise the impact of personal energy in at least three ways. Firstly, whether or not it is intentional and conscious, when building systems, a leader's personal patterns will affect the systems built.

Secondly, use of a solid project plan for managing organisational change will develop confidence in the executive team. This confidence radiates from the executives and naturally transmits to people throughout the organisation.

Thirdly, acknowledge the importance of interpersonal connection by building it into the formal and informal communication systems. While noticeboards are read on average by only around five per cent of people and written personal correspondence is more effective the use of personal oral communication has much more impact. Much more powerful again is face-to-face personal communication.

Of greater power and effectiveness are leaders' actions, energy and feelings since these are broadcast throughout the organisation.

Leadership implies the provision of direction. For this leaders need to have the self-discipline to pause and consider how to balance strategies to meet the organisation's needs for development. Leaders then need to develop plans for organisational and performance improvement. As this involves intangibles it can be difficult for some managers and executives to overcome reaction patterns and develop sufficient discipline to build and communicate sound plans.

Effective leadership requires consciousness to develop the discipline to take charge constructively and, where necessary, collaboratively to shape the organisation's future. Often this requires tenacity, resilience and commitment to persist with the plan, particularly when facing obstacles. It requires enthusiasm and passion for the plan and for the organisation since personal energy connects and moves others.

Importantly, a leader's personal patterns display the leader's priorities to all members of the organisation. Thus, to be more effective leaders need to develop consciousness by exploring their personal behaviour patterns by identifying, acknowledging and managing underlying feelings, needs and deeply held values.

Gendlin (1981) provides understanding of the presence within humans of a felt sense. Indeed, Einstein credited his success to his ability to go beyond his rational intellect by using his complete intelligence. It is becoming increasingly important for leaders to explore the innermost recesses of their being to identify, explore and manage personal patterns and intelligence. The technology for this is now readily accessible and many methods are available to explore the connection of feelings, intellect, physical and spiritual dimensions. Science is now

recognising the power of methods employing all these dimensions or modalities to uncover and change habitual counterproductive personal behaviour patterns. Ironically, modern science is now verifying the power of ancient techniques used for millennia to identify, explore and manage personal patterns.

Increasingly, science, western medicine and ancient eastern philosophies and practices are aligning on shared paths. Dr Deepak Chopra (1993), a western trained doctor with strong roots in practices of ancient India refers to:

> …a number of scientific studies that show the beneficial effects of meditating. Blood pressure comes down. Stress is alleviated. Basal metabolic rate goes down. Insomnia, anxiety, and a number of psychomatic disorders are relieved and disappear. Moreover, there is increased brain wave coherence, which also improves attention span, creativity, learning ability and memory retrieval.

These benefits combined with vastly improved immune system health are listed in research by the Institute of HeartMath whose work is now used to improve the effectiveness of soldiers in all four branches of the USA armed forces and the effectiveness of managers in many international corporations. It has been used in acclaimed research hospitals to replace conventional medical treatment.

Ironically, the 2500 year old technique of Vipassana meditation is now being verified by modern science for the technique's success in identifying and changing deep-seated personal behaviour patterns. This is arguably one of the most powerful methods for improving personal effectiveness, relationships and personal productivity since it develops mastery over reactions by bringing patterns to the surface consciousness. Studies indicate it appears to dismantle ingrained patterns developed in childhood and builds new more effective patterns to give people choices when faced with difficult situations.

Psychiatrist, Dr Marshall Rosenberg (2000), has developed a process now referred to as Nonviolent Communication currently achieving success and recognition around the world for its incorporation of feelings and needs in a very natural way that improves communication effectiveness. This is particularly so in challenging situations such as addressing discipline when many managers explode with anger and aggression or retreat and withdraw in fear. There is a third approach in which such situations can be changed to be positive for both the deliverer and recipient of disciplinary proceedings. Like Gendlin, Rosenberg discovered innate abilities in humans for enhanced connection and overcoming patterns of separation that prevent effective communication within and between individuals.

Practical, objective and comprehensive personal feedback tools based on observable behaviours can be of immense benefit in assisting managers, executives and directors to identify and better understand personal habitual patterns. Such data is of immense benefit in improving personal and organisational productivity and happiness.

Emotional mastery and consciousness is no longer considered a soft option. It's now about concrete, practical learnable skills and about being effective. Effective leaders are people who know themselves and consistently demonstrate self-discipline, emotional mastery, drive and connection with others. Fortunately, unlike intellectual intelligence, emotional intelligence can be enhanced, learned and developed.

This has significant impact on educators and legislators. Leblanc (2004) provides highly respected international research into executives and directors in many nations. His acclaimed work is exposing traditional corporate governance legislative approaches as not only inadequate, but undermining effective corporate governance and accountability. New Canadian corporate governance legislation instead considers the actual drivers of behaviour by executives and directors to increase accountability.

Sound industrial relations rooted in a solid managerial framework

In many underground and surface mines, particularly within the coal sector, industrial relations can provide challenges. In such cases experience shows it is necessary to have a firm approach to industrial relations supported by a solid corporate philosophy and solid corporate leadership. The importance of a clear vision, direction and constancy of purpose remain, as always, vital.

Combined with the personal energy aspects covered above, industrial relations can be turned to a strength for making and sustaining improvements while simultaneously building an organisation's capability.

Proven methodology for improving safety and productivity

Many organisations blindly embark on process and productivity improvement campaigns that are counterproductive or sustainable only with constant managerial attention. Instead, when leaders use the methodology of improving productivity by systematically reducing variation to control and stabilise processes, future improvements are locked in. Importantly, it becomes easier to continually improve both by making incremental improvements and by substantial step changes.

Allied with this is the need for measurement, analysis and reporting systems that enable rapid and reliable understanding of variation. Such methods rely on graphical presentation of data using simple statistically sound methods of analysis. These methods are usable by people of all levels of education. More importantly, these methods drive productive, supportive behaviours in leaders while enabling them to develop much greater accountability throughout the organisation.

Building the organisation's capability

Enduringly effective leaders focus on much more than simply improving today's productivity. They simultaneously build solid organisations in which continual productivity improvement is a normal part of business. Collins and Porras (2004) provide studies supporting use of aligned systems to ensure an organisation's future productivity.

TAKING RESPONSIBILITY FOR SAFETY AND PRODUCTIVITY

To be effective, leaders need to take responsibility for the use of their energy and the energy of the people they lead. At an organisational level, effective leaders understand the drivers of organisational and group behaviour. They take action to understand and build conscious, process-based systems to drive desired organisational behaviours and shape attitudes.

At a personal level, effective leaders develop conscious awareness of their personal patterns. To achieve this, executives, directors and managers explore their doorway to emotional mastery for inner peace and higher sustainable productivity. That doorway is often consciousness of deep feelings and needs. Opening the door by exploring underlying feelings, these deep feelings then become the path and behaviours become signposts. This is the road to consciousness – the foundation of accountability for superior productivity and safety.

Effective leadership involves the conscious, committed use of human energy. At all times leaders need to be conscious of the drivers of their personal behaviour and the behaviour of groups and organisations they lead.

The choice is not whether leaders address their responsibilities. An increasingly competitive global market and demanding stakeholders ensure the only choice is *when* leaders face up to organisational and personal consciousness.

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