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See the Smallness in Strategic Enterprise Asset Management

Let a Plant Wellness Way EAM System-of-Reliability End Your Business Risks Forever

To our recurring surprise we find that our planet is interconnected across both time and space. Who would have thought that deforestation in Africa would allow fine soil to be blown half-way around the world to cause asthma in Caribbean children?[1] And in 1698 who realised the first coal-burning steam powered machine, built by Englishman Thomas Savery, was a devastating technology that in 300 years would change the planet's atmosphere and its weather. We live in a holistic universe that is connected across time and space[2].

The interconnectivity in enterprise asset management is also becoming clear to us.

At a manufacturing workshop in Bassendean, a suburb in Perth, Western Australia, rainwater pooled on the top of a 200-litre oil drum capillaries inside through the thread cavity of the fill-hole bung, eventually causing a gearbox to fail on important production plant. The earlier decision by the accountant not to build a covered oil storage area is also connected to the failure. The poor cash flow that existed in the company at the time of the decision, caused by a world-wide downturn in the industry, connects economic conditions across the planet to the gearbox failure. Interconnectivity abounds throughout asset management as much as it does across Planet Earth.

The interconnectivity of asset management spans the life cycle of an operation. Financial decisions and design selections made at project conception and during design live with a business for the life of its plant and equipment. Those 'early days' choices produce effects across the operating lifetime, maybe for 25 or 50 years, even for more than 100 years is not uncommon. During operation each decision, and non-decision, like not having a clean and dry oil store, impacts production equipment somewhere in the world. Financial circumstances, design choices and asset management stewardship are interconnected with lasting production success.

Asset Management Stewardship

The sole purpose of asset management is to deliver utmost productivity for the life of a capital asset. That is achieved when maximum saleable throughput is made for the least unit cost every working second of the asset's lifetime. That is what asset management is meant to do for a company – provide equipment that always makes product for the least cost possible.

You can measure asset management success with the Asset Management Success Equation below.

$$\text{Unit Cost of Production} = \frac{\text{Cost of Production}}{\text{Throughput}} \qquad \textit{Eq. 1}$$

Asset management success, and hence production success, depends on having reliable equipment. The Asset Management Success Equation makes clear that costly production means expensive product. Low throughput also means expensive product. And an expensive product in a competitive

[1] 'Strange Days on Planet Earth', National Geographic Discovery program, 2007
[2] Bailey, Paul, 'Think of an Elephant', Watkins Publishing, 2007

market means low sales and poor profit. If asset management is not done well businesses suffer. Productive asset utilisation is the life and death of an industrial operation. The Asset Management Success Equation leaves no place for poor asset management stewardship to hide.

"It's the Parts, Dummy!"

Retired Professor of Maintenance and Reliability, David Sherwin[3], repeatedly makes the point in his reliability engineering presentations that "systems fail, but we replace parts". Machines fail because the parts fail (machines are systems of parts). So, we replace the parts and the machines work. It is worth repeating – first parts fail, and then machines fail. If there was no failure of parts, there would be no failure of machines. This is blindingly obvious, so obvious that most everyone misses its important message.

The sub-heading above, paraphrasing Bill Clinton's famous 1992 USA presidential election line about what was important to the electorate – "It's the economy, dummy!" – is there to make the point that the health of equipment parts is the single most important issue in asset management. Only when parts are healthy can equipment to operate trouble-free. Parts are asset management's lowest common denominator – everything else depends on them. Parts' working well together are what industrial operations need. Parts working well together let you make quality product. Parts in great health produce equipment reliability. Parts not working well together soon stop working!

For asset management to fulfil its purpose of delivering utmost productivity, it must provide the utmost useful support to those equipment parts that enable that productivity. All your asset management efforts must be focused on ensuring the equipment parts that allow a machine to operate are in perfect condition all their operating life. As the Professor encourages us to understand - if the parts do not fail, the machines do not fail! So, the tongue-in-cheek phrase, "It's the parts, dummy!" truly provides the most important focus for plant and equipment owners. All else in asset management is secondary; important, but secondary.

Asset management is all about creating a business quality management system that delivers all necessary support to production-critical equipment parts, so they have a long, failure-free, maximum-productivity life. Figure 1 puts equipment part health as the pinnacle of asset management accomplishment.

You now have a gauge to judge the value of decisions and actions that impact your production – 'How much will it improve the health and wellbeing of my production-critical equipment parts?' If it does not, then do not do it, you are wasting time and money; if it does, then get on with it; you're missing out on equipment reliability and production output.

Asset management exists to provide all the support needed by critical equipment parts to deliver maximum lifetime productivity from operating assets. When an organization makes improving equipment part health and wellness the focus for its asset management and maintenance management efforts, it will always achieve right results for its business. The interconnectivity of asset management ensures that every action that improves the reliability of equipment parts works its way through the operation to drive the cost of production down, while simultaneously lifting throughput. That is asset management success!

[3] Lund and Växjö Universities, Sweden

Figure 1 Equipment Parts Health is the Purpose of Asset Management

If what you now do does not make your critical equipment parts healthy and reliable; do not do it! If you are wondering what to do to improve your operation's productivity; do whatever is necessary to give your production-stopping equipment parts a longer and healthier life. Introduce good causes and asset management interconnectivity will naturally ensure that good effects follow for everyone!

The Plant Wellness Model of Lifetime Part and Equipment Health

Interconnectivity across time and space needs to be recognised. We know from the world around us that a holistic view is the right perspective to take when making our choices. We must look around us, and ahead of us, and question the effects that our choices will create across time and space on our equipment parts' health.

Figure 2 shows the 'plant wellness umbrella'. Under its protective cover are the lifetime results we can get when we take a holistic view of enterprise asset management. A holistic asset management perspective is one where we knowingly prevent and stop defects by using the methods and techniques that improve equipment health and plant wellness. We must remember the Professor's message – the wellbeing of parts is the first importance to the wellbeing of equipment.

Asset management keeps equipment healthy and operations profitable by supporting and improving the reliability of the parts that allow equipment to operate. Getting the most benefits from asset management requires recognition of its holistic nature in our businesses. If you want the greatest number of good effects in your businesses, do those things that bring health and wellbeing to your equipment parts. Their consequential effects and outcomes will always be good for productivity.

Every aspect of our industrial businesses is interconnected with every other aspect. It is impossible to make the right short-term or long-term decisions for the wellbeing of your operation unless you recognise its holistic nature. The business world is governed by the same universally holistic laws as our World.

Only those decisions that are good for your equipment parts will add real value to your business's future. Anything that reduces equipment parts' life removes value from its future. All actions and non-actions are inescapably interconnected across time and space.

Plant wellness and equipment health is a holistic paradigm critical to asset management success. When you focus on improving the health and wellness of your critical equipment parts you cannot help but deliver improving production performance.

Understand the importance and value of looking after the health of the important small things in your operating equipment, rather than looking for grand solutions.

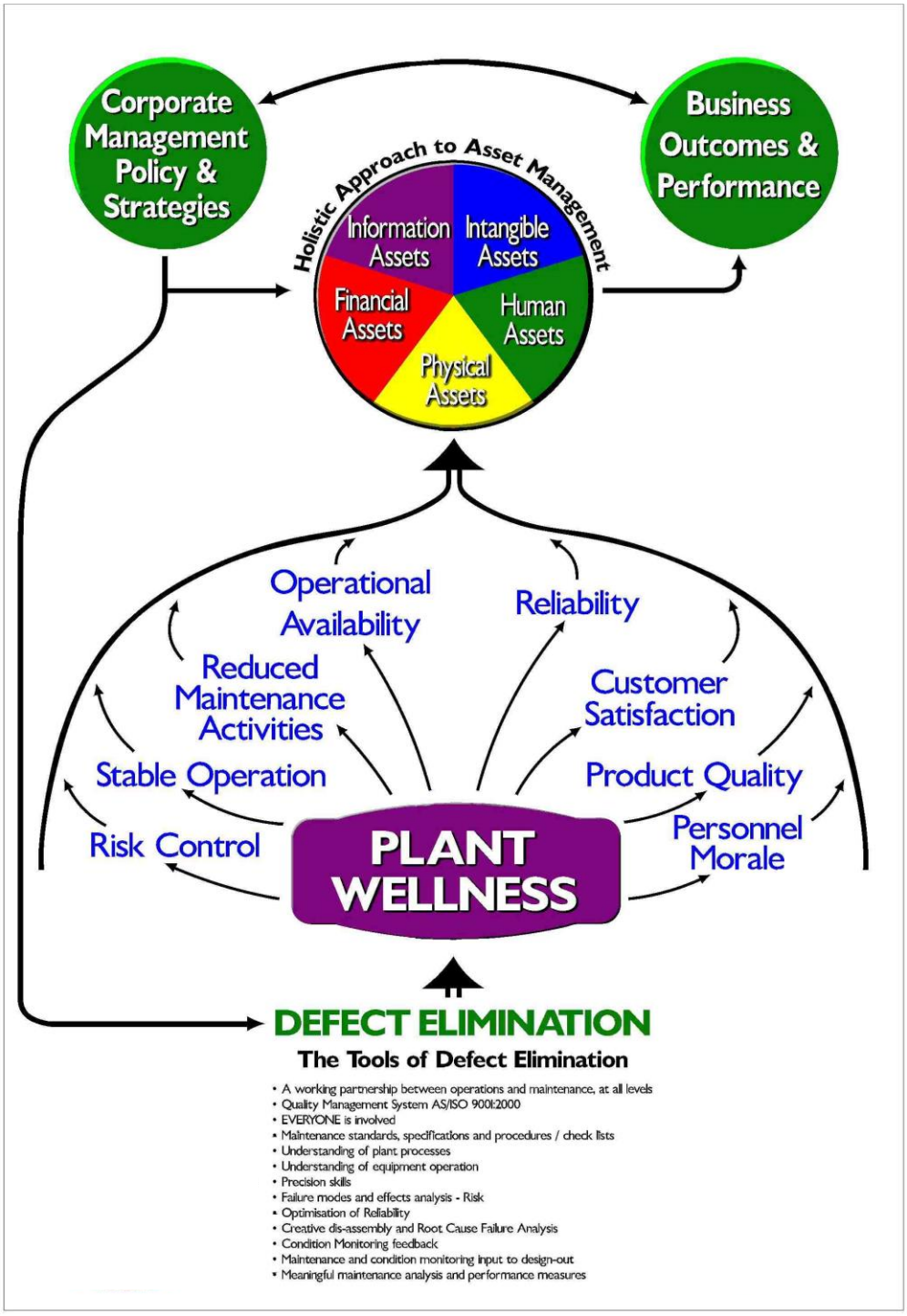

Figure 2: The Plant Wellness Asset Management Model

Thank you to Peter Brown of Industrial Training Associates for the Plant Wellness concept and diagram.

Focus on the small things that truly make the big differences to equipment health. Recognising the importance of small things is the secret of lifetime plant wellness.

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