



***RELIABILITY AND RESILIENCE FOR THE
MODERN METAL CASTING INDUSTRY.
WHAT IS IT & WHAT ARE THE BENEFITS ?***

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OVERVIEW OF THE AUSTRALIAN METAL CASTING INDUSTRY FROM MY EXPERIENCE:-

“TO CONTINUE TO BE RECOGNISED AND SUPPORTED BY BOTH FEDERAL AND THE STATE GOVERNMENTS AS AN IMPORTANT SOVEREIGN INDUSTRY, PROVIDING HIGH-QUALITY METAL CASTINGS AND OTHER METAL FORMS, REQUIRED FOR DEFENCE, MANUFACTURING, CONSTRUCTION AND OTHER INDUSTRIAL SECTORS “.

“FROM YOUR CLIENT’S BUSINESS PERSPECTIVE, TO HAVE CONFIDENCE THAT A PURCHASE ORDER FOR CAST PRODUCTS FROM YOUR COMPANY:-

WILL BE DELIVERED ON-TIME AT THE REQUIRED QUALITY AND
QUANTITY

“FROM AN OPERATIONAL CASTING BUSINESSES AND THE SITE WORKFORCE INCLUDING SENIOR MANAGERMENTS AND SHAREHOLDERS PERSPECTIVE, TO BE RECOGNISED AS SAFE, PRODUCTIVE AND EFFICIENT ORGANISATIONS ALSO MAINTAINING ALL QUALITY OHS & ENVIRONMENTAL REQUIREMENTS AT THE HIGHEST STANDARDS”.

Casting Business focus :-

*To be a Profitable valued supplier of
quality cast metal products.*

EXAMPLE OF RELIABILITY AND RESILIENCE?

- In everyday life, there are potential risks, where a failure of a system, component, infrastructure etc. if it occurs, may result in some form of loss.
- A loss can be from minor to severe, with consequences including loss of services or amenity , property , financial/reputation loss, or in the worst-case loss of life.
 - The following slide is an example of reliability and also resilience , that relies on castings and you will use often, and have the expectation that it will work every time precisely as designed and manufactured.
- You will probably not even think about it , you will TRUST that the system is reliable-every time use it!

RELIABILITY AND RESILIENCE IN EVERY DAY LIFE ?

- I use automotive braking systems as an example of reliability and resilience totally reliant on the quality of castings.
- A manufacturer is totally dependent on the foundries capability to produce castings at the required quality and ontime delivery as required.



RELIABILITY—A BUSINESS VIEW

From my own manufacturing management experience and also consulting/advisory work , many asset intensive manufacturing companies, share the following business objectives :-

Focus the asset management teams efforts supported by maintenance /reliability software systems, on elimination of plant failures that may impact on production and potentially create a financial loss, also recognise that a reliable plant is a safe plant to maintain and operate .

A plant or process failure is a cost to the business that cannot be recovered!

RESILIENCE IN MANUFACTURING.

- RESILIENCE in the manufacturing industry, is the ability of the asset management teams to prevent unexpected disruptions.
- Core Dimensions of Resilience
- Manufacturing resilience breaks down into these main operational qualities:- ROBUSTNESS: machinery and plant services that are using experience combined with condition knowledge-based technology, to provide advance warning of potential faults
- AGILITY: An asset management team that *is focussed on prevention of failures* and can **MAINTAIN SCHEDULED** production levels.
- **ACT** quickly if a breakdown occurs to restore production and also develop strategies to prevent future failures .

THE JOURNEY TO PLANT RELIABILITY

In the past, basic spreadsheets and paper workorders for 'maintenance', with the focus on repairs, rather than preventive activities and limited investigation and feedback as to actual cause of a failure, was normal.

We now have progressed '*basic breakdown/repair maintenance*' to a Reliability Management/Business Risk based activity. With Asset Management Software (CMMS) to manage planning. Plus plant and process real-time data for condition monitoring technology including the availability of A.I Technology.

Reliability Management is recognised as a 'bottom line' business improvement and manufacturing risk management discipline.

An investment rather than a cost .

ORGANISATIONAL INVOLVEMENT

From my management and consulting experiences, in the Manufacturing , Resources and also the Essential Services Sectors, regardless of the sector, many companies share the following common business objectives :-

Focus on reducing plant and process failures that can impact production

'The Asset Management team WITH THE SUPPORT FROM MANAGEMENT will need to have the technical systems and all the required tools and the experienced workforce, that will consistently maintain a safe and reliable operation, that delivers a product , or a service, on time, at the required quality to the meet client's expectations '

MY INTRODUCTION TO A.I REALITY

From my interest in plant reliability and manufacturing improvement strategies I was interested in the use of A.I technology for maintenance, I made an error of judgement.

I was focused on the technology, not the audience or impact including :-

- The workforce acceptance re using A.I and implications re job security?
- Contest of information, who is correct A.I or an experienced maintainer?
- The client's appetite for technical risk Vs potential ROI reward ?
- The approval that may be required by the company's insurers?
- Shareholders interests to be considered as to what are the benefits?

Finally, who takes the risk, you cannot sue an algorithm?



Clive Moore - comments

We are all experiencing the impact of fast-moving technological change, certainly in industry!

We cannot simply ignore it, human expertise combined with natural curiosity to learn can be a powerful combination in the use of A.I

However A.I is an information tool only, that requires skilled humans to do the actual physical work!

THE MAINTAINING, RECRUITMENT AND TRAINING OF A SKILLED WORKFORCE IS CRITICAL, FOR THE RELIABILITY AND RESILIENCE OF THE AFI MEMBERS.

**USING RELIABILITY STRATEGIES AND TECHNOLOGIES FOR
CONTINUOUS BUSINESS IMPROVEMENT, ALSO SUPPORTS THE
GOVERNMENTS FOCUS ON IMPROVING PRODUCTIVITY FOR
THE FUTURE.**

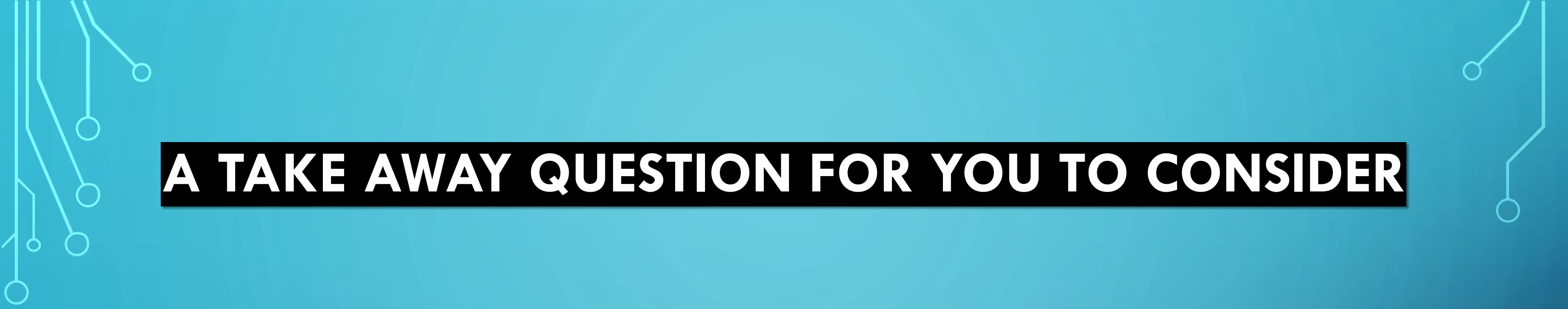
**THANKYOU TO THE AFI FOR THE PRESENTATION
OPPORTUNITY.**

I CAN BE CONTACTED FOR FURTHER INFORMATION.

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A TAKE AWAY QUESTION FOR YOU TO CONSIDER

***ARE YOUR CASTING PLANT OPERATIONS AS
RELIABLE AS
CAR BRAKES?***

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