

Under the patronage of **HRH Prince Khalid Al-Faisal**
Advisor to the Custodian of the Two Holy Mosques & Governor of Makkah Region



المؤتمر الدولي الثاني والعشرون لإدارة الأصول والمرافق والصيانة
The 22nd International Asset, Facility & Maintenance
Management Conference

Digitization - Excellence - Sustainability

MAINTENANCE MANAGEMENT

FROM CHINA TO WORLD

26-28 January 2025

The Ritz-Carlton Jeddah, Kingdom of Saudi Arabia

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**1. Maintenance management,
you do not take it seriously, it
will seriously against you!**

You own a car, but never maintain it, do not add oil, gas, water, how the car against you?



The seven dwarfs of our maintenance management against us

Safety - Environmental protection - health loss

Loss of production cost and efficiency

Delivery - reputation - brand loss

Loss of product and service quality

Equipment repair - cost loss

Equipment disrepair and loss of life

Energy loss





Harmony between man and nature!
Harmony between man and machine!

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2. Manufacturing flowers are in full bloom in China, calling for prosperous maintenance management!

There are 10 types of zipper head, which are invisible zipper, elephant nose, automatic head, locomotive, European head, YG head, needle, metal zipper, nylon zipper, injection zipper. There are more than 2,000 zipper companies in China.



How many lighter factories in China and how many lighters are produced in China each year? There are more than 10000 lighter factories in China, and more than 15 billion lighters are produced.



Weidu Technology, a Chinese company, sells surfboards for more than \$7,000 each, accounting for 40% of the global market. One little surfboard, 192 patents.



What does it mean?!

Prosperous China → **Diversified manufacturing** → **Diversified equipment**
Various processes → **Multiplex automations**
→ **Different intelligence**

How?

Tricks vary from person to person.

The fit is the best! However, never forget the goal:

Safety, Stable, Long(period), Smart

Low (carbon, consume) , Environment(protect),

High(efficiency) , High (quality)



Chinese enterprises create and implement a variety of maintenance strategies and maintenance management modes :

- Opportunity Preventive Maintenance——OPM**
- Chinese TPM——CTPM**
- Total normalized Productive Maintenance——TnPM**
- Safety Centered Maintenance——SCM**
- Big Data Based Prescriptive Maintenance——BDBPM**
- Life Cycle Risk Maintenance——LCRM**
- Pit Stop Maintenance——PSM**

China's Maintenance Management is flourishing!

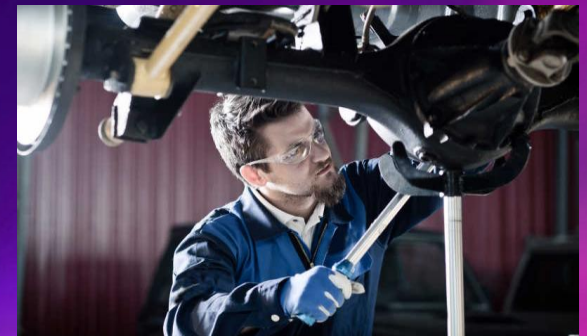
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3. Setting up hard fort and fighting dull battles remain the unalterable law of maintenance management!

The world's most stupid, can win the world's most skillful!

When the conflict reached its final stage, tanks and infantry were indispensable!

The basis of equipment management is still the basic skills of spot inspection, monitoring, maintenance and repair!



**Companies need to be both
"clever" (innovative) and
"foolish" (conservative).**



**Make a great wish, take a small
step, go a long way, bow a low
head, without pause!**

No matter how advanced the equipment is, it cannot be separated from the dedicated maintenance personnel!

4. AI world, embrace the AI era of maintenance management!

International AI development Trend in 2024 (technical level)

- 1. Generative AI -- Chat GPT -- GPT4 -- training Q-Star;**
- 2. Large model group, standard, specialization (miniaturization), generalization -- AGI+ASI**
- 3. Quantum computing joins hands with AI;**
- 4. AI agents and code-free software development;**
- 5. Several breakthroughs: deep learning, machine learning algorithms, natural language processing, human-computer interaction technology, 5G/6G technology, edge computing, digital privacy.**

Almost everyday we can hear the news of AI progress!

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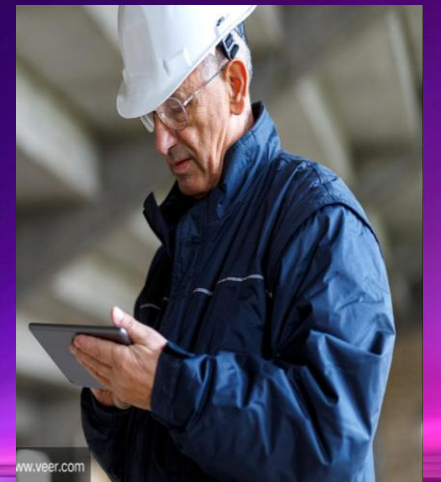


Nowadays, AI is like a wild horse, if you don't ride on its back, you will be under its feet!

5. AI partners, AI co-pilots, will become the standard collocation of maintenance managers

There are 153 lighthouse factories in the world, 62 of which are in China, 400 industrial clusters and, 6 million small and medium-sized manufacturing enterprises!

if each maintenance manager is equipped with an AI partner /AI co-pilot to help diagnose and make decisions. How much benefit to the enterprise!



**With an AI partner and an AI co-pilot,
a general maintenance manager
can quickly become an excellent
maintenance manager!**

6. The more intelligent, the more prominent the security risk!

- **We can imagine what it would be like if the streets were full of driverless cars, if a car was attacked by a cyber attack, or if a car had a virus in its system and it ran at liberty on the road.**
- **What if the entire Internet went down and all the cars were running like crazy on the streets?**

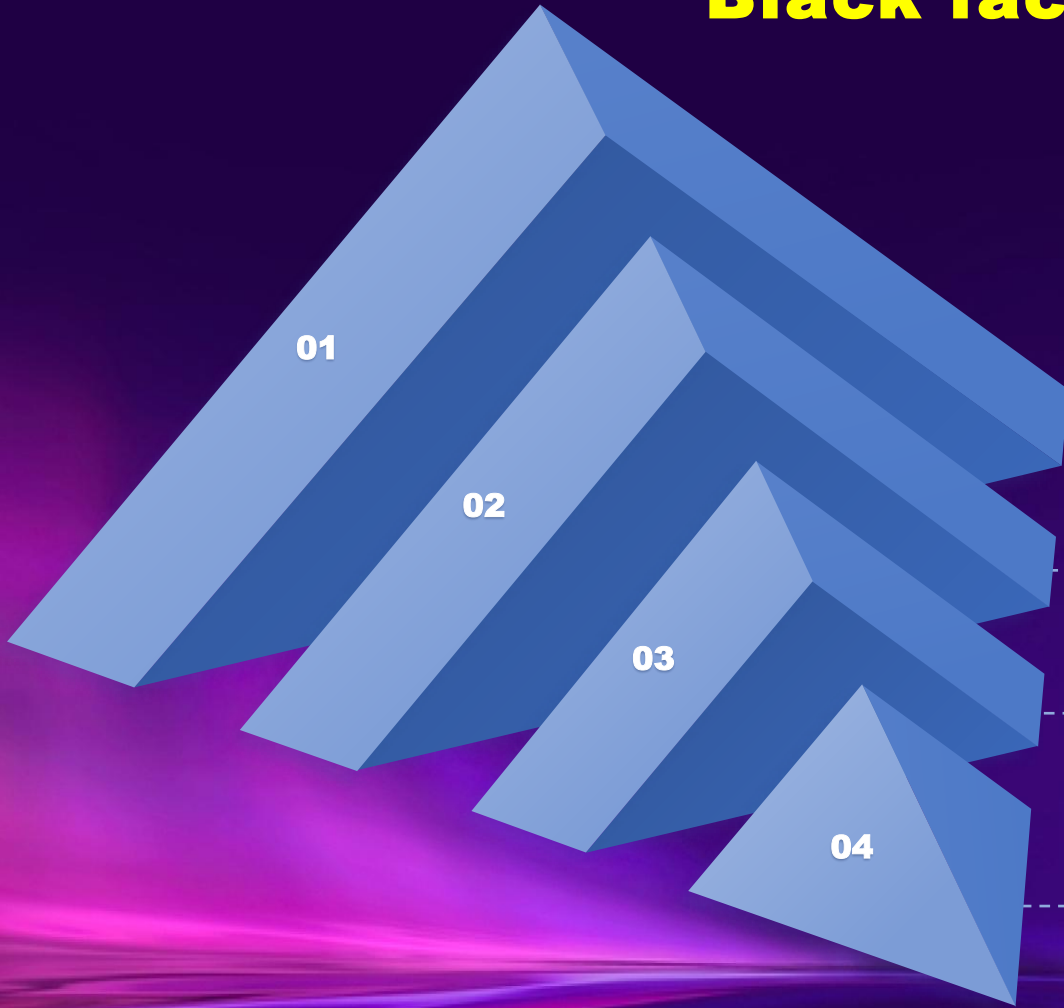
The smarter the system, the greater the cybersecurity risk!



**Network security has become
an important part of
enterprise equipment and
facilities management!**

7. The big era of maintenance management and is coming!

Black factory + unmanned factory



• **Industry 4.0 era, excess equipment**

• **Industry 3.0 era - lots of equipment**

• **Industry 2.0 era - Medium volume equipment**

• **Industry 1.0 - a small number of equipment**

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- **In black light factories and unmanned factories, the shutdown of one equipment affects the whole plant;**
- **Who is responsible for system maintenance and repair?**
- **Can we hand it over to the robots?**
- **How many complex robots should we have to design and build if they were capable?**
- **What if these robots break down?**
- **In the future, the workload of equipment maintenance and overhaul is less or more?**

In the future, there are two kinds of people who will not lose their jobs:

- ❑ One is the person who can solve the production and product problems with the large AI model.**
- ❑ The other is the person who can maintain, repair and efficiently manage the intelligent equipment through the AI assistant!**



**The advanced and high-
dimensional era of
maintenance management is
inevitable!**

8. China's, but also the world's!

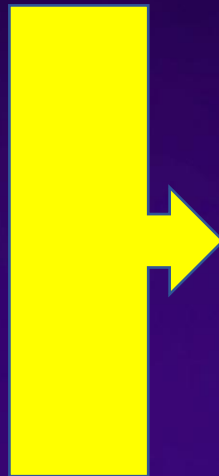
China's rise as a manufacturing power has almost accumulated a variety of supporting manufacturing resources.

It is the country with the most complete and complete industrial categories under the United Nations standards: **31 categories, 191 middle categories, 525 subcategories**

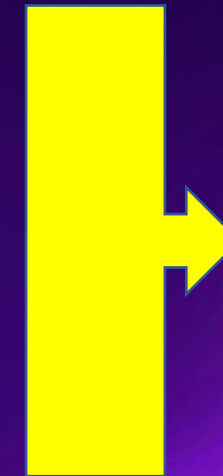
China has the most complete production and supply chain in the world!

China's main manufacturing industry accounts for the world:

1. Mobile phones 53%
2. Cars 36%
3. TVs 90%
4. Shipbuilding (49.8%)
5. Home appliances (56%)
6. Robot 50%
7. Chemical industry (36%)
8. Clothing 50%
9. Metallurgy 60%
10. Construction 30%
11. Food 26%
12. UAV (70%)



Chinese manufacturing equipment accounts for 50% of the world's total



China's maintenance management affects the world

**China's maintenance people
bear the responsibility
to promote the progress of
global maintenance management!**



**Now , I'd like to hand over the
time to my Chinese colleagues!**

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