

Real-time Data Platform & the OSIsoft PI System

Henko Engelbrecht





BHP

Real-time Data Platform & the OSIsoft PI System

Henko Engelbrecht

April 2019

Disclaimer

Forward-looking statements

This presentation contains forward looking statements, which may include statements regarding plans, strategies and objectives of management, future performance and future opportunities. These forward looking statements are not guarantees or predictions of future performance, and involve known and unknown risks, uncertainties and other factors, many of which are beyond our control, and which may cause actual results to differ materially from those expressed in the statements contained in this presentation. BHP's Annual Report on Form 20-F filed with the US Securities and Exchange Commission identifies, under the heading Risk Factors, specific factors that may cause actual results to differ from the forward-looking statements in this presentation. BHP does not undertake any obligation to update or review any forward-looking statements.

No offer of securities

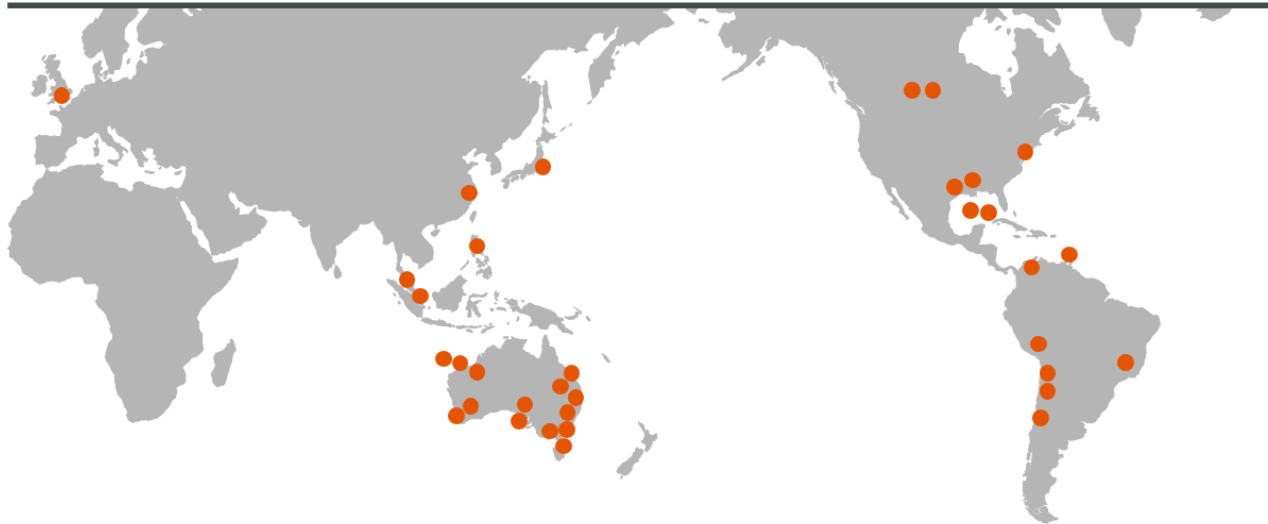
Nothing in this presentation should be construed as either an offer to sell or a solicitation of an offer to buy or sell BHP securities in any jurisdiction, or be treated or relied upon as a recommendation or advice by BHP.

BHP at a glance

BHP
has been around for
133 years

We employ over
62,000⁽¹⁾
employees and contractors

Primary Commodities: Copper, Iron Ore, Coal, Petroleum and Potash



FY2018
US\$33.9 billion
total contribution



through payments to suppliers, wages
and employee benefits, dividends,
taxes and royalties

[bhp.com](https://www.bhp.com)

What we want to achieve

Build a global Real-time data platform: Changing the way we think

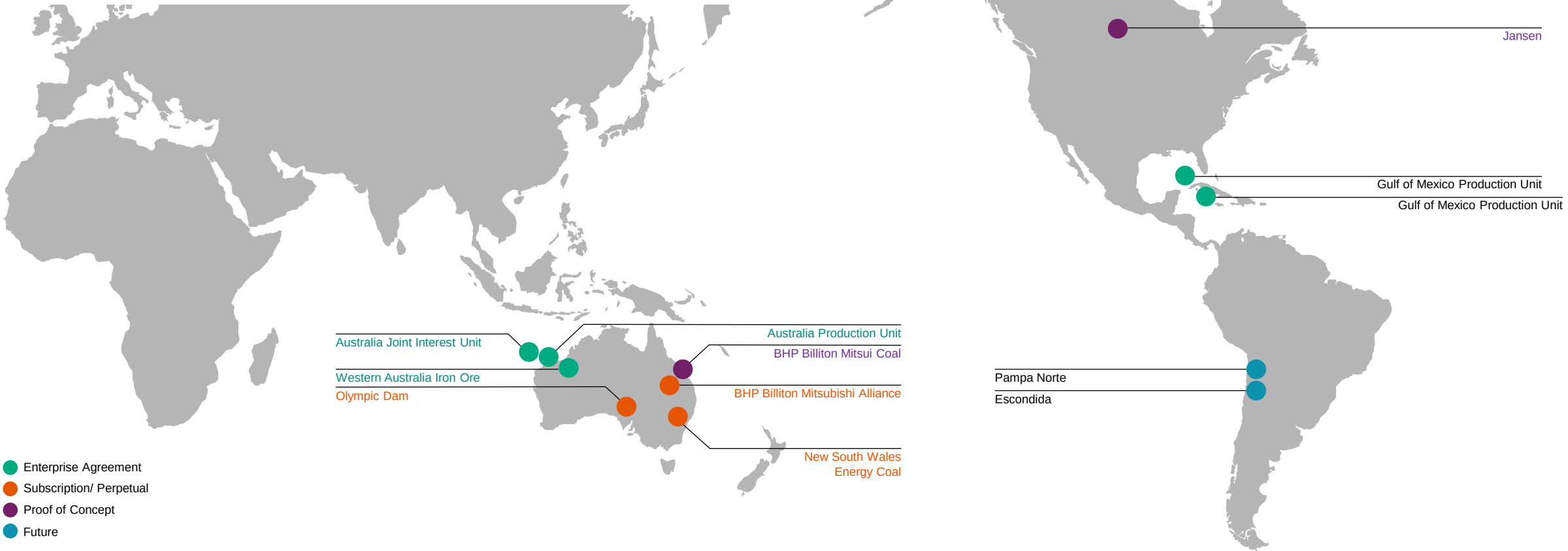
- Break stigma around “it is just a historian”
- Teaching users to ‘fish’ themselves
- Move away from point to point solutions and spider webs
- Ensure reusable investments and seamless integration
- Break away from waterfall and move towards agile
- It’s all about capabilities, enablement, sustainability and growth



The Real-time Data Platform do not have an end-state, it is rather
**a system of continuous evolving infrastructure and capabilities driven by
business needs**

Where we have an OSIsoft PI System footprint

- Time series data
- ISA95 level 0, 1 & 2



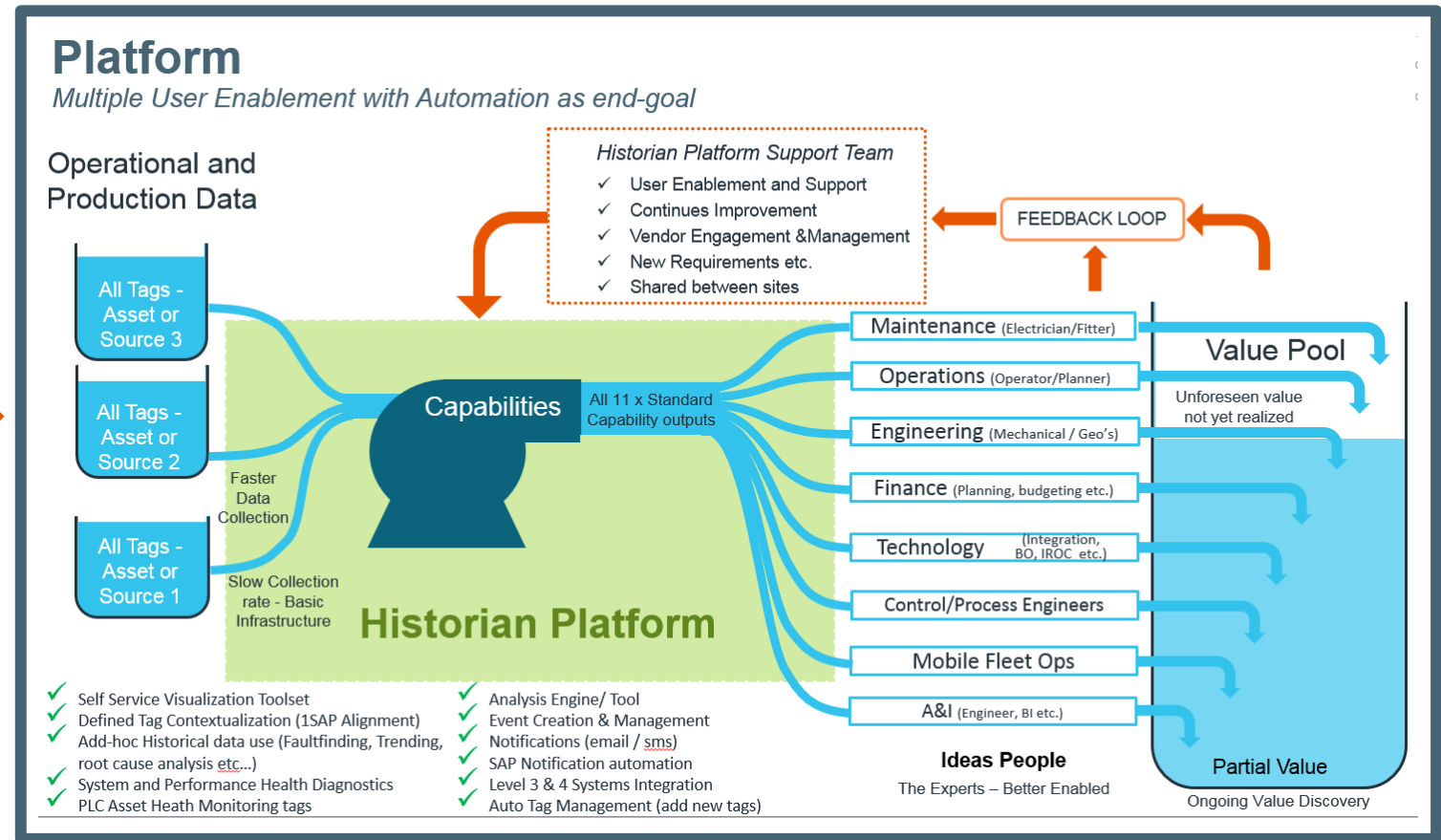
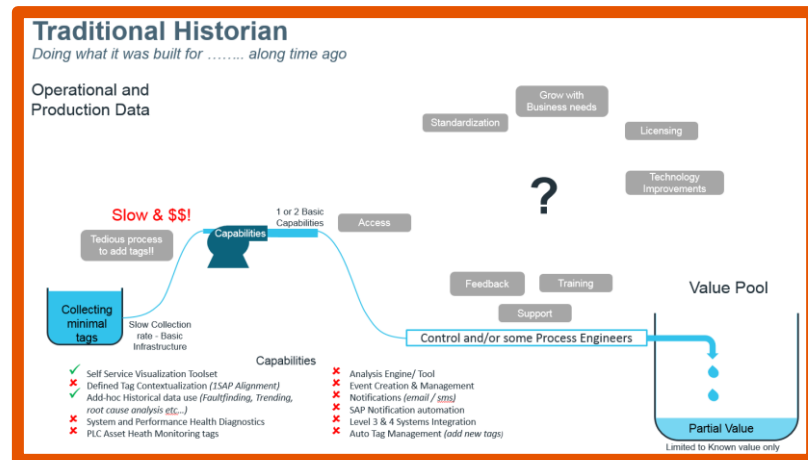
Challenges and learnings

1. Traditional historian versus platform (It is not only a Historian!)
2. You need a well defined operating model aligned to a blueprint/standard (the 'how')
3. Funding – no one wants to pay for something everyone uses or think they already have
4. Only standardise what makes sense
5. Principles are important – keeps you honest and counter opinions
6. Be patient; it is a journey

Traditional historian versus platform

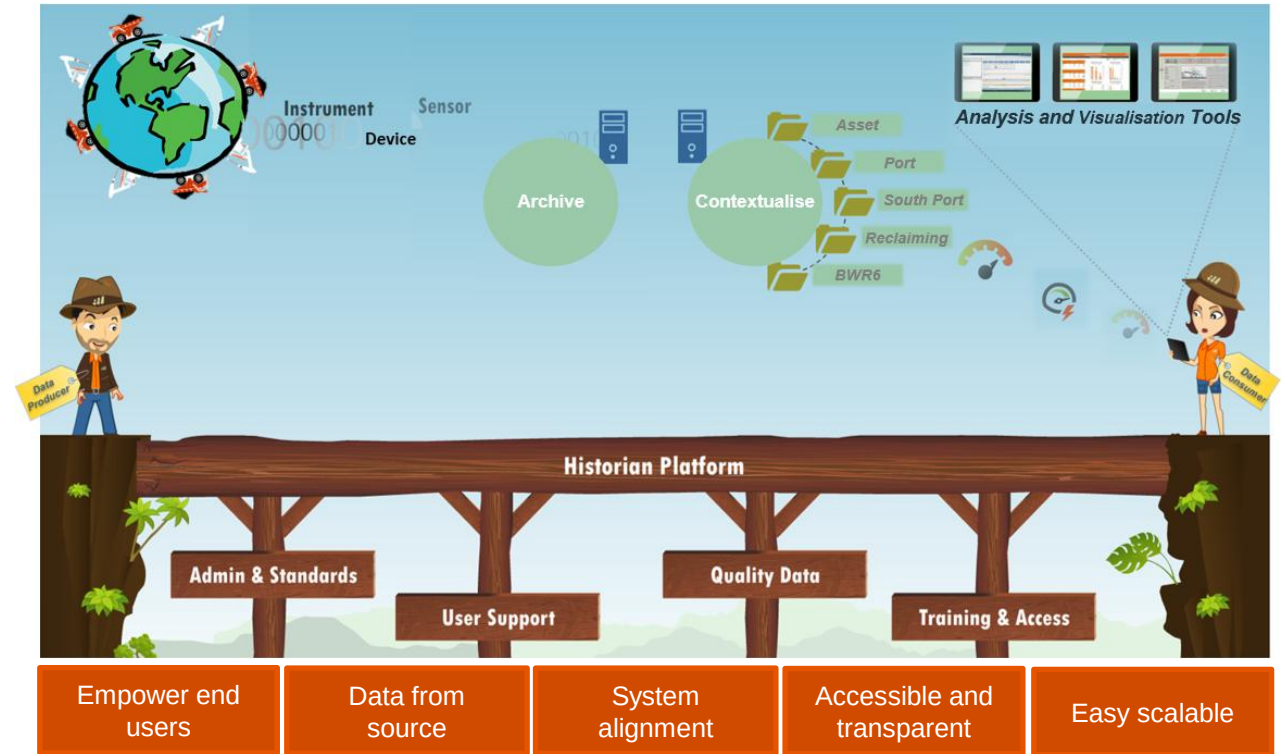
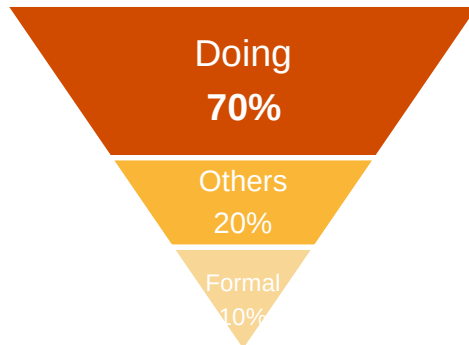
It is for everyone but requires a solid operating model for sustainability.

It is to provide the business with capabilities they did not have before.



Operating model

- Consumer producer model
- Strong principals
- Focus on enablement and quality of service
- *Skilled BAU team*
 - *(Operational SME's – Jack of all trades)*
- Simplicity in user groups
- *General*
- *Advance*
- Learning & upskilling model



Operating model and principles

Aspects of success and maturity

Current PI platform size and users

32 sites

± 5 million tags

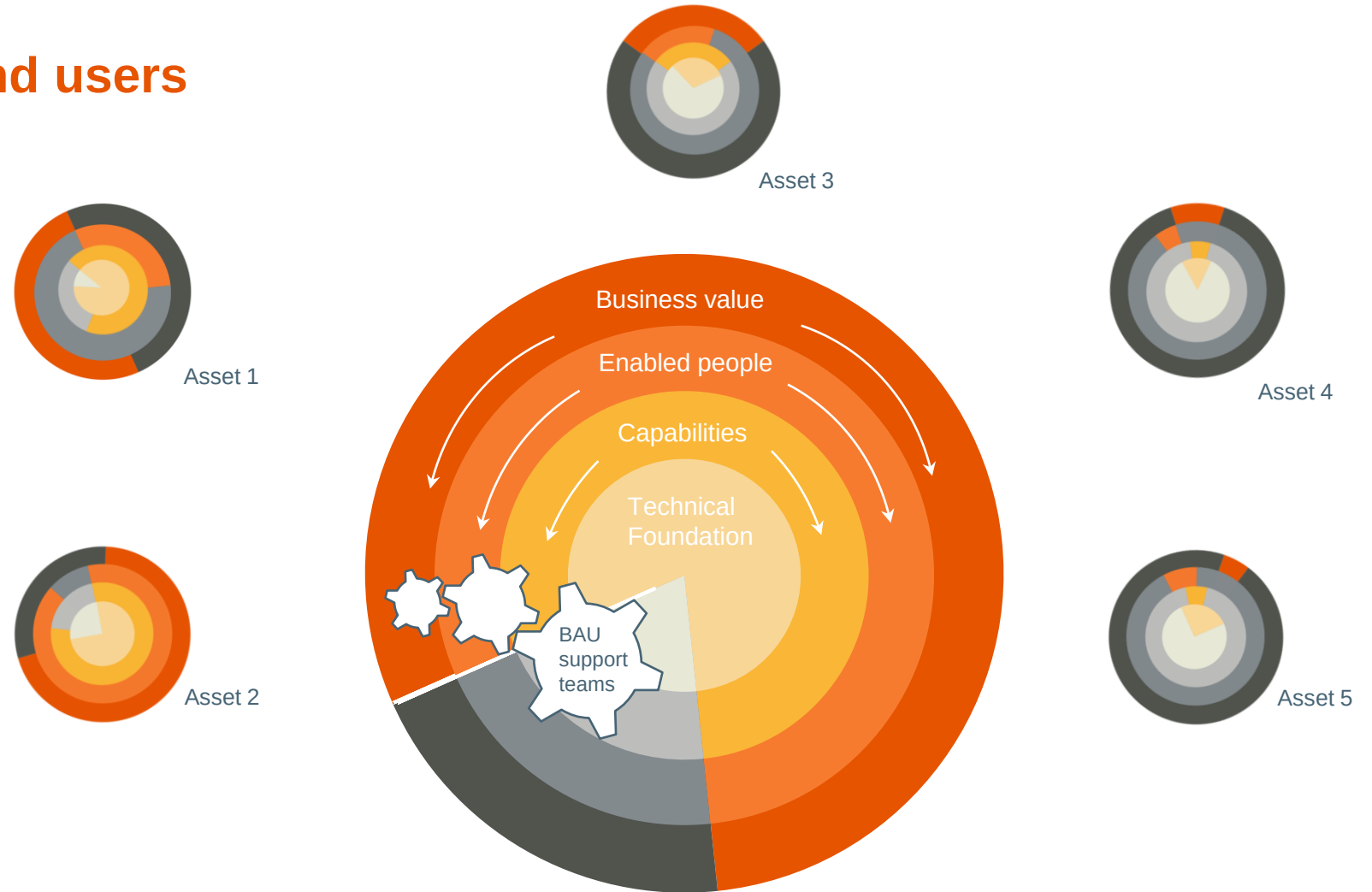
± 1,000 users

Near Future estimate

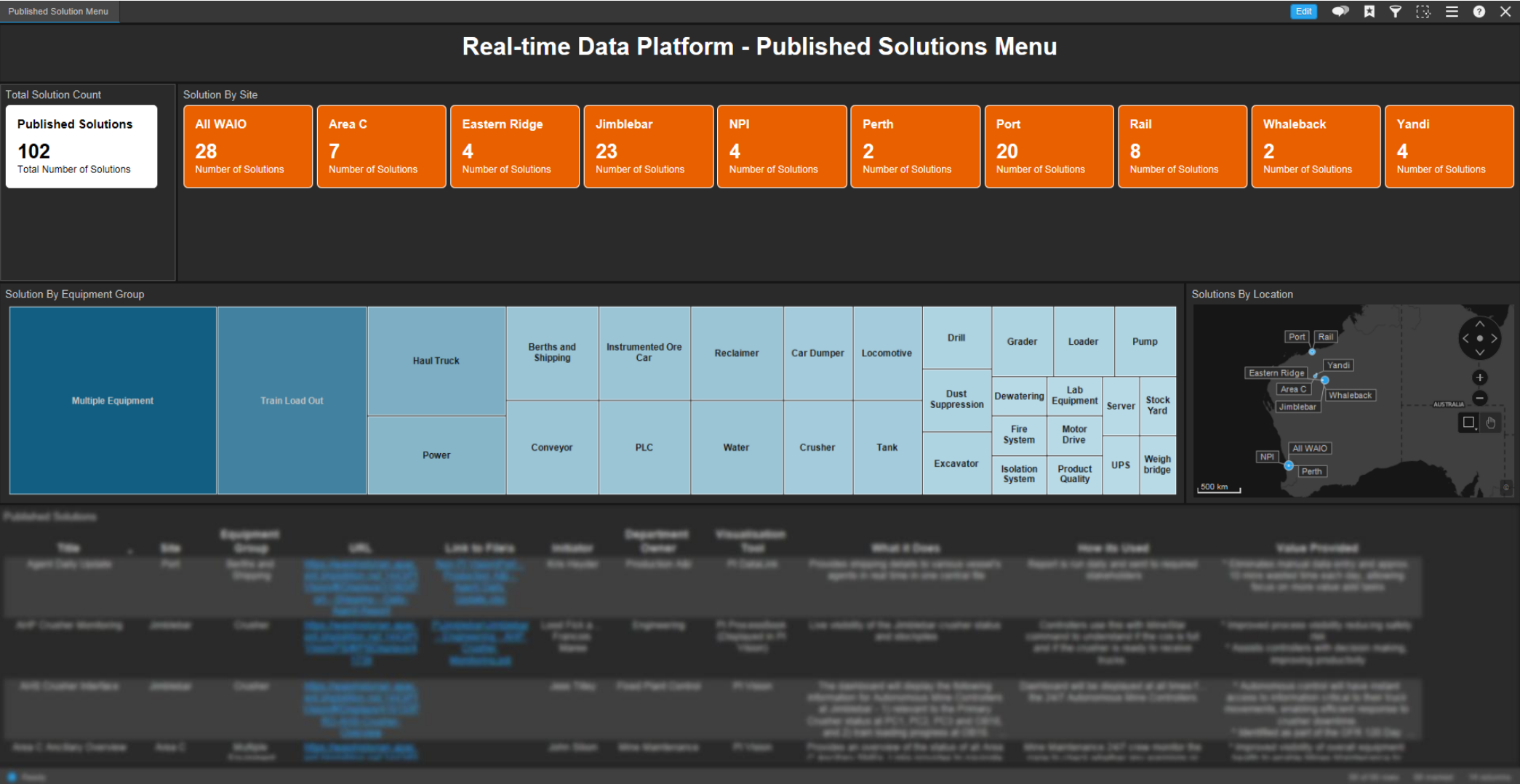
43 sites

± 10 million tags

± 2,000 users

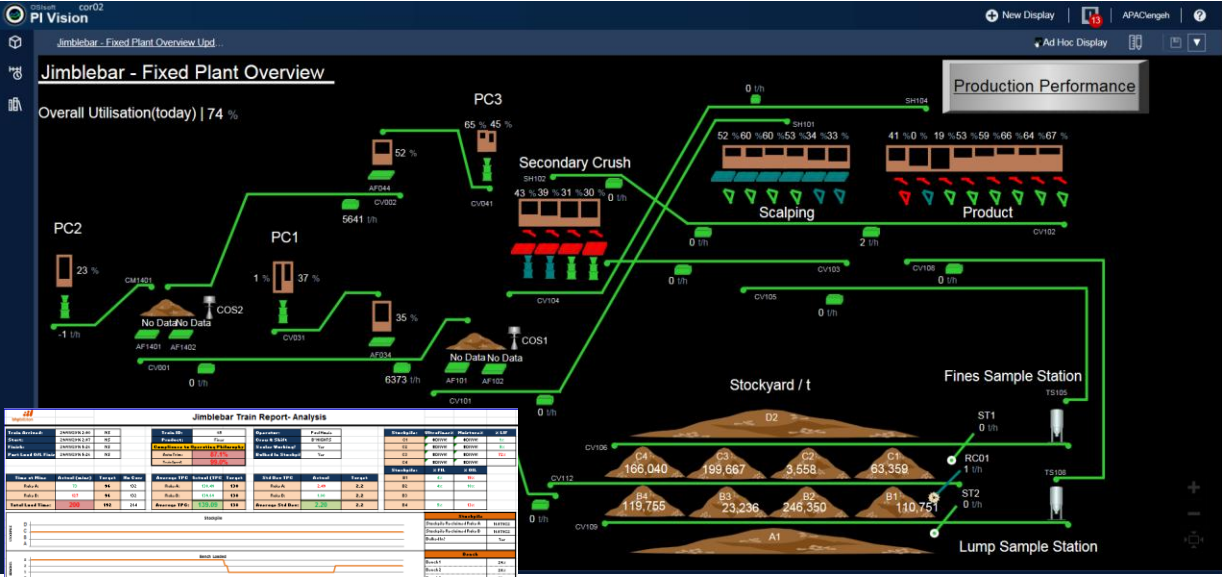


Heaps of value: applying the operating model

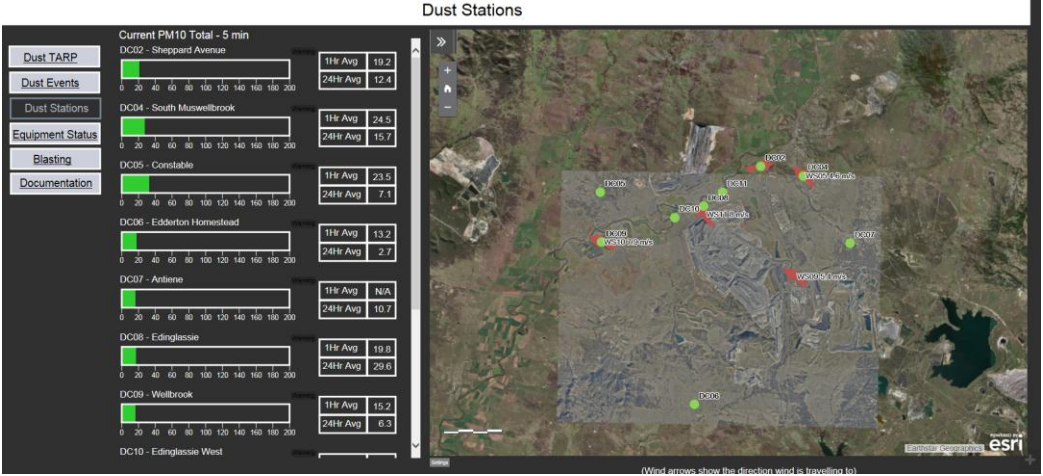


Example:
Iron Ore only

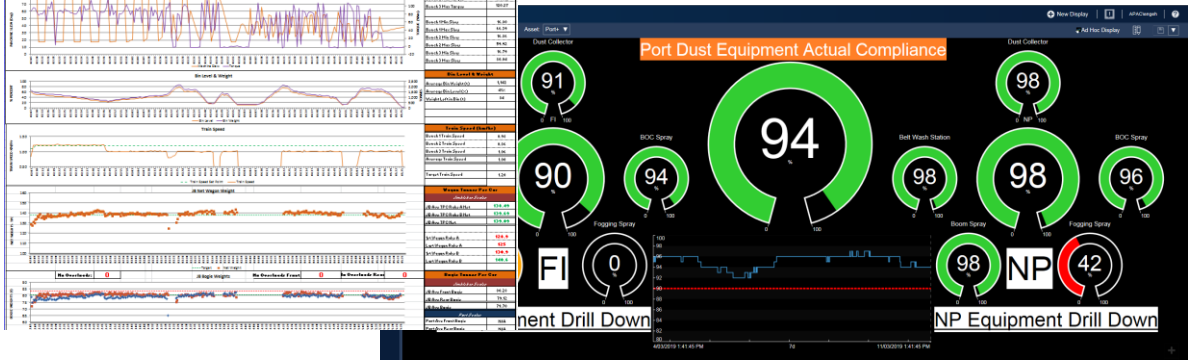
Some PI Vision examples:



Example: Coal



Examples: Iron Ore



Real-time data platform using the PI System

Company goal

Turn time-series data into knowledge and wisdom

- Create reusable investments to magnify business value through the application of a Platform operating model



Challenge

Transform “How” BHP use time-series data to maximise operational intelligence

- Change the way we think
- Empower as many system and people users as possible
- Break stigma around Historians
- Move away from spider webs and point to point solutions
- Rapid scaling



Solution

Platform thinking based on market leading technology enabled through a sustainable platform operating model.

It is all about the “how” not the “what”

- the **Operating model**



Results

Magnified value and acceleration through reusable investments

- Approximately 5 mil tags and growing
- 120+ solutions – many we do not know of
- ± 1,000 users and growing
- 32 sites
- Many systems integrated
- This is just the start!

BHP

Questions?

Please wait for
the **microphone**

State your
name & company



Please remember

TO DOWNLOAD
APP, SEARCH
OSISOFT

