

CI<sub>2</sub>BI

# Chemical Injection Real Time Data to Business Intelligence

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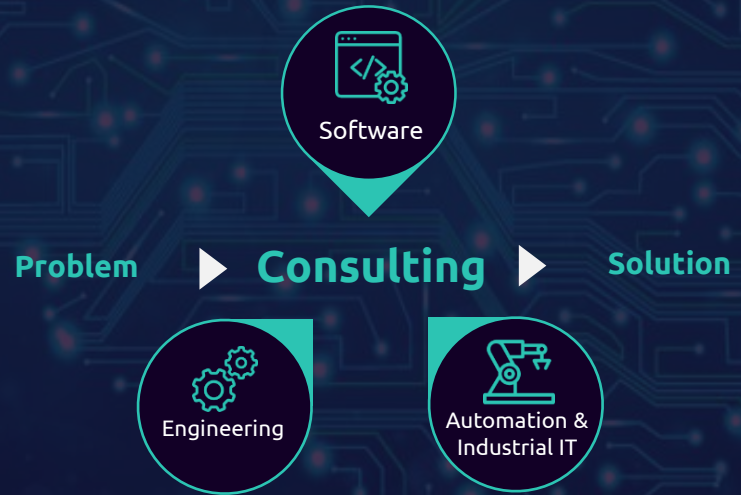
Engineering and Software

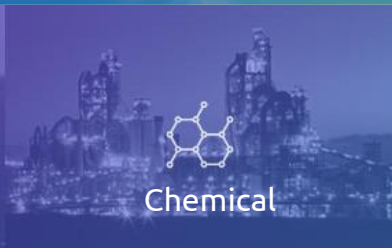


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**RADIX HAS A MULTIDISCIPLINARY TEAM**  
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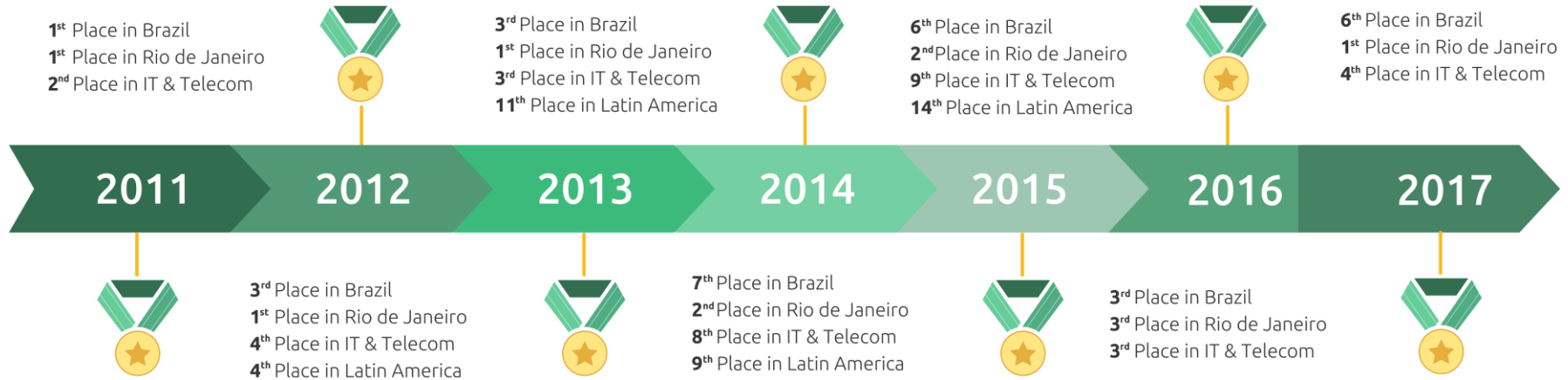


Radix offers **technological solutions** combining engineering skills, information technology and automation systems for **multiple industries**

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# Seven years among the best

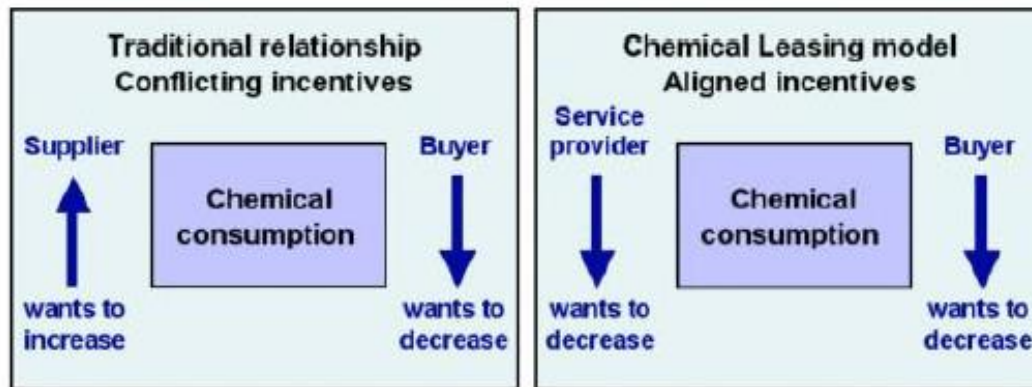




# Chemical Leasing Concept

Chemical Leasing Model promotes sustainable use of chemical through linking the **suppliers sales** income to **chemical performance**.

On the Chemical Leasing Model Motivations are bundled – There is no longer a seller of goods but a **service provider** that uses chemicals.



# The impacts are the efficient use of chemicals for both: supplier and user



## OPERATIONAL

Concentrated efforts on behalf of supplier to reduce losses to the environment.

## LIFE CYCLE REDUCTION

Raw material, energy, etc invested in the chemical decreases as chemical use decrease.

## INNOVATION

Linking revenue to life-cycle performance stimulates R&D process towards products and process modifications that reduce overall HSE impact.



This concept is completely aligned with **Radix Operational intelligence approach** which aims to assure operational efficacy and maximize operational efficiency while mitigating risks

## Operational Intelligence

### Operational Efficacy

- ✓ **Planning**
- **Production**
- **Assets**
- **Manpower**

### Operational Efficiency

- ✓ **Production**
- ✓ **Inventory**
- ✓ **Utilities**

### Operational Risks

- ✓ **Uptime**
- ✓ **Accidents**
  - **People**
  - **Equipment**
- ✓ **Failure**
  - **Equipment**
  - **Infrastructure**

# What is CI2BI?

# CI<sub>2</sub>BI

**Chemical Injection Real Time  
Data to Business Intelligence**

CI2BI is Radix response to the Chemical Management Issue. It is a real time based platform that provides the means to translate data into valuable information.

As a result, provide to our customers a tool to reduce waste and use chemicals more efficiently in order to achieve economic results (for both supplier and end user) as well as minimization of impact on Health, Safety and Environment (HSE).

# CI<sub>2</sub>BI Audience

## For Our Customers

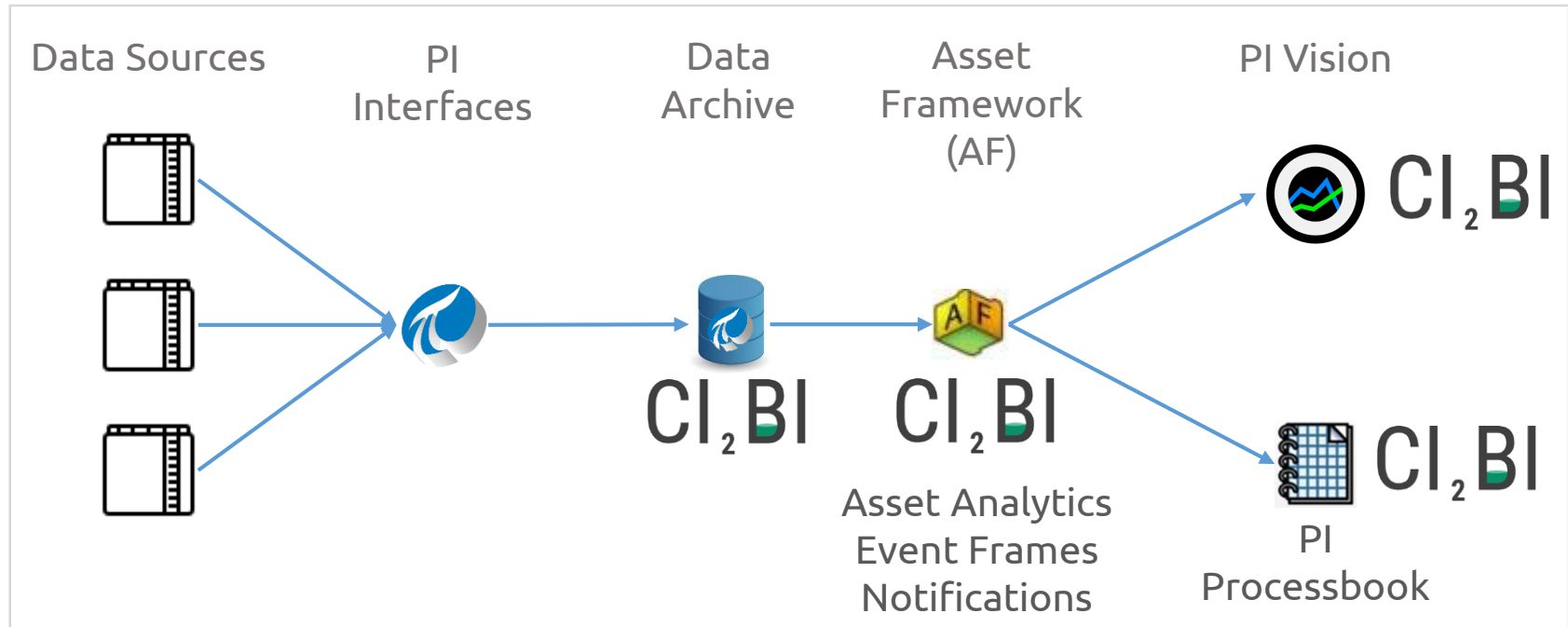
Our focus is on delivering positive outcomes for our customers' applications. We understand that the intelligent use of data and connectivity is a powerful tool to create a more sustainable world for today and for the future.

## Recommended CI<sub>2</sub>BI Users:

- Traditional Chemical Buyers;
- Chemical consumer and supplier under a Chemical Leasing contract;
- Any industry that consumes chemicals in its operation;
- PI System customers with Asset Framework (AF);

# Macro Architecture Review

CI2BI is a product developed entirely inside the PI System:



Calcium Naphtenate  
Inhibitor

Demulsifier

Defoamer

Scale Inhibitor

Corrosion Inhibitor

### Chemical Monitoring - Demulsifier

Tank Level

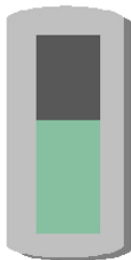
73,81 %

Tank Usage per Hour

17,41 L

Yesterday Usage

645,58 L



24h Average Dosage

85,92 ppm ▲

Target Dosage

80,00 ppm

7-days Variation

10,92 %

Dosage Averages:

83,39 ppm ▲ 7d

82,85 ppm ▲ 30d

79,78 ppm ▼ 90d

Period Average: 86,98 ppm▲

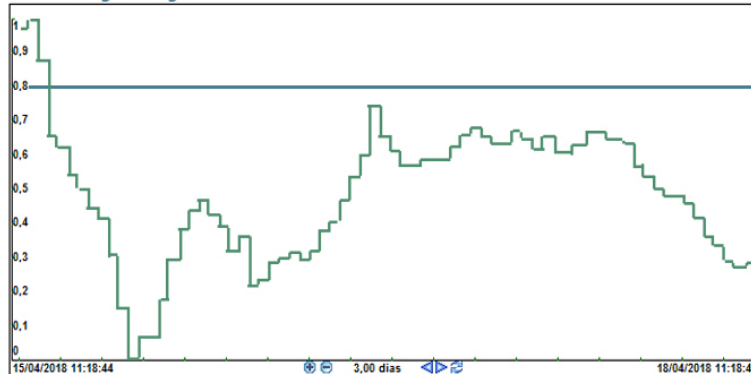
Tank Level



Chemical Usage



24h Average Dosage



# Key PI System Product Capabilities

## PI Data Archive:

- Time series storage for field data and Asset Analytics output;

## PI AF:

- Template structure provides scalability to multiple chemicals;
- Configurable Attributes for different Chemicals;
- Asset Analysis to transform data into operational intelligence;
- Asset Analysis to filter measurement and system failures;
- Event Frames to detect critical conditions;
- Notifications to alert operators and reduce response time;

## Visualization is possible in two platforms:

- PI Processbook (Desktop);
- PI Vision (web and mobile);

# Results Obtained and Business Impact

- **5% volume reduction** in chemical usage;
- Chemical dosage **closer to target and reduced variation**;
- **Reduced operators response time** to critical events;
- **Automated business intelligence** information through key performance indicators;
- Information update **frequency increased** to satisfy operators need;
- Increased surveillance and collaboration in offshore and onshore teams;

# CI2BI Summary



Engineering and Software

CI2BI is Radix response to the Chemical Management Issue. It is a real time based platform that enables chemical suppliers and end user customers to reduce waste, increase efficiency and improve HSE impacts.

# CI<sub>2</sub>BI

Chemical Injection Real Time  
Data to Business Intelligence

## CHALLENGE

Provide actionable business intelligence in real time for chemical injection operator.

- Operators had very limited data;
- Response time to events was very slow;
- Dosage variance and target deviation was high;

## SOLUTION

Transformed raw data into actionable business intelligence in real time.

- Asset Analytics generated new information relevant to operation;
- Event Frames and Notifications alerted operators of critical events;
- Real time data became available to operators;

## RESULTS

5% volume reduction in chemical usage.

- Reduced actual dosage variation;
- Reduced dosage deviation from target;
- Improved response time to critical events;



# Speaker Contact



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Merci

谢谢

Спасибо

Danke

Gracias

감사합니다

Thank You

ありがとう

Grazie

Obrigado