

# Capitalizing On B2B Information Exchange

Proposal for New CRE Standards:

*“XML Schemas For Refinery Equipment”*

*“Collection, Analysis And Exchange Of Reliability And Maintenance Data for Equipment”*

Andrea Johnson /API

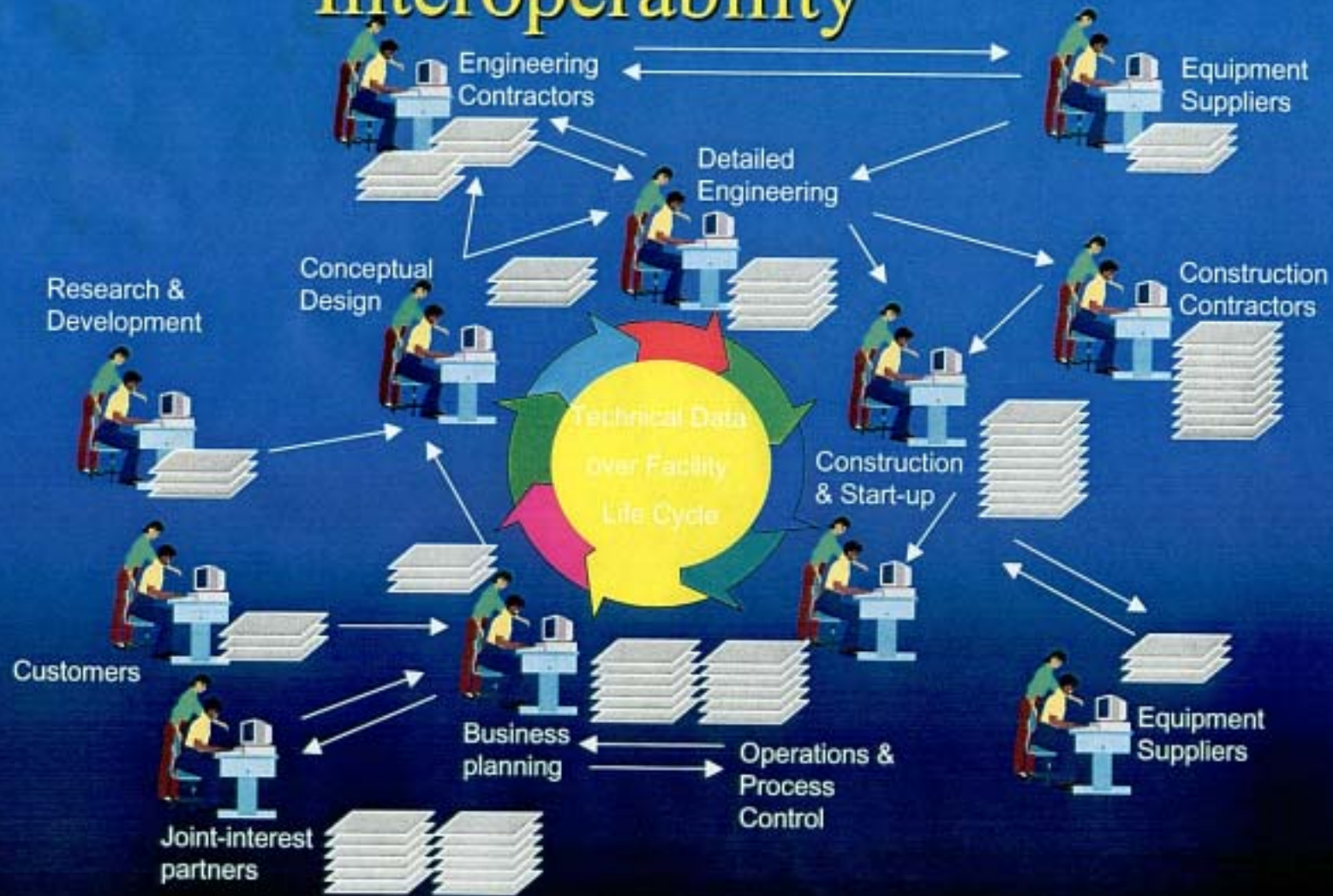
## New Proposal

# API 690 “XML Schemas For Refinery Equipment”

- **Potential Scope:** API Equipment Standards (Mechanical Equipment, Heat Transfer, Instrumentation, and Electrical)
- **Most important usage scenario**
  - exchanges between user, vendor , contractor and user IT systems
- **Content**
  - Standard definitions & nomenclature
  - XML schemas for key equipment types
  - Guideline on Mapping (vendor, contractor, user)
  - Guidance for industry deployment



# The Problem - Lack of Interoperability



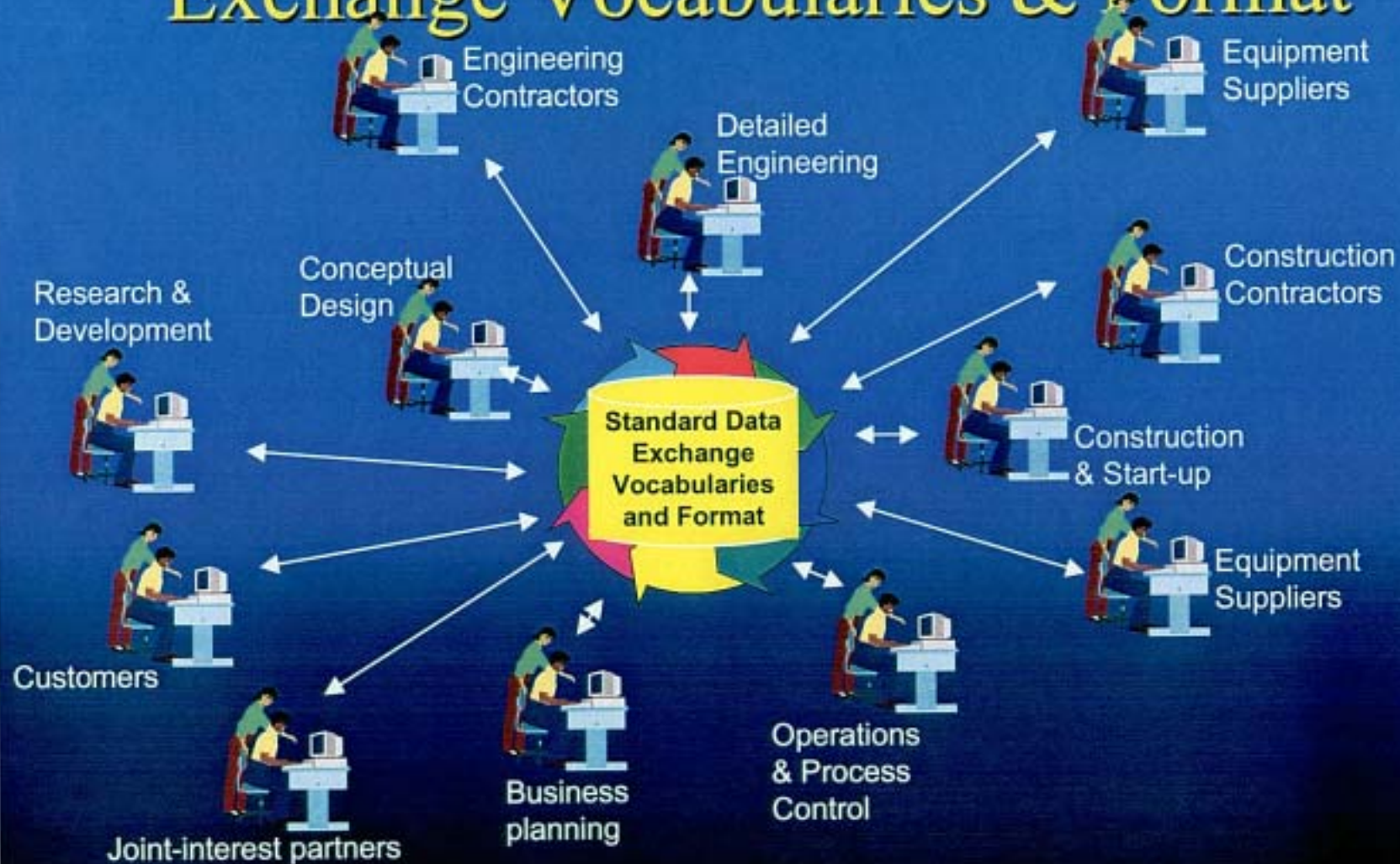
# Industry Challenges

- **Everyone configures their eCommerce and project delivery systems differently**
  - **repeating electronically the chaos of the paper-based work processes**
- **Minimal convergence on nomenclature and functionality to support EPC and O&M eBusiness processes**
- **Minimal success in exploiting eBusiness potential for improving the delivery of Capital Facilities**

# Background

- **eBusiness is and will transform the delivery and operation of capital facilities**
- **100s of companies developing overlapping and incompatible eBusiness applications**
  - still searching for sustainable eBusiness models
- **Interest in common work practices and eBusiness standards**
  - datasheets, RFQs, RFIs, change orders, inspection, diagnostics and maintenance reports

# The Solution - Industry Standard Data Exchange Vocabularies & Format



## Deploying Standard XML Schemas will...

- **Bring industry closer to interoperability**
- **Reduce friction and delay in the supply chain**
- **Provide capability for sharing data among parties across different uses and life cycle phases**
- **Provide a software-neutral format for data archival and re-use**
- **technology foundation to bridge the gaps between EPCs, suppliers and O&M**
- **Reduce transcription errors, improve productivity**

# Why is XML Important

- Simple; human and machine readable
- Broad, commercial use - pervasive
- Central idea: **presentation, content and structure** of an electronic document should be **kept separate and made explicit from the data**
- By starting with a set of simple constructs, XML allows growth and flexibility
- Tool for communicating business and technical information



## API PIDX Committee

**VISION:** To achieve petroleum industry and enterprise-wide integration of business processes through seamless electronic business communications.



**MISSION:** To influence the architecture and facilitate implementation of effective standards and processes for electronic business communications within the petroleum industry community. PIDX also seeks to leverage the inherent value in existing EDI standards as well as actively pursuing the benefits of the emerging E-business technologies.

Who is EM member?

# PIDX Members

Accenture

Baker Hughes Incorporated

BP p.l.c.

Channelinx Inc.

ChevronTexaco Corporation

DTN

FuelQuest, Inc.

Halliburton Energy Srvc., Inc.

OFS Portal

P O S C

Schlumberger Technology Corp.

Transport 4

Wellogix, Inc.

Aramco Services Company

Birdsnest

Business Knowledge Architects

ChevronTexaco Corp.

Cooper Cameron Corporation

ExxonMobil Corporation

FuelQuest, Inc.

Marathon Oil Company

Oildex/TransZap, Inc.

Shell/Equiva

Sooner Inc.

Unocal CorporateW

# Roles of PIDX and CRE

- CRE to provide DOMAIN expertise
- PIDX to provide XML data interchange expertise
- Two API committees to work in collaboration on single industry standard or set of standards for downstream

# API-610 (Centrifugal pumps)

- First API Standard to publish a “neutral data exchange file specification” in Aug, 1995 (Eighth Edition).
- Pulled out of API-610 Ninth Edition, Aug, 2001 in favor of a new standard addressing all API mechanical equipment.

# Magnitude of Industry Opportunity

- 46,000 ANSI/ASME pumps per year
- 37,000 API & other pumps per year
- 53,000 ISO pumps per year

*Each Customer has a unique data sheet and pump suppliers are required to "re-enter" data from customer data sheet to supplier "spec sheet". Savings benefit to the supply chain is \$100 to \$500 per pump. This translates to a savings within the industry of between \$ 13.6 Milllion - \$ 68 Milllion/ Year  
-Flowserve Pumps*

# What are we asking from CRE?

- Subcommittees to nominate potential 690 Task Force members
- Submit nominations to Andrea Johnson by May 10, 2002
- TF 690 to work in collaboration with the API PIDX committee

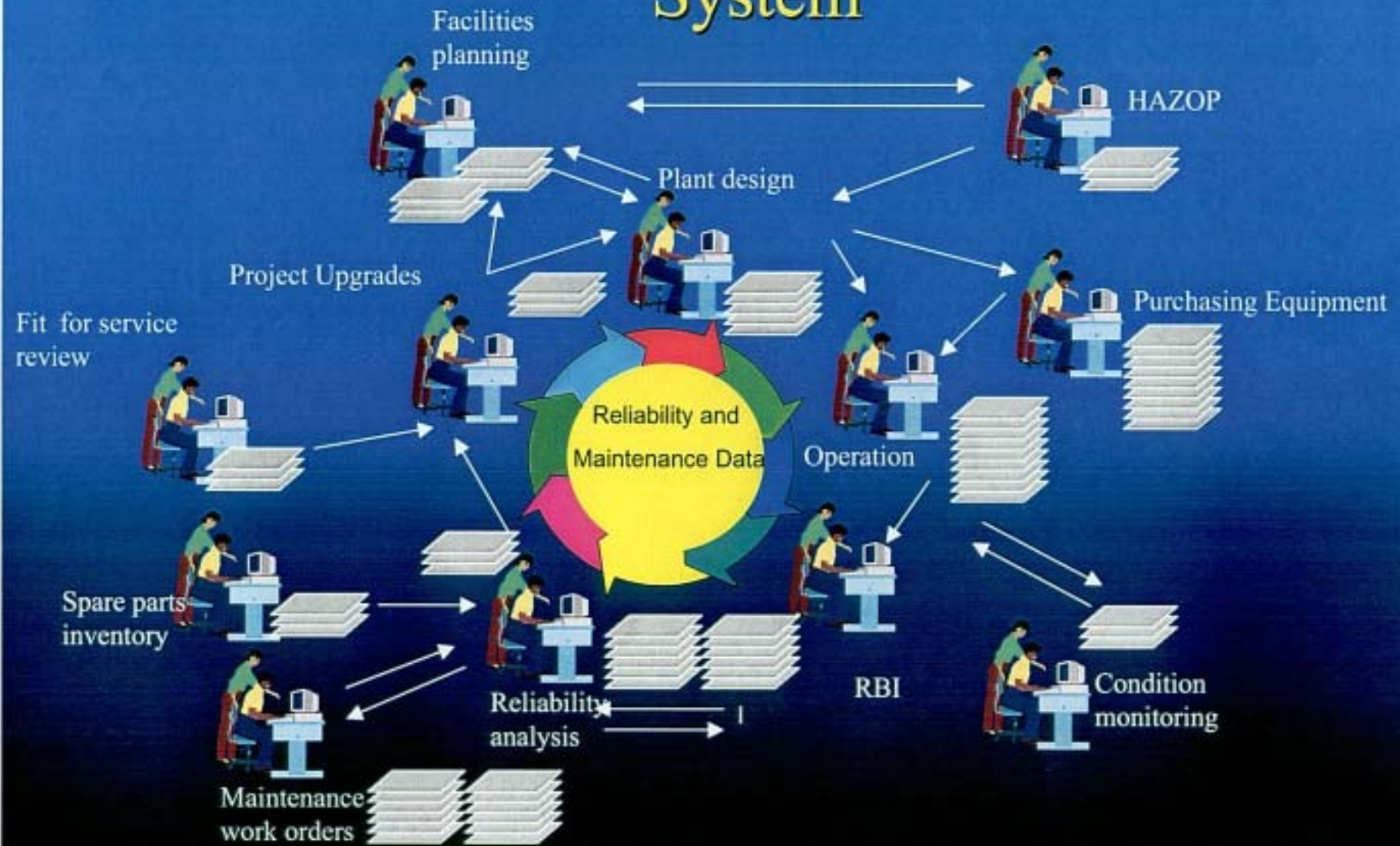
## New Proposal:

# API 689 “Collection, Analysis, and Exchange of Reliability and Maintenance Data For Equipment”

- **Potential Scope:** API Equipment Standards (SOME & Possibly, SCHTE , SOICS AND ELECTRICAL)
- **Most important usage scenario**
  - exchange of data between users worldwide
  - provides statistically significant data population from which to draw meaningful conclusions (high confidence intervals)
- **Content**
  - definitions
  - key performance indicators
  - data structure (taxonomy)
  - analysis methodology

ISO Std 11224 exist mainly Upstream, North Sea

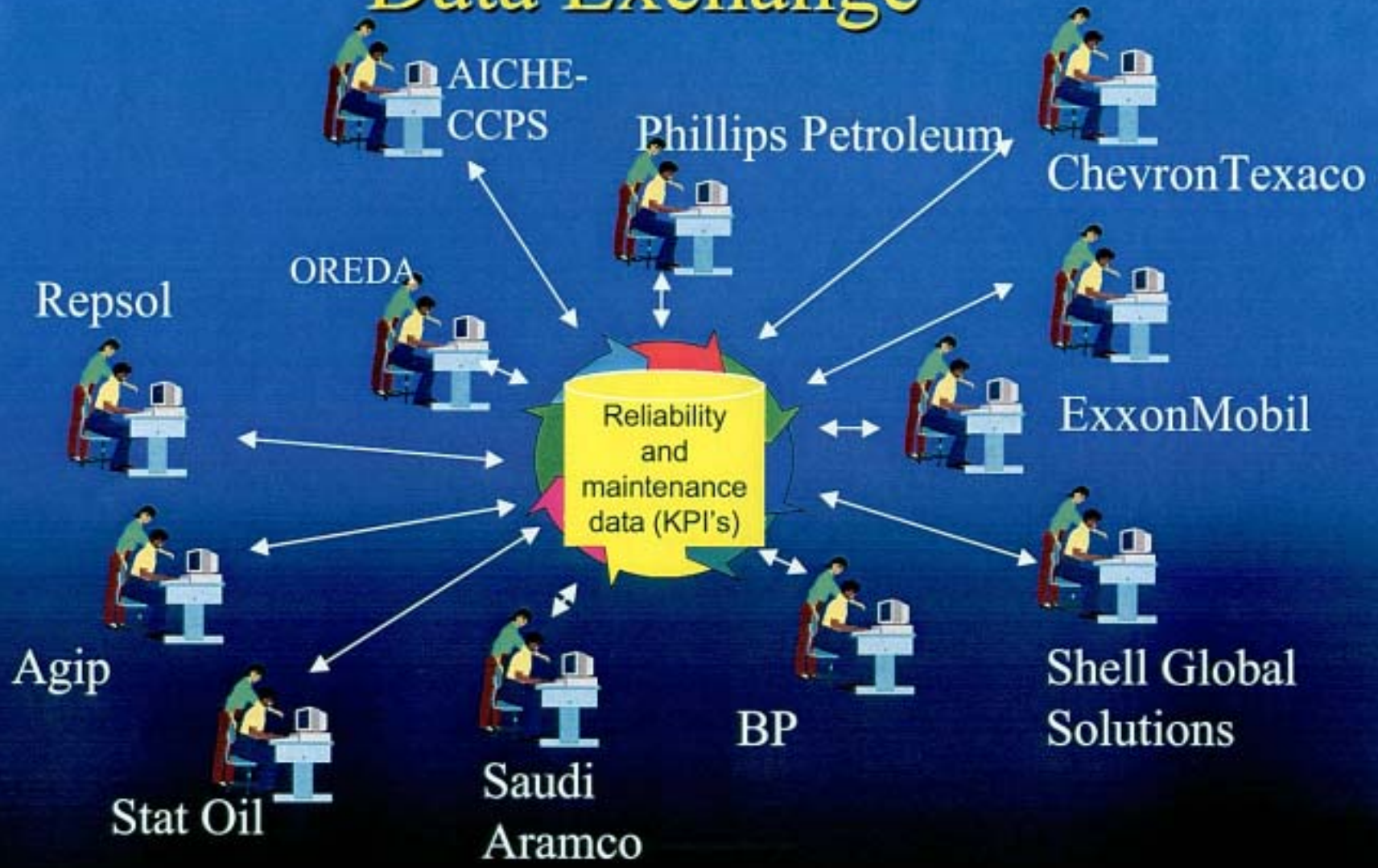
# Problem: Continuous Improvement Is Not Possible In A Closed R/M System





? Solomon

# The Solution – Industry Standard Data Exchange



# API-689 supports better business decisions....

- Weibull
- Monte Carlo
- Fault-Tree
- 6 Sigma

## OPTIMIZING:

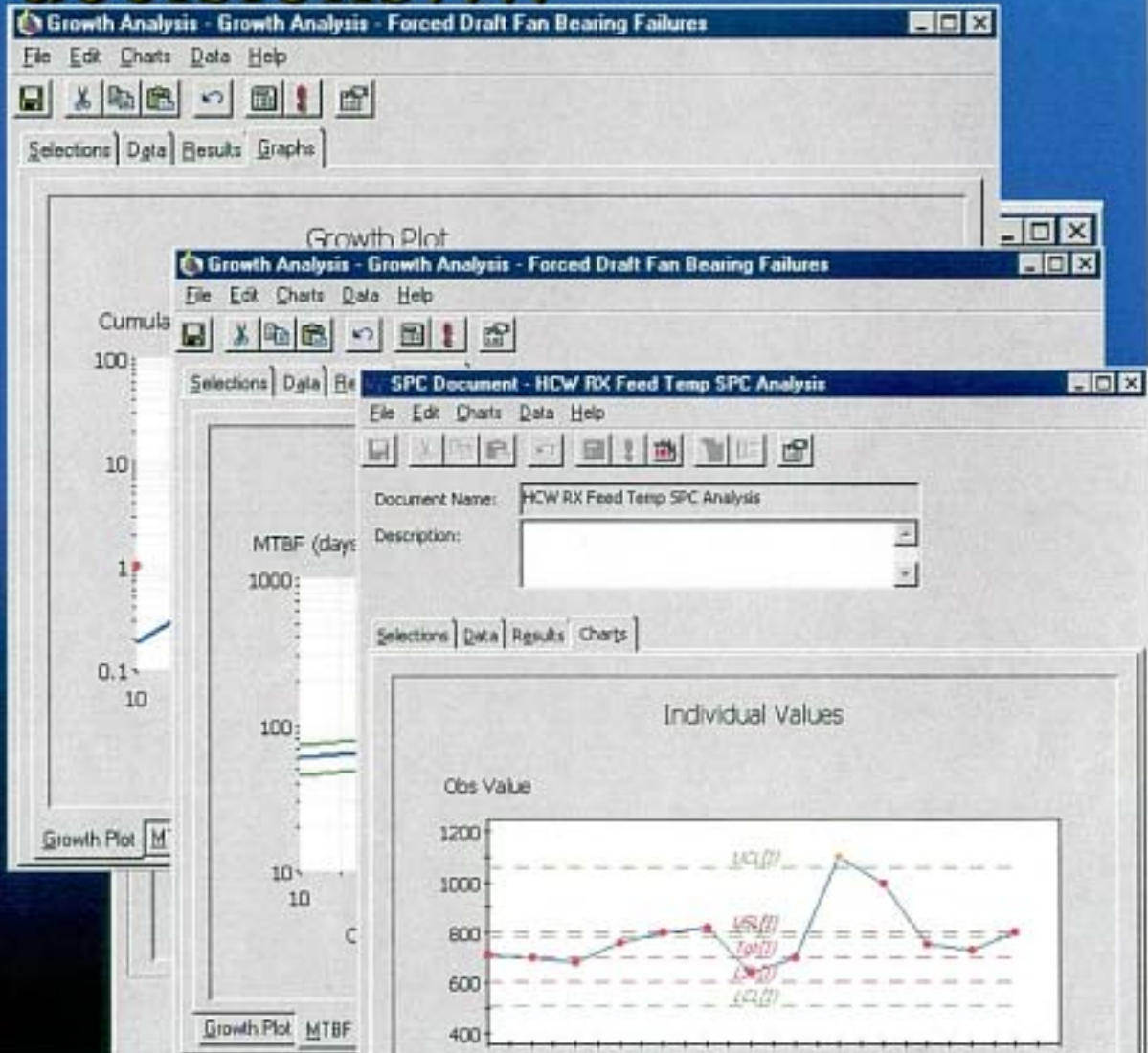
Spares inventory

Maintenance intervals

Equipment upgrades

Production

Life cycle cost



Who is EM member

# API-689/ISO-14224 Taskforce Participants

**AGIP**

**Air Products & Chemicals**

**Aramco Services \***

**BP**

**ChevronTexaco**

**ExxonMobil**

**Heinz Bloch**

**IsoGraph**

**Jardine**

**Meridium**

**DNV**

**Paul Barringer**

**Repsol**

**Total/Elf/Fina**

**SAP Germany**

**SB Technologies**

**Shell Global Solutions**

**Stat Oil**

**UOP**

**\*Chairmanship**

# API Initiatives/Standards

## Equipment Life Cycle

E= Engineering  
P= Procurement  
M/F= Manufacturing  
C= Commissioning  
O= Operation  
M= Maintenance

