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OSIsoft

REGIONAL SEMINAR 2012

APAC

The Power of Data

The Future of Business Insight

Presented by **John Bradley**

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Microsoft Australia
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Agenda

- Manufacturing & Resources Sector - the context
- Current State of the BI Market
- Microsoft's approach to Business Insight
- Q & A

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Manufacturing & Resources Sector – the context

Mining, Oil & Gas

- The hunt for new resources …
- Staffing
- OH&S. Pollution control, safety, sustainability and social responsibility
- Becoming more customer centric
- Much more real-time data
- The Cloud …..

Power & Utilities

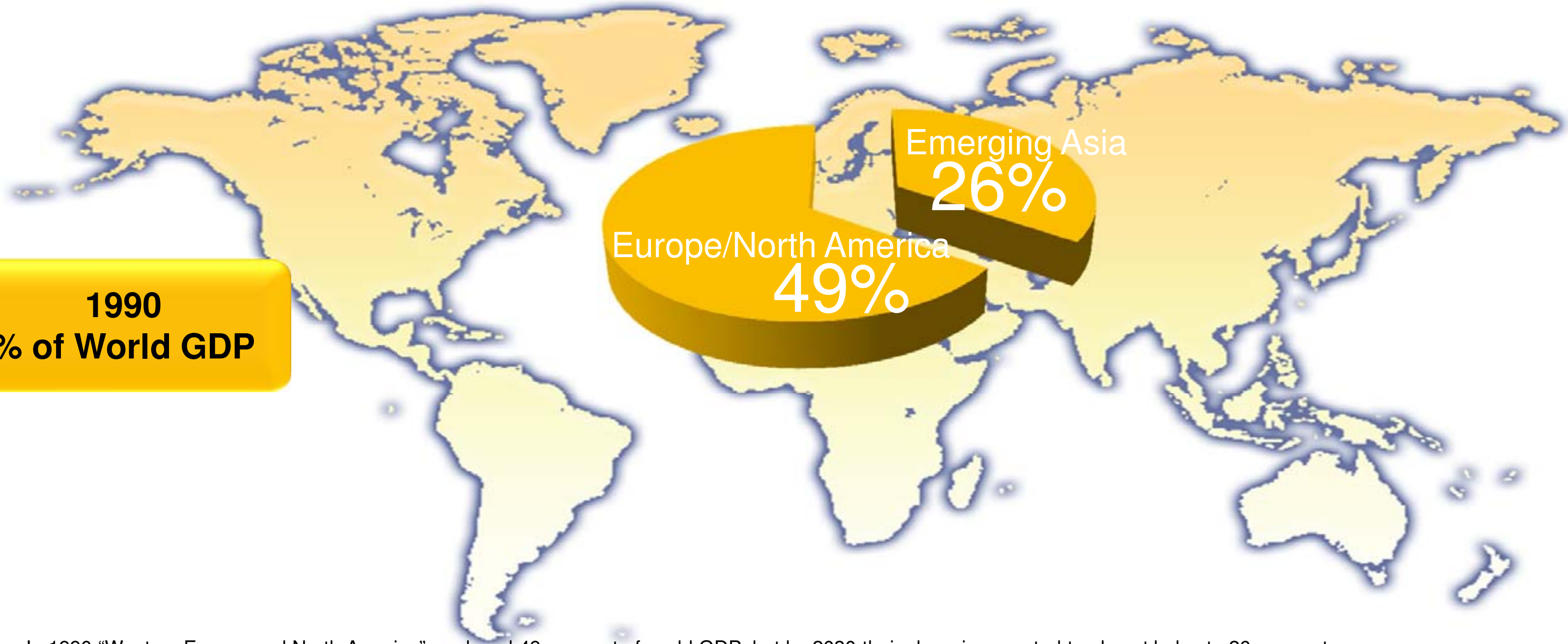
- Aging Infrastructure
- AMI programs
- Staffing
- Retail competition
- Sustainability, Carbon Tax

The common challenge?

Physical asset intensive industries. Time series asset monitoring is critical for transition from “time scheduled” maintenance, to “condition “based maintenance to “predictive “maintenance

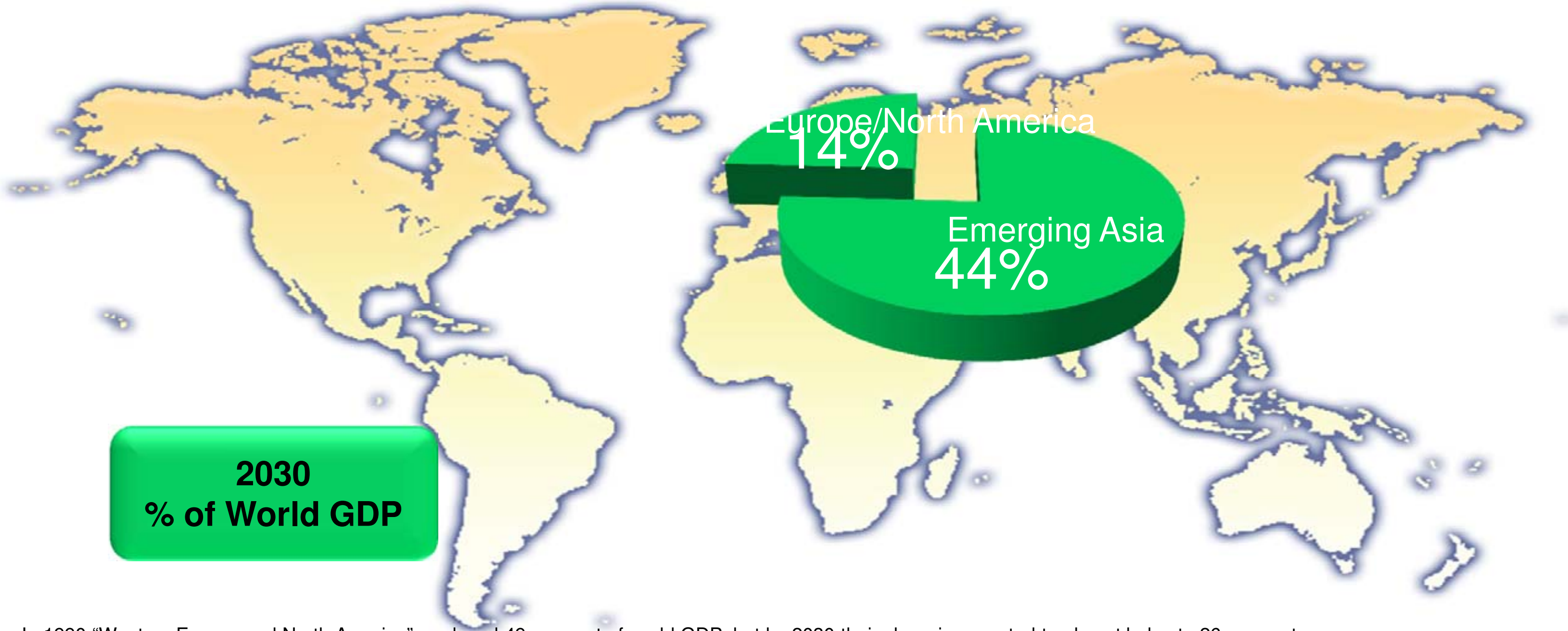
Resources Industry – what is driving the opportunity in Australia?

1990
% of World GDP



In 1990 "Western Europe and North America" produced 49 per cent of world GDP, but by 2030 their share is expected to almost halve to 26 per cent
In 1990 Emerging Asia (i.e. ex Japan) produced 14 per cent of world GDP, but is expected to more than triple its share to 44 per cent in 2030
Those are much bigger shifts in the location of global production than were recorded after the industrial revolution, and they are occurring over much shorter timeframes

Resources Industry – what is driving the opportunity in Australia?



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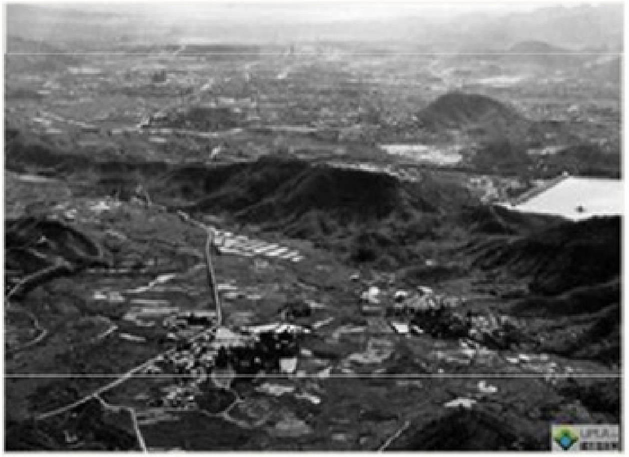
Microsoft

A picture tells a thousand stories….

Shenzhen 1982



Shenzhen 2007

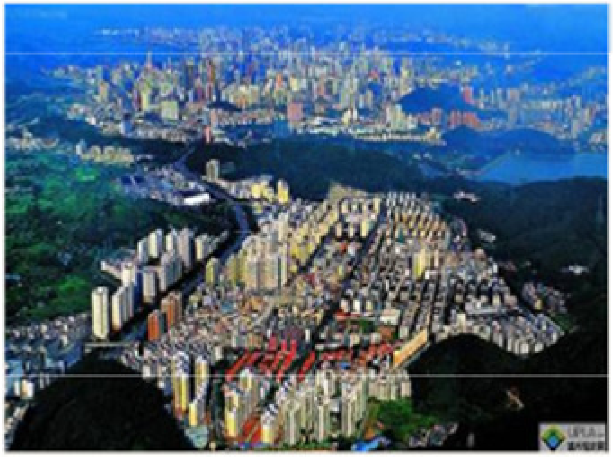


Image source: The Chinese UPLA urban planning network, http://www.upla.cn
Statistic derived from analysis of the United Nations, World Urbanization Prospects, The 2007 Revision Population Database

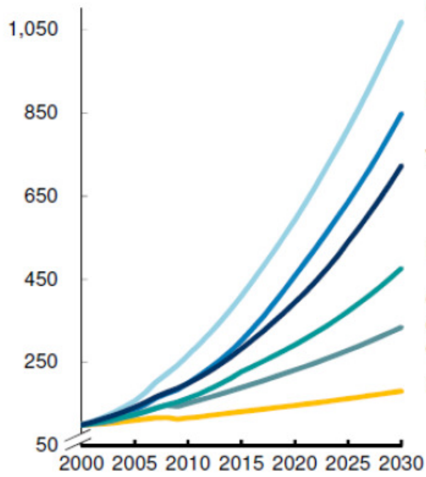
China needs to build 3 cities larger than Sydney every year until 2030 to accommodate rural to urban migration

NORTH AMERICA
EUROPE
ASIA
AFRICA
Nigeria
LATIN AMERICA
Brazil
Papua New Guinea
OCEANIA

Not Just China …. Economic growth projections - real PPP GDP

REAL PPP GDP

Index 100 = 2000



	Average growth p.a.					
	'00-05	'05-10	'10-15	'15-20	'20-25	'25-30
China	9.6%	11.1%	8.9%	7.6%	6.5%	5.7%
India	6.4%	8.0%	8.5%	8.6%	6.8%	6.0%
Vietnam	7.4%	7.0%	7.2%	6.8%	6.5%	6.0%
Indonesia	4.5%	5.7%	6.7%	5.1%	5.0%	5.0%
Other emerging/ developing countries	4.5%	4.0%	4.5%	4.1%	3.8%	3.7%
Developed	2.1%	1.0%	2.5%	2.2%	2.1%	2.1%

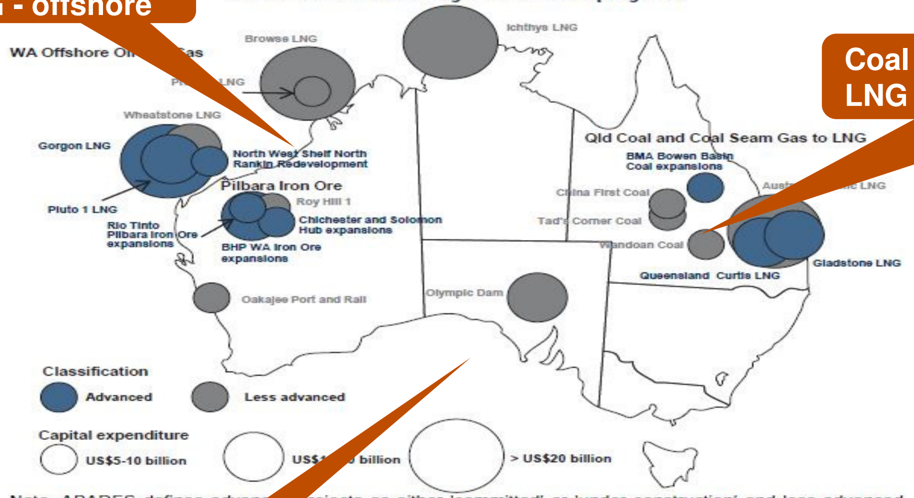
Source: IMF WEO, 2010; World Bank; Global Insight; Oxford Economic Forecasting; US Department of Agriculture Economic Research Service, 2010; PJP analysis

Mining & Resources - Australian Projects & Investment Pipeline

Iron Ore
LNG - offshore

Coal – Energy & Met
LNG – via Coal Seam & Shale gas

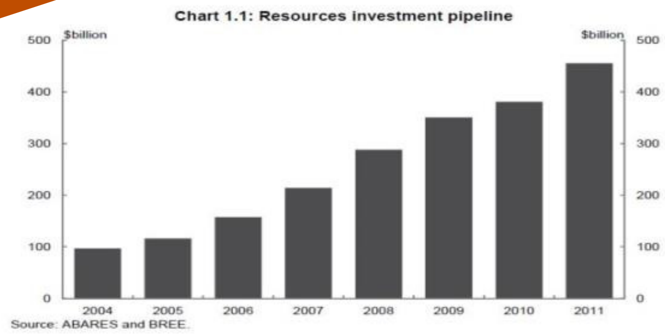
Chart 1: Selected major resource projects



WA Offshore Oi as
Browse LNG
Ichthys LNG
Pl LNG
Wheatstone LNG
Gorgon LNG
North West Shelf North Rankin Redevelopment
Pilbara Iron Ore
Pluto 1 LNG
Roy Hill 1
Rio Tinto Pilbara Iron Ore expansions
Chichester and Solomon Hub expansions
BHP WA Iron Ore expansions
Oakajee Port and Rail
Olympic Dam
Qld Coal and Coal Seam Gas to LNG
BMA Bowen Basin Coal expansions
China First Coal
Aust ic LNG
Tad's Corner Coal
Wandoan Coal
Gladstone LNG
Queensland Curtis LNG
Classification
Advanced
Less advanced
Capital expenditure
US$5-10 billion
US$1 billion
> US$20 billion

Note: ABARES defines advan projects as either 'committed' or 'under construction' and less advanced projects as those undergoi easibility (in some cases, pre-feasibility) study, or that have not yet been subject to a final investm cision since the completion of a feasibility study.
Source: Indicative esti based on ABARES, company reports and other publicly available information.

Chart 1.1: Resources investment pipeline



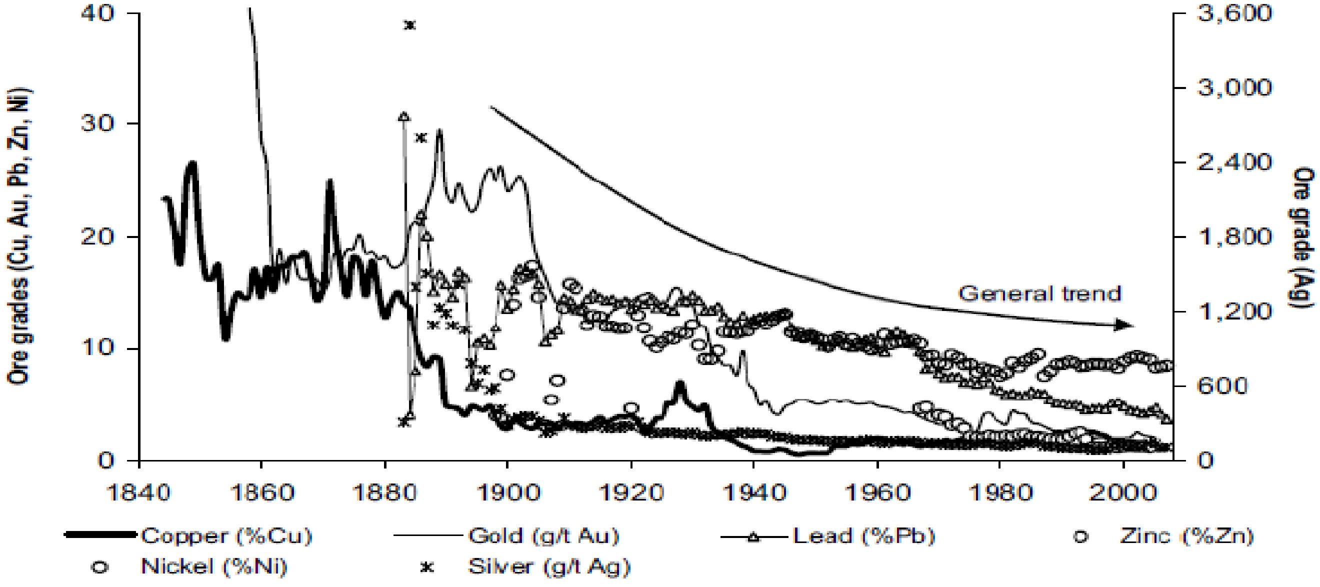
Source: ABARES and BREE.

Copper
Uranium

Capital Project Spend (BRW, June 2012)

- Mining & Energy projects in Advanced stage of development = $2[illegible]1b
- Further $24[illegible]b in earlier-stage of development
- Compared with 2000-2010 total spend of $1[illegible]8b

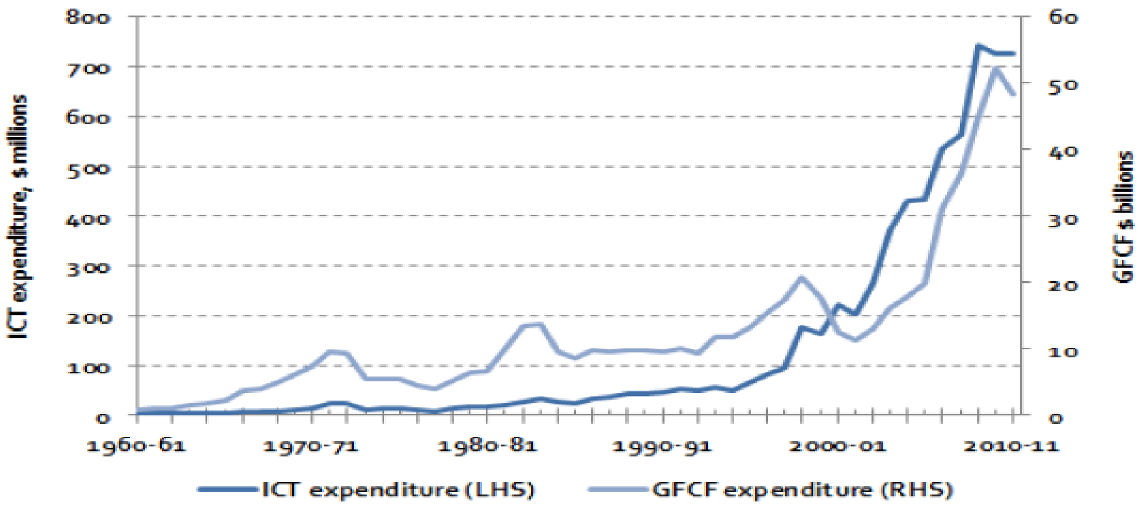
Decline in Ore Grade body leading to increased reliance on technology



Source: Productivity Commission (2008). Adapted from Mudd (2007).

Oil & Gas, Mining Industry – rising IT spend

Figure 3-1. Gross fixed capital formation in the Australian mining sector – Aggregate and ICT expenditure ($ nominal)



Notes: Chain volume measures. ICT refers to expenditure on computers and peripherals, computer software, electronics and electrical equipment.

Source: ABS, 5204.0 Australian System of National Accounts; Adapted from Topp et al. (PC), 2008.

Why would the Microsoft Manufacturing & Resource Industry PoV matter to customers?

Microsoft is one of the few GLOBAL companies in the world who cover consumer through to business

I am one of 700 people world wide who are part of “industry” at Microsoft. We can provide insight on where the industry is going

The answers to your questions might come from outside your industry

State of Business Intelligence

– finding answers to questions…

Only 28% of potential BI users have any meaningful access

– Business Intelligence Purchase Drivers and Adoption Rates, Gartner

32% of Excel users are comfortable with using it for "Advanced Analysis" e.g., PivotTables

– Excel Segmentation Research

31% of all BI initiatives partially meet or don't meet the business goals originally set

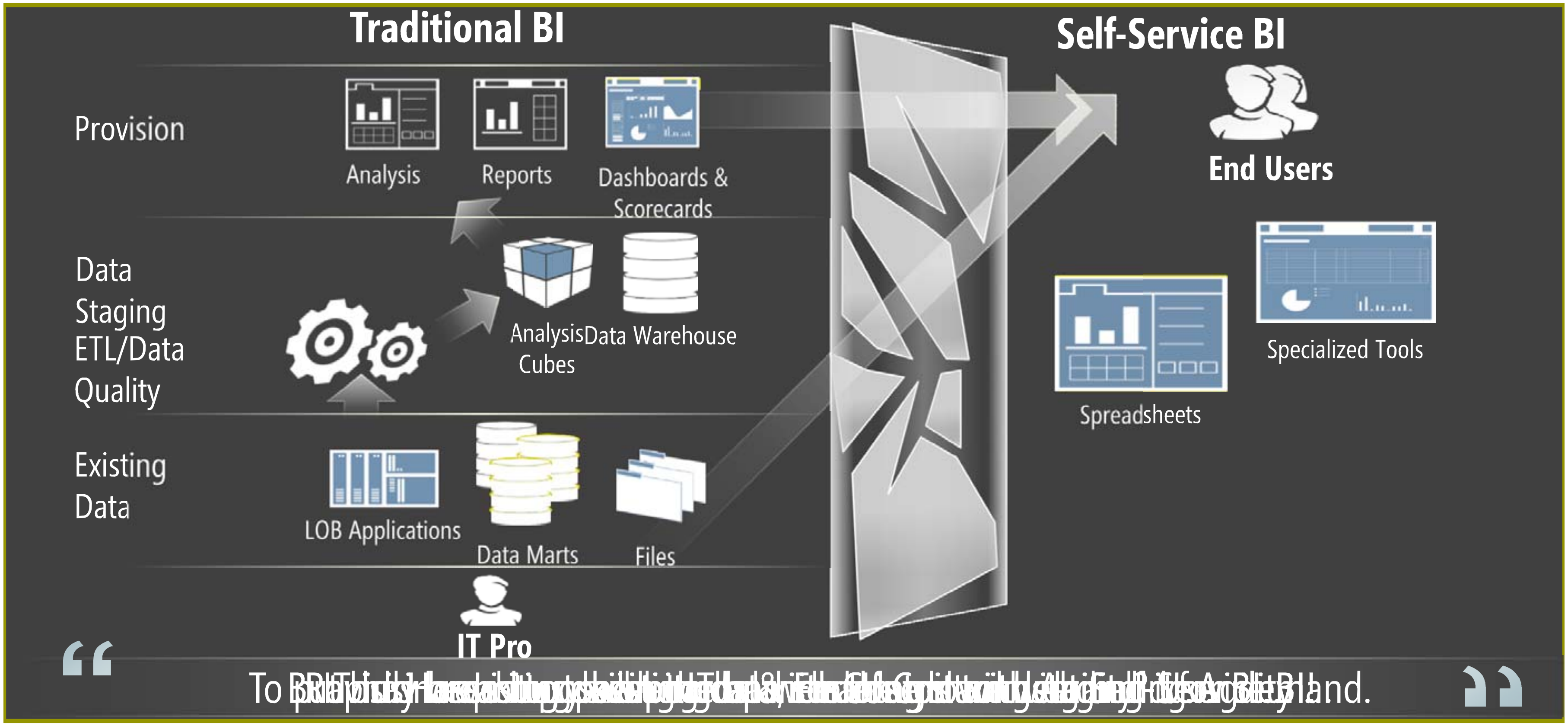
– BI Survey 9, BARC

> "Knowledge workers spend too much time looking for, not enough time analysing the information."

> "Lines between producers and consumers of information have largely disappeared."

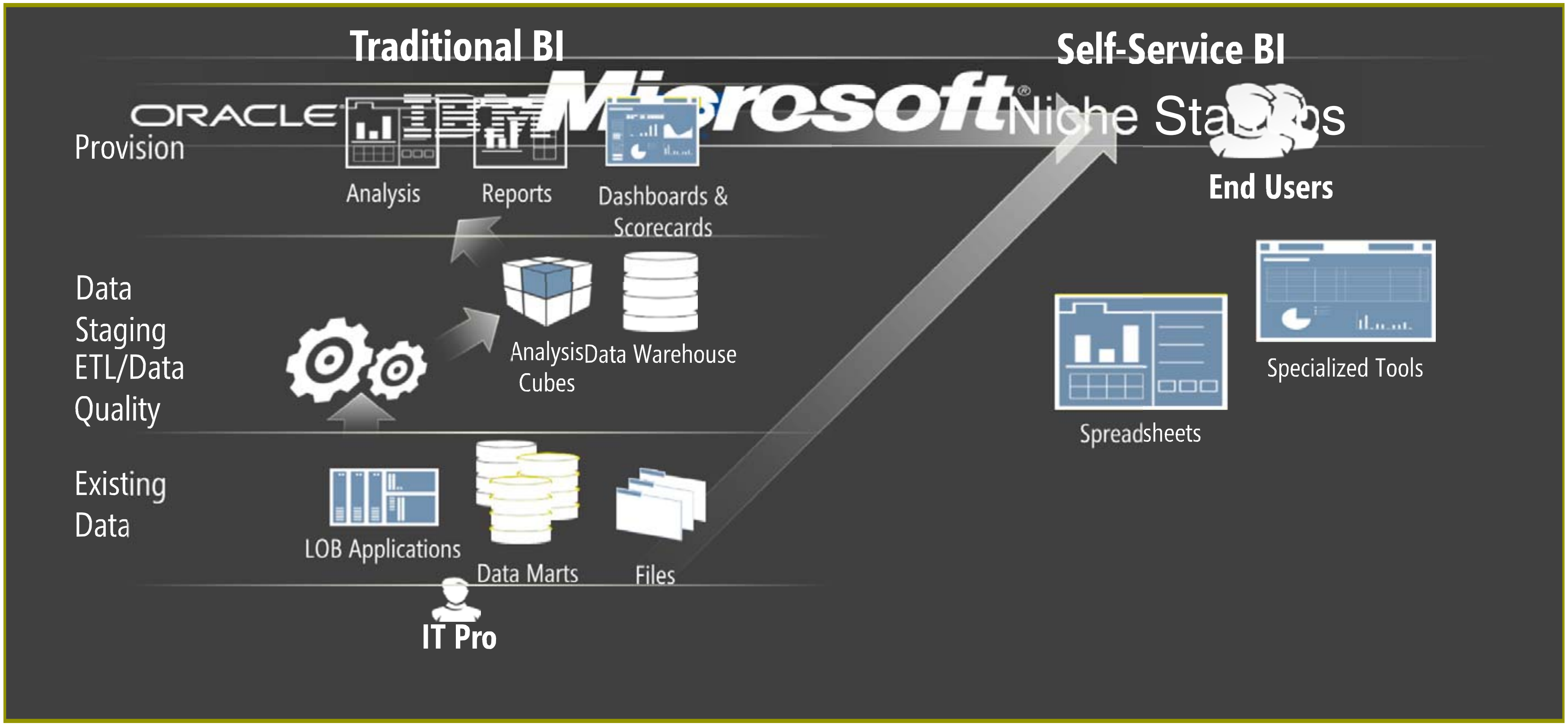
> "Requirements change way too fast for IT and traditional technology to keep up."

Evolution of BI


Traditional BI
Self-Service BI
Provision
Analysis
Reports
Dashboards & Scorecards
End Users
Data Staging ETL/Data Quality
Analysis Cubes
Data Warehouse
Spreadsheets
Specialized Tools
Existing Data
LOB Applications
Data Marts
Files
IT Pro

“To [illegible] and.”

Evolution of BI



Traditional BI

Self-Service BI

ORACLE
IBM
Microsoft
Niche Sta ps

Provision

Analysis

Reports

Dashboards & Scorecards

End Users

Data Staging ETL/Data Quality

Analysis Cubes

Data Warehouse

Spreadsheets

Specialized Tools

Existing Data

LOB Applications

Data Marts

Files

IT Pro

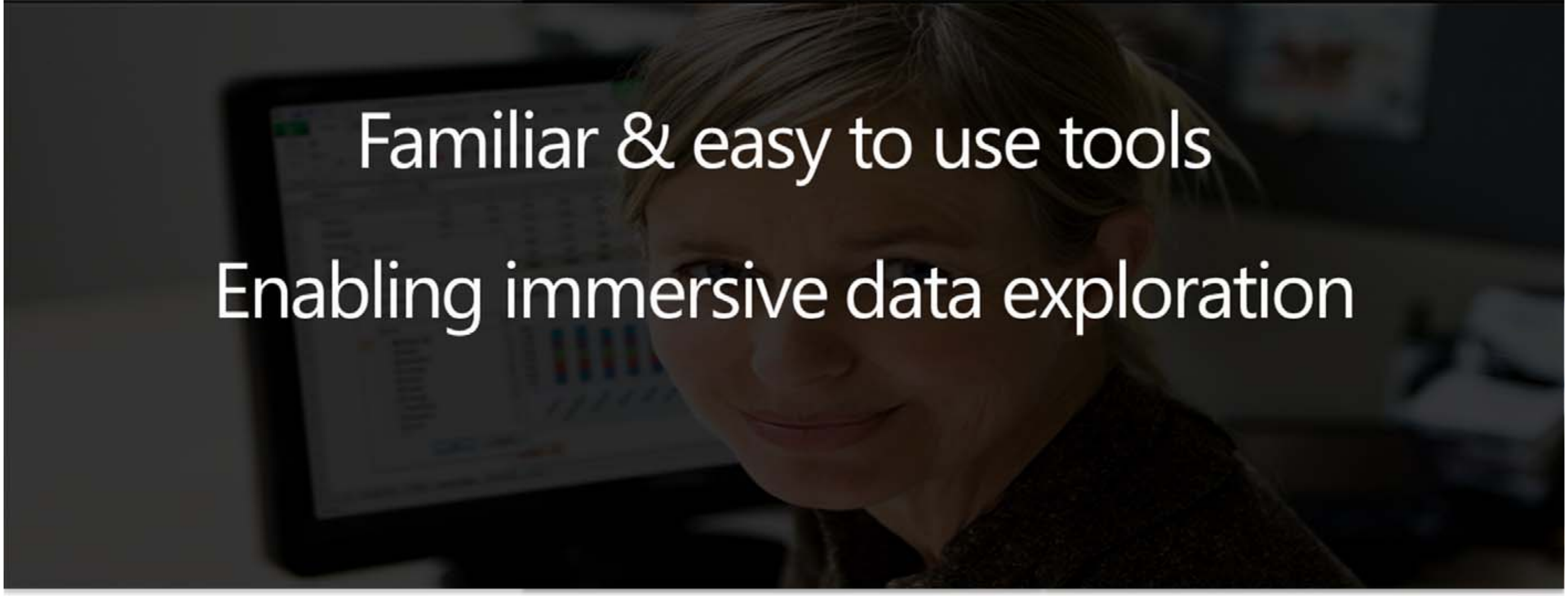
Microsoft Business Intelligence is……

Familiar

Collaborative

Complete

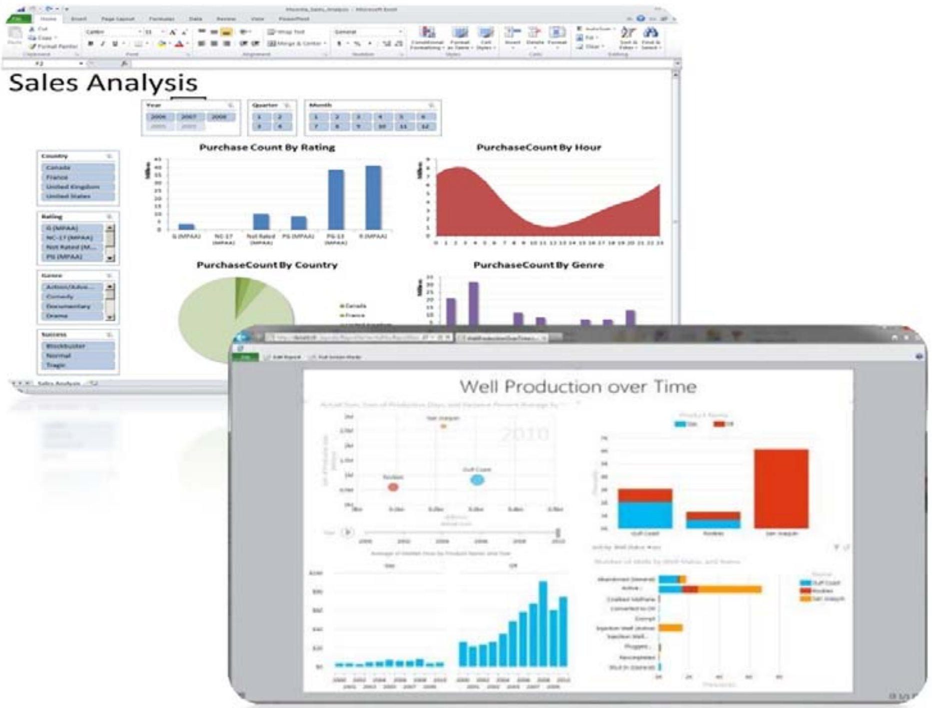
Familiar | Collaborative | Complete



Familiar & easy to use tools

Enabling immersive data exploration

Empowering users through familiar tools


Sales Analysis
Purchase Count By Rating
PurchaseCount By Hour
PurchaseCount By Country
PurchaseCount By Genre
Well Production over Time

- Familiar experiences for rapid data exploration and discovery with Excel.
- Powerful data mash-up capabilities for self-service analysis with PowerPivot.
- Rapid data exploration and visualization with PowerView.

Microsoft

Power View

102 Dalmatians

Kevin Lima
Director

CBS
Provider

100
Duration

Comedy
Genre

G (MPAA)
Rating

★★★★☆
User Rating

Highly Visual Design Experience

- Interactive, web-based authoring and sharing of information
- Familiar Microsoft Office design patterns
- Powerful data layout with banding, callout and small multiples visualisations

MOVIE SALES REPORT

Rich metadata-driven interactivity

- Fully integrated with PowerPivot and BI SM
- Drive greater insight through smart and powerful querying
- Zero configuration highlighting and filtering

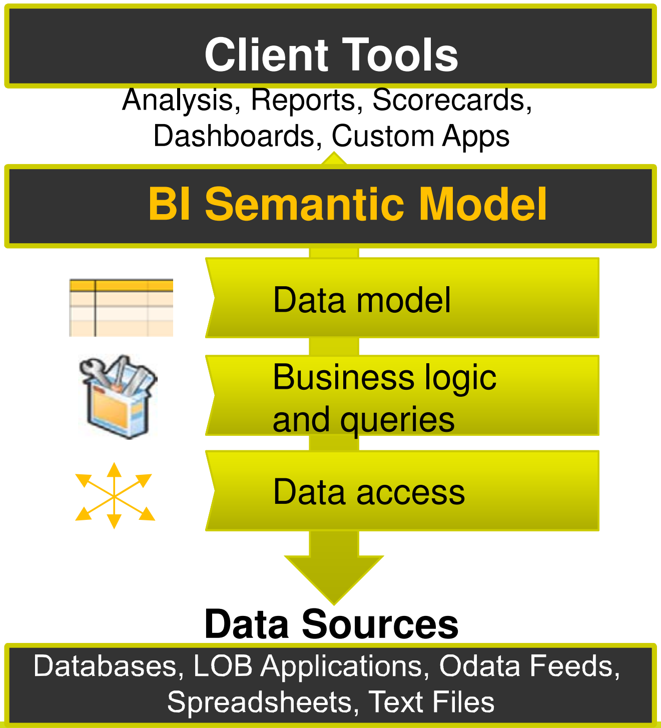
MOVIE SALES REPORT

Presentation-ready at all times

- Turn pervasive information into persuasive information
- Deliver and collaborate through SharePoint
- Interactive at all times

BI Semantic Model

A single model for all End User Experiences



Client Tools

Analysis, Reports, Scorecards, Dashboards, Custom Apps

BI Semantic Model

Data model

Business logic and queries

Data access

Data Sources

Databases, LOB Applications, Odata Feeds, Spreadsheets, Text Files

BI Semantic Model

- Enables a wide spectrum of capabilities – from dashboards and scorecards to reports and analytics.
- Enhance productivity with design aids and best practices.

New Tabular mode:

- Enable faster iteration and reduce complexity in design.
- In-memory column store technology
- Import PowerPivot Models into BI Development Studio in Visual Studio 2010

Microsoft

Familiar

Collaborative

Complete

Connect people & information

On the most popular collaboration platform

Microsoft

Better decisions through Ease of collaboration

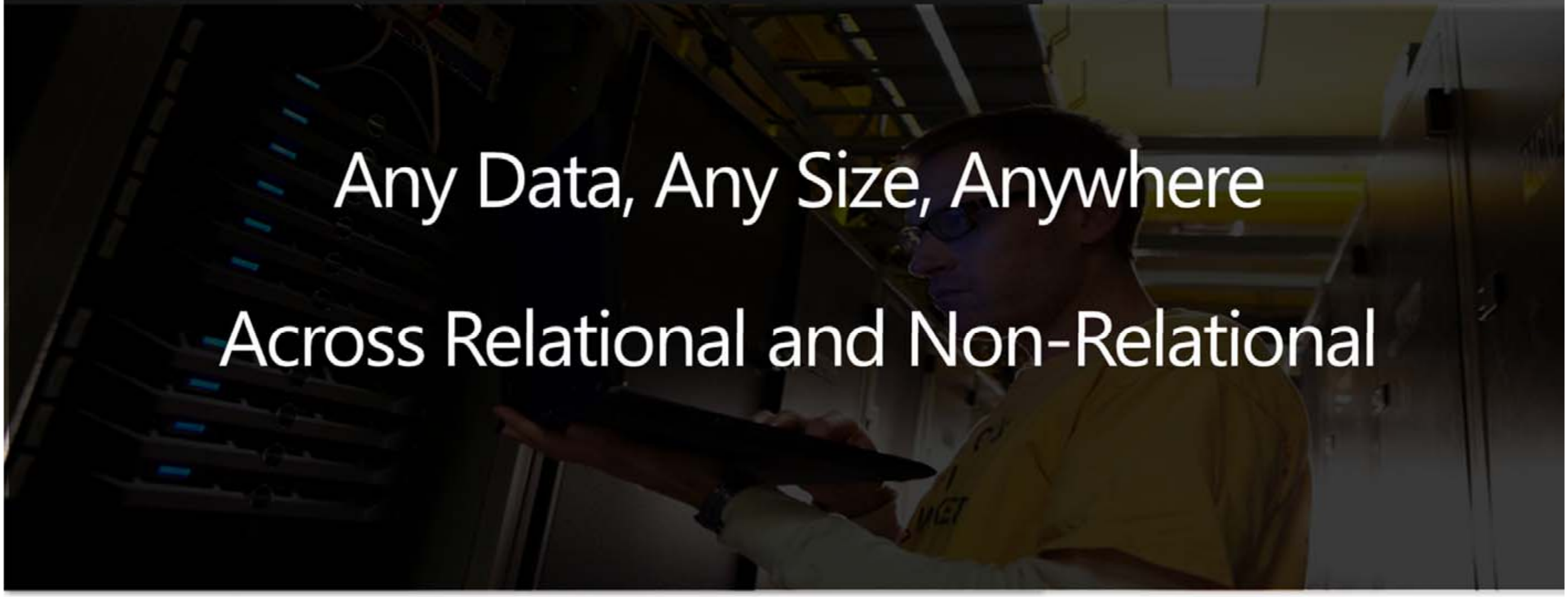
Moovlia_Sales_Analysis
Sales Analysis
CONTOSO

- Find expertise & valuable information
- Connect with colleagues;
- Engage in team discussions and threaded conversations
- Share & collaborate on documents

… in SharePoint.

Microsoft

Familiar | Collaborative | **Complete**

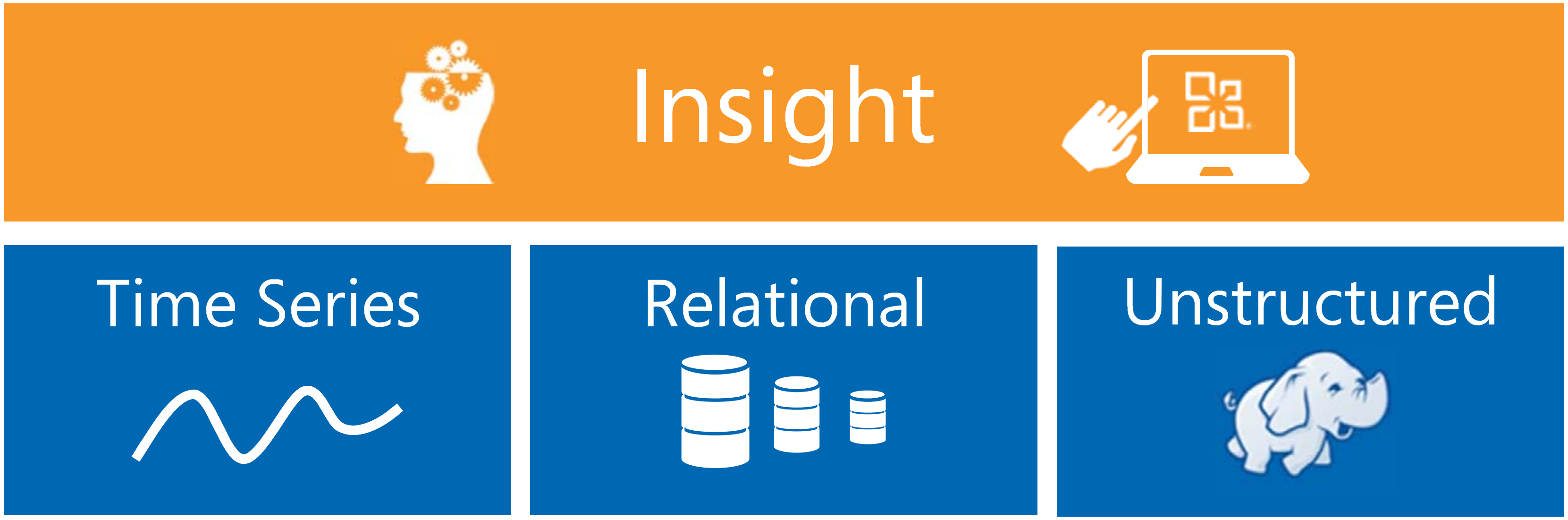


Any Data, Any Size, Anywhere

Across Relational and Non-Relational

Microsoft

Insights for any data, any size, anywhere



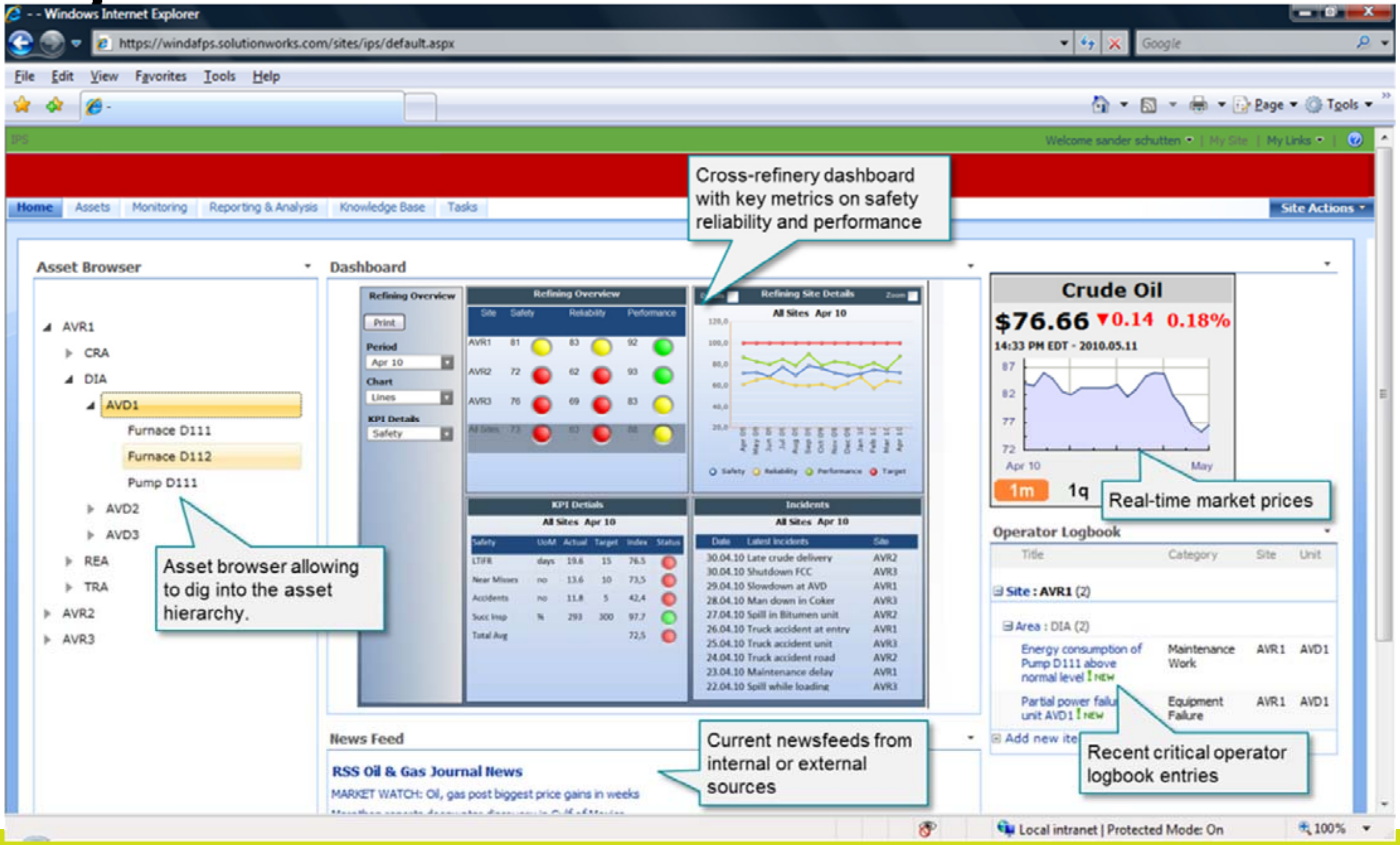
Insight

Time Series

Relational

Unstructured

Examples in M&R sector


- - Windows Internet Explorer
https://windafps.solutionworks.com/sites/ips/default.aspx
Google
File Edit View Favorites Tools Help
Page Tools
IPS
Welcome sander schutten | My Site | My Links
Home Assets Monitoring Reporting & Analysis Knowledge Base Tasks
Site Actions
Asset Browser
AVR1
CRA
DIA
AVD1
Furnace D111
Furnace D112
Pump D111
AVD2
AVD3
REA
TRA
AVR2
AVR3
Dashboard
Refining Overview
Print
Period
Apr 10
Chart
Lines
KPI Details
Safety
Refining Site Details
Zoom
All Sites Apr 10
120,0
100,0
80,0
60,0
40,0
20,0
Safety Reliability Performance Target
Crude Oil
87
82
77
72
Apr 10
May
1m
1q
Operator Logbook
Add new item
News Feed
Local intranet | Protected Mode: On
100%

Cross-refinery dashboard with key metrics on safety reliability and performance

Asset browser allowing to dig into the asset hierarchy.

Real-time market prices

Current newsfeeds from internal or external sources

Recent critical operator logbook entries

Refining Overview

Site	Safety		Reliability		Performance	
AVR1	81	🟡	83	🟡	92	🟢
AVR2	72	🔴	62	🔴	93	🟢
AVR3	76	🔴	69	🔴	83	🟡
All Sites	73	🔴	63	🔴	88	🟡

KPI Detials

All Sites Apr 10

Safety	UoM	Actual	Target	Index	Status
LTIFR	days	19.6	15	76.5	🔴
Near Misses	no	13.6	10	73,5	🔴
Accidents	no	11.8	5	42,4	🔴
Succ Insp	%	293	300	97.7	🟢
Total Avg				72,5	🔴

Incidents

All Sites Apr 10

Date	Latest Incidents	Site
30.04.10	Late crude delivery	AVR2
30.04.10	Shutdown FCC	AVR3
29.04.10	Slowdown at AVD	AVR1
28.04.10	Man down in Coker	AVR3
27.04.10	Spill in Bitumen unit	AVR2
26.04.10	Truck accident at entry	AVR1
25.04.10	Truck accident unit	AVR3
24.04.10	Truck accident road	AVR2
23.04.10	Maintenance delay	AVR1
22.04.10	Spill while loading	AVR3

Crude Oil

$76.66 ▼0.14 0.18%

14:33 PM EDT - 2010.05.11

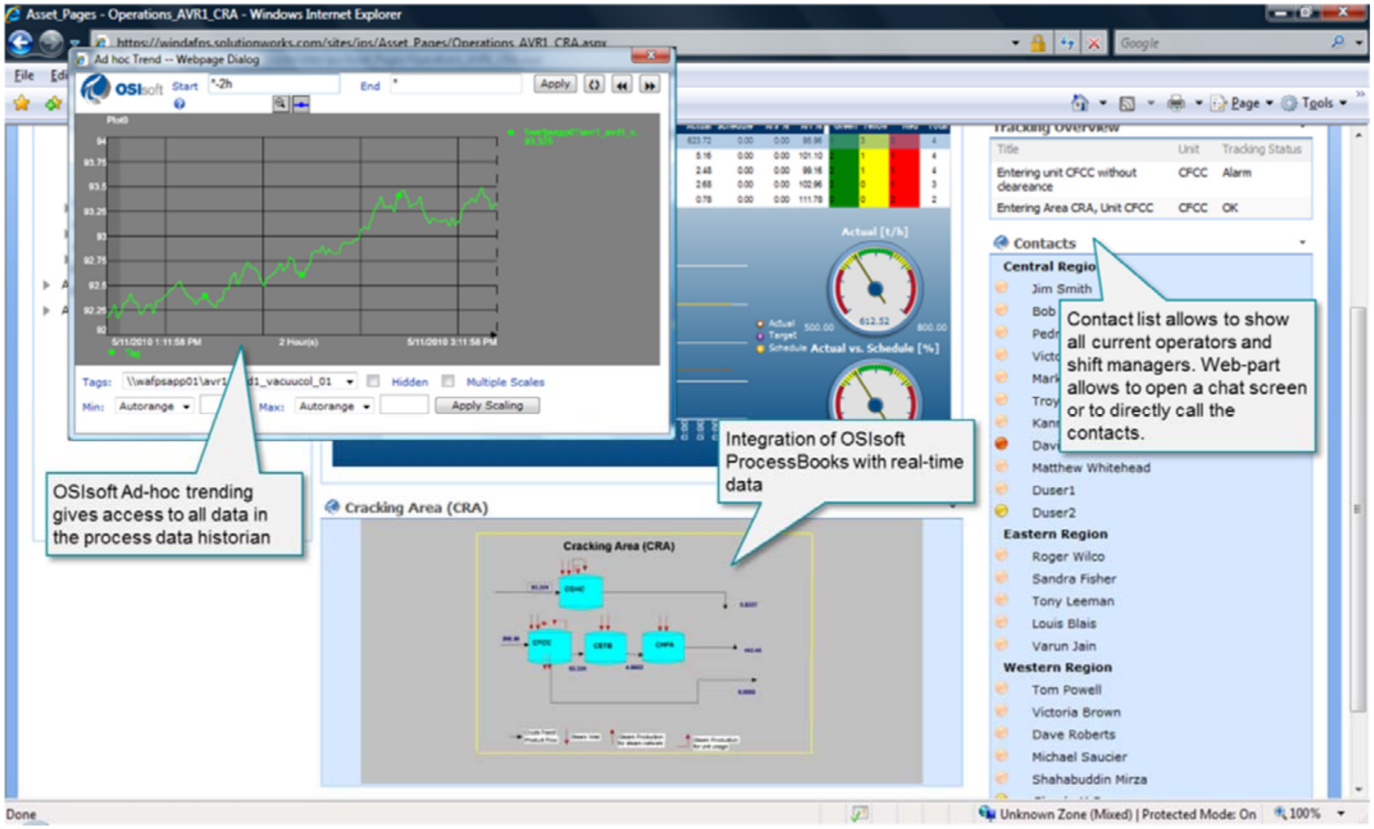
Operator Logbook

Title	Category	Site	Unit
Site : AVR1 (2)			
Area : DIA (2)			
Energy consumption of Pump D111 above normal level ! NEW	Maintenance Work	AVR1	AVD1
Partial power failu unit AVD1 ! NEW	Equipment Failure	AVR1	AVD1

RSS Oil & Gas Journal News

MARKET WATCH: Oil, gas post biggest price gains in weeks

Examples in M&R sector

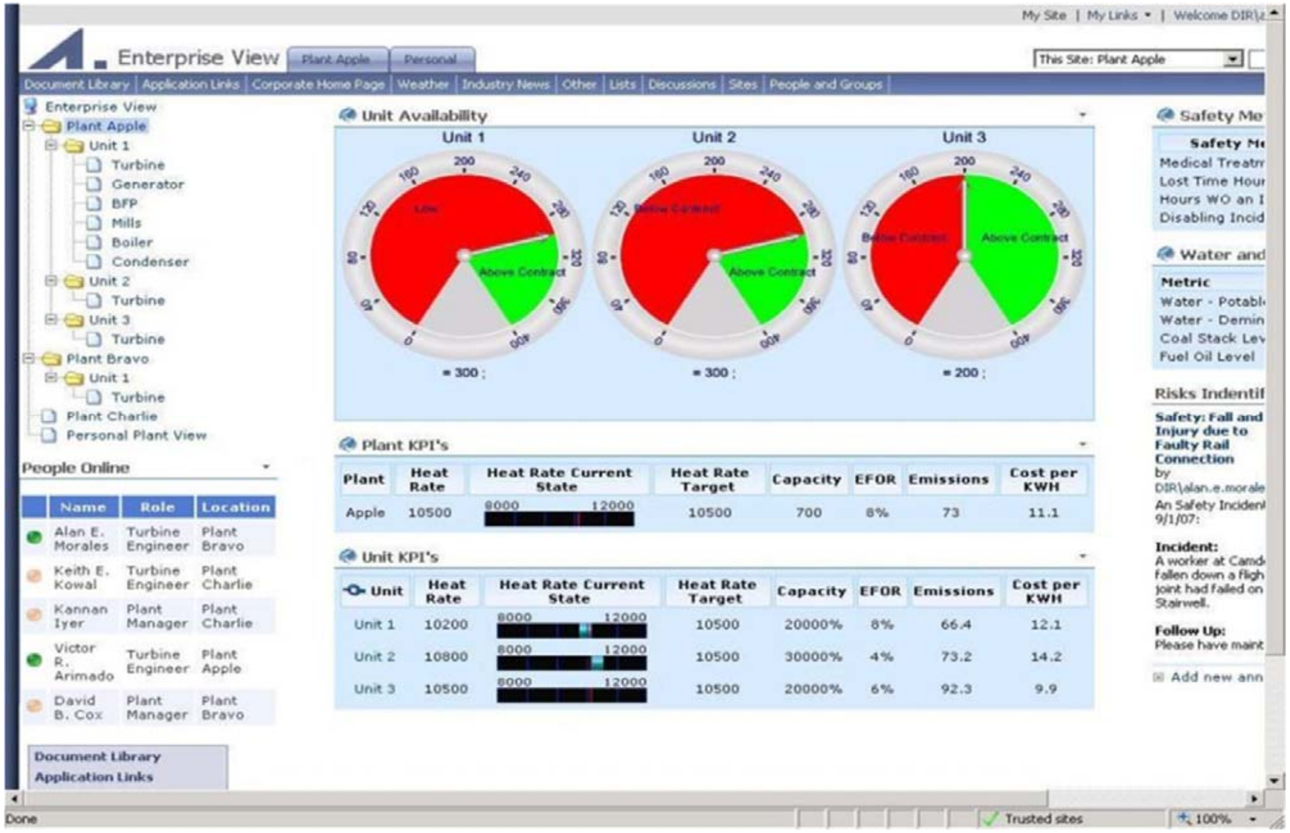

Asset_Pages - Operations_AVR1_CRA - Windows Internet Explorer
https://windafps.solutionworks.com/sites/ips/Asset_Pages/Operations_AVR1_CRA.aspx
Ad hoc Trend -- Webpage Dialog
OSIsoft
Start
*-2h
End
*
Apply
5/11/2010 1:11:58 PM
2 Hour(s)
5/11/2010 3:11:58 PM
Tags:
\\wafpsapp01\avr1_vacuucol_01
Hidden
Multiple Scales
Min:
Autorange
Max:
Autorange
Apply Scaling
Actual [t/h]
Actual vs. Schedule [%]
Tracking Overview
Title
Unit
Tracking Status
Entering unit CFCC without clearance
CFCC
Alarm
Entering Area CRA, Unit CFCC
CFCC
OK
Contacts
Central Region
Jim Smith
Matthew Whitehead
Duser1
Duser2
Eastern Region
Roger Wilco
Sandra Fisher
Tony Leeman
Louis Blais
Varun Jain
Western Region
Tom Powell
Victoria Brown
Dave Roberts
Michael Saucier
Shahabuddin Mirza
Cracking Area (CRA)
Done
Unknown Zone (Mixed) | Protected Mode: On
100%

OSIsoft Ad-hoc trending gives access to all data in the process data historian

Integration of OSIsoft ProcessBooks with real-time data

Contact list allows to show all current operators and shift managers. Web-part allows to open a chat screen or to directly call the contacts.

Examples in M&R sector


My Site | My Links | Welcome DIR\a
Enterprise View
Plant Apple
Personal
This Site: Plant Apple
Document Library | Application Links | Corporate Home Page | Weather | Industry News | Other | Lists | Discussions | Sites | People and Groups
Enterprise View
Plant Apple
Unit 1
Turbine
Generator
BFP
Mills
Boiler
Condenser
Unit 2
Turbine
Unit 3
Turbine
Plant Bravo
Unit 1
Turbine
Plant Charlie
Personal Plant View
Unit Availability
Unit 1
Low
Above Contract
= 300 ;
Unit 2
Below Contract
Above Contract
= 300 ;
Unit 3
Below Contract
Above Contract
= 200 ;
Document Library
Application Links
Done
Trusted sites
100%

People Online

	Name	Role	Location
●	Alan E. Morales	Turbine Engineer	Plant Bravo
●	Keith E. Kowal	Turbine Engineer	Plant Charlie
●	Kannan Iyer	Plant Manager	Plant Charlie
●	Victor R. Arimado	Turbine Engineer	Plant Apple
●	David B. Cox	Plant Manager	Plant Bravo

Plant KPI's

Plant	Heat Rate	Heat Rate Current State	Heat Rate Target	Capacity	EFOR	Emissions	Cost per KWH
Apple	10500	8000 12000	10500	700	8%	73	11.1

Unit KPI's

Unit	Heat Rate	Heat Rate Current State	Heat Rate Target	Capacity	EFOR	Emissions	Cost per KWH
Unit 1	10200	8000 12000	10500	20000%	8%	66.4	12.1
Unit 2	10800	8000 12000	10500	30000%	4%	73.2	14.2
Unit 3	10500	8000 12000	10500	20000%	6%	92.3	9.9

Safety Me

Safety M
Medical Treatm
Lost Time Hour
Hours WO an I
Disabling Incid

Water and

Metric
Water - Potabl
Water - Demin
Coal Stack Lev
Fuel Oil Level

Risks Indentif

Safety: Fall and Injury due to Faulty Rail Connection
by DIR\alan.e.morale
An Safety Inciden
9/1/07:

Incident:
A worker at Camd
fallen down a fligh
joint had failed on
Stairwell.

Follow Up:
Please have maint

Add new ann

Microsoft

Demo

Excel 2013 and PowerView

LONDON
2012
GAMES
OLYMPIC
BROADCAST
OLYMPICS
RIGHTS
SPORTS
IOC
COMMITTEE
LOGO
VENUES

Question of everybody's mind

How many countries have sent more female boxers to the London Olympics than men?

Q &A

THANK YOU

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