MAXIMO asset management

Smart Industry view

IBM Software

PCTY2010

Pulse Comes to You

Optimizing the World's Infrastructure

[**June 10.** Madrid]

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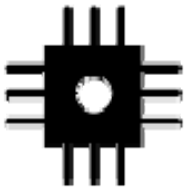
Consider how our world is changing:

Our world is becoming more…



INSTRUMENTED

- **By 2010, 30 billion** embedded RFID tags in our daily life, communicating across the entire ecosystem
- **1/2 of all sensors** in transportation, facilities & production equipment are smart sensors (e.g. robots, kiosks, meters, PDAs, appliances, cameras, smart phones, biometric devices, turnstiles or the Web.
- By 2010, **12% of new cars** will ship with embedded telematics.

INTERCONNECTED

- **1/3 of the world's population** is utilizing the Web by 2011
- **4B mobile subscribers** globally at the end of 2008
- The **interconnection of people and things**—customers, drivers, employees, roads, aircraft, airports, cargo, suppliers—creates the ability to improve performance and **quicker decision making**

INTELLIGENT

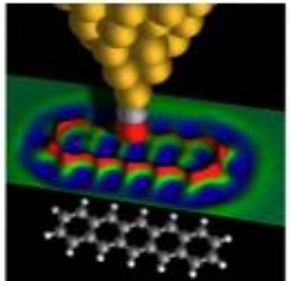
- **15 petabytes of new information** generated every day.. (8x more than the information in all U.S. libraries)
- An average company of 1,000 employees spends $5.3 million a year to **find information** stored on its servers.
- Sophisticated **analytic systems** enable patterns to be recognized, relationships to be drawn and **continuous decision making** and in near **real time to drive smarter outcomes**

The world is getting smarter

Smart traffic systems

Smart oil & gas technologies

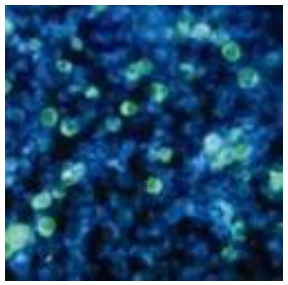
Smart food systems



Smart healthcare

Smart energy management

Smart retail



Smart water management

Smart supply chains

Smart manufacturing

Smart buildings

Smart cities

Smart regions

The transformation to a “smart” approach

It enables you to become more efficient, productive and responsive.

Smart Asset Management

We've thought about IT as the world of data centers, software, PCs, routers, bandwidth.

We've thought about infrastructure as the world of buildings, factories, hospitals, roads, pipeline.

These worlds are converging.

In a smaller, flatter, faster and "smarter" planet we face…

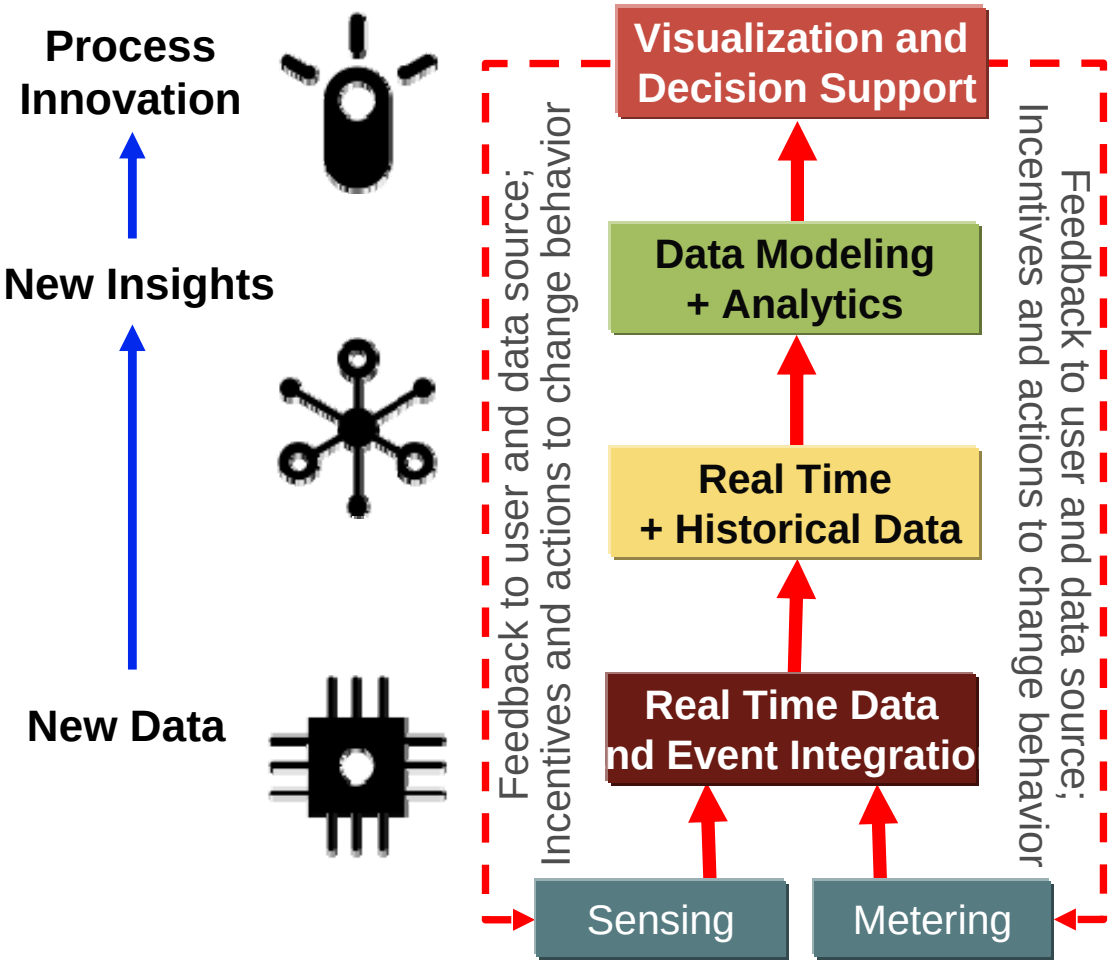
More *complexity in assets and processes*
More *capabilities required*
More *reliance on management systems*

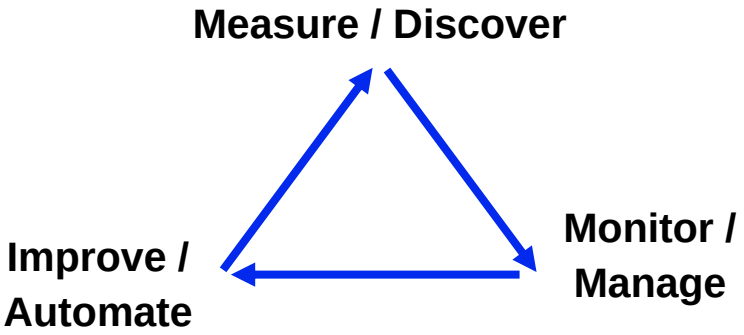
But, we also have the opportunity to achieve…

More *insight and collaboration*
More *efficiency, growth and profit*
More *innovation*

What does SMART mean …..

Deploy available and Improved intelligence

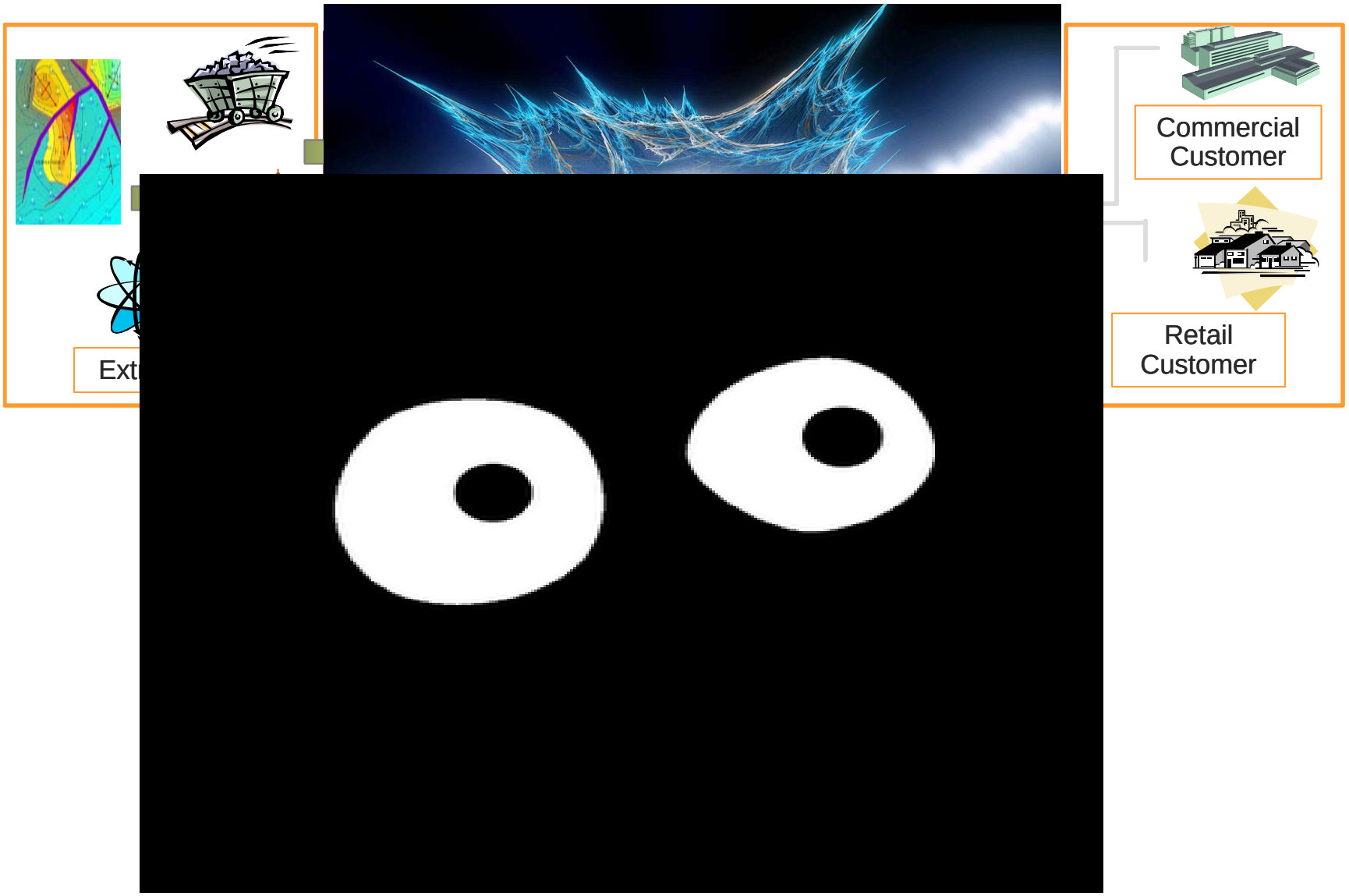




- **Data modeling and analytics to create insights from data to feed decision support and actions**
  - Build a scorecard
- **Proactively develop responses**
  - What is likely to happen in the future ?
  - What action will drive the best outcome ?
- **Comparison of historical data, with newly collected data**

What is Asset Management (AM)

UTILITIES



What is Asset Management (AM)

HEALTH CARE

What is Asset Management (AM)

Visibility

See your assets

Control

Govern your assets

Automation

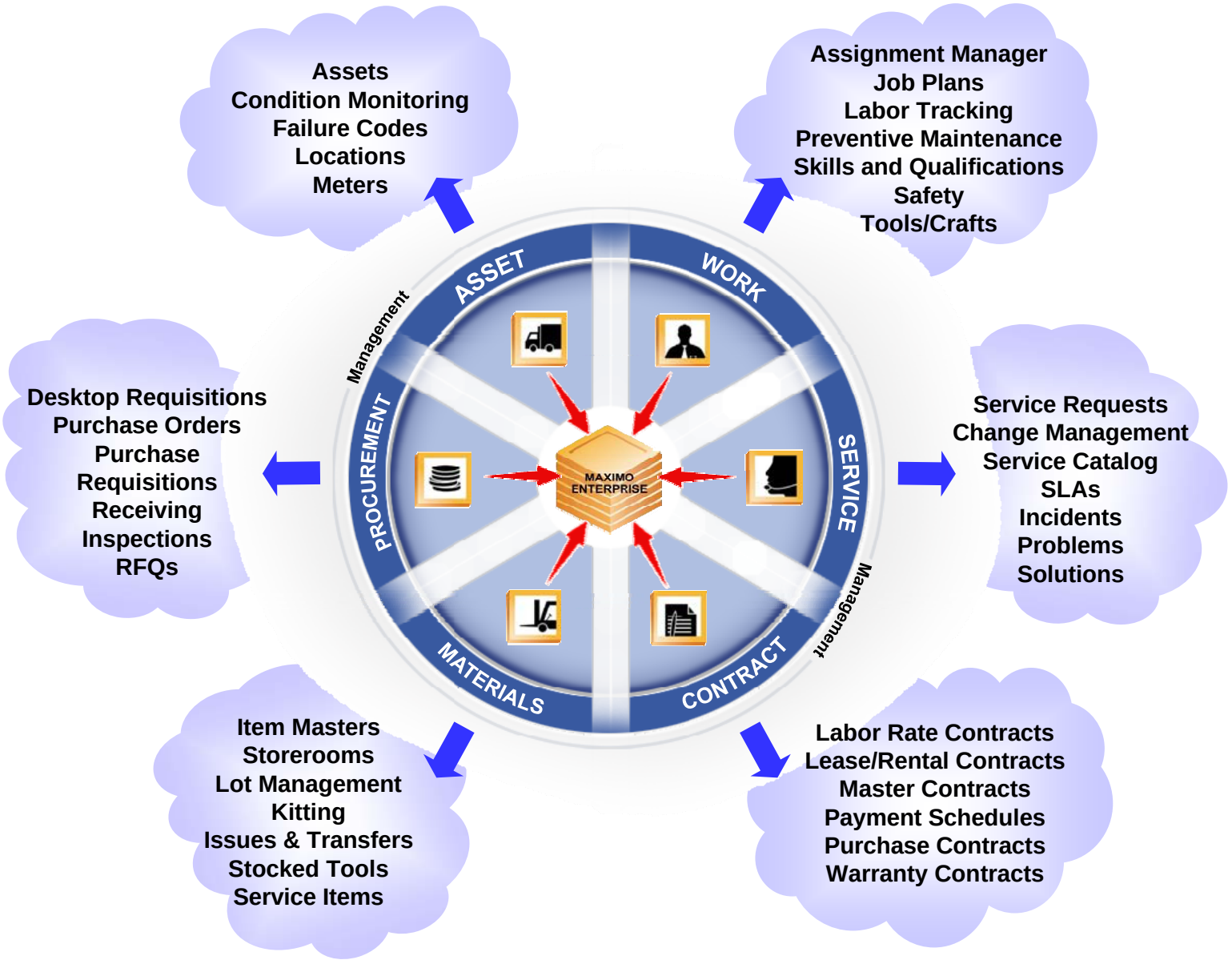
Build agility into Operations

- What do I have?
- Who is using it?
- How is it used?
- What does it cost?
- Where is it?
- How is it connected?

- **S** afe
- **M** aintainable
- **A** vailable
- **R** eliable
- **T** raceable

AM brings value to your Business

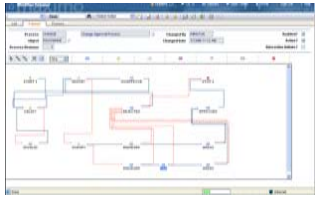
Maximo – End-to-end Asset Lifecycle Management



Spatially Enabled

Mobile

BPA



Scalable J2EE Architecture

Configure, not Customize

Open Integration Interfaces

SAP and Oracle Integration

Role-based User Interfaces

Smart Asset Management

SMART IS: IT Asset Management
Track and manage the lifecycle of IT assets

- Manage security policy compliance
- Track hardware and software deployment
- Manage audit, license, lease and software compliance exposures
- Combine inventory, maintenance, contacting processes

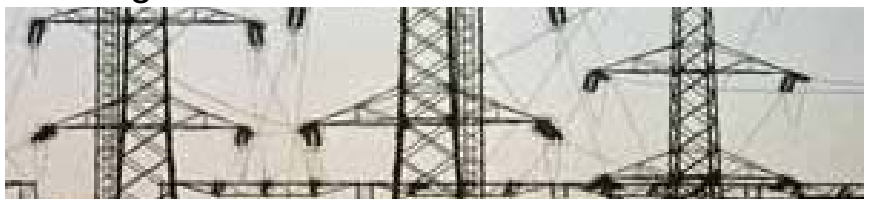
SMART IS: Consolidated Asset Management
Manage the lifecycle of all critical assets

- Address all types of assets: Production, Delivery, Transportation, Facilities, Infrastructure and IT
- Enforce best practices across the enterprise
- Ensure safe and reliable operations

SMART IS: Converged Assets
Leverage operational assets with embedded IT

- Physical devices are becoming IP enabled - smart meter.
- Embedded IT improves asset performance
- Enable remote monitoring and automation.

SMART IS: Deep Industry Functionality
Meeting the needs of asset intensive industries



- Industry specific solutions for Nuclear Power, Utilities, Transportation, Life Sciences, and Oil & Gas,
- Supporting infrastructure with Spatial and Linear Asset Management

SMART Utilities

- Smart GRID
- Smart Metering

IBM Software

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Smart Asset Management in Utilities

SMART is: providing real-time information about the flow of energy; as an intelligent utility system helps citizens and utilities make smarter, more responsible choices about buying, selling and managing utility services.

SMART is:
Ability to predict problems helps prevent outages

Southern Power use Maximo Asset Management to help staff proactively manage and maintain all infrastructure assets. This will help to reduce costs, provide staff with greater insight into operations and efficiently maintain an audit trail for compliance activities.

San Francisco Public Utilities Commission implemented an Asset Management solution to properly manage and maintain the city's wastewater system. Combining IBM Maximo software with IBM Cognos® 8 Business Intelligence and ESRI's ArcGIS provides better visibility to the physical infrastructure and maintenance operations has led to an 11% approximate improvement of preventive to corrective maintenance

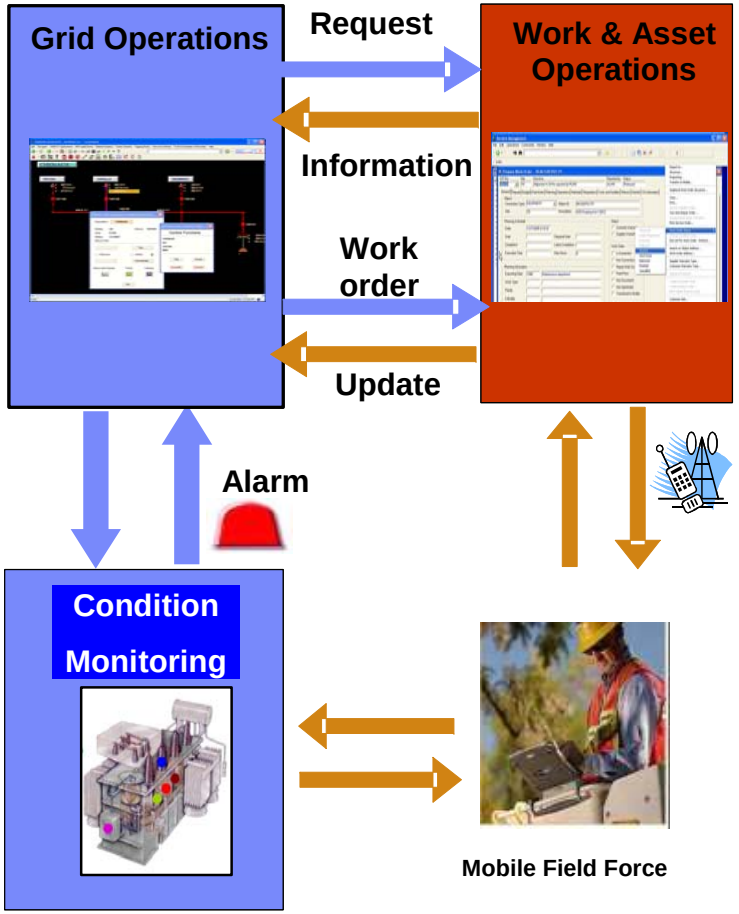
Electricite Reseau Distribution France
ERDF has implemented a condition-based asset management and maintenance system to be ready for the future: visibility and control of key information and to get: Greater insight into operations take preventive action to avoid asset breakdowns and outages; comprehensive cost analysis to optimize resource allocation, improved knowledge

How AM data can be used to improve Grid Operations

Use Case One : A transformer oil temperature alarm is raised at EMS level

Operator has to decide whether the transformer needs to be put out of service or not

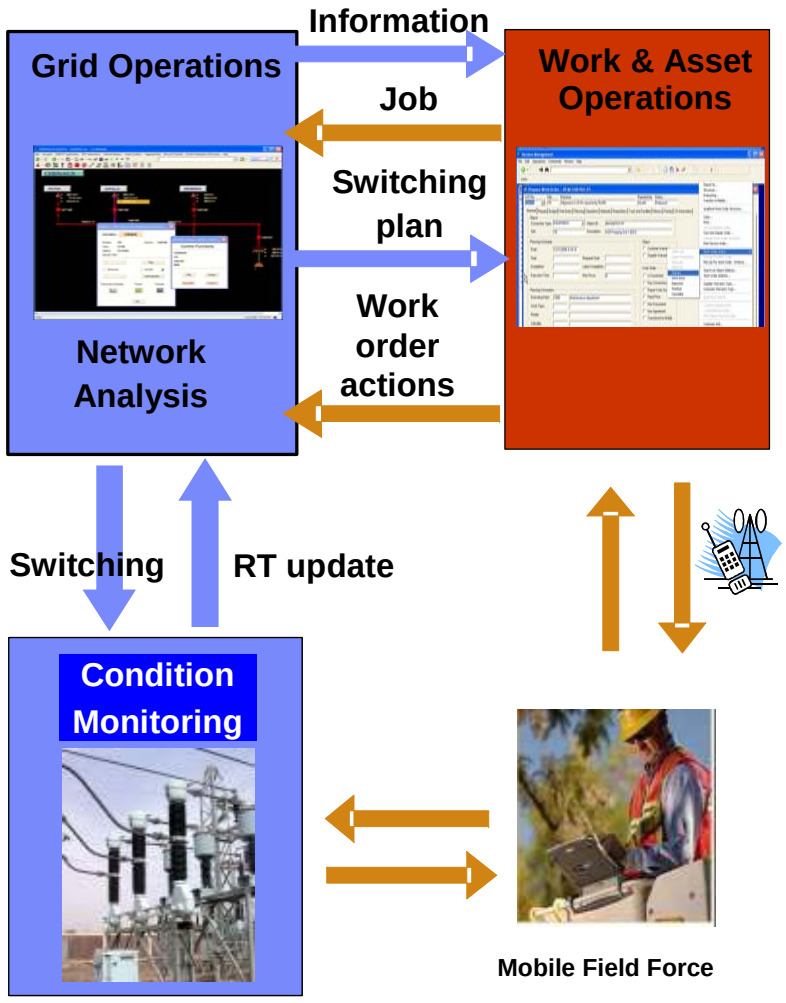
- Benefits :
  - Optimized reaction to abnormal conditions
  - Consistent and up-to-date maintenance information across grid operation and EAM
- Sequence :
  - Transformer selected in EMS UI
  - Past work orders and equipment Asset data retrieved from EAM
  - EMS operator reviews history,
  - Predictive analysis on the Transformer makes recommendations
  - Operator may trigger a maintenance Job into EAM
  - EAM writes a Tag to the EMS to show « on-going maintenance »



How grid operations data can be used by the EAM system

Use Case Three : Improve reliability while performing asset maintenance
Example : Circuit Breaker maintenance

- Benefits :
  - Improved reliability
  - Safety rules and procedures tracking
  - Consistent and up-to-date maintenance information across Grid Operations and EAM
- Sequence :
  - Maintenance Job is triggered by real time status data coming from EMS
  - EAM requests EMS to compute a switching plan
  - Suite of switching tasks is captured in an EAM Job Safety plan
  - Additional Field and Safety actions are added by EAM
  - Safety documents are initiated
  - Workflows are activated for the various approvals before execution
  - Job is executed: EMS related actions are automatically carried out from the EAM
  - Job is archived



SMART Utilities

- Smart GRID
- Smart Metering

IBM Software

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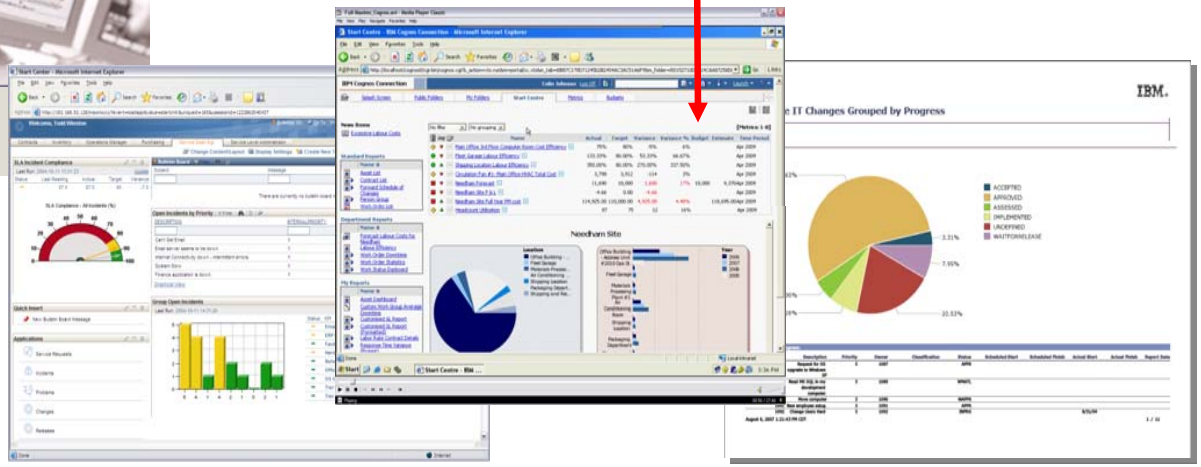
Maximo complementary to Smart Metering software

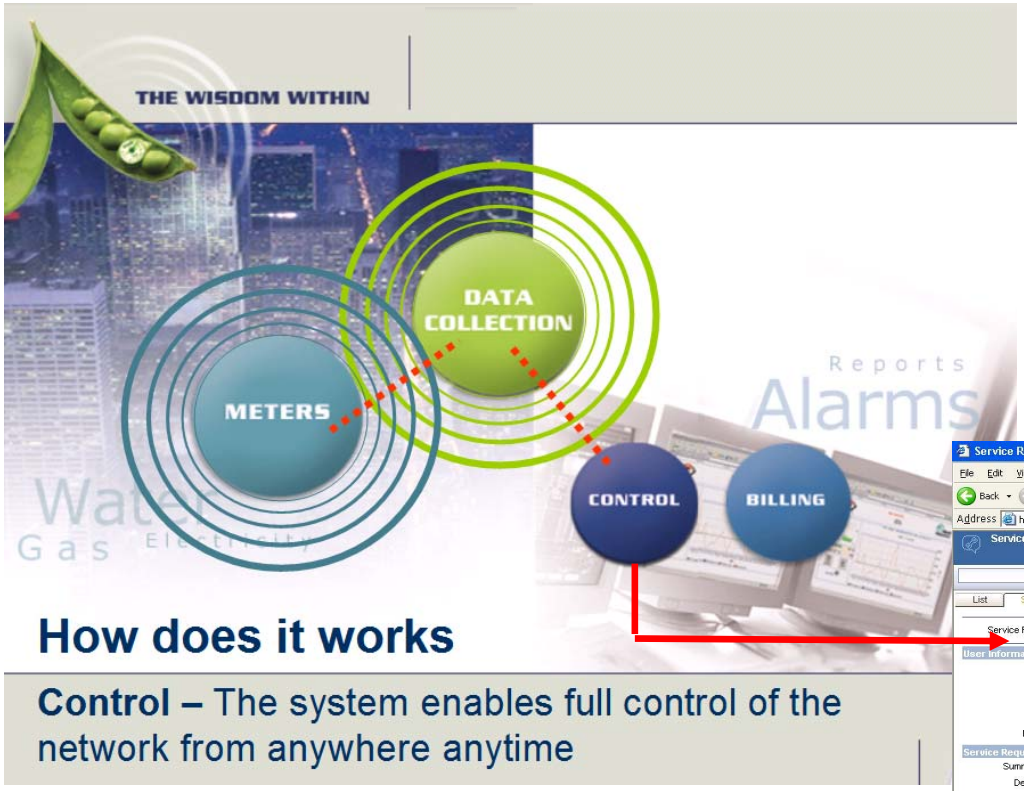
Data collection - Sophisticated and diverse data collection systems

Use Smart metering master data as:

- Asset and location operational data
- Analysis data

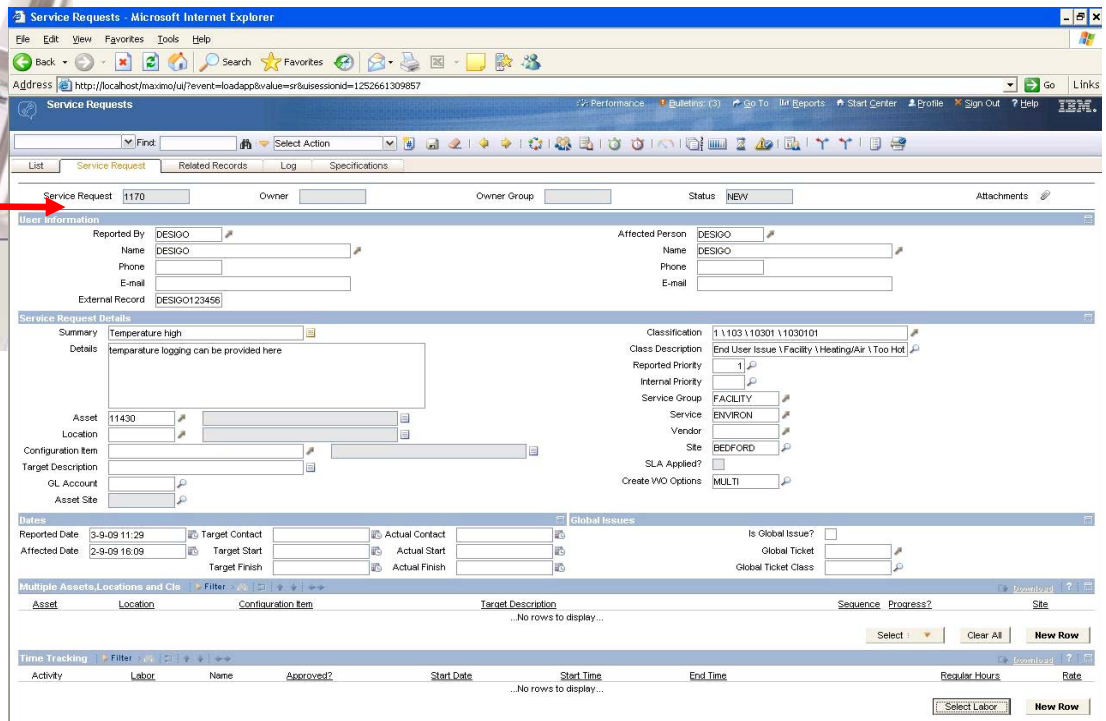


Maximo complementary to Smart Metering software



Use real time warnings as:

- Data for service process
- Start for automated service process
  - enable work force
  - enable vendor or service provider
  - allocate materials and tools



SMART Health Care

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Smart Asset Management in Healthcare

On a smarter planet, imagine if . . .

EMT teams could **collaborate** with hospital physicians in real-time, using secure, integrated patient information?

Clinicians could **educate and inform patients** in their hospital rooms using integrated information on a single physical display?

A **single view** could instantly tell you the location of every critical patient care asset in the hospital – in real-time?

Integrated patient information were available to physicians consulting on a diagnosis, independent of time or location?

A **single dashboard** could provide visibility to everything that generates energy in your facility?

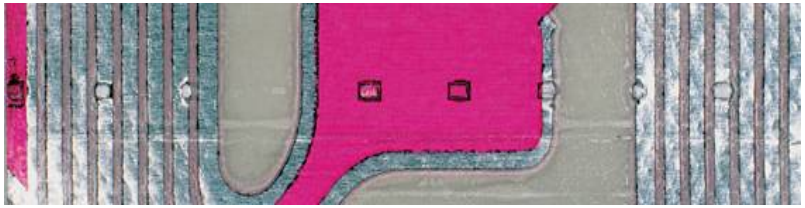
You could know which beds or other equipment in your hospital **are truly available** for admitting patients – NOW?

You know (in real-time) where all **critical and necessary asset, tools, equipment (and people) are located ?**

Smart Asset Management in Healthcare:

SMART IS

Helping doctors to locate and prioritize patients for care by automatically tracking and recording the position of patients, medical devices and assets.



SMART IS

Gaining real-time line of sight and responses to individualized health information.

SMART IS

Simplifying future growth and integration efforts with a standardized architecture.

SMART IS

Protecting your patients and staff through immediate connection and visibility to their location.

SMART IS

Smart is expanding user access to information and reducing operating and maintenance costs at the same time.

SMART IS

Treating the patient before the patient arrives at the hospital.

Issues

Real-time asset visibility impacts productivity and cost control

Excess Expense & Capital Expenditure

- Do I over-procure mobile assets?
- How much safety stock do I maintain?
- Am I paying excessive amounts for rental equipment?

Asset loss

- How much equipment do I lose annually?
- Can losses be reduced?

Operational Efficiency

- Are my staff spending valuable time searching for equipment to do their job?
- Is product impacted by asset misallocation?
- Are audit, validation and compliance procedures easy to carry out?

Asset Utilization

- Do I know my asset utilization rate?
- How do I set reasonable targets for utilization?

Benefits of Location & Condition enabled Asset Mngt

Real-time asset visibility impacts productivity and cost control

Excess Expense & Capital Expenditure

- Eliminate “Asset Not Found”
- Reduce inventory levels
- Decrease rental equipment costs

Asset loss

- Inside of loss and theft of mobile assets
- Decrease by 10% of misplaced or lost equipment annually

Operational Efficiency

- Less wasted time because of manually tasks
- Critical staff will reduce the time spend (10-30%) of searching for assets.

Asset Utilization

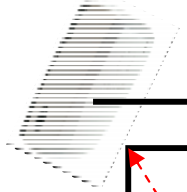
- Supports compliance with PM and calibration
- Shift to Predictive model with real-time capabilities

Real Time Location Services for Asset Management

Sensor-tagged assets send location information → *RTLS processes location events & interfaces to Maximo Asset Management* → *Enabling new business use cases and workflows*

Reader

Placed in the area that needs to be monitored

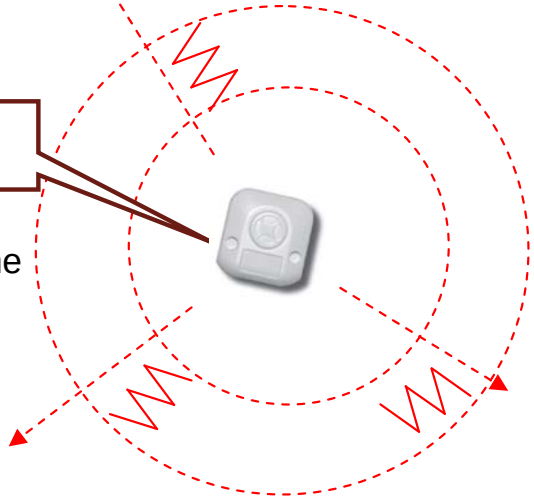


x,y,z location information

Real-time Location Services

Maximo Asset Management

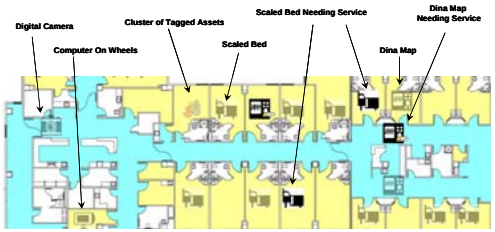
Tag



Placed on/in the asset

- **Location monitoring**
- **History management**
- **Zone management**
- **Complex event processing – alerts**
- **Web UI**

Web-based UI



Improved Workflows

- Location & condition enabled asset management
- EAM integration for PM, repair, inventory mgmt.
- Location and related business events trigger workflow
- Real-time location visualization
- Analytics provide KPIs and visibility related to inventory, utilization and exceptions

SMART Buildings

- Intelligent Building Systems
- Energy and Environment
- Space Management

IBM Software

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Smart Buildings

SMART IS
Create facilities that are cost effective for their owners, reducing energy and operational cost.

Mabuchi-motors:
Designed, built and maintain an intelligent HQ building in Japan that delivered 22% reduction of CO_2, 13% reduction of life cycle cost.

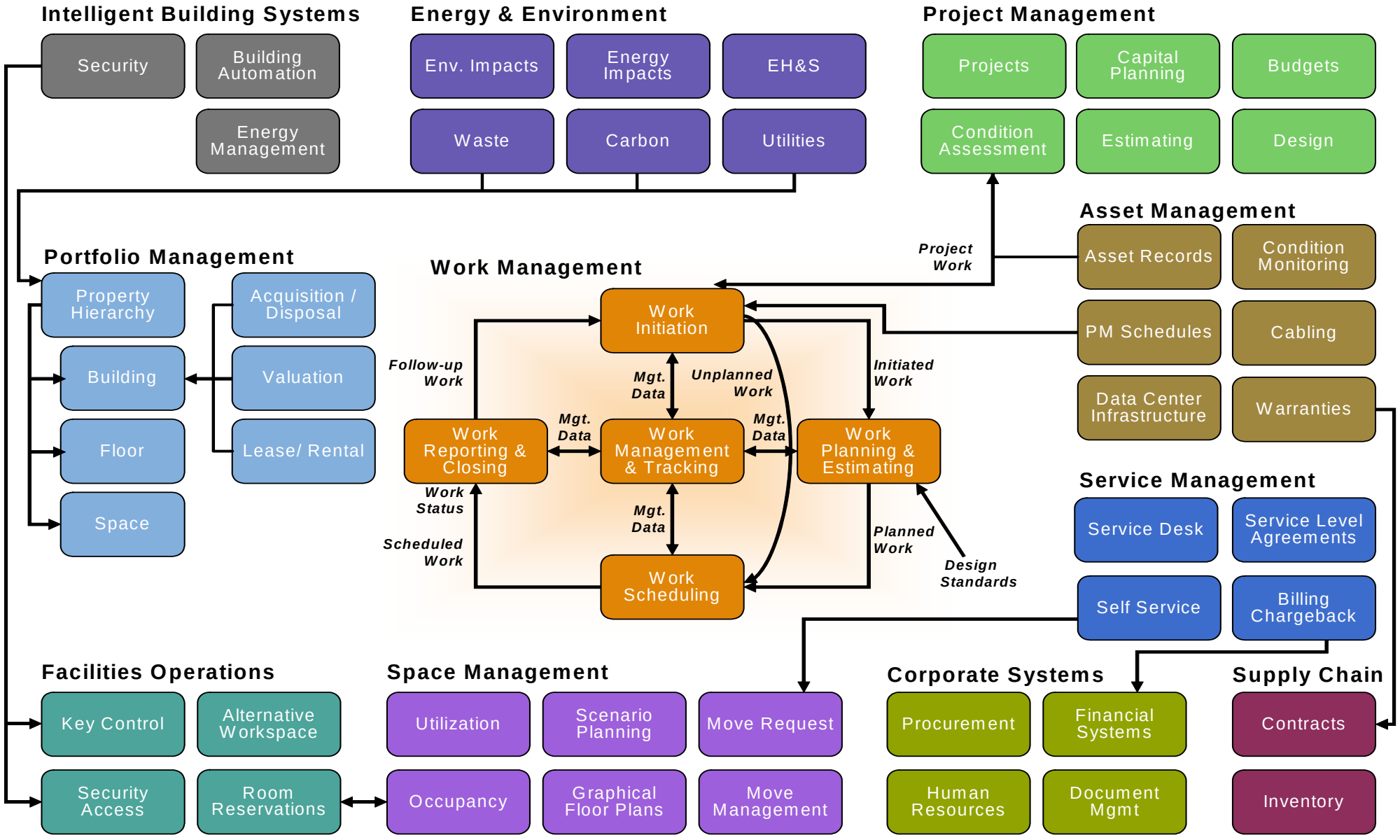
SMART IS
Running Buildings operationally efficient, comfortable and productive for its occupants

State of MO:
Saving $35.6M annually from real estate, operations, utilities, and operations creating a ROI of less than one year. Eliminated 205 million pounds of CO2 equivalent emissions which is equal to that of 40 coal-fired power plants.

SMART IS
Integration of Energy information related to Asset Management: meaning safer, more secure and focused on safeguarding the environment.

Ave Maria University:
Converged 23 systems to single IP network. Integrated JCI Metasys with IBM Maximo Asset Management. Saved $1M in building costs and $350K/yr in combined operating costs

Maximo Facilities Management Solution Map



Building Technologies - Areas of activity

Security

Fire Safety

Building Automation

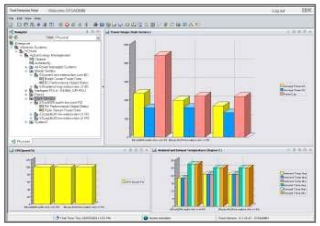
Energy Efficiency

Low Voltage Distribution

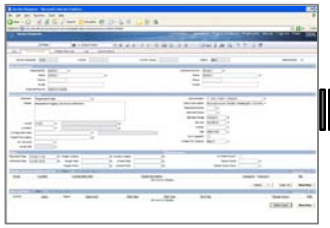
Total Building Solutions

Service & Asset Mgt - Outage scenario

BMS Alert



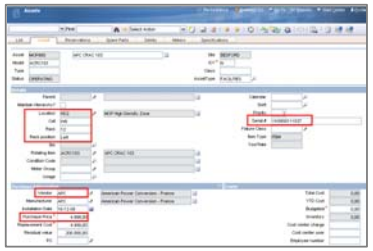
Monitoring & Correlation



Service Desk

Notification & Work orders

FM team

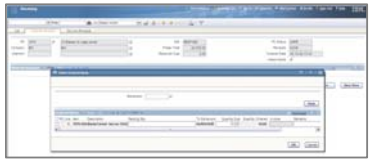


Asset definition & info

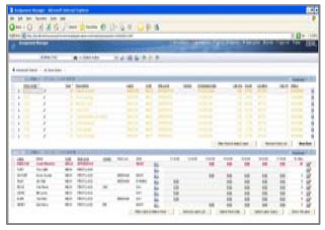
IT team

BMS investigation

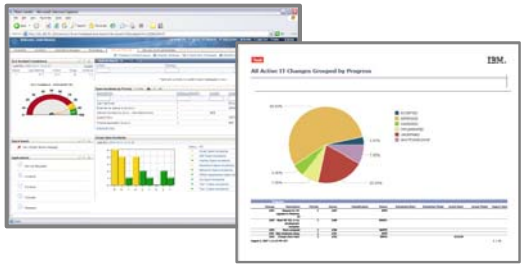
CCMDB browse for crac – physical server relation



CCMDB browse for server – business apps relation



Decisions & Actions



Dash Boards and reporting with all kind of specific ratio's

User benefits

Service Provider

Effective Colaboration

- Streamline Operation
- Improve Services
- Maximize Efficiency
- Reduce Cost
- Manage Risk

IT-department

End-user

- Ease of Entrance
- High Reliability
- High Availability
- High Satisfaction
- Optimal Experience

SMART Buildings

- Intelligent Building Systems
- Energy and Environment
- Space Management

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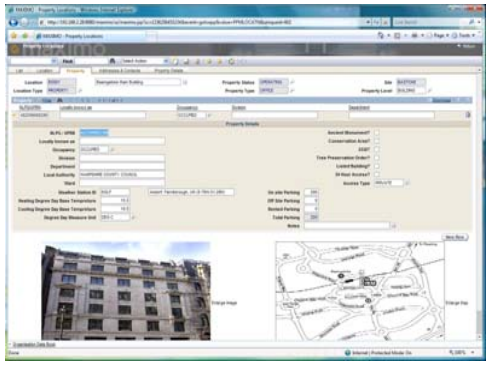
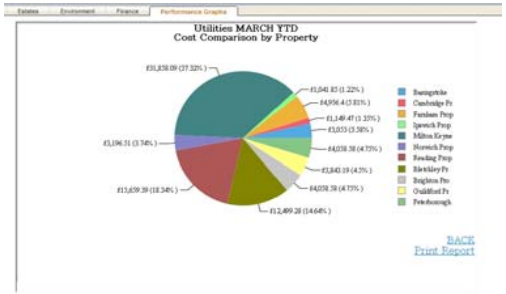
Maximo Property Performance Management System





“Data Books”

Global → ‘Geos’ → Countries → Regions → Areas

Roles
- Area Estates Manager
- Area Facilities Manager
- Area Environmental Manager
- Area Projects Manager

Areas → Properties

“Property Level Roles”

Properties → Buildings, Land

- Property Estates Manager
- Property Facilities Manager
  - Property Space Manager
- Property Environmental Manager
  - Property Utilities Manager
  - Property Waste Manager
- Property Projects Manager

Estates Manager
- Portfolio List
- Acquisitions
- Disposals
- Real Estate (Freeholds)
- Leases
- Valuations
- GIS

Facilities Manager
- Assets
- Surveys
- Work
- Help Desk
- Operations
- Space
- Occupancy

Environmental Manager
- Environmental Impacts
- Energy Impacts
- Utilities
- Waste
- Carbon
- Health & Safety

Projects Manager
- Design
- Budgets
- Planning
- Project Progress
- Projects Costs

Property Locations

Go To | Reports | Start Center | Profile | Sign Out | Help

Find: | Select Action

List | **Location** | Space | FM | Environment | Estates | M & E Assets

From Space System

From Security System

Location	BASINGSTOKE	Basingstoke Normandy House	
Region	UK		
Attachments			
Building Status	OPERATING		
Occupancy	Occupied		
Type *	PROPERTY		

Filter | 1 - 1 of 1 | Download

Main Use	Net Rentable (Corporate)	WS Capacity	OCC 30 Day Avg	Size Band
OFFICE	96,390	717	574	

New Row

Property Information

Address 1	Normandy House
Address 2	Bunnian Place
Address 3	Alencon Link
City / Town	Basingstoke
County	Hants
Post Code	RG21 7EJ
Country	UK
Area	South

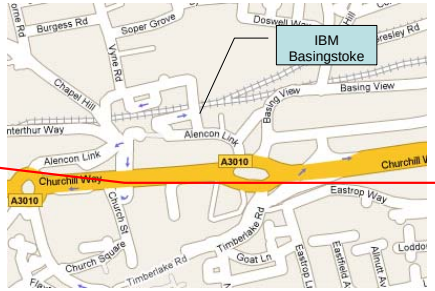
Contact Information

Person	8PRO266
Contact Name	John Smith
Contact Function	Facilities Manag
Primary Phone	01131-112777
Out of Hours Phone	07611-345678
Primary E-mail	John Smith@property.manager.com

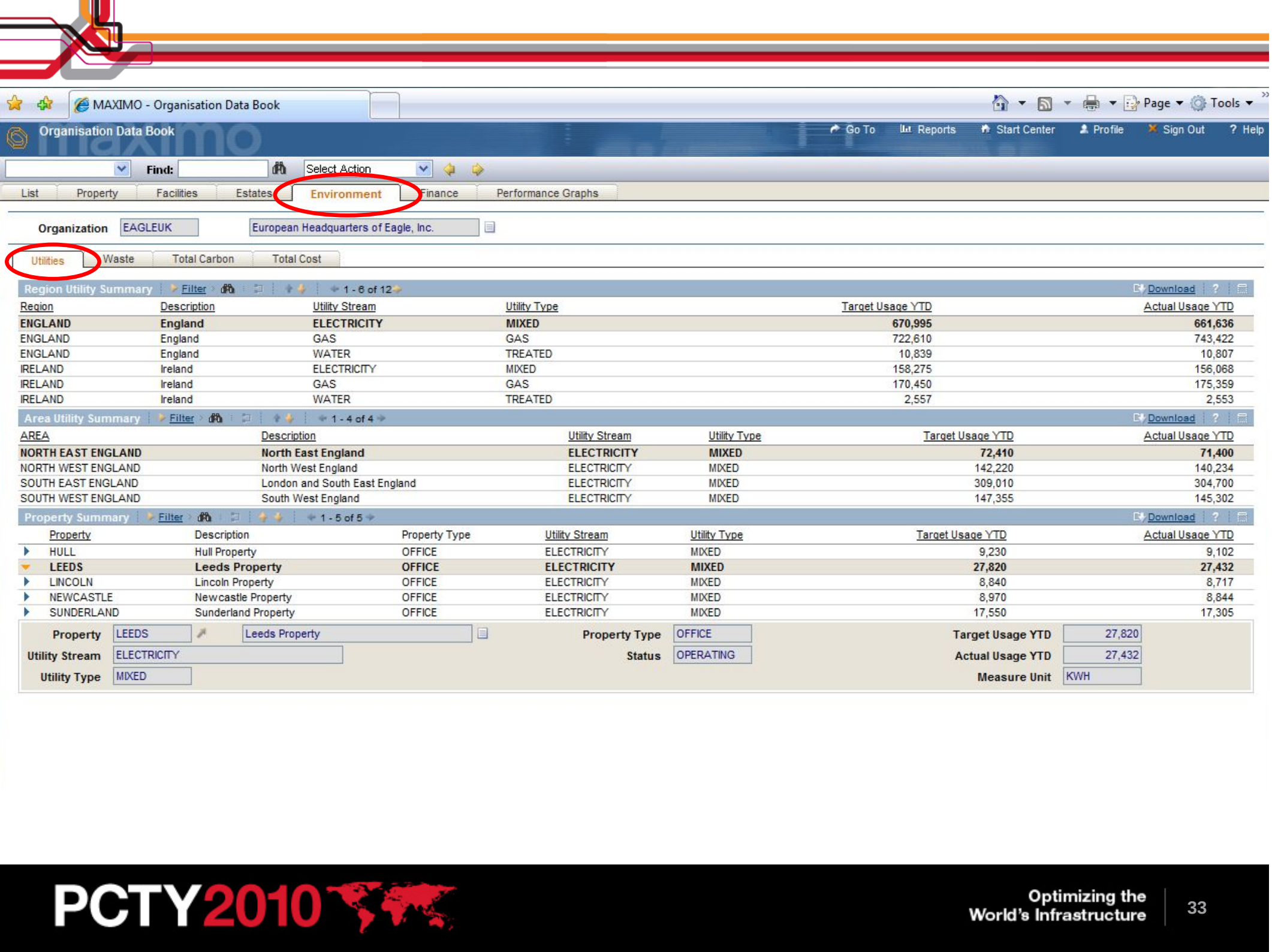
From HR System

Other Information

On Site Parking	284
Off Site Parking	82
Rented Parking	0
Subsidiary	
Tenure Belongs To	



From Estates System


MAXIMO - Organisation Data Book
Page
Tools
Organisation Data Book
Go To
Reports
Start Center
Profile
Sign Out
Help
Find:
Select Action
List
Property
Facilities
Estates
Environment
Finance
Performance Graphs
Organization
EAGLEUK
European Headquarters of Eagle, Inc.
Utilities
Waste
Total Carbon
Total Cost
Region Utility Summary
Filter
1 - 6 of 12
Download
Region
Description
Utility Stream
Utility Type
Target Usage YTD
Actual Usage YTD
ENGLAND
England
ELECTRICITY
MIXED
670,995
661,636
ENGLAND
England
GAS
GAS
722,610
743,422
ENGLAND
England
WATER
TREATED
10,839
10,807
IRELAND
Ireland
ELECTRICITY
MIXED
158,275
156,068
IRELAND
Ireland
GAS
GAS
170,450
175,359
IRELAND
Ireland
WATER
TREATED
2,557
2,553
Area Utility Summary
Filter
1 - 4 of 4
Download
AREA
Description
Utility Stream
Utility Type
Target Usage YTD
Actual Usage YTD
NORTH EAST ENGLAND
North East England
ELECTRICITY
MIXED
72,410
71,400
NORTH WEST ENGLAND
North West England
ELECTRICITY
MIXED
142,220
140,234
SOUTH EAST ENGLAND
London and South East England
ELECTRICITY
MIXED
309,010
304,700
SOUTH WEST ENGLAND
South West England
ELECTRICITY
MIXED
147,355
145,302
Property Summary
Filter
1 - 5 of 5
Download
Property
Description
Property Type
Utility Stream
Utility Type
Target Usage YTD
Actual Usage YTD
HULL
Hull Property
OFFICE
ELECTRICITY
MIXED
9,230
9,102
LEEDS
Leeds Property
OFFICE
ELECTRICITY
MIXED
27,820
27,432
LINCOLN
Lincoln Property
OFFICE
ELECTRICITY
MIXED
8,840
8,717
NEWCASTLE
Newcastle Property
OFFICE
ELECTRICITY
MIXED
8,970
8,844
SUNDERLAND
Sunderland Property
OFFICE
ELECTRICITY
MIXED
17,550
17,305
Property
LEEDS
Leeds Property
Property Type
OFFICE
Target Usage YTD
27,820
Utility Stream
ELECTRICITY
Status
OPERATING
Actual Usage YTD
27,432
Utility Type
MIXED
Measure Unit
KWH

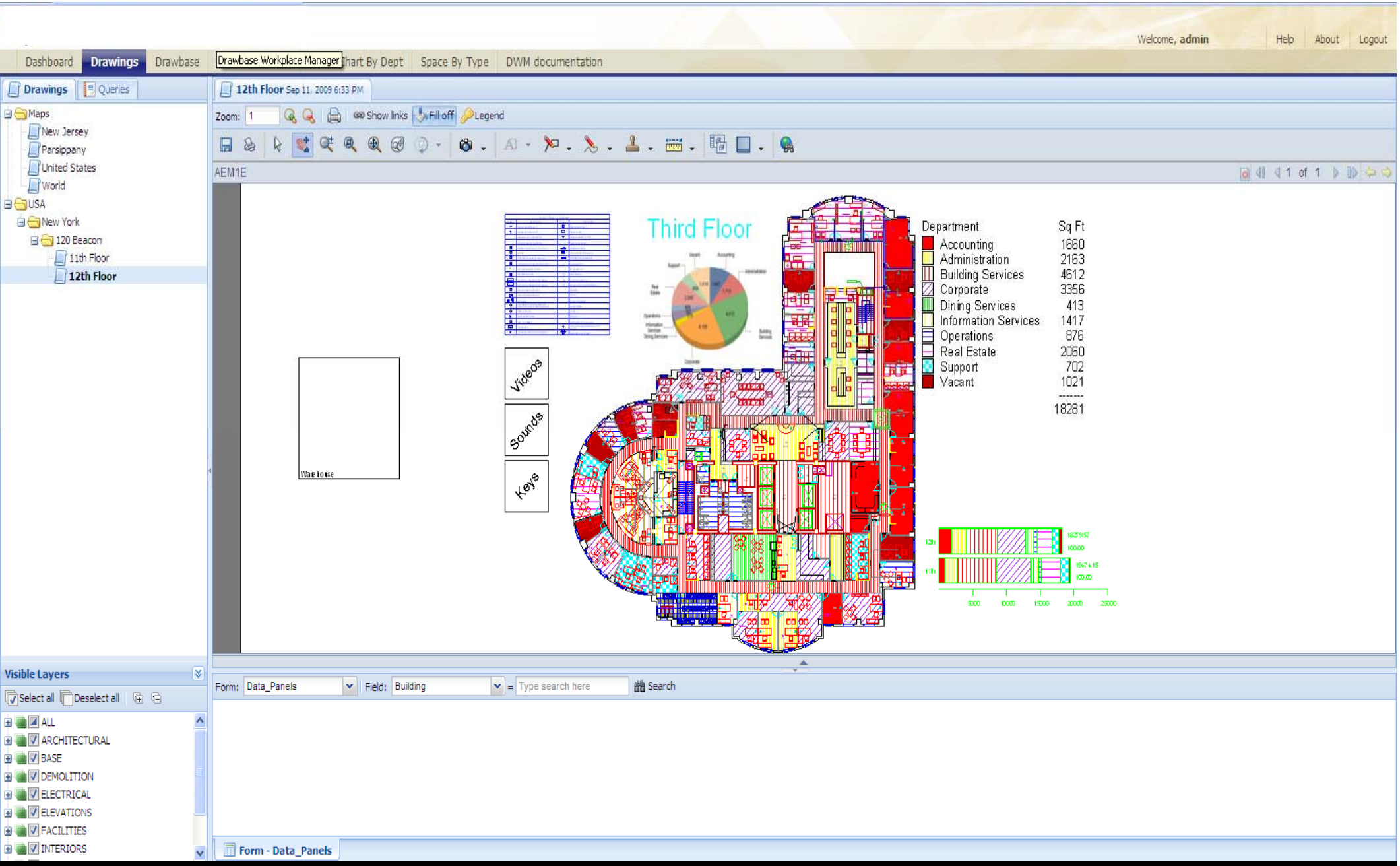
SMART Buildings

- Intelligent Building Systems
- Energy and Environment
- Space Management

IBM Software

PCTY2010

Pulse Comes to You


Welcome, admin
Help
About
Logout
Dashboard
Drawings
Drawbase
Drawbase Workplace Manager
Chart By Dept
Space By Type
DWM documentation
Drawings
Queries
Maps
New Jersey
Parsippany
United States
World
USA
New York
120 Beacon
11th Floor
12th Floor
12th Floor Sep 11, 2009 6:33 PM
Zoom: 1
Show links
Fill off
Legend
AEM1E
1 of 1
Third Floor
Department
Sq Ft
Accounting 1660
Administration 2163
Building Services 4612
Corporate 3356
Dining Services 413
Information Services 1417
Operations 876
Real Estate 2060
Support 702
Vacant 1021
18281
Videos
Sounds
Keys
Visible Layers
Select all
Deselect all
ALL
ARCHITECTURAL
BASE
DEMOLITION
ELECTRICAL
ELEVATIONS
FACILITIES
INTERIORS
Form: Data_Panels
Field: Building
Type search here
Search
Form - Data_Panels

Welcome, **admin** | Help | About | Logout

Dashboard | **Drawings** | Drawbase | Space Allocation | Space Chart By Dept | Space By Type | DWM documentation

Drawings | Queries

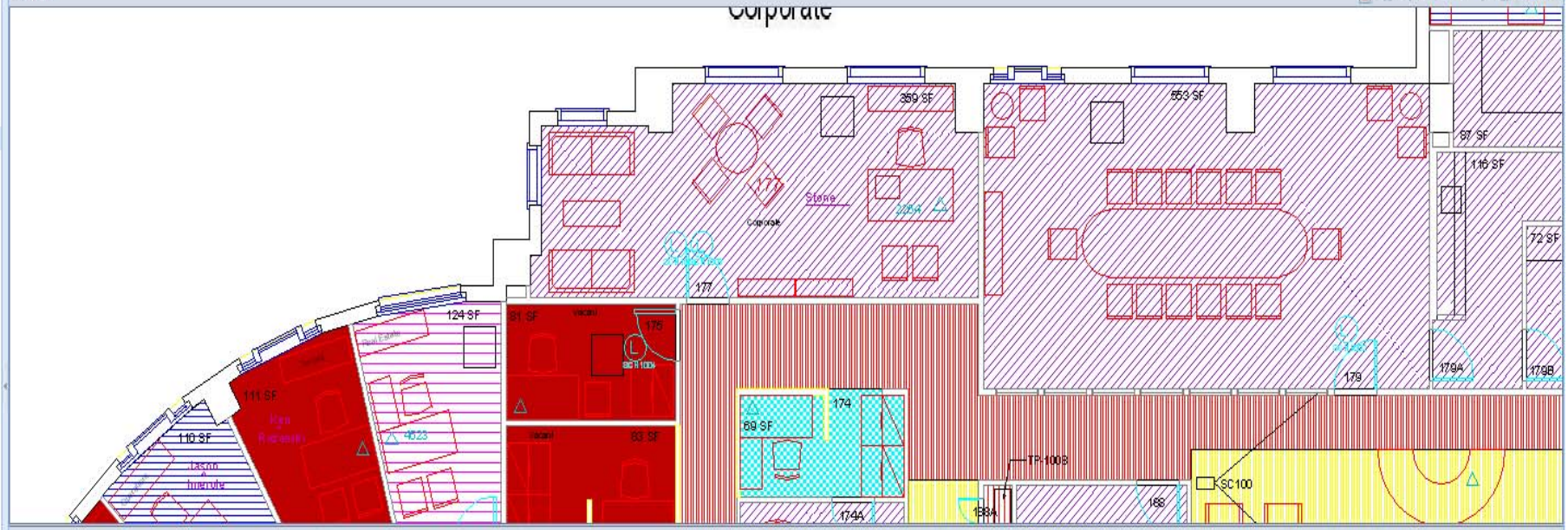
New query | Refresh

- Public Queries
- My Public Queries
  - Computer Repair
  - Data Panels
  - Data Port Destinations
  - Department Pie Chart
  - Employee Count by Dept.
  - Employee Count by Division
  - **Employee Listing**
  - Jacks
  - PersonnelDayOfMonth
  - PersonnelFullDate
  - PersonnelMonth
  - PersonnelYear
  - Projects
  - Racks - Available Space
  - Rentable Space
  - Room Listing
  - Security - Groups/Users
  - Security - Users/Groups
  - Servers
  - Servers1
  - Total SF by Dept.
  - Total SF by Div/Dept
  - Total SF by Division
  - User Network ID
  - Vacant Room Listing
- My Private Queries
  - Employee Count by Dept (Custom SQL Qu
- Other Private Queries

12th Floor Sep 11, 2009 6:33 PM

Zoom: 7.7 | Show links | Fill off | Legend

AEM1E — 1 of 1



Department	Last Name	First Name	Title	Type	Employee ID	Email	Room	Drawing Link
Division: null								
	Palmer	Jack		Contractor	PALMER,J	jack_palmer@comtekcadd.com	189	11th Floor
Division: Administration								
Administration	Cline	Fred	Manager	Employee	CLINE,F	cline_fred@comtekcadd.com	137B	12th Floor
Administration	Peel	Matt	Manager	Contractor	PEEL,M	matt_peel@comtekcadd.com	157	11th Floor
Administration	Valentine	Linda	Administrative	Employee	VALENTINE,L	linda_valentine@comtekcadd.com	138	12th Floor
Dining Services	Ziegler	Teri	VP	Employee	ZIEGLER,T	teri_ziegler@comtekcadd.com	135	11th Floor
Information Services	Jones	Kim	Manager	Employee	JONES,K	kim_jones@comtekcadd.com	141	12th Floor
Information Services	Ulsen	Linda	Manager	Employee	ULSEN,L	linda_ulsen@comtekcadd.com	148	12th Floor

Form - Personnel | Query Results - Employee Listing

Space Management

Space Design	Move Management	Occupancy Management	Cable Management
Import/Export CAD Documents	Support Individual or Group Moves	Reduce costs through consolidation	Trace mechanical, electrical, telco, plumbing from point to point
Drag and Drop Configuration	Optimize space utilization	Regulatory Requirements	Understand dependencies, locate shut off
Multi-revision support	What-if scenarios	Implement more Energy efficient configuration	
	Increased Service Levels	Avoid unnecessary facility expansion	
	Reduce Labor Costs	Charge-back based on usage	
	Drag and Drop capabilities		

Wrap up

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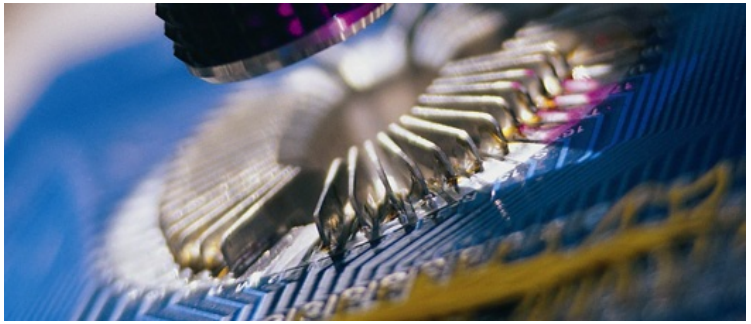
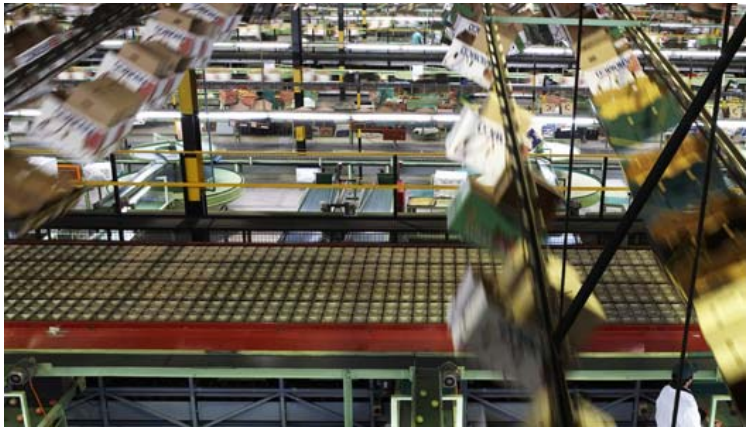
Pulse Comes to You

Smart Asset Management - foundation for a Smarter Planet.



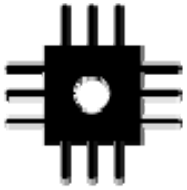
Smart Products are already transforming the world and the way in which we interact with it.

Smart Asset Management is supporting - and managing this new environment.



Let's work together to make us act smarter

Acting Smart will Embrace Better Performance



Our world is becoming

INSTRUMENTED

Our world is becoming

INTERCONNECTED

All things becoming

INTELLIGENT

- **S** afe
- **M** aintainable
- **A** vailable
- **R** eliable
- **T** raceable

SMART asset management brings value to your Business which makes this planet a SMART planet.

Please contact us for additional Product Information, or in-depth demonstration:

G.E.T. (Eddy) Johannes

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