How to use your building’s data to unlock value for your organization

Smart Buildings 101:

19 March 2018
Smart buildings 101: how to use your building’s data to unlock value for your organization

Date: Monday, March 19
Time: 9:30 a.m. to 10:10 a.m.
Location: Surf E

Presented by:
Sandra Corkern  
EY

Paul Lacey  
IBM
Agenda

Workplace management solution overview (IBM TRIRIGA)

Customization vs Innovation

Automation

Moving Forward

Real Estate Technology & Innovation (RETI)
<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Business Goal</th>
<th>How TRIRIGA Can Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP of Facilities</td>
<td>Enhance Occupant Workspace Environment and Engagement</td>
<td>Redefining today’s workspace environments. Focusing on foresight into occupant needs.</td>
</tr>
<tr>
<td>VP of Maintenance &amp; Operations</td>
<td>Reduce Costs, Increase Operational Efficiency</td>
<td>Maximizing operational efficiency and quality control to reduce work order inefficiencies.</td>
</tr>
<tr>
<td>Office of the CFO</td>
<td>Ensure Compliance Readiness</td>
<td>Disclosing lease obligations on the balance sheet in full compliance with new leasing standards from FASB and IAS by 1/1/19.</td>
</tr>
</tbody>
</table>
IBM TRIRIGA SOLUTIONS ENABLE THE ENTERPRISE
Customer Request Central (self service, wayfinding)
Business Analytics (KPIs, advanced reporting)
SaaS and On Premise Deployments

Lease
- Site Selection
- Transaction Management
- Lease Administration
- Lease Accounting
- AR Tenant Tracking
- Payment Processing
- FASB Compliance

Construction
- Program Management
- Fund Management
- Cost Management
- Gantt Scheduling
- Resource Management
- Quality Management
- Vendor Engagement
- Capital Planning

Space
- Space Management & Utilization
- Chargebacks
- Space Requests
- Move Management
- Strategic Planning
- Drawing Management
- Reservations

Maintenance
- Contact Center
- Maintenance Mgmt.
- Preventive Maintenance
- Condition Assessment & Capital Planning
- Security/Key Mgmt.
- Inventory Management
- Resource Planning

Sustainability
- Utility Tracking
- Benchmarking & Energy Star Integration
- GHG Emission Tracking
- Waste Streams
- Water Consumption
- LEED/BREEAM Cert.
- Energy Optimization

Portfolio Data & Core Components
Geographies
Locations
Organizations
People

Work Orders
Financials
Assets
Workflow

Reporting & KPI’s
Documents
GIS Mapping
Transactions

Powered by TRIRIGA Platform
Workplace management solution overview
Workplace management solution overview
EY Workplace (IBM TRIRIGA)

Workplace management value
- Assets
- CAD/Floor plans
- Move management
- Reporting
- Service/facilities requests
- Lockers
- Scenario planning
- Leases
- Lease payments
- Lease projects
- Capital projects
- Budget
- Reporting
- Advanced and exception reporting

Workplace management global scale
- >125K Lockers/storage
- >100K Service requests
- 172 Offices
- 153 Country lease data
Workplace management solution overview

Global lease management presence
Identify trends and disruptors that will shape the future of workplace technology and drive continuous...
Customization vs Innovation
Customization vs Innovation
Users & facilities

**General users**
90% of users default basic read access

**Facilities users**
Role-based access

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*Figure 1: Example of a user interface showing role-based access and customization options.*
Customization
Service & maintenance requests
Innovation
Records management and functionality
Customization

**Artwork**

- **Standard manager report using IBM TRIRIGA report manager**

- **Appraisal ‘one page’ report**
  - Runtime filter limits location selection to only locations that have artwork
  - Cascading runtime filter limits floor selection to only the floors in the selected location
  - Use of BIRT (Business Intelligence and Reporting Tools) JavaScript to convert the image name to an embedded binary object that BIRT can use as if it were a ‘BLOB’
Innovation

Artwork

Use of BIRT to create reports with images that export to PDF

Export images properly to PDF
- Read the image name
- Adjust the name to represent the actual image file location
- Read the image file into a binary stream
- Format the binary stream such that BIRT can use it as a ‘BLOB’
- Embed a default image to use should anything go wrong
Customization
Floor plans graphic reporting

- Layers
- Graphic queries
- Labelling schemes
- Legends
Innovation
Floor plans (Utilization graphic reporting example)
Automation
Pre-BOT process

Start
- Download the report from SharePoint on the day before the site is open
- Requester creates or updates records in SharePoint
- Download the report from SharePoint on the day after the site is closed
- Compare the reports with the macro
- Compared report is sent to Business Team by email
- Business Team searches IBM TRIRIGA with System Record ID
  - If System Record ID available?
    - Yes: Open the record in IBM TRIRIGA and update
    - No: Create a new record in IBM TRIRIGA
- Send email to SharePoint team
- Download a report from IBM TRIRIGA
- Open the record in IBM TRIRIGA and update
- Send email to SharePoint team
- SharePoint team updates SharePoint records
- Stop
BOT implementation

Start

Open SharePoint and download the report

Select the latest updated/created records for the day in the SharePoint report

Download a report from IBM TRIRIGA

Select the latest updated/created records for the day in the IBM TRIRIGA report

Compare IBM TRIRIGA report with SharePoint for the day, and if common records found mark it unprocessed

Download the attachments from SharePoint for the records that need to be processed

Open IBM TRIRIGA and search with System Record ID (from SharePoint report)

If System Record ID available in IBM TRIRIGA?

Yes

Open the record in IBM TRIRIGA, update and upload attachments (avoid duplication)

No

Create a new record in IBM TRIRIGA and upload attachments (avoid duplication)

Open SharePoint and search with System Record ID (from IBM TRIRIGA report)

If System Record ID available in SharePoint?

Yes

Open and update the record in SharePoint

No

Create a new record in SharePoint

Send an email with unprocessed System Record ID of the day to the business team

Stop
EY performs **Tens of Thousands** of audits and accounting advisory projects.

As part of work, EY typically receives **500 - 10,000** lease contracts.

Each lease has between **10** (vehicle) to **300** (real estate) pages.

Each lease requires on average **3 – 4 hrs.** to complete a review.
EY performs **Tens of Thousands** of audits and accounting advisory projects.

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By leveraging Artificial Intelligence and Advance Language Models to assist EY professionals in reviewing lease contracts our valuable human IP can be contributing strategically, faster and with far more accuracy.

**Preliminary Results To Date**

- **3X** increase in overall consistency of extracted Contract reviews
- **2X** improvement of overall efficiency of review

**EY AI** + **EY Human IP**
Current active initiatives FY18

- Architecture upgrade and replacement of three environments
- Platform and application upgrades
- Dashboard and metrics reporting
- RES dashboard
- Records — new functionality/processes
- Mercury integration
- Non EY laptop access for GRE external PMs
- France pilot deployment
- India GDS deployment
- India practice office deployment
- GSA Munich deployment
- Mobile
Moving forward
It’s more than just a Real Estate program

• Provide the technology to communicate, collaborate and connect anywhere and anytime
• Offer world-class service amid changing work conditions and locations
• Create flexible, efficient and technology-enabled workspaces
• Provide a work environment that promoted teaming, collaboration and well-being
• Design and build brand recognition into every office

- Support and enable flexible working
- Promote and develop new ways of collaboration and teaming
- Support and accommodate the health and well-being of our people
- Provide meaningful opportunities to engage with our communities

Includes Facilities Management
EY@Work to date

- Transformed 150 locations around the globe and 101,000 people are working in the environment — 34 more locations in the pipeline
- Our EY@Work offices include:
  - A variety of spaces for activity-based working (collaboration, heads-down concentration, virtual working, etc.)
  - New ways of working that help our people to deliver exceptional client service
  - Current technology that enables these behaviors
Real Estate Technology & Innovation (RETI)
Our mission is to be leaders in the identification, implementation, and support of innovative technology that greatly enhances the experience of our people during their interaction with EY@Work.

Goals

► Identify trends and disruptors that will shape the future of workplace technology and drive continuous advancement
► Engage with global subject matter and business leaders during the innovation & enablement process to ensure scalable and globally acceptable solutions
► Integrate mobile and visual experience through the entire portfolio
► Leverage the investments and innovations of the Global Firm to the fullest
► Optimize operations through the use of robotic process automation (RPA)
<table>
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<th>Innovation / Pilot</th>
<th>Flexible / Smart Workplace</th>
<th>Physical Access</th>
<th>Visual Communications</th>
<th>Workplace Management</th>
<th>A/V Technology</th>
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<td>Resource reservation</td>
<td>Credential convergence</td>
<td>Physical Access</td>
<td>Visual communications</td>
<td>Workplace management</td>
<td>A/V Technology</td>
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<td>Space availability</td>
<td>Security system interoperability</td>
<td>Visual layer</td>
<td>Visual communications</td>
<td>Workplace management</td>
<td>A/V Technology</td>
</tr>
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<td>Occupancy tracking</td>
<td>Mobile access credentials</td>
<td>Interactive communication services</td>
<td>Graphical data</td>
<td>Workplace management</td>
<td>A/V Technology</td>
</tr>
<tr>
<td>Environmental control</td>
<td>Visitor management</td>
<td>People engagement</td>
<td>3D / 360° / VR</td>
<td>Workplace management</td>
<td>AV Consulting</td>
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<td>Managed services</td>
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Smart Building Automation
Augmented Reality
Voice command
Indoor Navigation
Connected classrooms
Sensors / beacons
3D / 360° / VR
Mobile
Environmental preference

Innovation, Strategy / Execution
Real Estate Technology and Innovation (RETI) solutions

- **Currently available**
  - AV solutions
  - EY@Work mobile app
  - Location-based smart guides
  - Room/service bookings
  - Security solutions
  - Visual communications
  - Workplace management

- **RETI roadmap**
  - Augmented reality
  - Enhanced guest experience
  - Voice command services
  - Proactive AV assistance
  - Mobile FM service requests
  - Mobile and wearable credentials
  - Sensor/data enhanced experience
  - Environmental preferences
  - Indoor navigation
  - Digital people engagement
Value

8+ Years Flat Occupancy Costs While Doubling Headcount

100 Best Companies to Work for – 20 Years
Questions

Contact me at:
sandra.corkern@ey.com
Connect with EY at IBM Think

► Visit EY in booth #129 in the Security and Resiliency Campus

► Attend our thought-provoking sessions

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Visit: ey.com/IBM
EY at IBM Think: week at a glance

Session 8131A
Monday
March 19
Smart buildings 101: how to use your buildings data to unlock value for your organization

Session 8992A
Wednesday
March 21
EY’s artificial intelligence journey: our chatbot success

Session 5763A
Thursday
March 22
Brighthouse
OpenPages GRC case study:
An EY and IBM strategic alliance