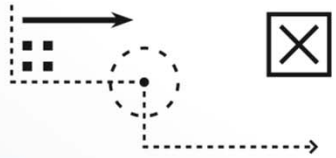
Guide

Data & Analytics

Market: All
Role: All
Purpose: Education

BIG DATA



Actionable Intelligence

EPS 10

BuildingEngines
Optimizing Property Performance

Based on the educational session as presented at the BOMA International Every Building Show:

Actionable Intelligence

The Key to Improved Tenant Service & Property Operations

1. Learn how to mine data for operating insight to improve management outcomes.

2. Acquire best practice tips for working with your technology systems and providers to improve the delivery of captured data.

3. Learn how to establish an action plan to make data-driven improvements that will differentiate a management practice within the marketplace.

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Contributors

Moderator:

Scott Sidman
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Mr. Sidman is a real estate and technology veteran. For 9 years, Scott he has led development and expansion of Building Engines, a mobile and web-based property and tenant management solutions provider, across hundreds of millions of square feet across the US and Canada. He oversees marketing, strategic client and partner relationships and evaluation of new markets and products for the company.

Panelist:

Yvonne Apodaca
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Ms. Apodaca is based in Los Angeles and is responsible for asset management operations for properties on the West Coast. Prior to joining Beacon Capital Partners, Ms. Apodaca was the Senior Regional Financial Analyst, LA Region for Equity Office Properties. She holds a California Real Estate License and is a member of the Institutional Real Estate Management (IREM) chapter in Los Angeles.

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Contributors

Panelist:

Jim Meacham
Principal, Altura Associates
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Jim is a founding Principal of Altura. He is the former leader of the energy services and commissioning team at CTG Energetics, where he was responsible for managing a team which provided services for some of the world's most efficient and iconic buildings. As a California registered mechanical engineer, Jim has also directly managed scores of commissioning, retro-commissioning, energy auditing, and modeling assignments.

Panelist:

Curtis Mummau
SVP, Thalhimer
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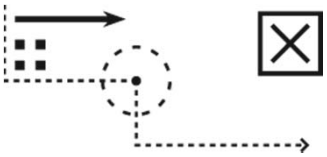
Mr. Mammau has over twenty years' experience in management including hotel, multi-family, commercial associations, and commercial properties. He recognizes the importance of communication, customer service, and having an understanding of owners' goals and objections and how to meet or exceed them. Thalhimer continues to evaluate and implement technology solutions that not only increase efficiencies, but Drive client Value by delivering the Right real estate solutions.

The Problem:

The “Big Data” Paradox



Businesses in all industries are increasingly automating their operating procedures and adding advanced systems, yet losing productivity.

Productivity in the U.S. continues to decline despite the surge in technological advances:

US Productivity Q1 2013	0.5%
US Productivity 2012	0.7%
US Productivity 2011	0.6%

Even when this overwhelming amount of data is neatly compiled in one automated application or software, employees must manually sift through the big data in order to monitor and react to data changes.

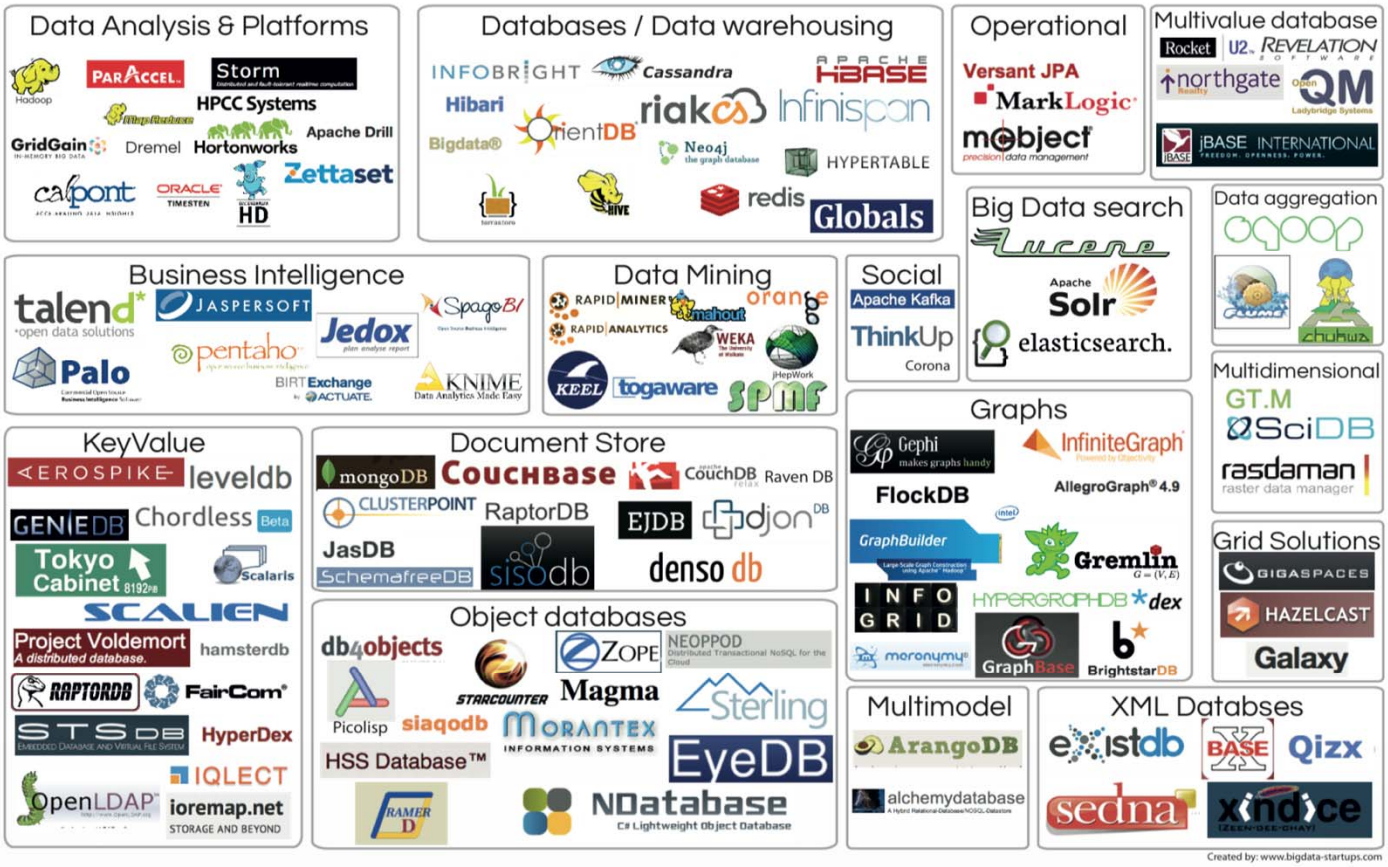
The amount of data that these technologies accumulate is too large and complex for most organizations to use and process. The manual process is time consuming, laden with human error and utilizes valuable employee resources.

Busagang, Jeff. "The Productivity Paradox”, Inc.com (http://www.inc.com/jeff-bussgang/the-productivity-paradox.html) 11 June 2013.

The Problem:

The “Big Data” Paradox

In order to process the “mountain of data” that systems are generating, an entire industry of **Business Intelligence** tools has been created.



The solution the data overload problem is utilizing automated systems that display the right metrics for your data and company. **Agile analysis produces actionable intelligence without wasting valuable employee resources and time.**

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The Business Drivers:

Agile Analytics

Data technology and analysis is necessary now more than ever because of the **changing demands of decision makers** and the **increasing *amount* of data available**.

Top Four pressures driving the need for Business Intelligence:

1. Decisions are based on overly "gut feelings"
2. More managers need analytical support
3. Growing business data is under-utilized
4. Information is too fragmented

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Best-in-Class Businesses:

How the Leaders are Making Data Work for Them

Top performers achieved a **10% year-over-year** increase in operational efficiency by changing how they worked with data. Followers achieved a mere 1%.

Leaders are Mobile

Leaders are over three times more likely to use mobile business intelligence.

Leaders Have a Nimble Data Infrastructure

The average public sector organization reports a 32% year-over-year increase in the volume of incoming data. Leaders integrate new data sources into their analytical infrastructure 6.2 times faster than laggard organizations.

Leaders Encourage High Adoption & Engagement

Regardless of the size of a particular organization, the more users it engages in analytics, the greater the outcome for the organization.

Leaders are 45% more likely to have self-service access to business intelligence with minimal, if any, assistance from IT- fostering innovation and entrepreneurship and reducing IT spend.

White, David. "Agile Analytics: Staying Afloat on the Rising Tide of Information Needs," Aberdeen Group. June 2013) / "Sector Insight", Aberdeen Group, 2012)

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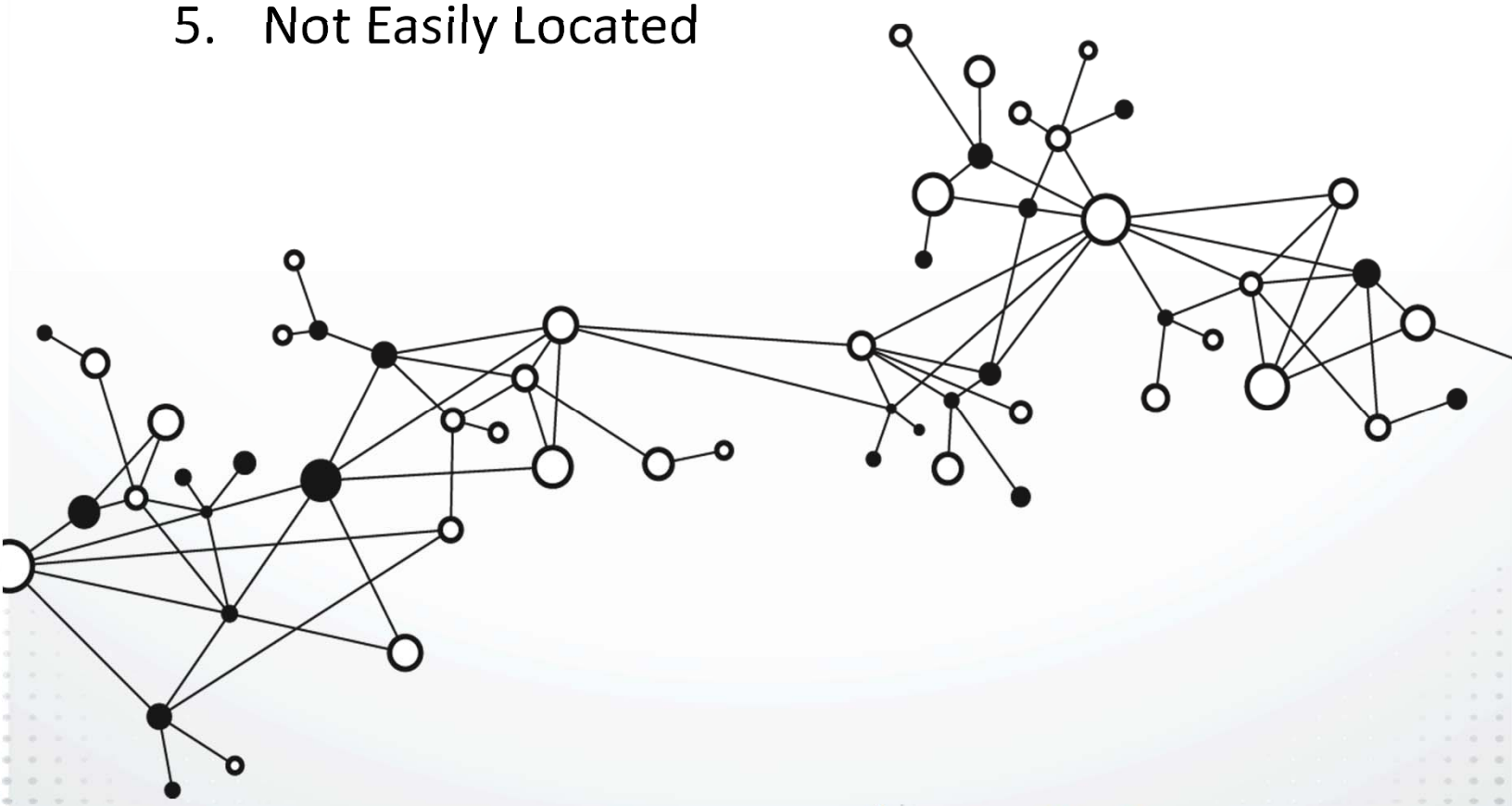
Data Output:

Data that Fosters Action

The Biggest Problems Organizations Face with Data:

1. Unstructured Format
2. Not Integrated with Software or Reporting Solutions
3. Not “In the Cloud” or Digitized
4. Not Updated Regularly
5. Not Easily Located



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Data Output:
Data that Fosters Action

Personalize It.

Automated reports are good for pre-defined questions, but every organization should set its own targets, benchmarks and key performance indicators (KPIs).

The most successful use of data is customized and aligned with the unique goals the organization has outlined for success.

Software should be able to adapt for these changes.

Pre-built reports can be the enemy of analytical creativity – customization is crucial.

☒ Other Tips:

- Automate as much of the data collection as possible
- Encourage users to customize reports
- Allow all parts of a chart or report to be edited
- Allow “drilling down” for more detailed analysis (but keep the initial view as simple as possible

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Data Output:

Data that Fosters Action

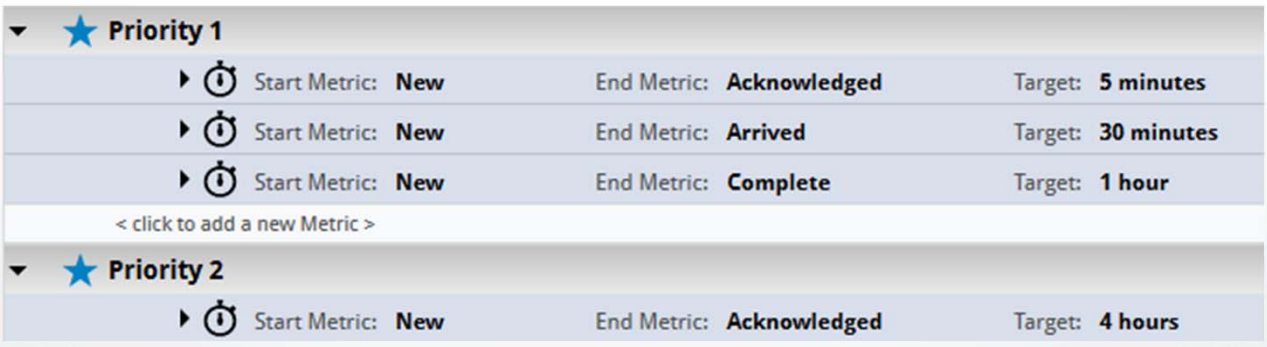
Exceptions, Notifications and Alerts…Oh My!

"Business Alerts" and "Event Triggers" were features of old software that would notify a user when certain conditions were met. The evolution of these, often called **"Exception Alerts,"** are something industry leaders use to allow end-users to be notified of important data trends without having to dig through databases and printed reports- which is time consuming and error prone.

Exception Notification Examples:

- **Notify me when a service delivery target was missed**
- **Notify me when a building incident occurs**
- **Notify me when work order is created or assigned**
- **Notify me of an upcoming lease renewal**

Prioritize and define the notifications you think are important to receive in real-time and then enable your software tools to do the work for you and notify you when an issue occurs. Manage by exception!



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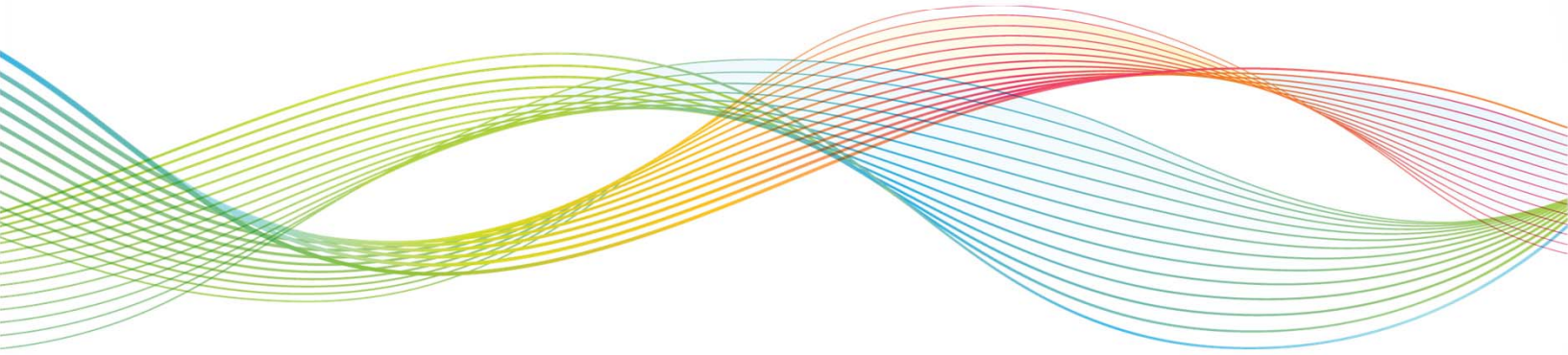
Data Output:

Data that Fosters Action

What is the best way to try and sift through and understand all this data?

Companies use a number of textual and visualization based methods of displaying insight and interpreting data, but they don't always meet the growing demands of "big data" and can make finding the root cause of a problem difficult and time consuming.



Reports

Reports are a legacy method of displaying data results. They provide detailed information that can be crucial when investigating an issue or trying to track behavior. However, reports require a great deal of time, since information needs to be to sifted through manually- which can lead to errors.

Ultimately, reports provide important information but create significant time lag that reduces efficiency.

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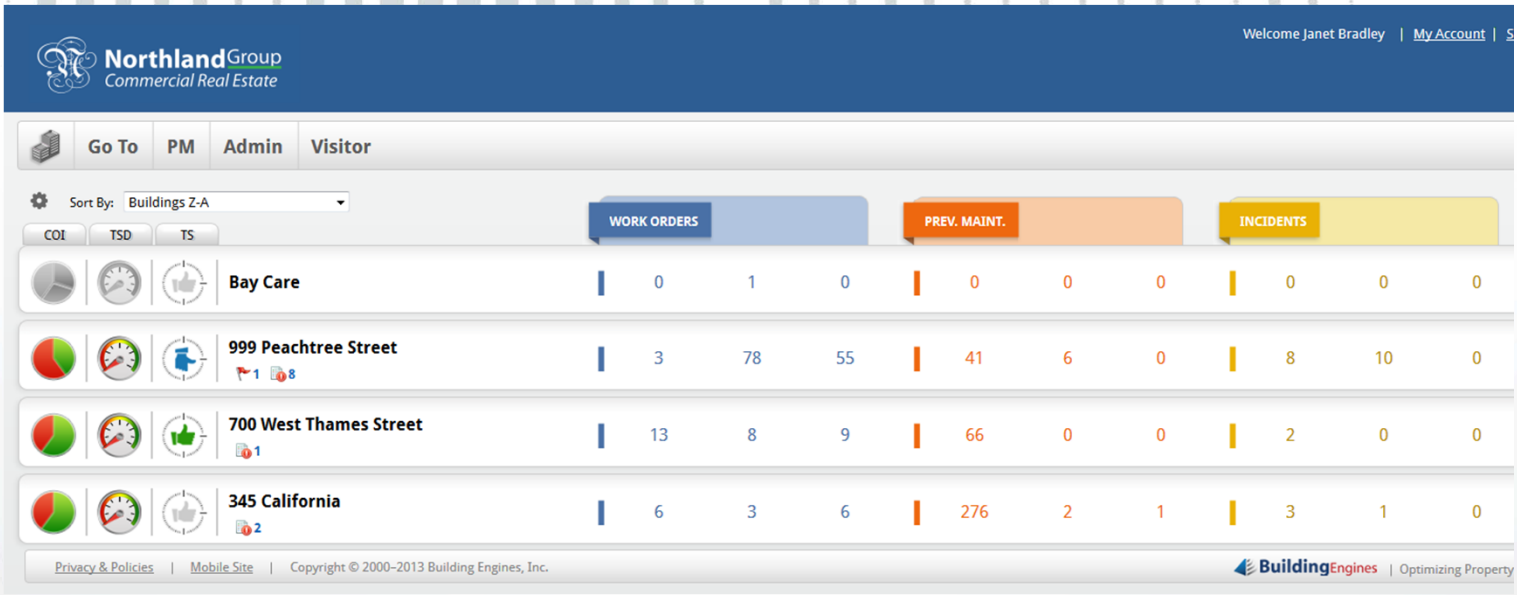
Data Output:

Data that Fosters Action

Dashboards

The saying *"a picture is worth a thousand words"* is extremely relevant when trying to find data. According to a 2006 study by the University of Pennsylvania, **sight is by far the fastest of the five senses -** making visualizations such as those found on a dashboard extremely effective when trying to communicate large amounts of data at once.

Dashboards, such as the one below, roll-up and display large amounts of information using simple meters and gauges. The best dashboards show trends and notify you of any missed targets.



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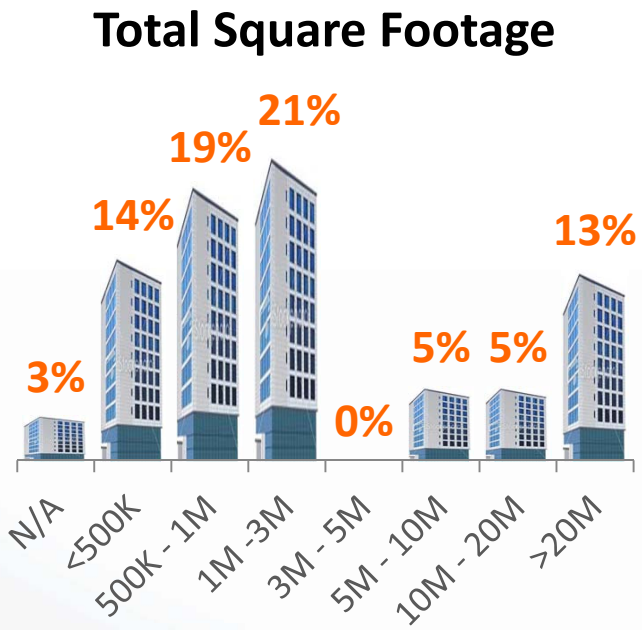
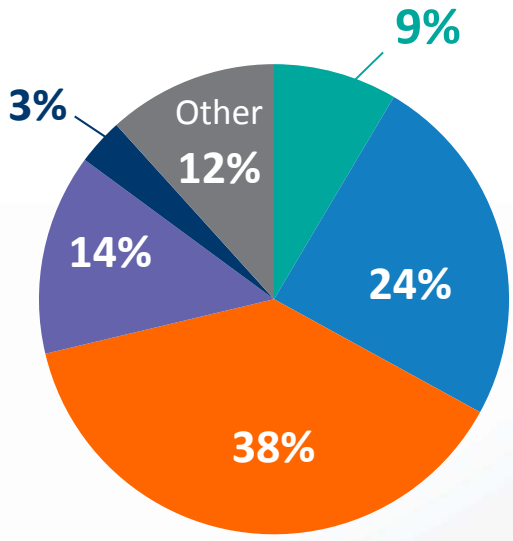
Data Output:

Data that Fosters Action

Charts and Graphs

In addition to the visual tools found on a dashboard, graphs, charts and scatter plots are also provide a clean and easy display of large amounts of complex information at a high level. The problem with many charts and graphs is that they don't easily link to more complex data sets- making it difficult to track information and find the route cause of an issue. They do not "drill down" as well as visual dashboards.





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Data Output:

Data that Fosters Action

Property Data is meaningless unless it empowers your team to take action, make operational improvements, or improve service delivery.

Three Steps to Turning Raw Data Into Actionable Intelligence

1. Set benchmarks, targets, and Key Performance indicators (KPIs)

2. Establish and automate notifications. Make sure escalations are put in place for missed goals and when performance targets are not met.

3. Create reports that show how performance correlates with goals; have high level dashboards and widgets that show trends and missed targets. Having this information available in easily consumable charts makes it easy to digest info on the go, but these charts also need to have extensive drill-down capabilities for rich data analysis.

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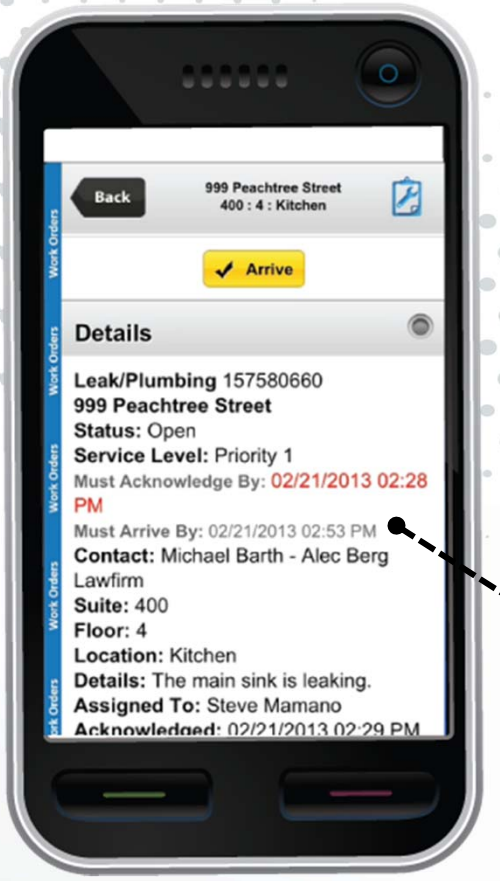
Extending to Mobile

Actionable Intelligence on-the-go

By extending the reach and usage of existing databases to mobile platforms, organizations can more agilely respond to market changes and customer needs.

Employees are able to access the information required for decision making via mobile platforms 87% of the time- **accelerating time-to-information and improving tenant satisfaction and retention.**



Mobile Growth in CRE

- **61%** Increase in mobile usage in CRE (2012 YOY)
- **69%** Information workers using smartphones for business

Did You Know?
Establishing a mobile strategy means that you can clearly communicate targets for maintenance and service delivery to your team in the field.

AgBeat, Mobile usage in commercial real estate up 61%, http://agbeat.com/commercial/mobile-usage-in-commercial-real-estate-up-61/
IDG News Service, IDC: IT Hasn't Grasped Consumerization Trend, 1/11/11, http://www.pcworld.com/article/235465/article.html

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Extending to Mobile

Actionable Intelligence on-the-go

Implementing a Mobile Strategy

1. Form a Core Team
2. Define Security Measures
3. Select the Right Mobile Platform
4. Decide Which Apps to Implement First

Benefits

Better Decisions	Property managers on the move can make more informed decisions as they have all the relevant information at their fingertips.
Better Time Utilization	Mobile property teams are able to respond to service requests and create and complete work- anywhere, anytime.
Agility	Mobile property teams are able to respond faster to situations that require their attention.
Collaboration	Managers are able to stay connected with their teams at all times, and always have access to the most up to date information.
Customer Satisfaction	Mobile property teams always have service history and tenant details at their fingertips. This enables them to offer more appropriate solutions to tenant problems, have more productive meetings and improve service delivery.

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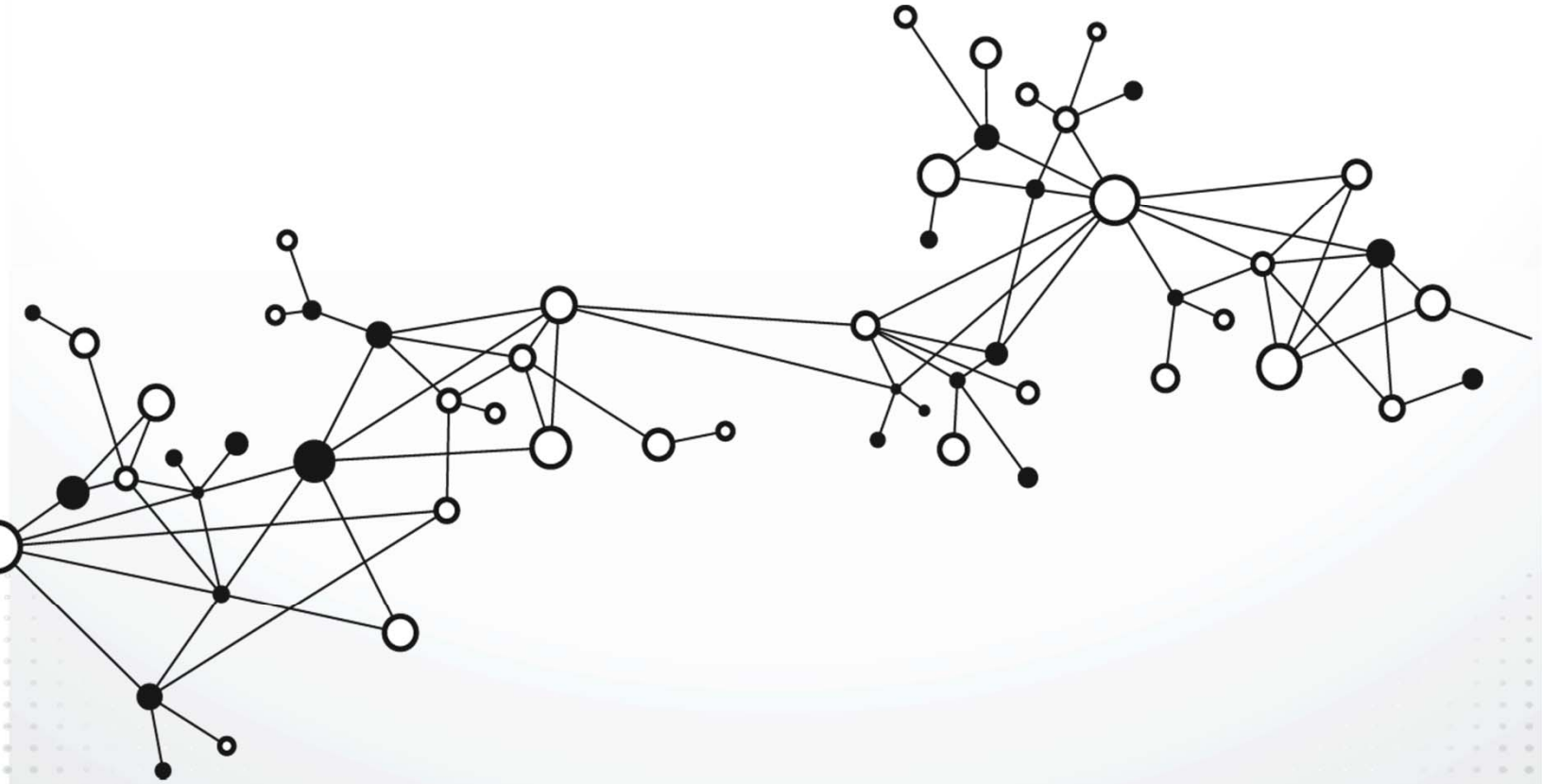
Extending to Mobile

Actionable Intelligence on-the-go

- **44%** of CRE organizations operate a mixed platform of devices
- **49%** of CRE employees use a personal device for work
- **90%** of U.S. employees used personal smartphones for work within the past year
- Shift to a “active production model” from a “passive production model is expected to happen, allowing mobile business users to assemble dashboards and produce/edit reports on the go.



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Extending to Mobile

Actionable Intelligence on-the-go

Bring Your Own Device (BYOD)

The policy of permitting employees to bring personally owned mobile devices (laptops, tablets, and smart phones) to their workplace, and use those devices to access company information and applications.

BYOD Policy Best Practices

- Have security in place to properly protect the devices.
- Have a plan to deal with lost or stolen devices.
- Set guidelines for managing confidential data.
- Develop a best practices guide for employees to follow.
- Enforce guidelines through regular education and training.
- Consider offering a stipend for employees who use their personal devices (gives your organization more control).

SECURITY is the primary concern for a BYOD Policy, as critical organizational data is stored in employee devices

Glossary

Actionable Intelligence: Having the necessary information immediately available in order to deal with the situation at hand.

Big Data: Refers to the massive amounts of data that collect over time that are difficult to analyze and handle using common database management tools

Business Intelligence: Business intelligence, or BI, is an umbrella term that refers to a variety of software applications used to analyze an organization's raw data. BI as a discipline is made up of several related activities, including data mining, online analytical processing, querying and reporting.

Data Visualization: the study of the visual representation of data, meaning "information that has been abstracted in some schematic form, including attributes or variables for the units of information." The "main goal of data visualization is to communicate information clearly and effectively through graphical means." Friedman (2008)

Data Warehousing: "A copy of transaction data specifically structured for querying and reporting." -*The Data Warehousing Information Center*

Data Security: protecting a database from destructive forces and the unwanted actions of unauthorized users

Retiring Data: the removal of old data from active databases

Pull Reporting: A report that is requested by the user

Push Reporting: A report that users automatically receive on a set schedule

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