



# Leveraging New Technology to Improve Job Site Efficiency

May 21, 2015

# McGladrey overview

Fifth largest U.S. provider of assurance, tax and consulting services

- Over \$1.28 billion in revenue
- 75 offices and 6,500 employees in the United States
- Internationally\*
  - Presence in 90 countries
  - More than 32,000 people in over 700 offices
  - \$3.9 billion in worldwide revenues

*\* Member of the RSM International network of independent accounting, tax and consulting firms.*



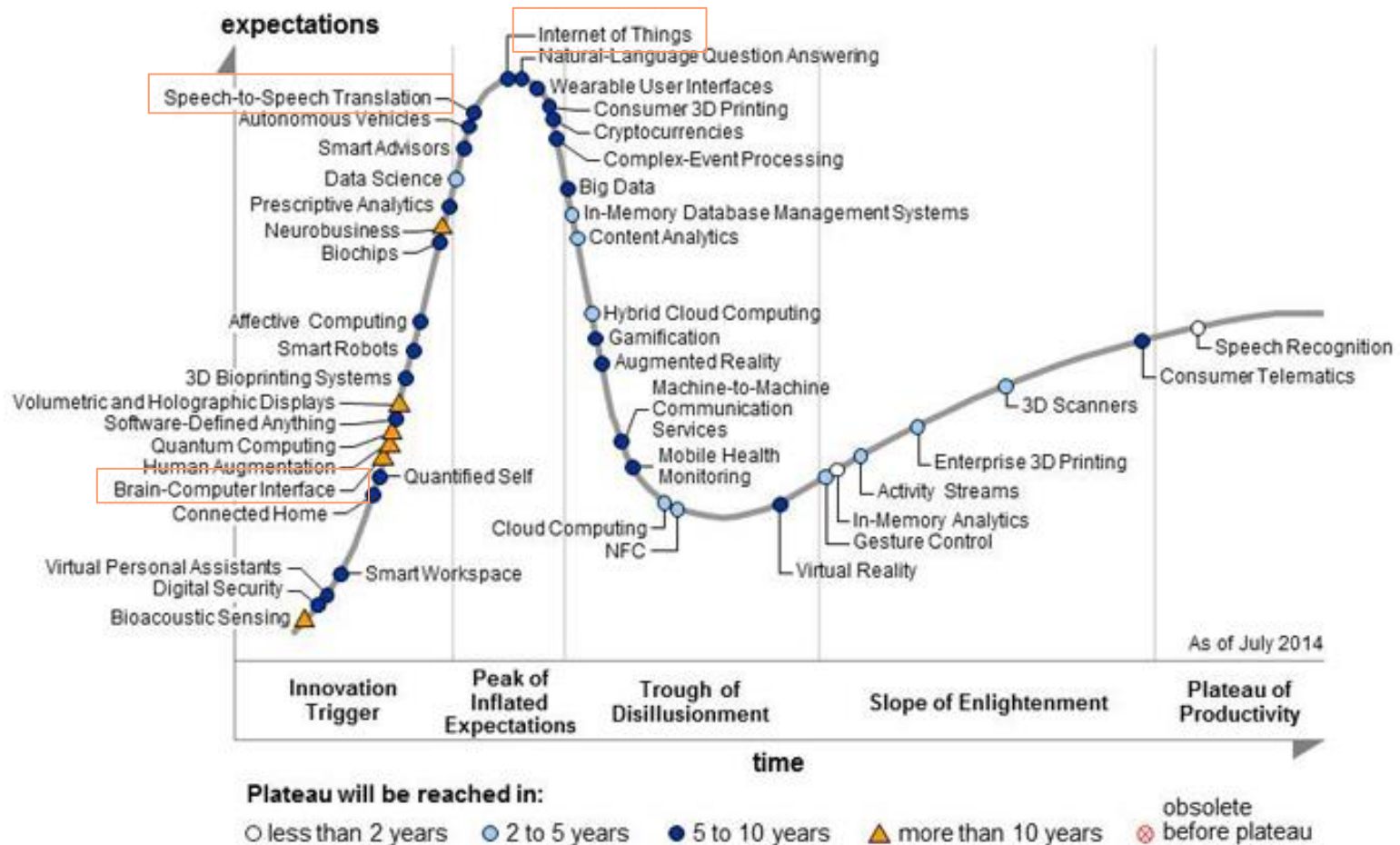
# Today's agenda

- Overall technology trends
- Job site industry trends
- Pillars of an effective job site
- Transitioning to the cloud
- Technologies to consider
- Q&A

# Macro Technology Trends

# The IT landscape is changing quickly

## Summary of 'Disruptive Technologies' – Gartner Hype Cycle for Tech 2014

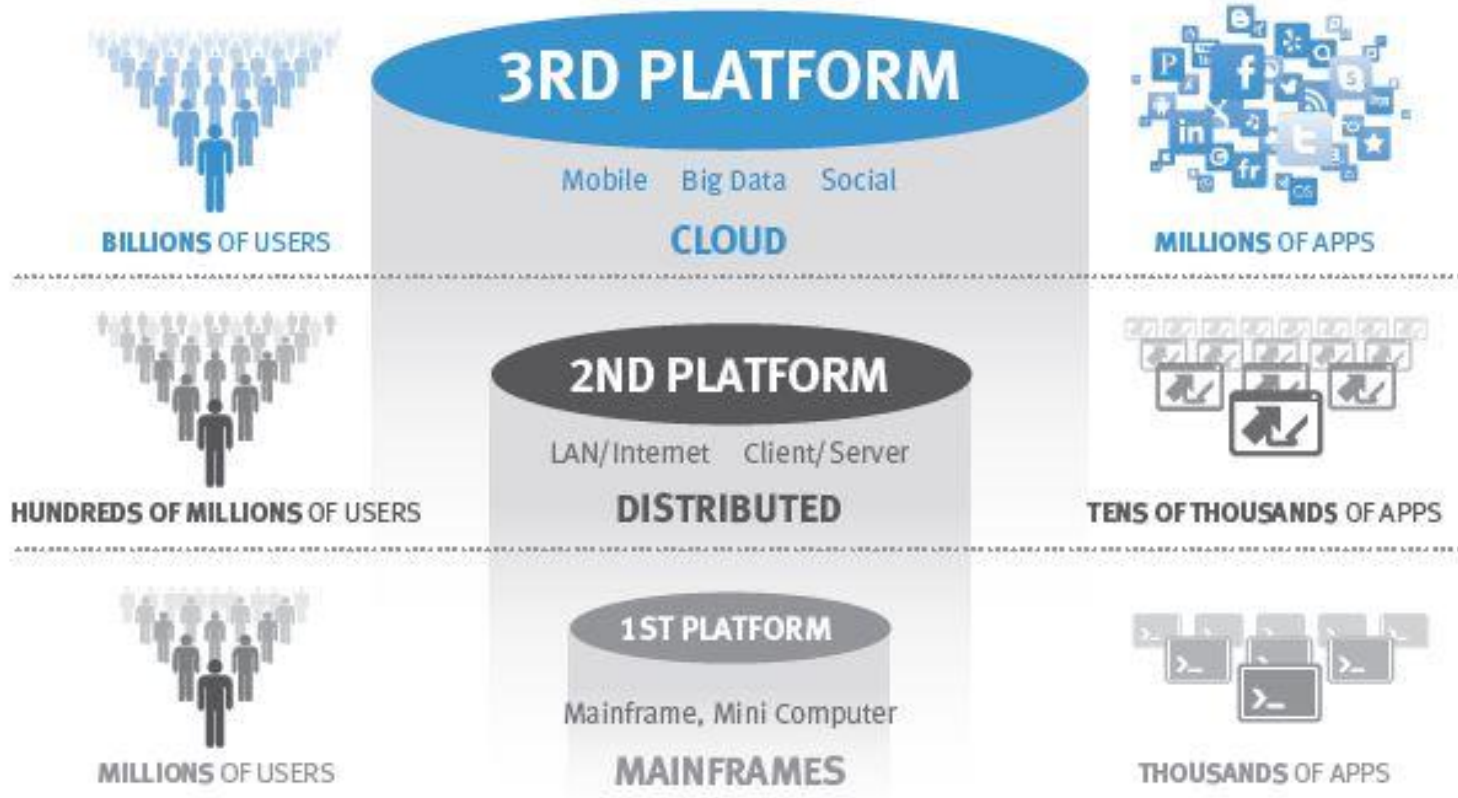


# Macro technology trends

## *The 3rd platform - IDC definition*

### THE THIRD PLATFORM

The Third Platform is described by IDC as the next-generation compute platform that is accessed from mobile devices, utilizes Big Data, and is cloud based.



# Macro technology trends

## 3<sup>rd</sup> Platform



### Mobility

- Increase in mobile devices has required businesses and people to be “always on, always connected”



### Cloud

- The cloud removes the burden of storing, archiving, and managing data from consumers and organizations



### Social

- Technology is changing the way we interact with one another, with machines, and with organizations



### Big data

- Access to data and data analysis tools will help consumers and organizations make better decisions



### Internet of things

- Everything is connected
- Connections happen without human intervention from any device or object



# Macro technology trends

## *Triggers of Innovations*

### Organizations

Competition for  
\$\$

### Consumers

Desire for instant  
connection and access  
to knowledge

**Innovation**



Mobile ★



Cloud &  
Virtualization ★



Social ★



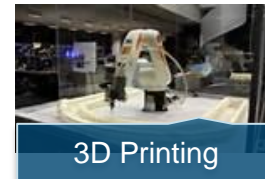
VDC ★



Paperless sites ★



Prefabrication



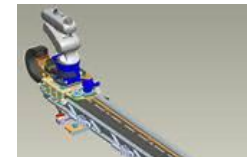
3D Printing



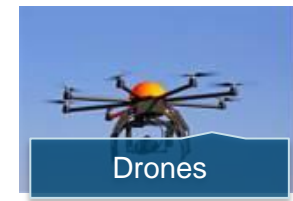
Green Building



Laser Technology



Computer-aided  
Manufacturing



Drones



# Key trends

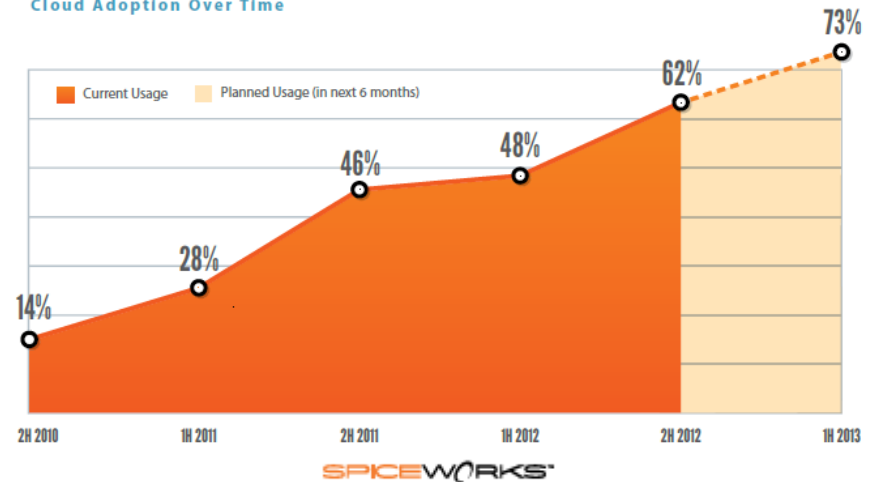
## Cloud computing

### Cloud Computing – A Simpler Life

- Fastest adoption continues in Middle Market
- IT spending moving from capital to operating expenses
- Leaders are closely examining cost comparisons (5 yr TCO)
- Improved productivity and mobility for employees (BYOD)
- Increased agility & scalability
- Disaster recover & business continuity opportunities

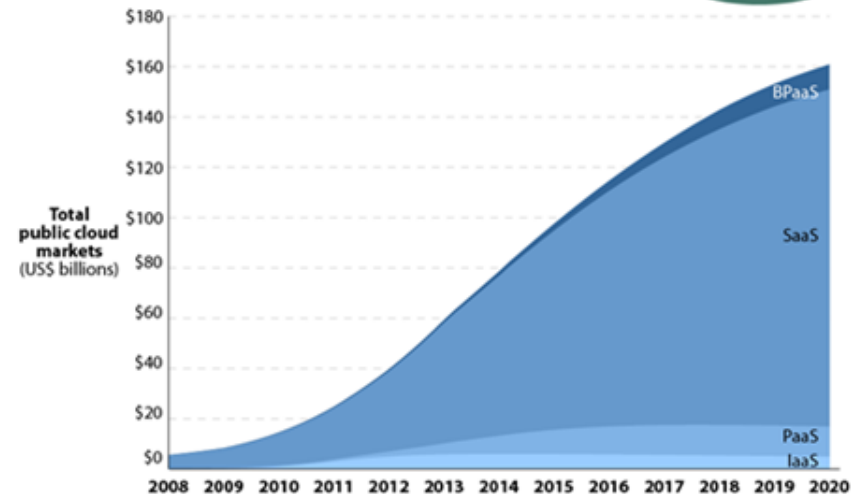
**Security & privacy continues to be #1 concern/barrier to cloud adoption followed by cost concerns**

Cloud Adoption Over Time



Forecast: Global Public Cloud Market Size, 2011 To 2020

FORRESTER



# Industry Overview

# Industry overview

## *Economic outlook*

The construction industry in the US has been experiencing a steady recovery since the end of the recession. However, the economic downturn revealed how well – or how poorly – business were being run.

### **Post Recession Re-Investment**

- “Technology Debt”
- Without consistent upgrades and IT investments the legacy systems became quickly outdated

### **Industry striving to be more lean, efficient, agile and profitable.**

- Post recession, increased budgets have allowed for attention to turn to those legacy systems including jobsites

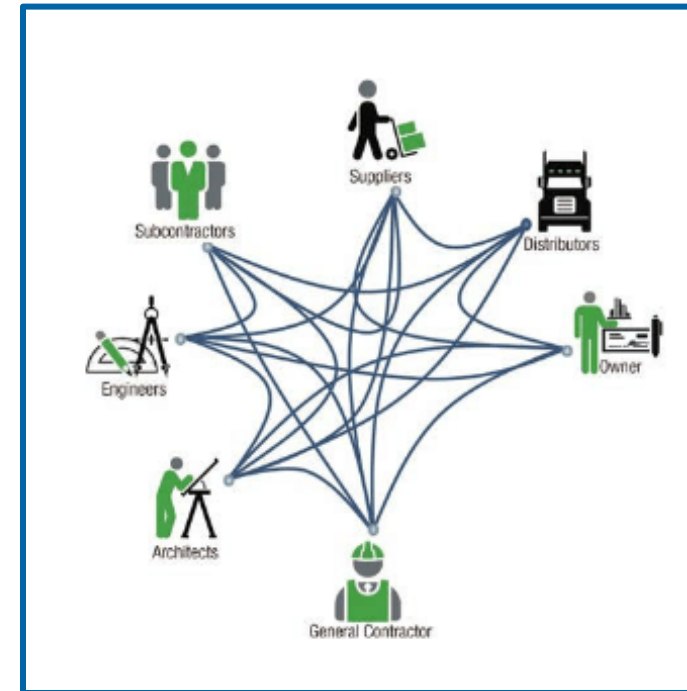
### **Preparing for the future**

- Minimal IT budget allocation – the majority of companies remain under 1% of total revenue, though spending now could pay dividends in the future

# Industry overview

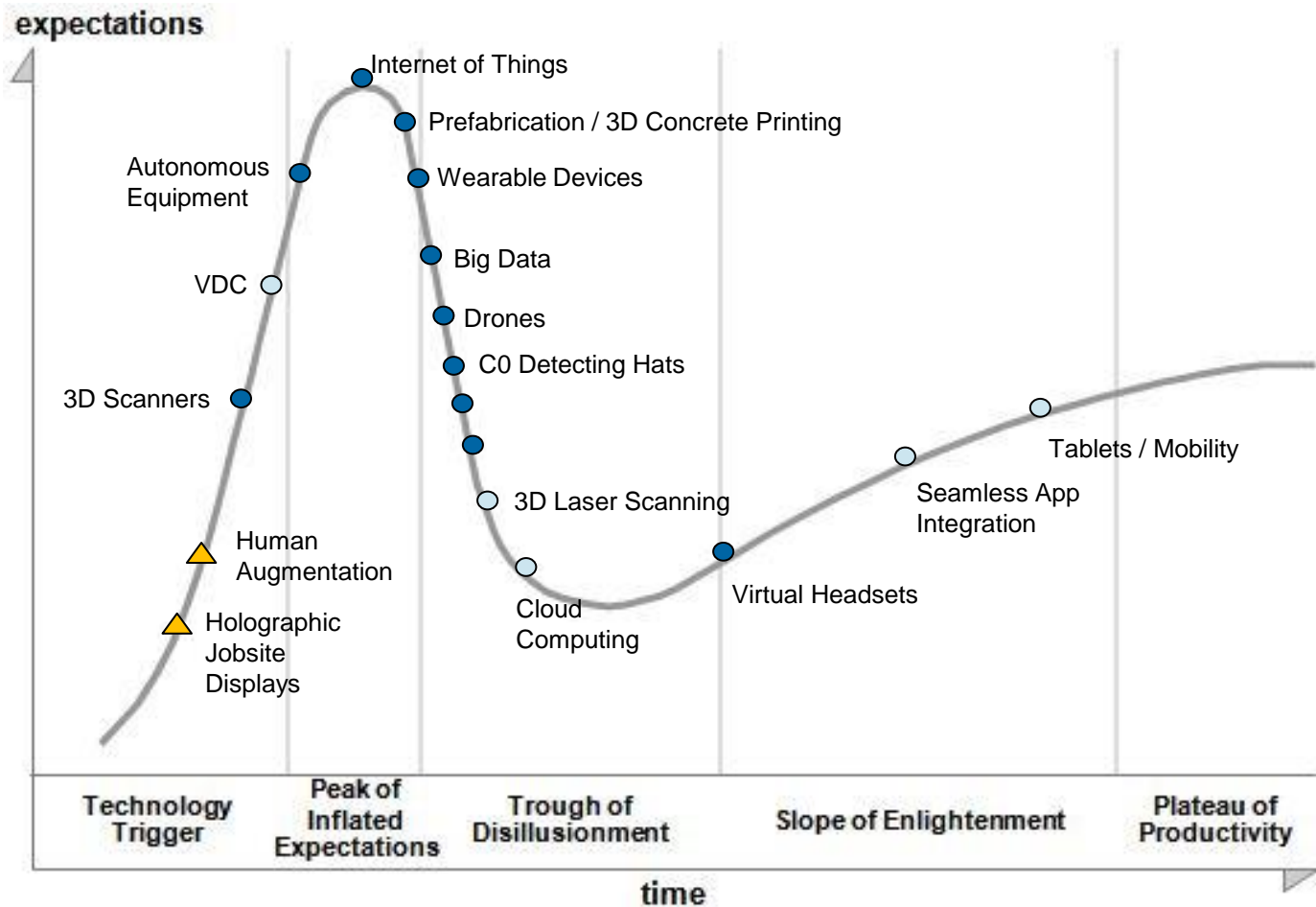
## *Job site needs & current environment*

Area	Issue	Impact
<b>Collaboration</b>	<ul style="list-style-type: none"> <li>High volume of large files being shared has increased demand for new collaboration tools</li> </ul>	<ul style="list-style-type: none"> <li>Files are often shared via the wrong platform/tool causing business disruption</li> </ul>
<b>Scale &amp; Agility</b>	<ul style="list-style-type: none"> <li>Relative small size of firms</li> <li>Job sites are not agile enough to adapt in size as projects change scope</li> </ul>	<ul style="list-style-type: none"> <li>Difficulty projecting and attaining economies of scale needed for technology modernization</li> </ul>
<b>Repeatability</b>	<ul style="list-style-type: none"> <li>Many disparate players, functions and systems and the high demand to quickly mobilize jobsites</li> </ul>	<ul style="list-style-type: none"> <li>Limited adoption of new technology and processes across job sites and mass duplication of effort</li> </ul>
<b>System Architecture</b>	<ul style="list-style-type: none"> <li>Aging system architecture and lack of integration between legacy systems</li> </ul>	<ul style="list-style-type: none"> <li>No single system of truth</li> <li>Lack of consistency from location to location</li> </ul>
<b>Project visibility</b>	<ul style="list-style-type: none"> <li>Paper-based invoices are misplaced in the shuffle from locations to headquarters</li> <li>Limited visibility into invoice payment status</li> <li>Contract values and change orders are not entered in the system in a timely manner</li> </ul>	<ul style="list-style-type: none"> <li>Delayed ability in performing revenue recognition and “cost to change” calculations</li> <li>Quarterly and monthly close financial statement production relies heavily on manual, excel based processes</li> <li>Estimate to Complete project forecasting is inaccurate and/or delayed</li> </ul>



# Industry overview

## Technology hype cycle



# Key trends

## *Virtual design & construction*

- BIM is evolving to VDC
- VDC allows for:
  - Increased project schedule & budget visibility
  - Review virtual design including materials
    - Quickly determine change impact
  - Better facilities management decisions:
    - Operations & maintenance
    - Energy management
    - Construction/renovation programs
  - Field coordination
  - Ensuring a safe jobsite

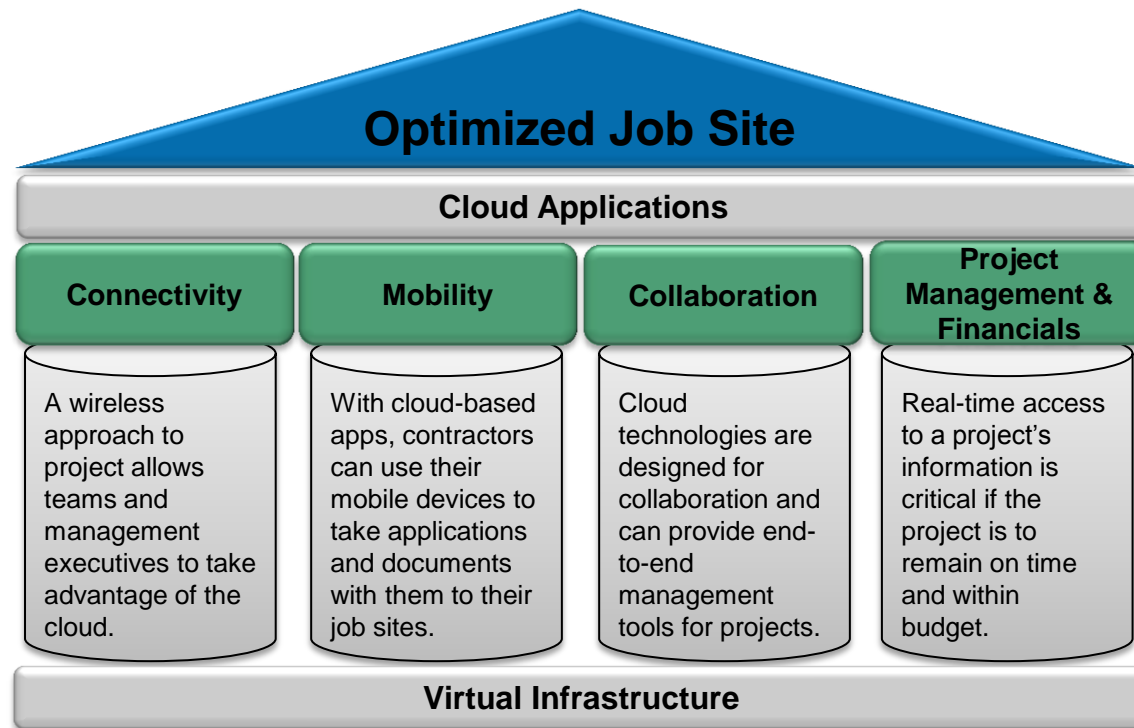




# Pillars of Enlightenment

# Pillars of enlightenment

Many companies do not recognize the inherent flexibility or the number of potential technology options available to improve job site performance. We have identified 4 “Pillars of Enlightenment” for companies to focus on and assess whether they are in a position to transition to these



# Pillars of enlightenment

## 1. Connectivity

Jobsites today demand have real-time data to keep communication easy and projects moving on schedule. A lack of access can lead to delays in projects and higher budgets.

- Strong internet signal and plug and play Wireless Access Points (WAPs)
  - Rugged Ware Jobsite Box
  - 3G, 4G, Wi-Fi Hotspot
  - Control over WLAN, LAN, Security, guest wifi and mobile devices
- Smart Stations
  - View project documents & schedules
  - Real-time updates
  - Send photos back to the office
- Mobile Program
  - Smartphones
  - Cellular connected tablets
- Wireless Signal Repeaters
  - Repeaters paired with on-site wifi
- Offline Apps
  - Make updates that will be automatically once in a wifi area

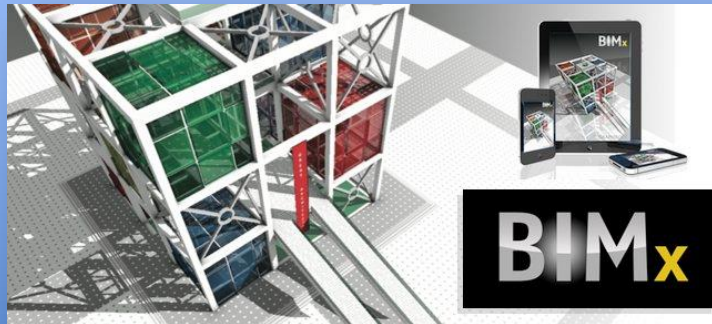


# Pillars of enlightenment

## 2. Mobile technology

Many construction apps are accessed in the cloud through tablets that are used on-site and are often designed to endure the rough treatment they will encounter on a job site

Construction and productivity apps provide innovative ways for employees to access documents and collaborate.



BIMx allows users to access the BIM projects via smartphones and tablets for 3D communication and presentation through their app.



Apps like iBlueprint allow users to create and export custom floors plans, and access blueprints on the jobsite.

# Pillars of enlightenment

## 3. Collaboration

With highly compressed margins on projects, collaboration between contractors and subcontractors is critical for project success.

Tools for a collaborative work environment are key drivers in the moving projects forward efficiently and effectively.



SMART Boards enable users to share plans quickly and can be placed in project trailers, offices, and on the jobsite if stored properly.

- ✓ Office 365
- ✓ SharePoint Online
- ✓ SMART Boards
- ✓ Mobile Construction Applications



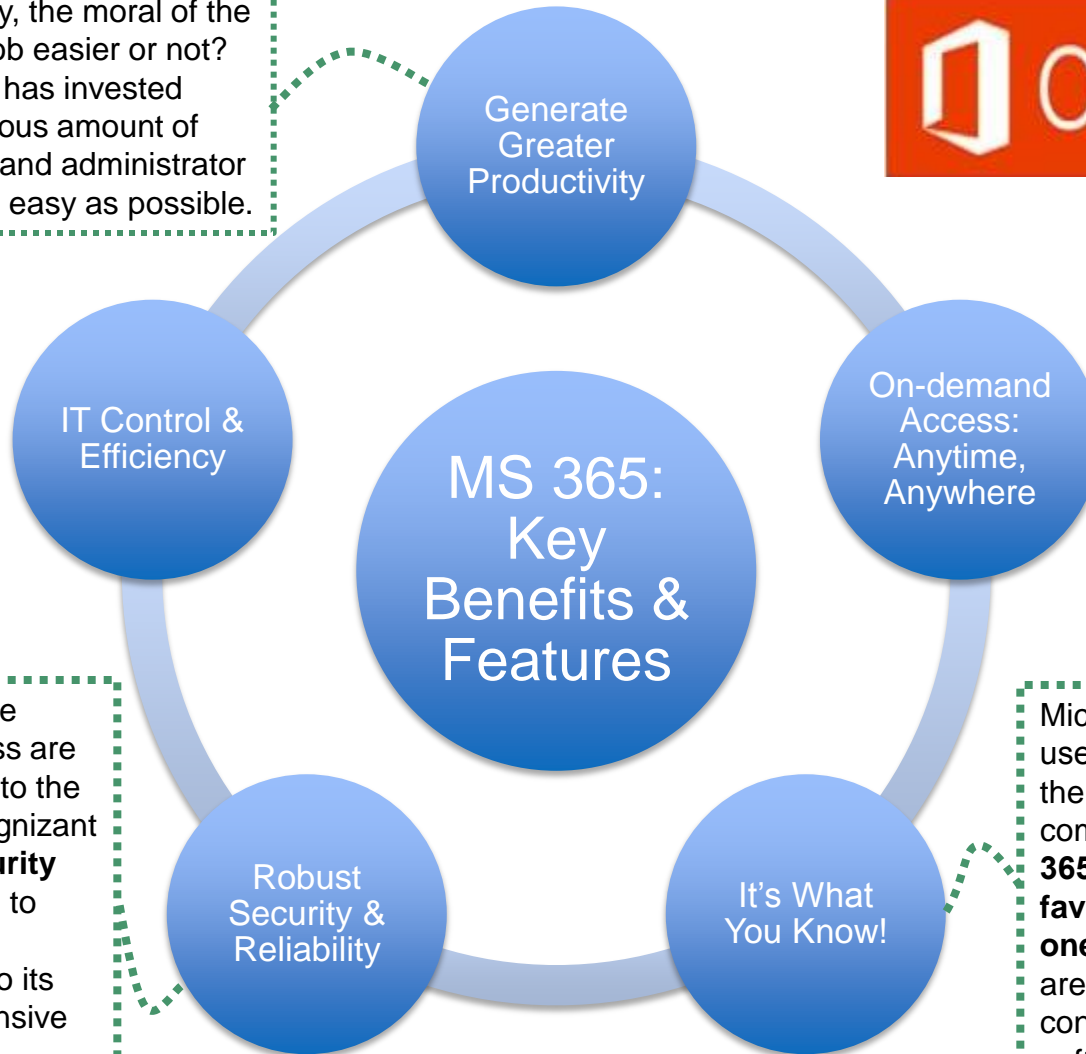
PlanGrid allows users to share plans, edits, reports, and photos from anywhere at anytime.

# Pillars of Enlightenment

## 3. Collaboration



When it comes to productivity, the moral of the story is: Can you make my job easier or not? **Simplicity is key!** Microsoft has invested heavily and spent a tremendous amount of time trying to make the user and administrator experiences of Office 365 as easy as possible.



With security being one of the leading reasons why business are hesitating to migrate their IT to the cloud, MS was extremely cognizant of incorporating **robust security** into MS 365. MS also strives to provide **top-of-the-line connectivity** and reliability to its customers, maintaining extensive service level agreements to guarantee performance.

Microsoft recognizes that users don't want to give up the things that make them comfortable; therefore, **MS 365 hasn't changed favorite MS applications one bit**, other than that they are now seamlessly connected to the enterprise software in the cloud.



# Pillars of Enlightenment

## 4. Project Financials & Management

Construction management involves many moving pieces and decentralized participants. This can make it difficult for project managers and project accountants to execute their tasks effectively in a timely manner. Fortunately, there are applications available to streamline these activities



Geofencing applications like TimeSheet mobile automatically log employees hours when they cross over into a site.



Most new CM software enables managers to write, process and submit RFD's, project updates, applications, LEED forms, invoices and contracts online and store them in the cloud. Tools allow better visibility into Project Financials.



AP applications like Mineral tree and Bill.com synch with your ERP to automate invoice and payment processing, reducing time of job cost posting and increasing the revenue recognition cycle.

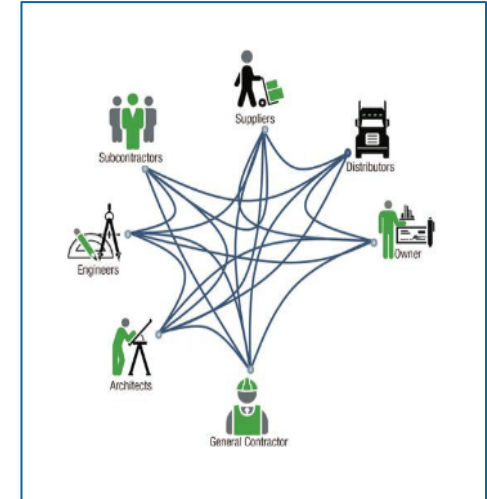
# Transitioning to the Cloud

# Transitioning

## *Moving to the future job site*

Before a construction company tries to leverage the cloud, management needs to identify where the company can get the largest return in its investment. There is a logical process for matching different parts of an IT infrastructure to specific cloud solutions. Implementing the most appropriate road map can help reveal opportunities to improve performance and make more strategic technology investments.

Area	Steps
<b>1. Identify the technology support currently in place and how it is being used</b>	<ul style="list-style-type: none"> <li>✓ Compile an inventory of existing IT resources, including infrastructure, applications, staffing and security measures</li> </ul>
<b>2. Create a vision &amp; roadmap</b>	<ul style="list-style-type: none"> <li>✓ Take a close look at the company's IT strategy and how it aligns with the company's needs, then set actionable goals for the department</li> </ul>
<b>3. Develop a logical sequence of events to meet the goals</b>	<ul style="list-style-type: none"> <li>✓ Stakeholders need to evaluate cloud options to determine how they can enhance capabilities and productivity</li> <li>✓ Map out a detailed plan, including implementation steps, a realistic timeline and key responsibilities</li> </ul>
<b>4. Assess the competition</b>	<ul style="list-style-type: none"> <li>✓ Assess how peers leverage technology and gather any available competitive intelligence to determine how your technology utilization compares</li> </ul>



# Technology recap

Area	Technologies to Consider
Project Management	ProCore, ProContractor, MS Project/SharePoint
Collaboration & Document Management	Microsoft 365 SharePoint & Knowledge Lake, Primavera, Newforma
Large File Sizes	Nasuni, Panzura
Budgeting & Forecasting	Hyperion, Prophix, Adaptive Insights, Host Analytics
VDC	Autodesk Revit, Vico, ArchiCAD
Mobile Apps	Plangrid, ConstructionHelper, iBlueprint, BIMx
Email/Office Productivity	Microsoft 365, Google Aps
Finance & Accounting Automation	AP Automation: Bill.com, Mineraltree T&E Management: Tallie, Concur

Q&A



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