



MOBILITY IN ENTERPRISE ASSET MANAGEMENT SOFTWARE

A study conducted by IFS North America

APRIL, 2013

THE CURRENT STATE OF THE INDUSTRY

BASED ON A SURVEY OF MORE THAN 200 EXECUTIVES

METHODOLOGY

In early 2013, IFS North America and Advantage Business Media conducted a study among executives with industrial companies to determine how respondents involved with enterprise asset management (EAM) and industrial maintenance access enterprise software from mobile devices while performing maintenance work and other asset management activities.

Respondents were from companies with more than \$50 million dollars in revenue, and had some involvement with enterprise software selection. Data in this report was further filtered to reflect answers of respondents whose companies are involved with enterprise asset management and maintenance.

Answers reflect the extent to which enterprise data is accessible and how it is accessed while engaging in maintenance work.

THE CURRENT STATE OF THE INDUSTRY

VERY LOW LEVELS OF MOBILE USE IN EAM

Relatively low levels of access to enterprise data from mobile devices

- Companies involved in industrial maintenance can benefit from mobility on a number of fronts, but according to this data do not yet have the technology in place to do so.
- Those that do have some mobile access to enterprise data are typically reliant on third-party connection tools like Cisco VPN. This presents a number of drawbacks including an intolerance for interruptions in wireless service, performance and speed issues and additional license costs. This may prevent full adoption, particularly in environments where connectivity is a challenge including mining, oil and gas and large scale manufacturing where equipment may interfere with wireless signals.
- A minority of respondents said they are currently performing work in enterprise software from a mobile device.

OPPORTUNITIES PRESENTED BY MOBILE

MAINTENANCE EFFICIENCIES AVAILABLE

- When working across large plants and facilities, mobility allows staff to send updates or report on maintenance work on the spot, without having to return to a hub location to check spare parts inventory or look up technical information. This means reduced overtime and lower costs for asset maintenance because information that enables decision-making is available at the point of maintenance.
- Mobility can also help deliver greater workforce productivity by logging status updates and delivering routing information to workers. This enables much improved management control and visibility of maintenance – allowing better business management and better maintenance strategy.
- Most people who will use a mobile device in these environments will be technical staff. They're typically somewhat averse to paperwork and administrative tasks, so a simple mobile interface improves the quality of their reporting and data. Better information enables better management.

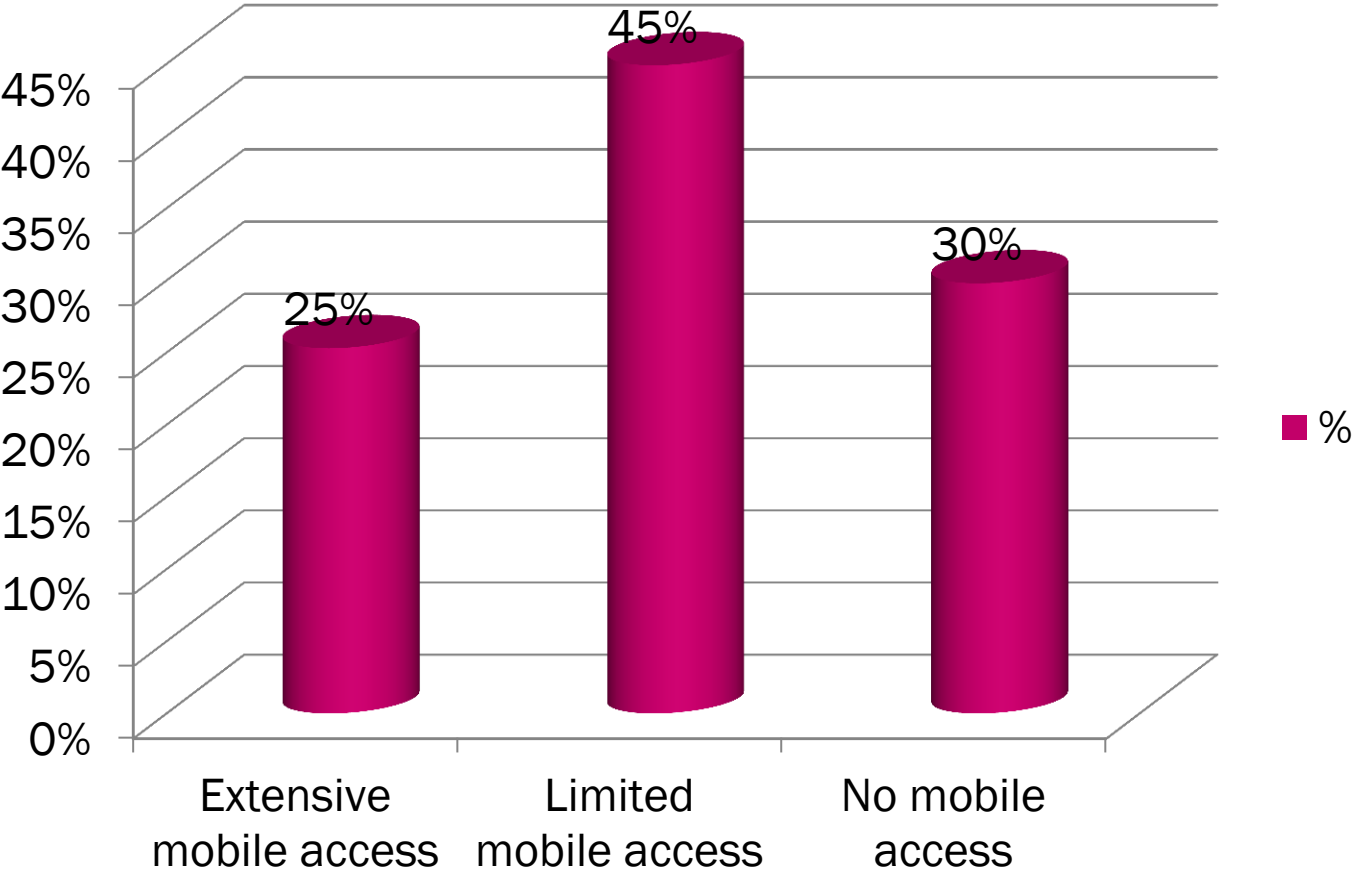
OPPORTUNITIES PRESENTED BY MOBILE

MAINTENANCE EFFICIENCIES AVAILABLE

- Preventative maintenance typically consists of a large number of small, repetitive tasks, carried out on a daily, weekly or monthly basis. These checks may often be carried out needlessly or overlooked. Mobilization allows businesses to optimize maintenance routes in much more granular detail, delivering custom routes to accommodate missed checks or other exceptions, include new check sites and account for variable levels of maintenance between different assets
- Mobility enhances safety at the point of maintenance by providing core information and key processes to workers on mobile devices.
- Paperless or PC-less timesheet input/logging delivers efficiencies and encourages greater staff engagement with core processes, producing better quality management data.

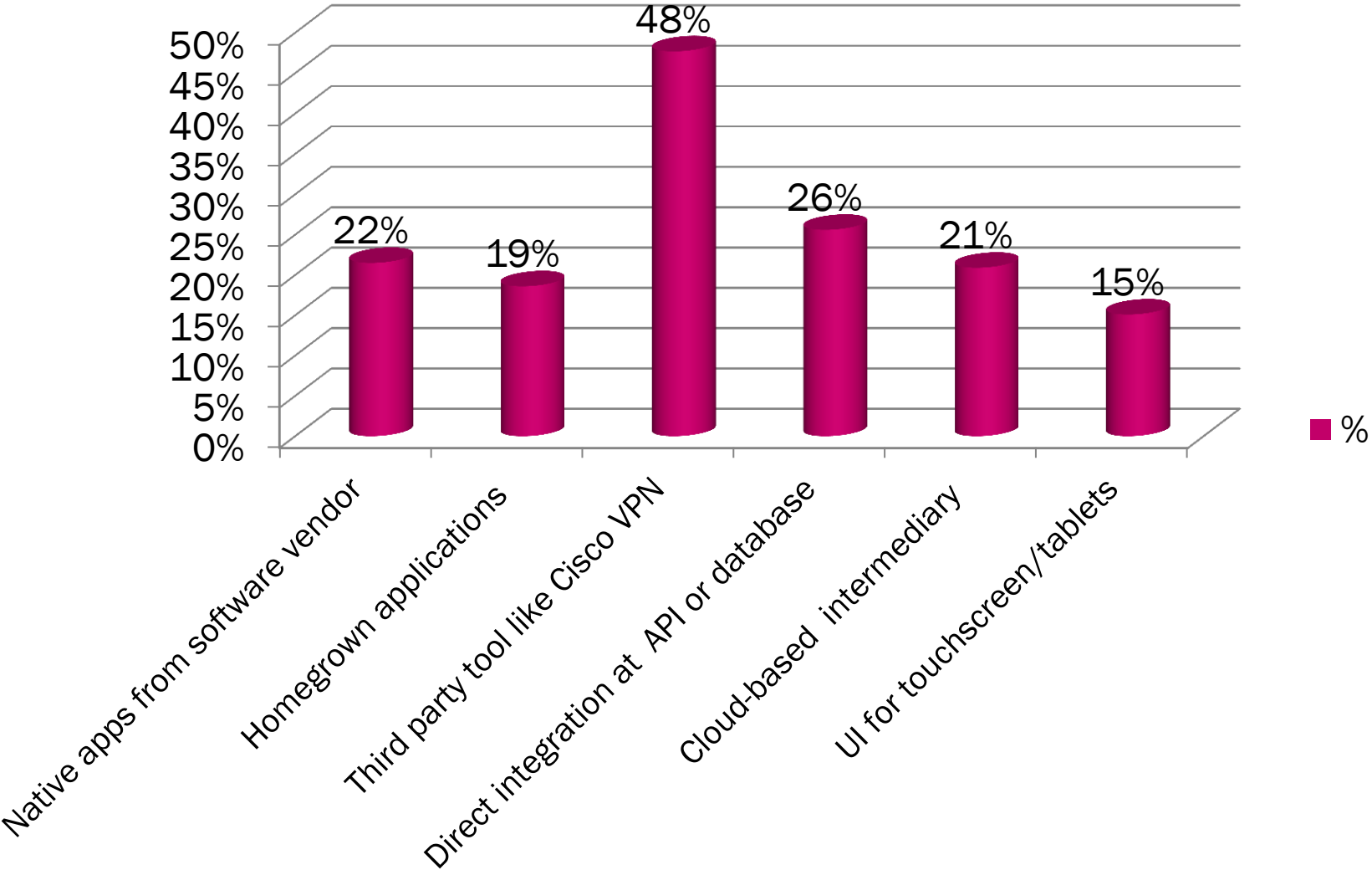
MOBILE ACCESS TO MAINTENANCE DATA

75% HAVE LIMITED OR NO MOBILE ACCESS



HOW DO YOU ACCESS MAINTENANCE DATA?

48% USING THIRD PARTY CONNECTIONS LIKE CISCO VPN



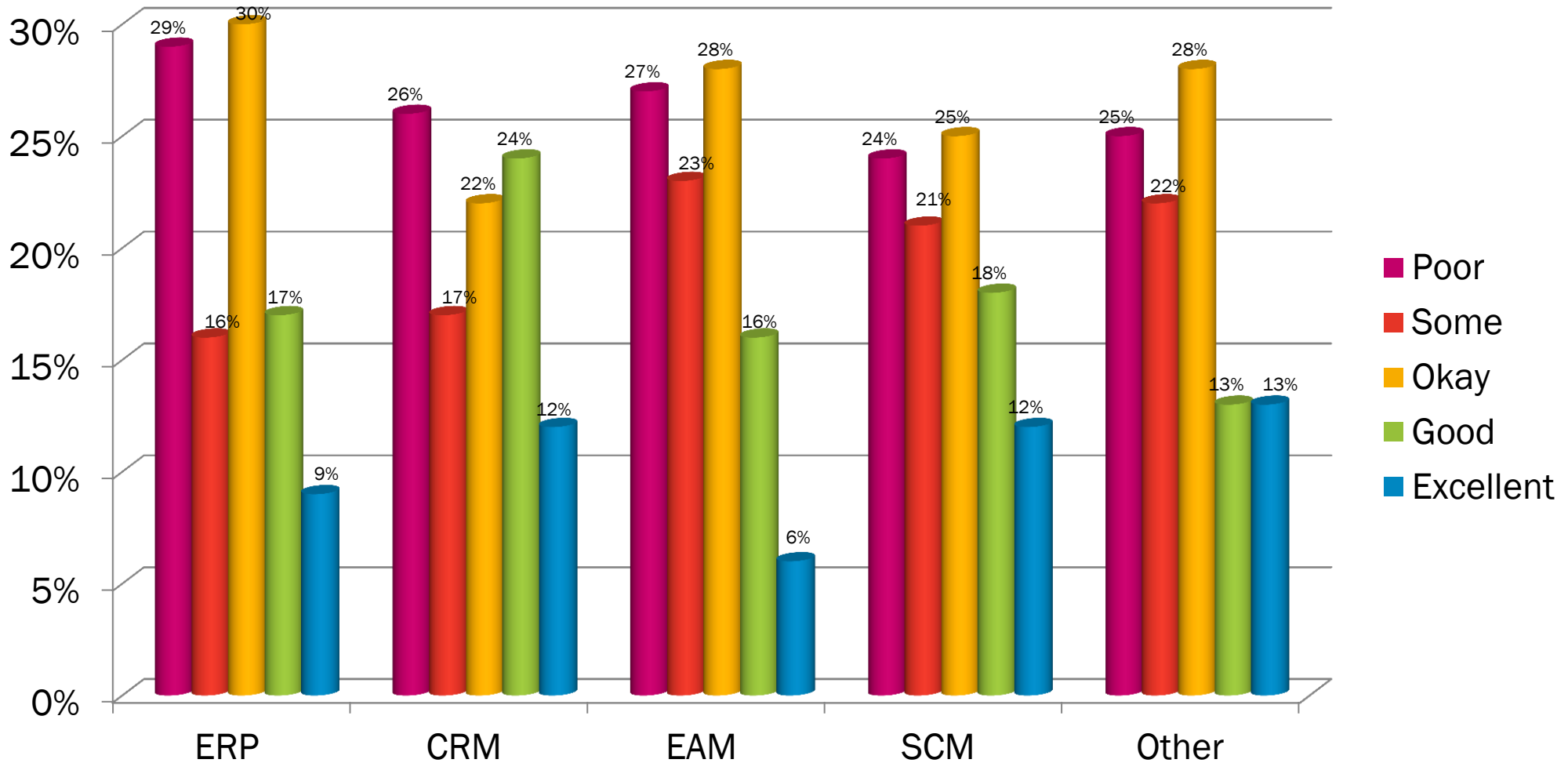
HOW DO YOU ACCESS MAINTENANCE DATA?

65% HAVE LIMITED OR NO MOBILE ACCESS

- Respondents were asked “As you think about the type of software you use for service, maintenance, asset management, or repair work, what methods do you use to access it from consumer mobile devices, including smartphones and tablets?”
- Just under half of respondents indicate that they are connecting using an intermediary like Cisco VPN. Applications through an intermediary like this are not optimized for the screen formats of smartphones, and are usually dependent on an uninterrupted connection, which may not be available at a remote site.
- 19% are relying on homegrown mobility applications and 26% use direct integrations into their database.
- Less than a quarter of respondents report using native apps designed by their enterprise software vendor. Applications designed for use with the software can offer functionality, usability and security advantages. A small percentage – 15% -- report using a UI designed for touchscreens and tablets.

ACCESS DIFFERS BY SOFTWARE TYPE

“OTHER” MOST OFTEN OFFERS “EXCELLENT” ACCESS

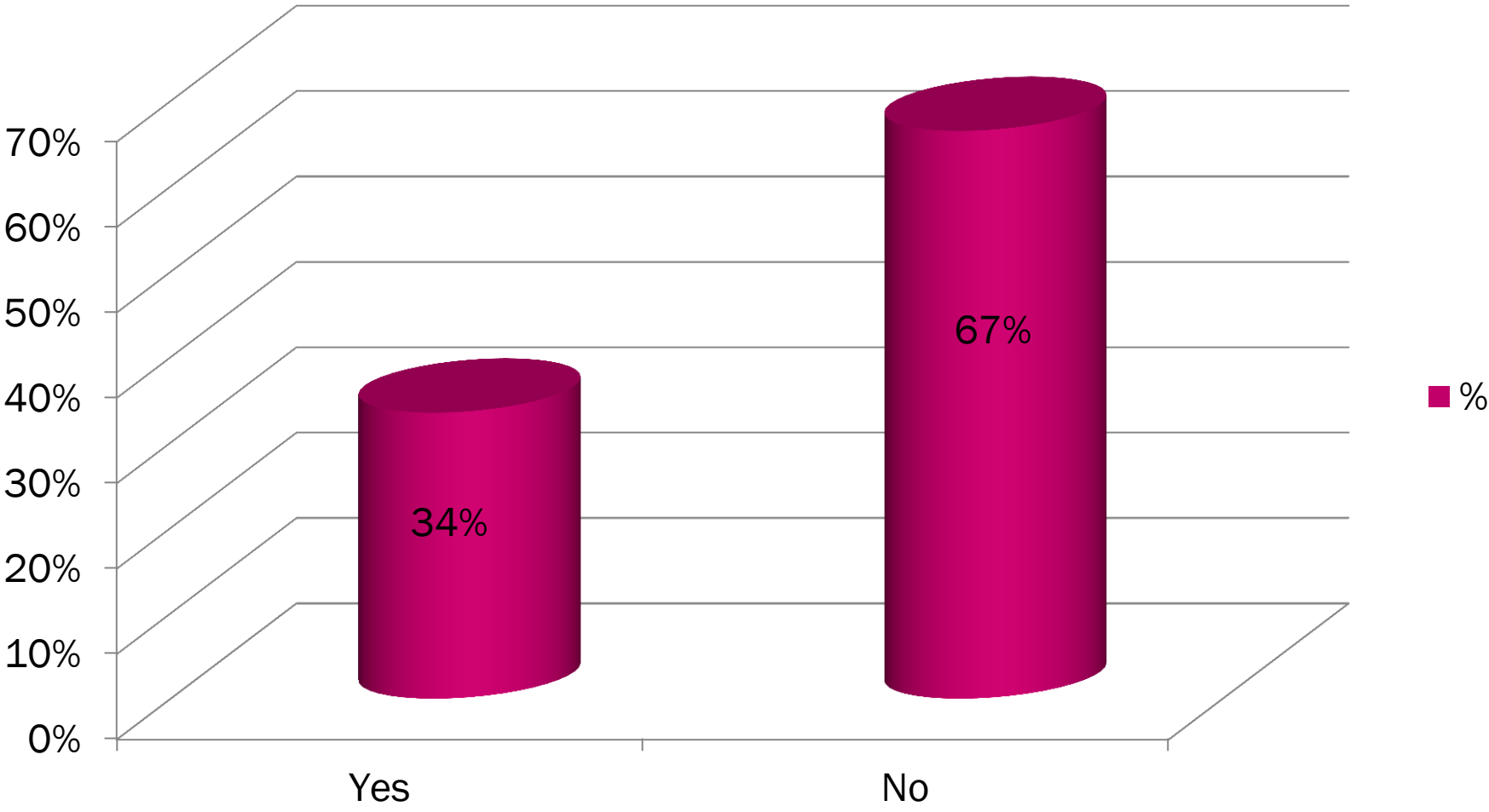


ACCESS DIFFERS BY SOFTWARE TYPE

“OTHER” AND CRM FARE BEST

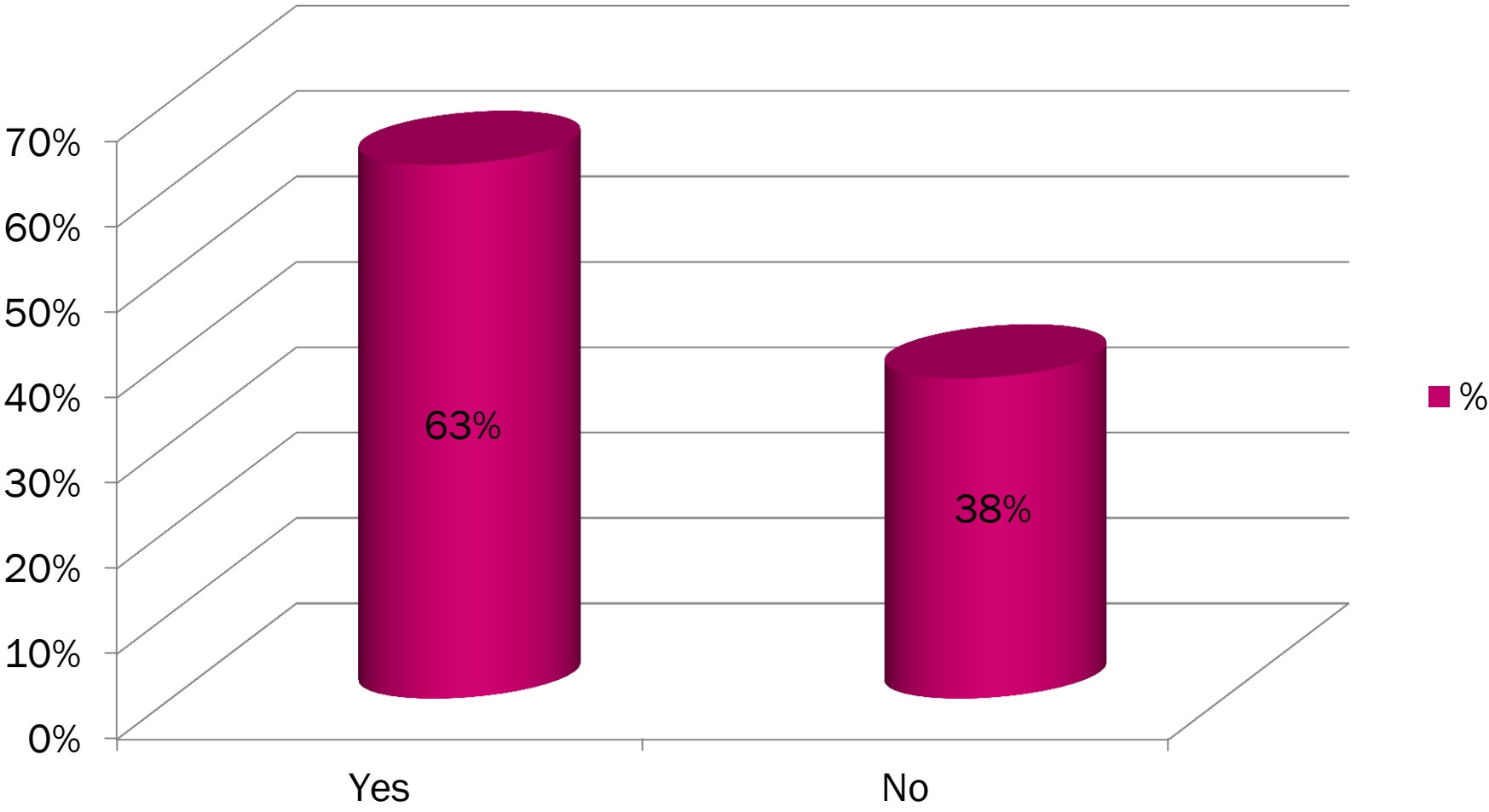
- “Other” enjoyed an “Excellent” rating of 13%, while CRM scored a just over an Excellent rating of just over 12%. But 36% ranked CRM as being excellent or good while 26% ranked “Other” as excellent.
- 30% of users of both ERP and EAM/CMMS software reported fair to middling levels of mobile access to enterprise data.
- ERP and EAM were comparable in satisfaction with the degree of mobile access, with 26% of respondents characterizing their mobile access to ERP as either good or excellent. 22% characterized their mobile access to EAM as good or excellent.

CURRENTLY WORKING VIA MOBILE DEVICE



ON THE WHOLE, A POOR MOBILE EXPERIENCE

MORE THAN HALF USING VPN OR OTHER INTERMEDIARY



ON THE WHOLE, A POOR MOBILE EXPERIENCE

MORE THAN HALF USING VPN OR OTHER INTERMEDIARY

- On the whole, there is some correlation between respondents who report using “VPN or other intermediary” and whether or not respondents report performing work on a mobile device. About half of respondents who report using a third party connection like VPN report performing business functions on mobile devices.
- Among respondents who said they get mobile access through a direct integration to APIs or the database of their enterprise software, 72% reported performing work in enterprise software on a mobile device.
- This would suggest that the means of connecting a mobile app to the back office application is a key criteria in determining how well mobility is leveraged in an EAM software environment.

OPPORTUNITIES FOR THE INDUSTRY

TECHNOLOGIES TO SOLVE THE PROBLEM

- In the years ahead, we expect more companies to use mobile applications developed by their software vendor as opposed to other, less optimal, solutions. These may take different forms including:
 - Native apps for a mobile device operating system like Android or iOS.
 - Interfaces designed for mobile use on touch screen devices like tablets.
 - Native apps for handheld ruggedized devices may be more appropriate for technicians in demanding environments.



OPPORTUNITIES FOR THE INDUSTRY

TECHNOLOGIES TO SOLVE THE PROBLEM

- Native apps need to deliver specific functionality to maximize their utility.
 - The interface must be optimized for the screen size and designed for the specific tasks maintenance technicians perform.
 - Data must be shared with back end systems used for maintenance and service management. These systems may include computerized maintenance management systems (CMMS) or enterprise asset management (EAM) applications.
 - Off-line capability must be provided so apps tolerate interruptions in connectivity, and can synchronize with the database once the connection resumes. This is important in a maintenance environment like oil and gas with distributed assets where connectivity may be limited, and in settings where large equipment may interrupt connectivity

OPPORTUNITIES FOR THE INDUSTRY

TECHNOLOGIES TO SOLVE THE PROBLEM

- Native apps must synchronize and communicate over any IP network supported by the device.
 - 3G, GPRS
 - Wi-Fi
 - Bluetooth
 - Cradle
 - or regular LAN.
- Communication must be encrypted for security and optimized for performance over the slowest of network links.
- In the ideal scenario, minimal data is kept on the actual device, but rather is housed centrally on the server. This improves security, particularly when employees' private smartphones are used.



BENEFITS OF CLOUD MEDIATED NATIVE APPS

- Makes it easy for users to use their own privately-owned devices (BYOD).
- Self-provisioning, and require minimal involvement from IT as apps can be downloaded from public app marketplaces.
- No need for VPN or other employer provided technology, reducing cost and increasing usability.
- Apps can be designed to be secure for use over public Internet.
- They can be developed for a variety of consumer platforms—most notably Android and iOS.

OPPORTUNITIES FOR THE INDUSTRY

TECHNOLOGIES TO SOLVE THE PROBLEM

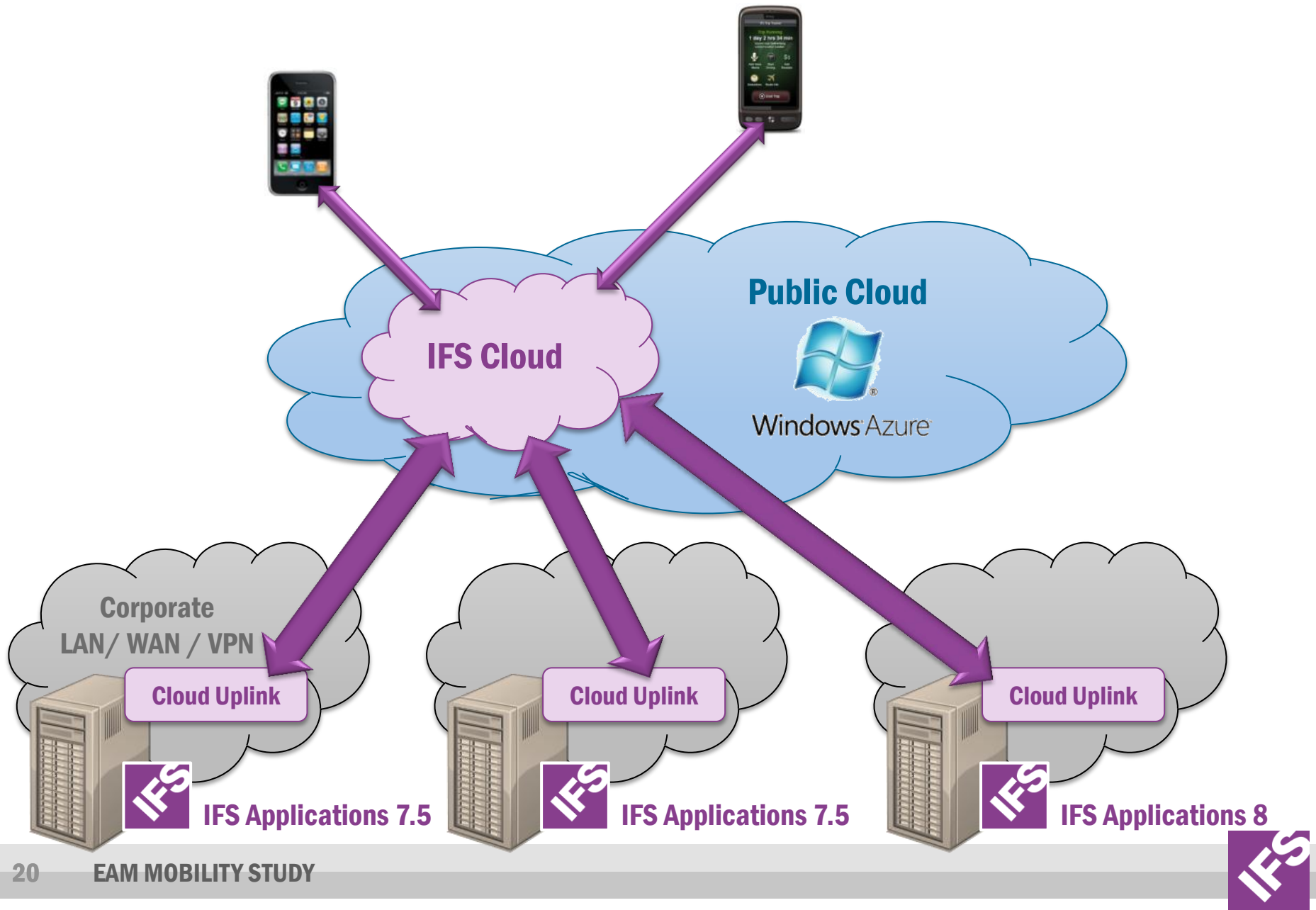
- In order to realize this vision of native apps on mobile devices, there are certain technological and security hurdles that must be surmounted. Particularly in BYOD environments, enterprise data is accessed on employees' devices that stay with them if they leave the company. And even company-owned handhelds and tablets can be lost or stolen.
- 19% of respondents report using homegrown applications to access data on mobile devices, and 26% say they are getting to that data through integrations directly with their enterprise data, either through application programming interfaces (APIs) or directly with the supporting database.
- Encryption of data is one way to limit the exposure of enterprise data to mitigate security risks of accessing enterprise data on small, hand-held and even privately-owned devices. Care must also be taken to eliminate access for mobile devices owned by employees who leave the company.

OPPORTUNITIES FOR THE INDUSTRY

TECHNOLOGIES TO SOLVE THE PROBLEM

- Another strategy is to use a cloud intermediary that connects the mobile app to the enterprise application. This cloud provisioning means access to enterprise data can be stopped at the cloud intermediary so even if the app still exists on the privately owned device, a CIO can exercise central control over access.
- This cloud intermediary can also increase stability of the combined application/app system by allowing the apps to work with a variety of versions of the enterprise software.
- One-off integrations of homegrown or commercial mobile apps, however, likely need to be uplifted each time EAM or maintenance software is upgraded. As maintenance operations move to take advantage of mobility, this is one potential cost they will want to take into consideration.

STABLE AND SECURE CLOUD DELIVERY



CONCLUSION

OPPORTUNITY FOR TREMENDOUS EFFICIENCY GAINS

- Companies currently involved with industrial maintenance report relatively low levels of and quality of access to enterprise service and asset management data from mobile devices.
- While 70% of respondents said they had at least some access to data from mobile devices, less than 40% said they were currently using this access to perform work. This would indicate that the method of connection, the nature of the apps and general levels of performance and usability prevent respondents from enjoying the business benefits mobility has to offer in the industrial maintenance space.
- More information
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