

# Thinking Big: How Google Mobility Tools Can Combine For Digital Transformation

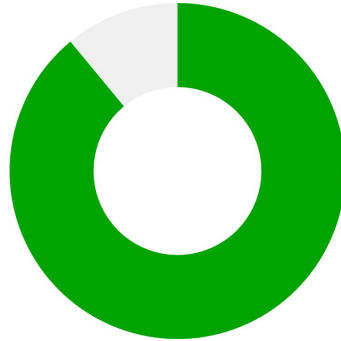


android

# The desire for digital outpaces technical reality

**89%**

of organizations  
have adopted  
or have plans to  
adopt a digital  
first strategy



**41%**

of organizations  
have not yet  
adopted mobile  
technology



Mobile is the  
**presentation layer**  
to the digital business.

Mobile is how data  
becomes **actionable**  
**by people.**



## An example in “smart” manufacturing



Analytics  
for manufacturing  
output



Operating conditions  
/ predictive  
maintenance

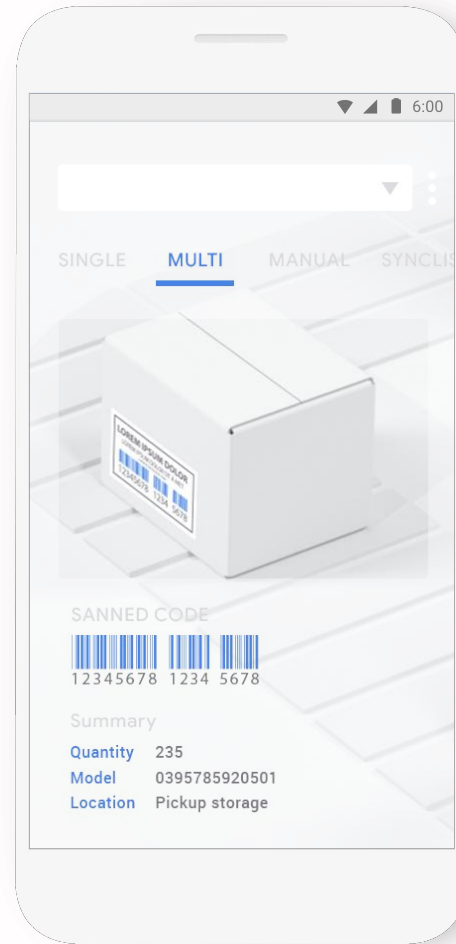


Delivery &  
inventory



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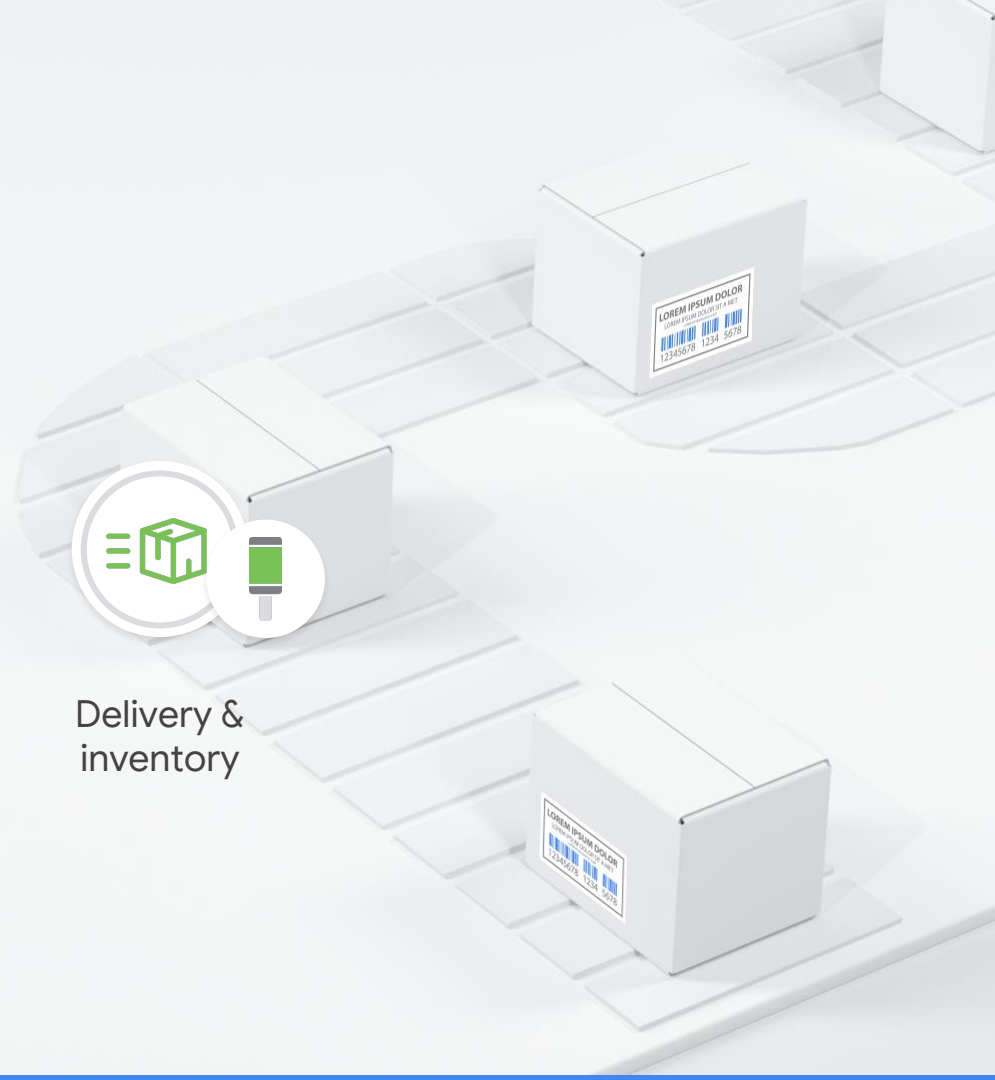
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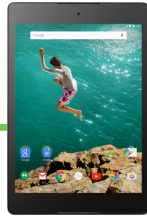
Delivery &  
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# Many form factors. One code base.



Smartphones



Tablets



Rugged devices



Single use devices



Kiosks



Digital signage



Virtual reality



Laptops



Desktops



Convertibles



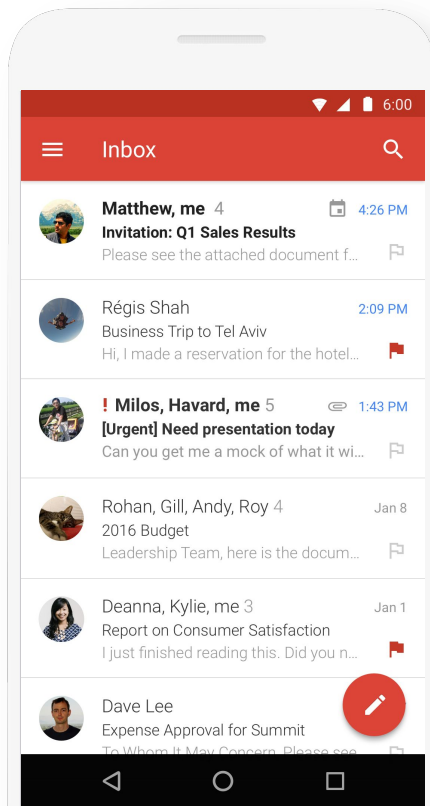
Rugged

# Benefits from the Android platform

android



# A fantastic, out-of-the box, email experience



- Provides native support for Office 365, Exchange & GSuite

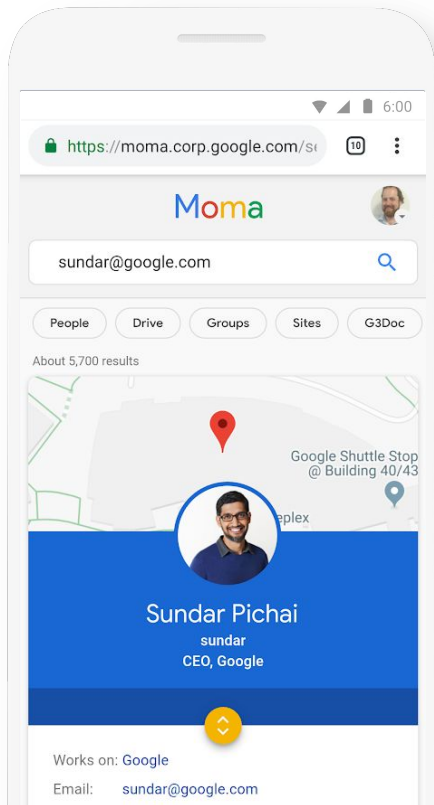
- Familiar to employees, no juggling email apps

- No need to license / maintain additional productivity apps

- Supports automatic setup via managed configuration

- Includes advanced enterprise features like cert-based auth

# The world's most popular browser - tuned for enterprises



- Support for rich, web-based applications

- Corporate data sandboxed from personal data

- Support for online and offline websites

- Tunnel to internal-only sites via per-app VPN

- Authenticate with cert-based authentication

# Android provides a wide variety of hardware for apps



Cellular



WiFi



GPS



Motion



Nearby/  
proximity



NFC



Barcode  
& QR



Bluetooth



Camera



Mic



Flashlight



Biometrics



Attestation

Key:



Native  
& Web



Native  
only

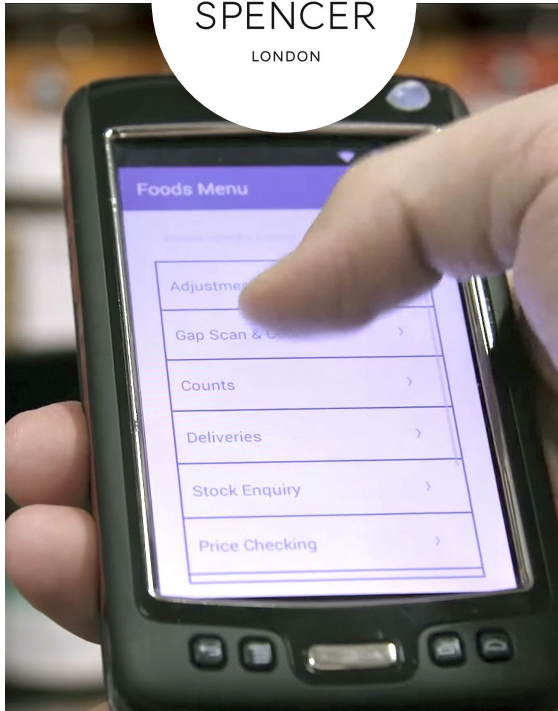


Partner  
based

# Improving retail productivity

MARKS &  
SPENCER

LONDON



## Mobile computing for connected retail

Using Honeywell Dolphin 75e for:

- Stock inquiries from the shop floor
- Price checking
- Omni-channel engagement

POS:

- Rolled out to 600+ stores in the UK

## Benefits

- Increased productivity: One device for variety of jobs
- Access to 26 customer-facing Android apps
- Better customer loyalty; surface offers from the M&S rewards program
- Improved, faster customer service = increased customer satisfaction

# Digital tools from Google

android

# Android Jetpack:

## Help from Google with app fundamentals



### Foundation

Foundation components provide cross-cutting functionality like backwards compatibility, testing and Kotlin language support.

#### AppCompat

Degrade gracefully on older versions of Android

#### Android KTX

Write more concise, idiomatic Kotlin code

#### Multidex

Provide support for apps with multiple DEX files

#### Test

An Android testing framework for unit and runtime UI tests



### Architecture

[Architecture components](#) help you design robust, testable and maintainable apps.

#### Data Binding

Declaratively bind observable data to UI elements

#### Lifecycle

Manage your activity and fragment lifecycles

#### LiveData

Notify views when underlying database changes

#### Navigation

Handle everything needed for in-app navigation

#### Paging

Gradually load information on demand from your data source

#### Room

Fluent SQLite database access

#### ViewModel

Manage UI-related data in a lifecycle-conscious way

#### WorkManager

Manage your Android background jobs



### Behavior

Behavior components help your app integrate with standard Android services like notifications, permissions, sharing and the Assistant.

#### Download manager

Schedule and manage large downloads

#### Media & playback

Backwards compatible APIs for media playback and routing (including Google Cast)

#### Notifications

Provides a backwards-compatible notification API with support for Wear and Auto

#### Permissions

Compatibility APIs for checking and requesting app permissions

#### Sharing

Provides a share action suitable for an app's action bar

#### Slices

Create flexible UI elements that can display app data outside the app



### UI

UI components provide widgets and helpers to make your app not only easy, but delightful to use.

#### Animation & transitions

Move widgets and transition between screens

#### Auto

Components to help develop apps for Android Auto

#### Emoji

Enable an up-to-date emoji font on older platforms

#### Fragment

A basic unit of composable UI

#### Layout

Lay out widgets using different algorithms

#### Palette

Pull useful information out of color palettes

#### TV

Components to help develop apps for Android TV

#### Wear OS by Google

Components to help develop apps for Wear



# Building great experiences with Material Design

Detailed design guidance and best practices, direct from Google

Design templates, layouts, iconography and typography to get you started

Everything you need to start building –  
open-source code, docs, and tutorials for development

Collaboration tools for sharing, uploading, and presenting  
design iterations and custom Material themes

# Firebase: Core app tools from Google

## One platform with products that work better together



Crashlytics: Real-time crash reporting diagnoses issues



Test lab: Test apps on real devices hosted by Google



Performance Monitoring: Gain insights into app performance

## Grow your application experience with innovative tools



Cloud messaging: Send notifications in real time



Dynamic links: Smart links to drive application workflows



A/B Testing BETA: Optimize experiences through experimentation

## Infrastructure backed by Google, trusted by top apps



Cloud functions: Manage code, not infrastructure



Cloud storage: Store and serve files at Google scale



Cloud Firestore BETA Store and sync app data at global scale



# Unlock additional value through machine learning



- Execute custom trained models on mobile devices
- Run online and offline
- ML expertise required to build custom models



- Handle common tasks like object recognition, barcode scanning, OCR
- Support both online and offline capabilities for machine learning
- No ML / AI expertise required!



Neural  
Networks API

- Leverage device hardware acceleration for ML, no proprietary HW integration required

# Improving customer service

## Rentokil

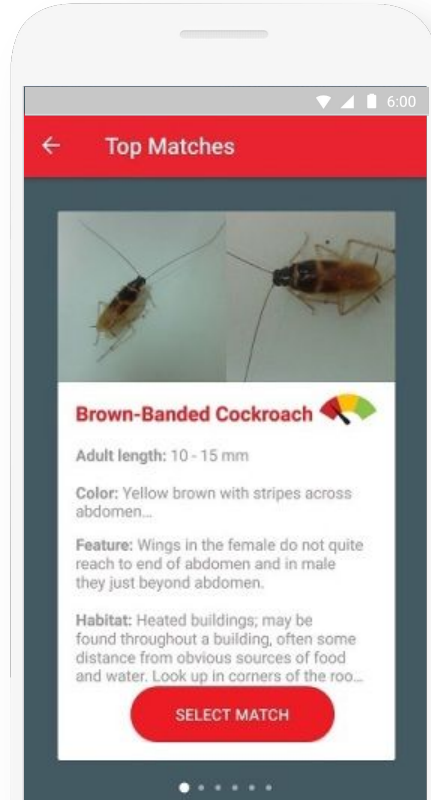
### Mobile computing for field services

Using Android & machine learning to:

- Help 5,000 field technicians identify and treat pest problems
- Automatically identify pests based on ML trained on Rentokil images
- Provide remediation solutions based on ML identification.

### Benefits

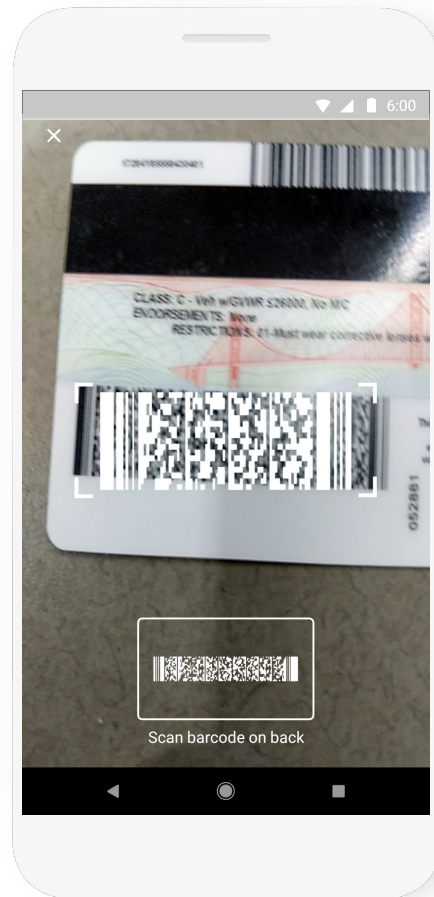
- Quicker, more accurate identification of pests
- More efficient service for customers
- More accurate and effective remediation programs



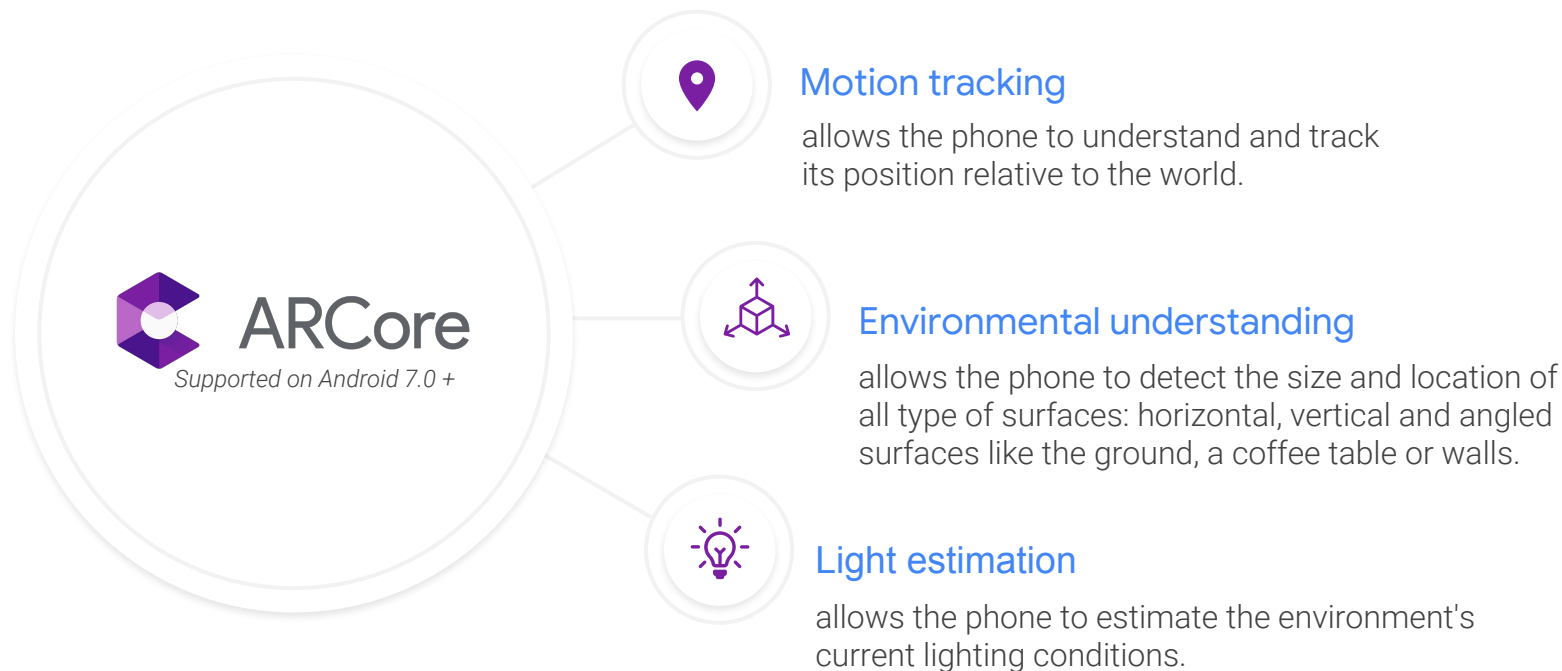
## Simplify user workflow and development effort

“At TurboTax, we are always looking for ways to make doing taxes **easier** and **more secure**. Using the driver’s license 2D barcode scanning feature from ML Kit, we enabled customers to easily scan their license and pre-populate their information, reducing manual data entry and potential for error. ML Kit was easy to integrate and deploy.”

**Tim Mueller**, Sr. Product Manager



# Rich tools for augmented & virtual reality



# Empowering conversational experiences



## Engage efficiently



Advanced natural language understanding and machine learning



Advanced fulfillment options including built-in code editor



Training and analytics across platforms



## Maximize reach



Build once, deploy everywhere



14+ languages



32 platform integrations and SDKs



## Build faster



Start training with only a few examples



40+ pre-built agents and small talk features



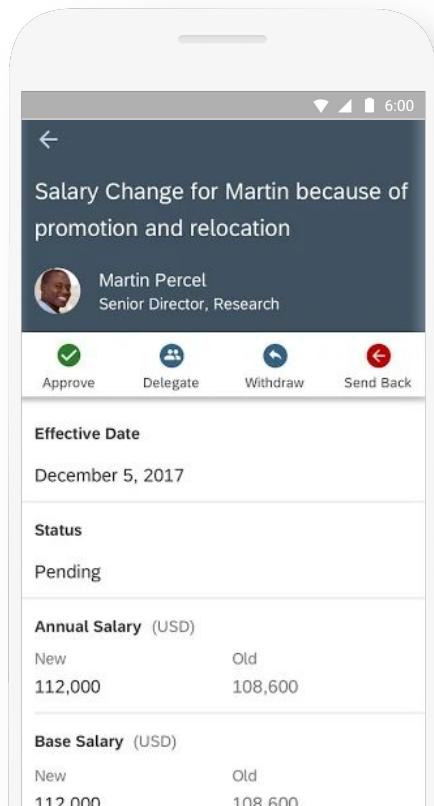
Go-to-market with simple bots in hours

Better tools with partners

android

# Android Enterprise & business applications

Working with partners for better development tools



- SAP Cloud Services Mobile SDK for Android,
- SAP Mobile Cards for Android,
- SAP Fiori Design Language for Android



- Salesforce SDK for Android
- Integrations to Google Assistant & Actions on Google



# Pushing boundaries with Google Glass

android





# Enterprise Glass

Hands-free technology for the hands-on worker.

Melvin Chua, [mchua@google.com](mailto:mchua@google.com)





Fashion to Function



 **AGCO** 50%




46%  **GE Healthcare**



 25%



25%  **Dignity Health**

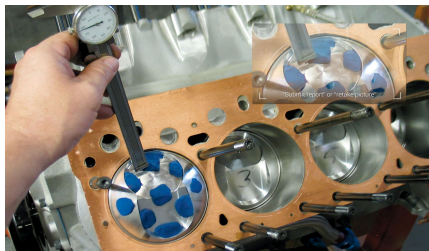


# GLASS ENTERPRISE EDITION CORE USE CASES

## INSTANT COMMUNICATION

Taps expert advice from anywhere; reduce response time

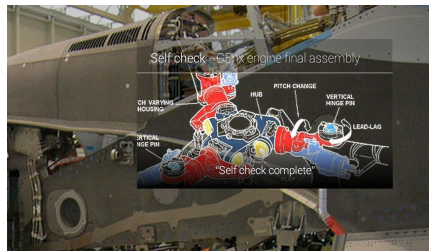
**"Collaborate without the wait"**



## REAL-TIME TRAINING

Enables "just-in-time", multi-media training

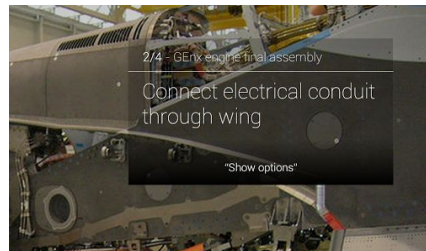
**"Learn while you do"**



## TASK COMPLETION + VERIFICATION

Improves safety and procedure adherence, reduces downtime

**"Adhere without slowing down"**



## BUSINESS INTELLIGENCE + NOTIFICATIONS

Real-time info to minimize downtime and optimize process

**"Increase business efficiency"**



# GLASS ENTERPRISE EDITION OVERVIEW

Making Glass Enterprise Ready through Android



## Improved Security and Management

Support for Network based Certificates  
Support for industry leading MDM from Airwatch



## Customers in control of Data and Integration

Android OS is Free of Google dependencies.  
Support for open standards to speed integration



## Ruggedized Hardware

Support for water and dust resistant environments.  
OSHA approved safety shields available.



# When you arrive in the office tomorrow

- ☐ Identify the data you have.
- ☐ Explore ways to provide data access; look to cloud services as a streamlined method.
- ☐ Evaluate native and web tools to digitize business processes and scale data access.
- ☐ Identify the data you don't have, but want.
- ☐ Build security and access model that assumes anytime anywhere access everywhere.
- ☐ Evaluate native and web tools to digitize business processes and scale data access.