

# Making Wearables and Sensors Work in the Enterprise

## GLOBAL PRODUCT DATA INTEROPERABILITY SUMMIT 2015



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# Biographies

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- **Dave Gibson**

Jonathan David (Dave) Gibson is a Distinguished Technologist at Hewlett Packard and the global Digital Context Aware (DCA) Chief Technologist in the Mobility and Workplace Practice. He is the co-leader of the HP ES Wearables and Digital Context Aware worldwide team with Cliff Wilke. Dave brings more than 30 years of technology expertise and business experience. He holds a Master of Science in Science and Technology Commercialization from The University of Texas at Austin and a Bachelor of Science in Mechanical Engineering from The University of Texas at Austin. Dave holds a Professional Engineering License with the Discipline in Software Engineering from the Texas Board of Professional Engineers.

- **Cliff Wilke**

Cliff Wilke is Chief Technologist focusing on Emerging Technologies for the Americas and the US Public Sector. He is the co-leader of the HP ES Wearables and Digital Context Aware worldwide team with Dave Gibson. Mr. Wilke brings more than 35 years of technical leadership experience. at the Assistant Administrator, CIO, CTO, VP, Director, and Principal levels for US Treasury, OCC, TSA, Homeland Security, IBM and Mobil Oil. Mr. Wilke is currently finishing his PhD in Science and Technology at Virginia Tech and has two Masters Degrees from Boston University and is currently the HP ES Co-Chair for Tech Con '16.

# Overview

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## HP Digital Context Aware (DCA) Solutions



“ok glass”

What is  
DCA?

DCA  
Use Cases

DCA  
Solutions

DCA  
Service Offers

DCA  
Contacts &  
Collateral

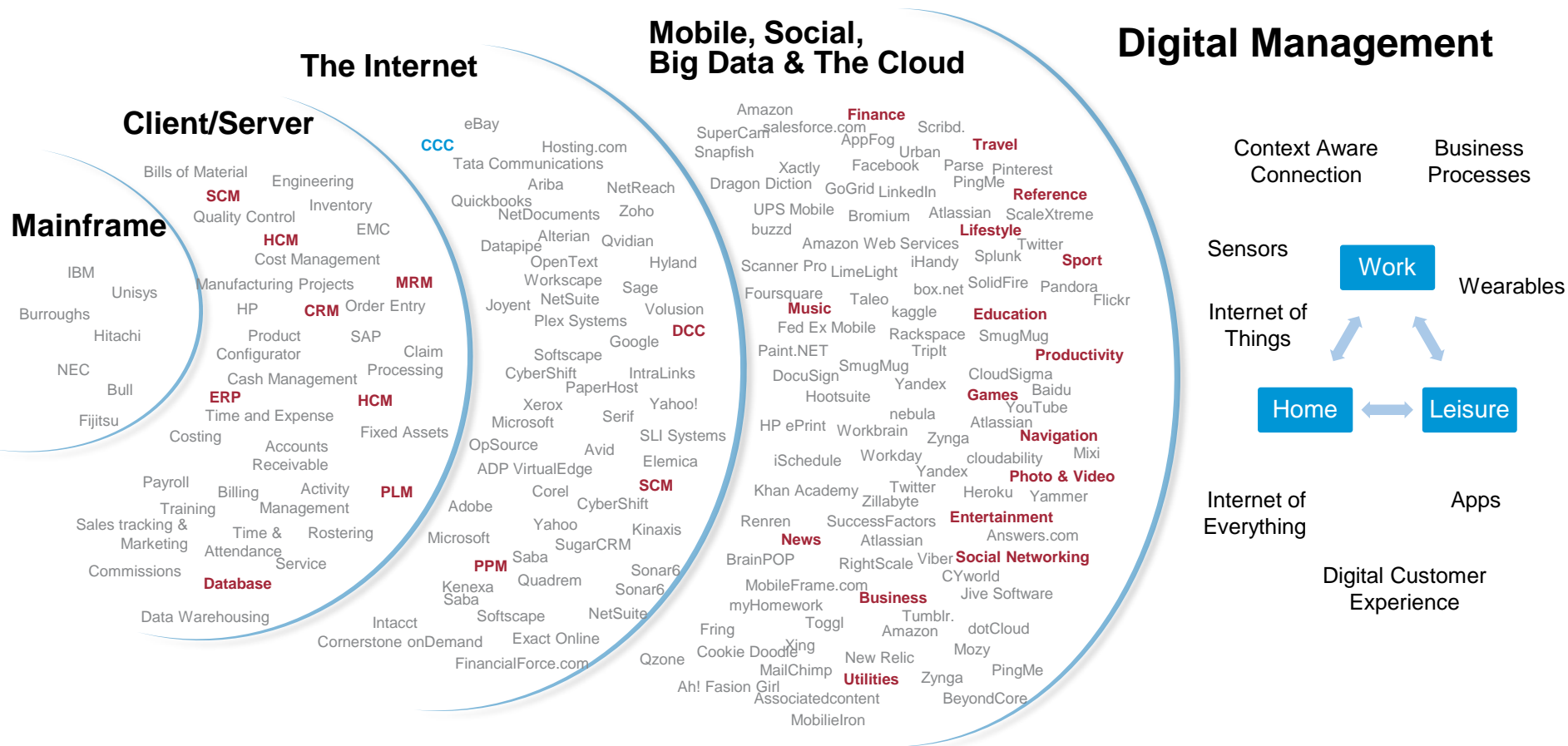
Q&A

Wearables and the Internet of Things

# Next Big Wave

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## Disruptive Innovation is Accelerating, What is Next?





# Digital Context Aware (DCA) Solutions

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Interconnectivity of wearable devices – right information, to the right device, at the right time

## Digital Context Aware Platform

Innovative patent-pending modular platform of context aware service packages and event triggers driven by situational awareness and context changes

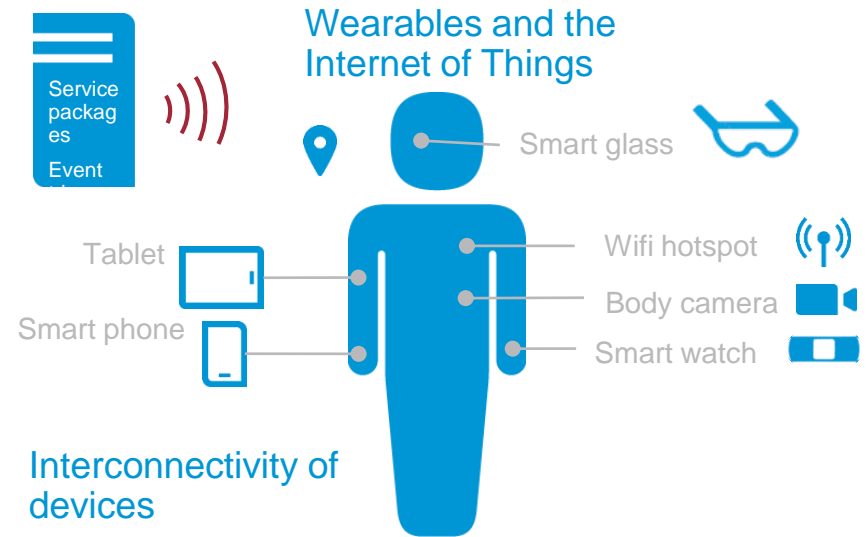
**10** Patents pending

**400+** Use cases identified

**\$1.2 Trillion** Gartner estimated market size by 2020

### Service packages

- Recognition
- Remote Viewing
- Video streaming
- Schedule
- Checklist
- Navigation
- Location
- Biometrics



- Increases productivity and efficiency of enterprise resources
- Enriches our client's interaction with their customer
- Improves the overall end user's digital experience
- Increases health and safety in the enterprise

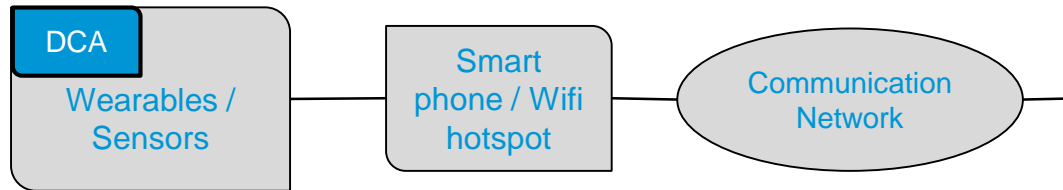
# Digital Context Aware (DCA) Component View

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## How DCA Works?

### DCA

- provides a secure context-aware ecosystem that delivers a truly seamless experience

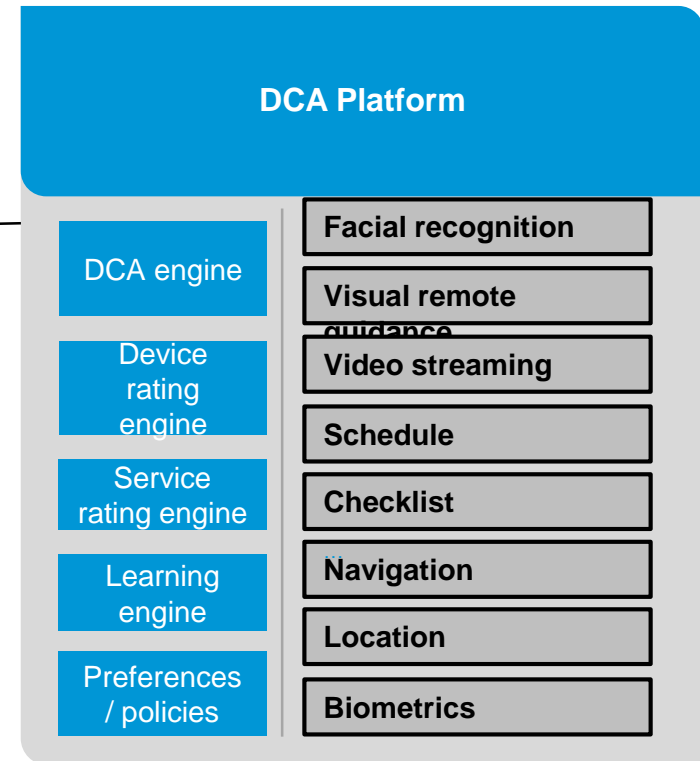


### Experiences

- Interconnect devices and their functions (Packages)
- Provides the right information at the right time to the right device
- Provides a seamless holistic experience for the user

### Packages

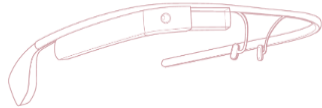
- Consumes functions related to devices
- Interconnects with services and systems



# Digital Context Aware (DCA) Solutions

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## Solving Real Business Problems



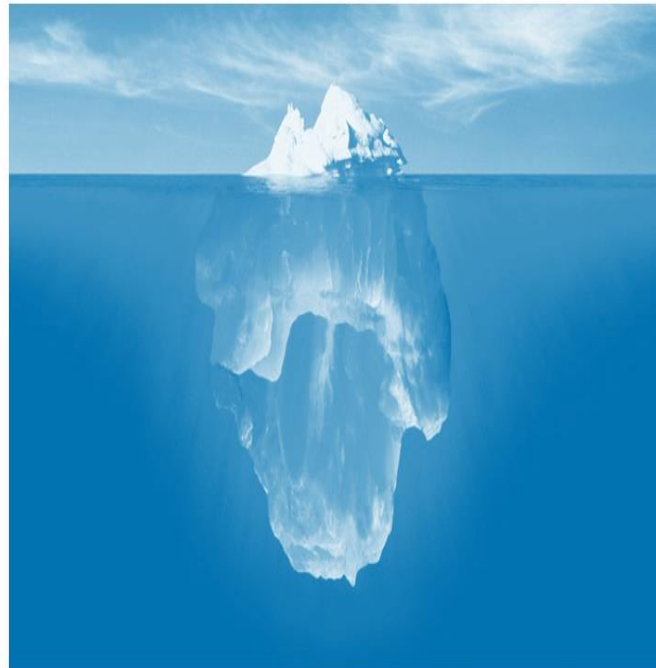
### Fashionable frontend

Wearable devices are  
just the tip of the  
iceberg

Needs strength and  
depth of HP to deliver  
meaningful outcomes -

### New Style of IT

- Cloud
- Applications
- Security
- Analytics
- Compute
- Storage
- Networking



### Plus an ecosystem of DCA solutions - New Style of Business

- Checklist
- Schedule
- Indoor navigation
- Outdoor navigation
- Geo boundary
- Location reporting
- Remote viewing
- Recognition
- Collaboration
- Partner ecosystem



# Digital Context Aware (DCA) Solutions

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## HP Patent Pending Technologies for Seamless Context Aware Experiences that Deliver Valuable Business Outcomes



### Business focused

Solves real business problems, it is not an IT system/commodity sell



### Device agnostic

Interconnects devices from other ecosystem such as Google Android and Apple iOS environments



### Device fit for use

Enables using the right device for the right function



### Best of HP

Utilizes HP cloud, security, network, compute, software, analytics & data management, R&D



### Rich partner ecosystem

Rich partners that enable DCA from both a hardware & software perspective



### Extensible

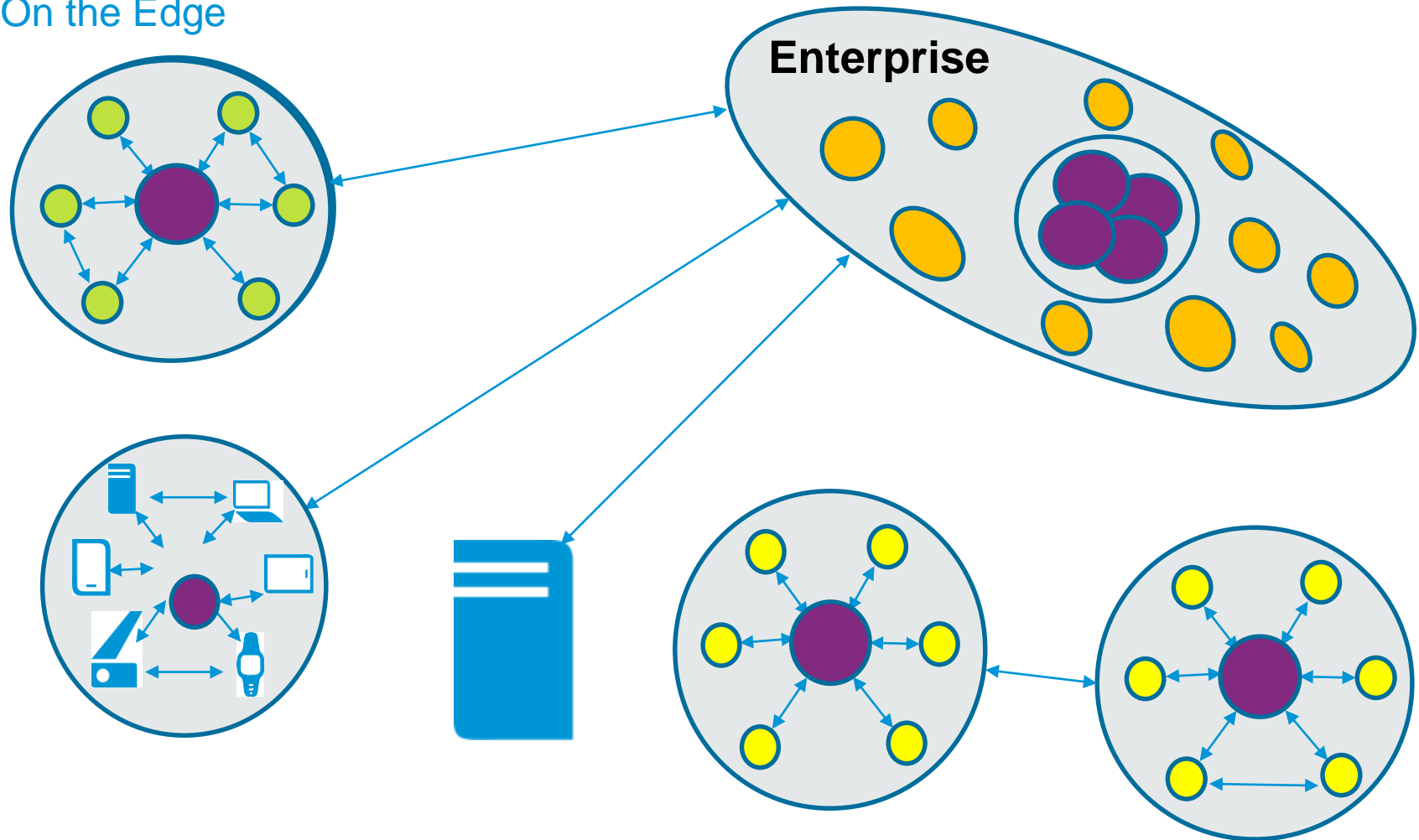
Enables the Internet of Things (IoT) experiences

DCA works with real-time context aware information flows as well as with aggregated & trending context aware information flows

# Digital Context Aware (DCA) Ecosystem

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## On the Edge



# Digital Context Aware (DCA) Ecosystem

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On the Edge

## The Edge

**Tier 1**  
Sensor/  
Wearables/  
Actuators

**Tier 2**  
Gateway

**Tier 3**  
Edge IT

**Tier 4**  
Enterprise  
Systems

# Digital Context Aware (DCA) in Action

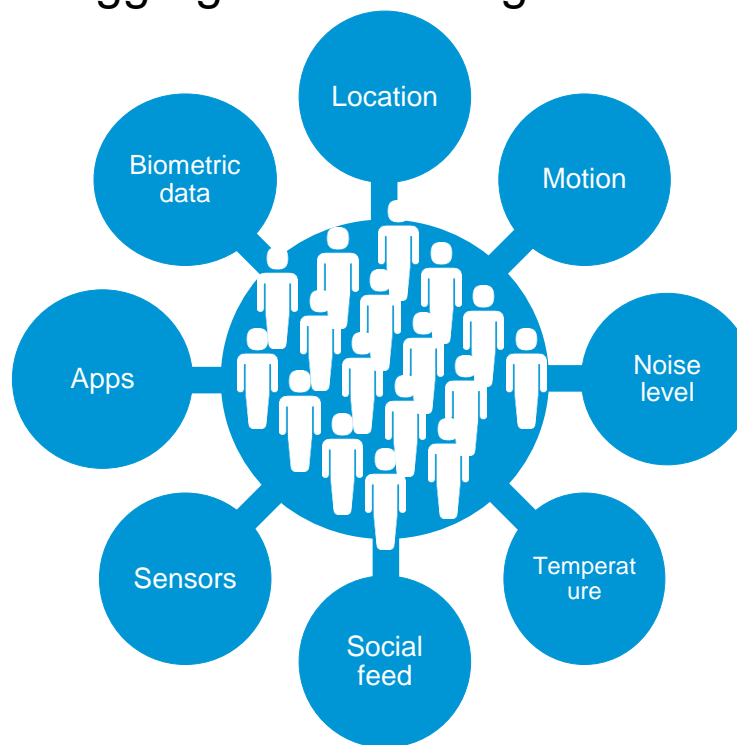
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## Connecting and Acting on Information

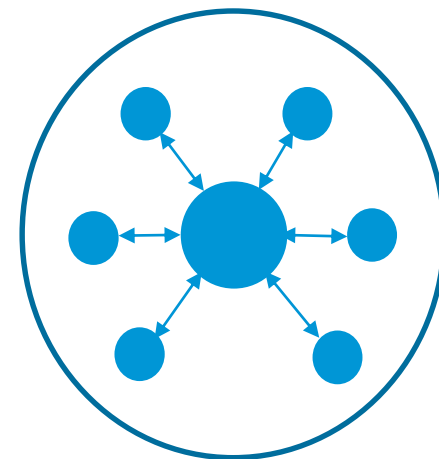
### Real-time Model



### Aggregated/Trending Model



### Autonomous Model



# Inspection & Quality Control Resource

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## Hands Free Inspector & Quality Control Resource

### Functionality

- Automatically navigate inspector/quality control resource to the location where the inspection or quality control check is going to be performed
- Once inspector/quality control resource arrives automatically:
  - Notify inspector/quality control resource when they arrive
  - Identify the machine to be inspected or the quality control check to be performed on the machine
  - Determine whether operating temperature of machine is within normal operating limits
  - Provides secure step by step checklist on smart glass:
    - Navigate through checklist via voice command/gesture
    - Video snippets for each checklist step activated with a single voice command/gesture
    - Schematics/diagrams for each checklist step activated with a single voice command/gesture
    - Remote expert using real-time remote viewing to assist with each checklist step activated with a single voice command/gesture
    - Full video for the checklist

### Checklist

### Business Value

- Increase productivity
- Improve job efficiency
- Increase uptime
- Enables less experienced resources to perform more complex procedures or inspections
- Enriches the digital experience
- Improved quality through receipt of in-process instructions

### Service

Schedule
Navigation
Checklist
Remote Viewing
Location

# Maintenance Repair & Operations

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## Plant Maintenance & Repair

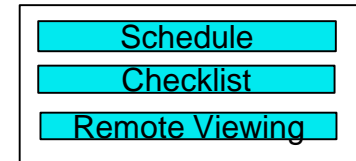
### Functionality

- Automatically navigate technician to the location of the maintenance/repair to be performed, update work order when maintenance/repair is complete
- Once technician arrives automatically:
  - Identify the part/system to be maintained and repaired
  - Show part/system specs to help determine if it is out of tolerance
  - Start the maintenance/repair checklist for the part/system
- Provide step by step maintenance and repair instructions including:
  - Full video for maintenance/repair instructions activated with a single voice command/gesture
  - Video snippets for each step activated w/single voice command/ gesture
  - Schematics/diagram for each step activated with a single voice command/gesture
  - Remote expert using real-time remote viewing to assist with each step activated with a single voice command/gesture
- Capturing information such as video, pictures, and notations related to key aspects of maintenance/repair for compliance, safety monitoring and training
- Log time spent on maintenance/repair order

### Business Value

- Cost saving due to:
  - Increase in productivity
  - Improved job efficiency
- Reduced plant downtime, resulting in improved customer satisfaction
- Enables less experienced resources to perform more complex procedures or inspections
- Improved auditing, compliance, and training through capturing the right information for key maintenance and repair tasks
- Enriches the digital experience
- Improved quality through receipt of in-process instructions
- Improved financial reporting through better logging of time spent on maintenance and repair steps

### Service



• Providing safer work environments

# New Employee Orientation and Training

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## New Employee Assistance

### Functionality

- Provides secure step by step completion checklist for new employees:
  - For employee onboarding
  - Video snippets for each onboarding step
  - Schematics/diagram for each step
  - Remote expert using real-time remote viewing to assist with each step activated
  - Mark completion of onboarding steps/ training for position
- Video Display of Training Processes
- Log time spent on employee onboarding and training
- Capturing information in the HP Helion Cloud such as video, pictures, and notations related to key aspects of employee onboarding and training used for post inspections, compliance with regulations , and for training purposes

### Business Value

- Increase productivity
- Improve employee onboarding process by reducing the time to onboard a new employee
- Improve quality control and consistent compliance with training and bringing new employees into the organization
- Enriched auditing and compliance process by capturing information such as videos, pictures, and notations related to a specific signoff step or series of steps – safety processes and form compliance
- Improved financial reporting through better logging of time spent on:
  - Steps during the employee onboarding process

### Service Packages

Checklist

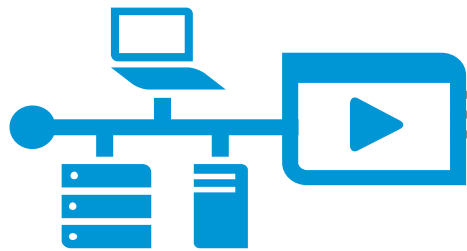
Remote Viewing

# Best of HP

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## System View

### Systems of record



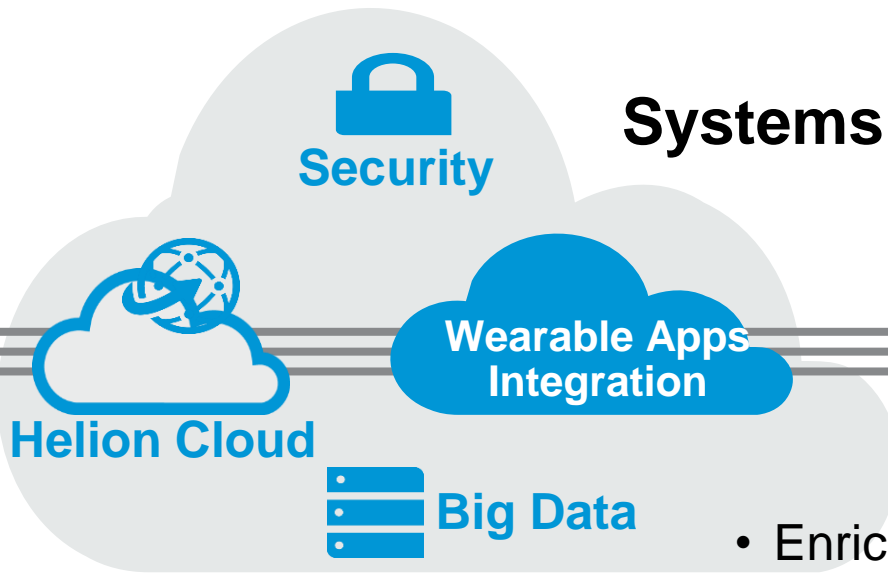
- IT driven
- Host business processes
- Inflexible
- Need to be re-engineered to work with Systems of Engagement

### Systems of engagement



- Enrich User Experience
- End user driven
- Just in time information
- Contacts and connections
- Hands free access
- Cloud & analytics

**End-to-end solution  
needs both  
components**





# Digital Context Aware (DCA) Service Offerings

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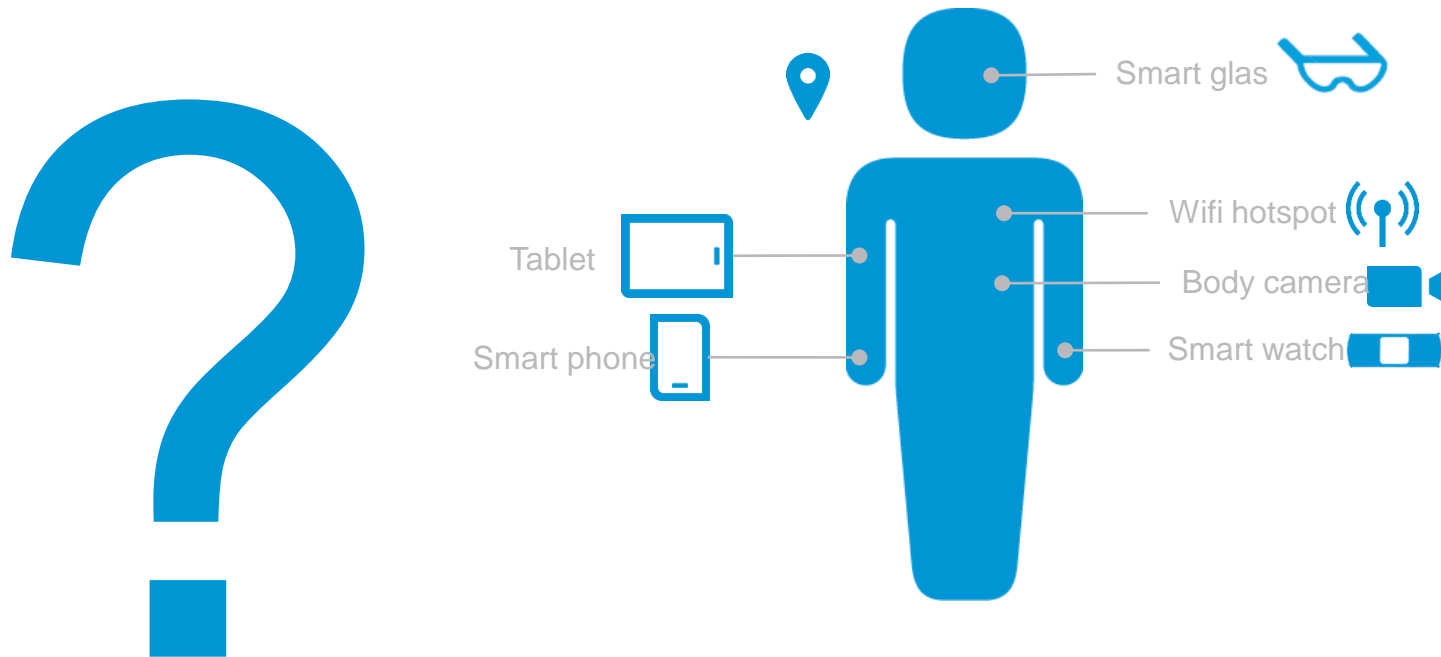
## Next Steps – Business Solutions and Outcomes



# Digital Context Aware (DCA)

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## Questions



Seamless enablement of **context aware mobile experiences** leveraging **wearables** and the **internet of things**