NEW AND INTERESTING:

ENTERPRISE WEARABLE TECH USE CASES

BRAINXCHANGE / WHITEPAPERS

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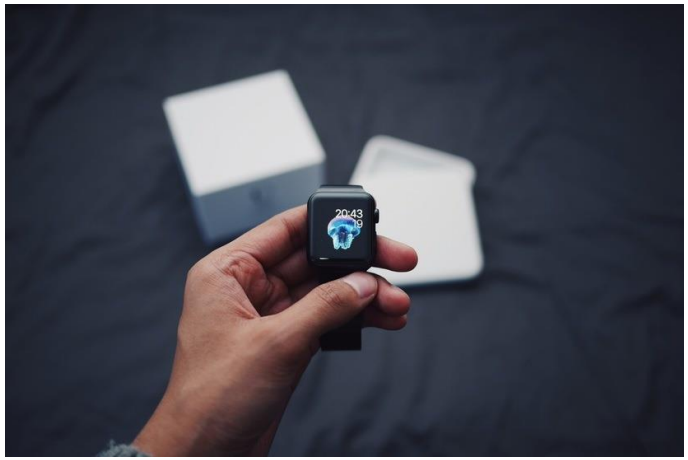
Introduction

While some of the latest reports say that consumer interest in wearable technology is fizzling, enterprise interest in the technology is surely rising and spreading fast across the industry spectrum. Indeed, it seems as if new examples of wearable devices in the enterprise come to light every week now: From a Canadian hotel resort to a British musical instrument retailer and even the U.S. government; ***wearable tech is rapidly evolving to meet business needs around the world, creeping into some surprising sectors.***



This eBook spotlights some of the *latest and most interesting use cases of wearables* in enterprise environments. In the following pages, you will read about how wearable tech has recently infiltrated the hospitality, retail, logistics, and automotive industries, along with the public sector. **A word of note, however, before we begin**: The use cases described in this eBook were all originally reported elsewhere or otherwise uncovered directly from an involved party. Nevertheless, this does not mean that the companies mentioned are still using or will continue to use wearable technology in the future.

Many of the use cases out there are mere trials of wearable devices. Undoubtedly, some of these trials prove successful, others just promising, and still others cease at the pilot stage. What you don't read about in the news, of course, are those companies that tested out wearables but for whatever reason – cost of investment, hardware issues, failure to prove ROI, IT challenges – did not go through with deploying the technology. Still, it is worthwhile to read about the use cases, for they reveal the great potential for wearables in a variety of workplaces. Wearable technology for enterprise purposes is really about arming the right person, with the right information, at the right time…and in the most convenient, least obtrusive way possible. That's what wearable tech comes down to, **no matter the industry, no matter the use case, no matter the first outcome.**

Whistler Blackcomb

This major ski resort near Vancouver, Canada recently launched a pilot program featuring wearable technology, with the end goals of increasing efficiency in the resort's operations and improving the visitor experience. In order to realize the pilot project, WB partnered with **Vandrico Solutions**, a Vancouver-based software company.

So how exactly is wearable tech being utilized in this case? Actually, in a few ways. First of all, some of WB's lift staff or "lifties" are going to be using smart glasses in order to truly customize service at the resort. The smart glass technology will enable staff to recognize an individual getting off the lift and to know such things as whether it is that person's first day on the mountain. Because the devices show staff real-time data about guests, lifties will be able to engage in a highly personal manner with resort-goers, ensuring they have the best experience possible.

The smart glasses will also be utilized to reduce lift maintenance times, with the technology – or more specifically, the software by Vandrico – directing the right person to the job as fast as possible.

Royal Caribbean International

Here's another travel and hospitality case in which wearable tech is being employed in more than one way.

To start, Royal Caribbean – in partnership with a tech expert – "has created a new wearable technology" intended to train travel agents on all the offerings aboard RC's newest *Quantum* and *Anthem of the Seas* cruise ships. Now, it's not clear whether this is a proprietary wearable device or whether the hospitality brand has had special software customized for an existing model of smart glasses (I'd bet on the latter). What we do know is that the wearable tech in this case is smart glasses that can show agents the facilities on board the new ships via built-in video, perhaps virtual reality-style. The wearable training technology will be used to ensure that Royal Caribbean's trade partners are in the best position to sell the brand's most advanced ships to date.

In addition, when *Anthem of the Seas* launches next year, passengers will use wearable technology in the form of multipurpose smart wristbands instead of keycards in a bid to upgrade the cruise experience for both guests and crew. Royal Caribbean partnered with **Assa Abloy Hospitality** to realize the wearable devices, which use flexible RFID technology.

How the technology works: As passengers approach the gangway, crew members will be able to quickly scan their smart bands containing all the necessary identification information. Not only will this simplify and speed up the process of guests' embarking and disembarking from the ship but the bands will also act as a room key and pass to certain areas of the ship like the spa.

And that's not all. A la Disney's MagicBand, the Royal Caribbean wristbands are designed to keep track of passengers' bar and restaurant tabs and as a means of payment for professional photos taken on the cruise along with the ship's vending machines and casinos. It is not hard to imagine how the technology might lead to greater spending by those aboard Anthem of the Seas.

Along with constituting new and exciting use cases of wearable technology, both the Royal Caribbean and Whistler Blackcomb wearable tech schemes reveal a general trend in the hospitality industry of incorporating the latest technological advancements in order to improve customer service and the guest experience.

Dawsons

The Dawsons example is a testament to the game-changing potential of wearable tech in business, especially when it comes to customer service. Dawsons is a British musical instrument retailer that is utilizing smart glasses – plus AI technology – to revolutionize the online shopping experience.

When a customer clicks *Chat* on Dawsons' "online shop," he is no longer connected to an anonymous, text-based support person but rather he is able to communicate with an in-store specialist wearing a pair of **Epson** smart glasses. In this case, the smart glasses act as the remote eyes and ears of the potential buyer.

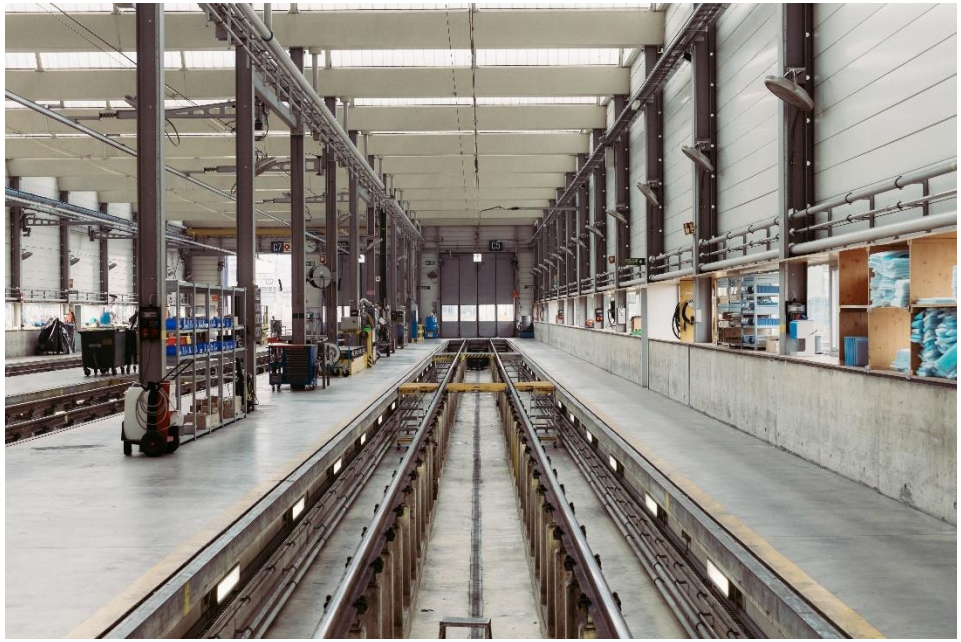
Say you're considering purchasing a guitar. While browsing online, you could ask the Dawsons in-store specialist to try out a few instruments for you. You would be able to see and hear whatever the smart glasses-clad sales associate does in the physical store; and you would be able to talk to him and ask questions, all thanks to a one-way video link with two-way audio.

This truly novel take on online shopping was provided by UK startup **GoInStore**. Typically for Dawsons, online conversions are one-tenth of in-store rates; but wearable tech has improved the online numbers dramatically, along with improving customer satisfaction, increasing the average order value, and reducing return stats.

This kind of wearable tech program is great in retail scenarios requiring a consultative or “high touch” sale between staff and customer. Buying a guitar is one such scenario—a very considered purchase, in which most customers would prefer testing out the instrument and talking with a specialist in a physical store to shopping online. Dawsons’ use of smart glasses provides a very practical digital link between store and web, providing an immersive online experience that nearly replicates the in-store one.

Other major retailers should take note, for smart glasses may very well finally deliver the perfect balance between the confidence of a real human-to-human sales interaction and the ease of purchasing with a click of the mouse.

Exel / DHL



Exel, the freight forwarding arm of Deutsche Post DHL's supply chain management business, is apparently following in the footsteps of its parent company in preparing to test "vision picking" with smart glasses to boost productivity in two of its U.S. warehouses.

Earlier this year, DHL deployed smart glasses in a distribution warehouse in the Netherlands. In that wearable tech pilot program, warehouse workers processed orders by scanning barcodes with their glasses instead of using hand-held barcode scanners. Instructions were relayed via the wearable devices, eliminating the need for paper invoices and even telling workers the fastest route to find products and how to arrange orders precisely.

Warehouses can be complex environments, but Exel is betting on wearable technology to simplify matters somewhat, especially for the thousands of temporary workers the company hires during periods of peak activity. It won't matter that these temps are unfamiliar with the particular warehouse, because smart glasses will tell them what to do and where to go. And of course, wearable tech can also be applied for training purposes.

Exel is undoubtedly hoping for the same results as those of the forerunning Dutch scheme, in which smart glass technology reduced the time needed to pick and pack an item by 25%. In the Exel case, the smart glasses will be outfitted with the company's warehouse management software, which is how the technology will help workers navigate so precisely and efficiently on the warehouse floor.

Daimler AG

At this point, it may seem like smart glasses will never be a hit with consumers, but enterprises that have warehouses and factories are closely eyeing the technology and even adopting in many cases (DHL, ahem). A test program still underway at Daimler as of June 2015 (when it was mentioned in a WSJ article) reveals how Google Glass and the like can boost productivity by reducing – and even eliminating – the need for manuals and printed instructions along with reducing production errors and the number of steps required to complete tasks.

Daimler is using **Vuzix** smart glasses plus quality assurance software by **Ubimax** for quality control inspections on its assembly lines. Workers checking for defects on vehicles moving down the assembly line need no longer memorize checklists or rely on paper instructions; and they don't need to file reports on computers away from the assembly line once they've completed their inspections, because now they're wearing smart glasses.

With smart glass technology, Daimler assembly line workers are able to view checklists during inspections, greatly diminishing the possibility of missing an item. And upon discovering a defect, they can immediately and rather effortlessly make a voice-recorded report without leaving their station, as well as photograph the problem and forward all the information to those workers responsible for correcting the error—a much more precise method of handling the issue.

Daimler hinted that it may test smart glasses in other areas of assembly work in addition to quality control in the future.

Singapore Land Transport Authority

A group of 200 Singapore commuters are currently trialing smart wristband payments for public transport services as well as for retail goods at establishments equipped with “contactless readers” capable of interacting with the bands. To realize the pilot scheme, the LTA teamed up with a number of corporations, including **Sony**, which provided the hardware for the project in the form of the Sony SG50 SmartBand, and mobile network operator **Singtel**.

The wearable technology works like so: in order to pay for their transportation, participating commuters need only hold their wrists up to a fare card reader on the bus or at a transit station. When they need to “top-up” or refill the value stored in their smart bands, they hold their wrists up to a different device.

The project, which will run until February 2016, is designed to give commuters a range of options to stay mobile: they can register for automatic wristband “top-up” or refill services for their Sony smart bands, and they can use the Singtel mWallet app to check their bands’ stored value balance while on the go. In addition, trial participants can use the wristbands to pay for services at a number of retail outlets, including – I’m assuming – fast food establishments and even libraries.

The LTA will track the performance of the smart bands in fare transactions in order to determine whether wearable technology has a place in public transit. The hope is that wearable tech will enable “faster, easier and more convenient” transit for commuters. The mobile retail payment services and lifestyle/wellness tracking are just added benefits.

U.S. Department of Defense

The DoD is looking to both the private sector and academia to help the U.S. military keep up with the rapidly advancing wearable technology market. As part of the Pentagon's newly announced Flexible Hybrid Electronics Hub – an initiative by the Obama Administration to develop flexible, high-tech sensory gear that can be worn by soldiers or molded onto the surfaces of various crafts – Defense Secretary Ash Carter awarded $75 million to a consortium of 162 companies, nonprofits, independent research organizations and universities, including the likes of Apple, Boeing, Lockheed Martin, Harvard, Standford, and MIT.

The U.S. government clearly sees wearables as a next major technology frontier, as evidenced by the creation of the FlexTech Alliance consortium. Under an agreement managed by the U.S. Air Force Research Laboratory, the Silicon Valley-based group will receive the $75 million in Defense Department funding over the course of five years. That money will be matched by more than $90 million pledged by industry, academia and local governments over the same period of time; so in total the team will receive $171 million to invest in advancing wearable technologies.

The partnership between the Pentagon and the private sector aims to revitalize and strengthen U.S. manufacturing through the development and production of flexible hybrid electronics. Stretchable electronics can be embedded with sensors and potentially worn by soldiers to monitor their health in real time; they can also be integrated onto ships and aircrafts to monitor the vessels' structural integrity.

This is not the first time the government has considered the potential benefits of wearable devices for improved health monitoring and connectivity in the military. In 2014, ground support crew at the U.S. Air Force tested Google Glass as a way of extending computing support to dismounted airmen on the battlefield. The experiment was part of the BATMA(N) program, an endeavor to improve tactical decision making and reduce human error in the battle space. Possible applications included medical support—having pararescuemen and other first responders use smart glasses to monitor the vital signs of multiple casualties without taking their hands off either the patients or their weapons.

NASA

In March 2015, NASA announced it would be teaming up with **Osterhout Design Group** to bring augmented reality glasses to space. Imagine smart glasses becoming essential equipment for astronauts aboard the International Space Station!

The space agency is exploring the potential for ODG's smart glasses in human spaceflight, particularly their ability to guide astronauts through an experiment or repair job in space. The plan is to create a system of how-to guides that could be uploaded to the glasses, enabling astronauts to follow directions in order to, say, repair a latch on their ship with their hands full.

NASA's engineering teams were working on integrating the space agency's software into ODG's AR glasses, intending to test the technology in an undersea lab to simulate the environment of a space flight before submitting the glasses to NASA's flight program team for its first trip into space.

Currently, astronauts rely on printed instruction manuals in space, so when something goes wrong they have to flip through a ring of index cards. It's not hard to imagine that this can be a highly cumbersome process, especially in an emergency. Most astronauts resort to phoning back to base, which – as a ship travels farther and farther from earth – becomes increasingly infeasible, with a message from Mars taking approximately 20 minutes to reach someone at home base.

Recognizing that the traditional method was problematic and inefficient, NASA spent over a decade working on software capable of recognizing objects from video, in addition to voice-control technology. At that point, however, the right kind of hardware did not exist. Flash forward to the rise of wearable tech, and NASA has found the right gadget in the form of smart glasses by ODG. (This was only after Google turned NASA reps away in 2014, when the company's Glass efforts were still focused on consumers.)

ODG's products are currently used by the U.S. military, as well as by other defense and industrial clients. The R6, the company's heavy-duty smart glasses model, is designed to stand up to the rigors of military life; and to provide mobile guidance and information even in the most demanding environments, of which space missions certainly count as one.

As electronic directions and instructions replace paper checklists and as NASA considers missions of longer and longer duration, wearable technologies can meet the agency's evolving demands, improving the accuracy and efficiency of astronauts' in-flight activities. Along with ODG's smart glasses, NASA has been "toying" with Microsoft's HoloLens headset. Though the rocket carrying two of Microsoft's "mixed reality" headsets to the International Space Station blew up in June, NASA will try again in December to bring the HoloLens to space.

What good could HoloLens do in NASA's exploratory activities? The space agency sees a number of potential practical uses for the technology, including allowing astronauts aboard the space station to receive help with unfamiliar tasks in the form of tele-expertise. HoloLens could also act as an augmented-reality instruction manual and be utilized in safety procedures as well as inventory management, since keeping track of things on the ISS is apparently a big challenge. In an underwater research station off the coast of Florida, NASA tested HoloLens for various tasks in which an astronaut might receive help from an expert sitting in a remote control center. Whether at a construction site on earth or millions of miles away in space, the see-what-I-see capabilities of smart glass technology are definitely going to be a gamechanger.

Fennemore Craig

Could wearable technology change the legal process as we know it? The "Lamber-Goodnow Injury Law Team" of Phoenix, Arizona firm Fennemore Craig thinks so.

Marc Lamber and James Goodnow are two personal injury attorneys who have been employing Google Glass to win cases since 2014. In a pilot program they called "Glass Action," Lamber and Goodnow loaned a pair of Google Glass to several of their clients, who then utilized the technology to document their lives post-injury. This video documentation could then serve as evidence at trial.

When the Explorer Edition of Google Glass first rolled out, the lawyer duo immediately recognized the potential for the technology to tell the stories of their injured clients in a powerful way. Take the case of Gary Verrazono, one of Lamber and Goodnow's clients who was rendered a double amputee in a 2012 work accident: Instead of having Gary write a letter describing how his physical condition affected his day-to-day life or eliciting the same information through questioning at trial, or even having a day-in-the-life video shot from a third-person perspective and entering that into evidence; Gary was able to use Google Glass for a few months to not only document his life but also communicate with his lawyers despite his physical limitations. It's easy to imagine how effective such first-person perspectival footage of the hardships encountered by Gary each and every day of his life would be in a trial.

In this case, Google Glass was essentially used to create evidence—unique and highly moving evidence from the injured client's perspective. But beyond serving as a recording device, Glass also encouraged an open line of communication between the injury law practice and its clients. While some injured clients may be unable to use a smartphone or tablet without difficulty, smart glasses enable even the severely physically disabled to communicate and convey their story seamlessly (as well as remotely) using voice activation.

Along with Google Glass, Lamber and Goodnow have been experimenting with Fitbit and the Apple Watch during different stages of the litigation process. The team believes that Glass and other wearables can make a real difference in their practice, helping them to provide their clients with the best representation possible. In addition to experimenting with Glass during mock trials, the attorneys toyed around with the Fitbit, having mock jurors wear the devices during trial simulations in order to figure out how actual jurors might process and respond to information. With Glass, you can glean what grabs a particular mock juror's attention, while with a Fitbit you can measure his heart rate to predict which pieces of evidence will resonate most strongly with real jurors.

The Lamber-Goodnow team also sees potential for Fitbit to be used by the firm's clients in monitoring their activity levels over the course of a day. Such information could then be presented as evidence to support their clients' claims, especially if the metrics are consistent with healthcare providers' reports and recommendations.