DIGITAL CLARITY GROUP

Insight Brief

Wearables, Drones and Virtual — Are You Ready for Work?

By: Connie Moore

At a recent business process management (BPM) conference,[1] one of the panelists made a startling comment about the future of work, which spurred an immediate tweet from the Digital Clarity Group analyst in attendance:

> **Connie Moore** @cmooreclarity
> Cognizant information officer speaker at #appian15 says the future of work isn't mobile, #social, cloud. it's #drone, #wearable & #virtual

Those few words made a big statement — a significant leapfrog about the state of work today and the impact of new technology in the future. This Insight Brief continues that Twitter dialog by examining how successful organizations are using the transformative technologies prevalent today and what the impact on work will be from transformative technologies on the horizon.

Mobile, Cloud and Social Were Disruptive, Now Ubiquitous

As for the state of the market for today's existing transformative technologies:

- **We take mobile for granted because it is literally everywhere.** *The Economist* recently featured Planet of the Phones on its cover, saying, "the smartphone is ubiquitous, addictive and transformative." If that's the case — and it is — mobility has already reinvented the workplace. According to *The Economist* about half the world's adult population already owns a smartphone; by 2020, 80% will, and that trend is dramatically changing the workforce, customers, students, children, criminals, terrorists . . . just about every cohort you can think of.

- **Cloud computing has transformed work too, whether it's icloud, salesforce.com, Microsoft Azure or something else.** Cloud makes it easier, faster and safer (from a backup perspective) to use software off premises than it is to implement big, time-consuming software suites on site. According to SiliconAngle, if given the choice of only moving one application to the cloud, 25% of respondents would choose storage, making cloud storage a key enabler of mobility.

- **Social is so ubiquitous that the tag line for every TV show, entertainment offering and advertisement links to Facebook, Instagram, and Twitter.** The question that always surfaces, at least during the internet age, is: does social enhance productivity or decrease it? But the more germane question is whether workers will stick around if they don't have access to social, particularly given how creaky our 50 year-old e-mail systems are. Plus, in many jobs, social has become intrinsic to the job. Reps routinely engage with customers via Twitter or Facebook; anyone in media or public relations had better keep their finger on the social pulse; marketing gleans customer feedback (much of it negative) from social, and so forth. Social has definitely become a work tool.

Wearables, Drones and Virtual For Work Are Closer Than You Think

The first half of that conference speaker's assertion is correct: mobile, cloud and social have already transformed the world of work. Going forward, their impact will not be as disruptive as in the past — workers will expect those technologies to be prevalent in the workplace. So, if that's true, what's next on the horizon? Is it really wearables, drones and virtual? Let's take a look:

- **Wearables hold great promise, particularly in industries that involve working with the physical world.** One of the most easily grasped examples for wearables is logistics — warehousing and shipping — where workers can quickly scan inventory and examine items that have been damaged or misplaced.[2] According to Andrew Sheehy, the eight most common use cases for wearables are for healthcare, diet management, car insurance, policy and security, outdoor navigation, personal trainer, arranging a meeting, and memory aids.[3] (See Figure 1 for an example of a wearable device.) While some of these use cases are more oriented toward consumers than workers inside companies, it's relatively easy to imagine how consumer wearables that track exercise and diet could also transform the health care, insurance and pharmaceutical industries.

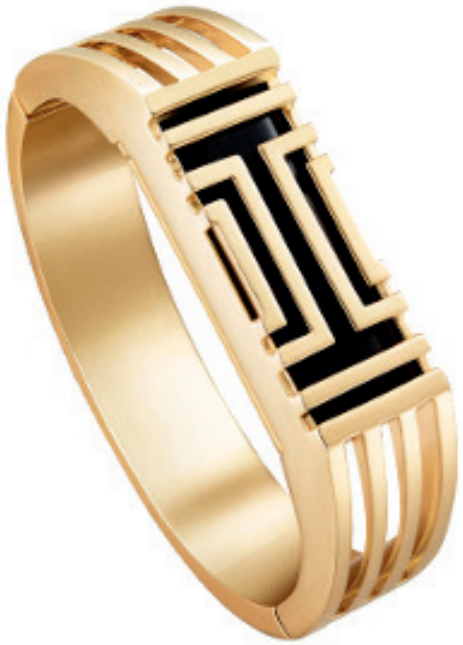
Figure 1.

Wearable Tech Users Claim to Have Enhanced Their Careers

According to PwC, twenty percent of American adults already own a wearable device and the adoption rate is on par with tablets in 2012. (That's a little hard to believe — can Fitbit really be that popular?) (See Figure 2 for an example of a Fitbit redesigned as a fashion device in addition to a fitness wearable.) But, wearables may not sweep the economy by the same wave that mobile devices rode in on. PwC also says that "33 percent of surveyed consumers who purchased a wearable technology device more than a year ago now say they no longer use the device at all or use it infrequently. Price, privacy, security, inconsistent data and the lack of "actionable" information from such devices are among consumers' main apprehensions. In fact, 82 percent of respondents were worried that wearable technology would invade their privacy, and 86 percent expressed concern that wearables would make them more vulnerable to security breaches."[4]

Figure 2.

Fitbit Flex Designed as a Tory Burch Accessory

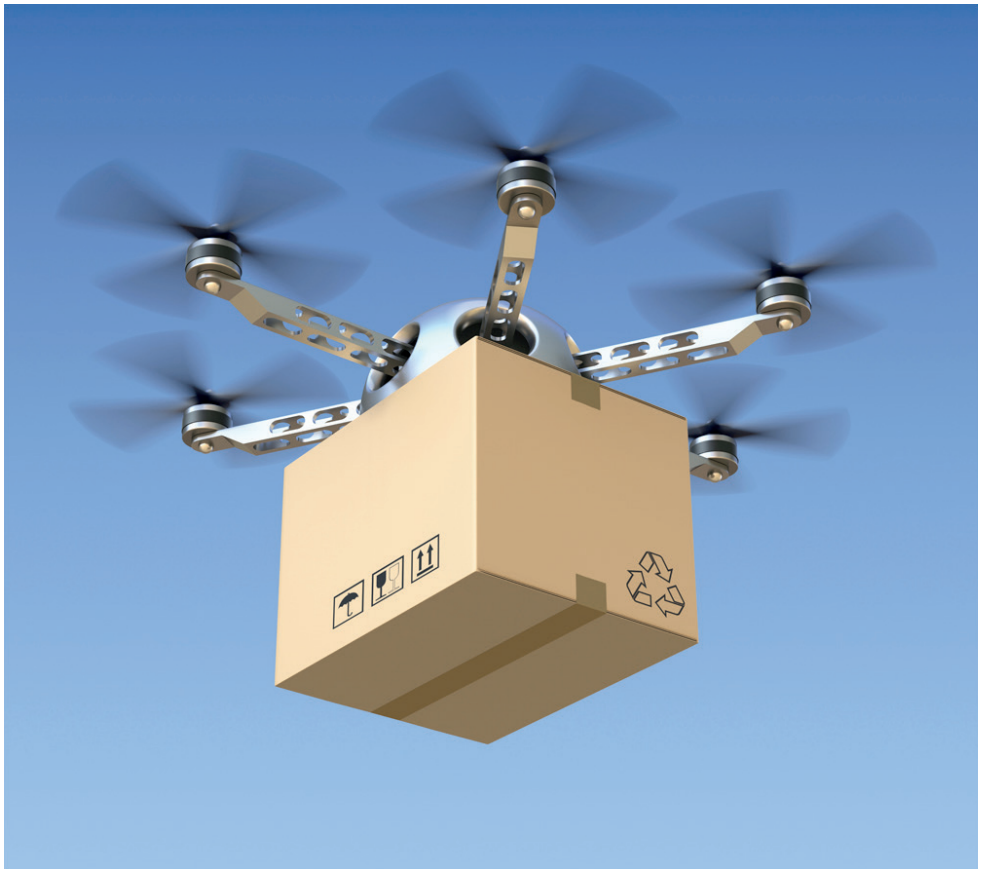


- **Drones have begun to make business inroads, and manufacturers have high hopes for the nascent civilian market.** While drones have become so commonplace (if not uncontroversial) in Afghanistan, they are also quietly and quickly making inroads into the commercial sector. Interestingly, this growth is not just a US phenomenon; several manufacturers are based outside the US, including Switzerland's senseFly (owned by France-based Parrot); the Canadian firm, Aeryon; publicly traded Swedish firm CybAer; China-based DJI; and the Korean firm, Gryphon.[5]

  When Amazon recently announced that it is testing the use of drones for package delivery, everyone got excited that Amazon would transform the drone market in a fell swoop. (See Figure 3 for an example of package delivery.) Yet industry watchers don't think package delivery is the killer app; instead they see a wide adoption pattern emerging across a number of industries, including aviation, city/government, construction, disaster response, education, engineering, environment/climate, inspections, insurance, mapping, marketing, maritime, meteorology, mining/oil & gas, real estate, tourism, utilities, and videography/photography.[6] BI Intelligence now predicts "12% of an estimated $98 billion in cumulative global spending on aerial drones over the next decade will be for commercial purposes."[7] This means a wide swath of workers will be impacted by the deployment of drone technology.

Figure 3.

Use of Drones for Product Delivery



The author of this Insight Brief has personal, vicarious experience with drones for commercial use, from watching her relatives use drones in their real estate construction business. Customer service was the prime motivator in their decision to use drones, which proved to be quite affordable and easy for a small business to use. The company builds high-end homes for people who earn in the stratosphere — like athletes, movie stars, and CEOs. This clientele expects a level of service that the hoi polloi can only dream of. The owners decided that flying drones over properties under construction, or over land to be developed, and filming the results, would be a great client service. They were right; clients loved it and it soon became a differentiator. Here's a great example of how drones can change work, even in a small business. (See Figures 4a and 4b for examples of using drones to video hard to reach areas.)

Figure 4a.

Drones Expand the Reach of Real Estate Firms

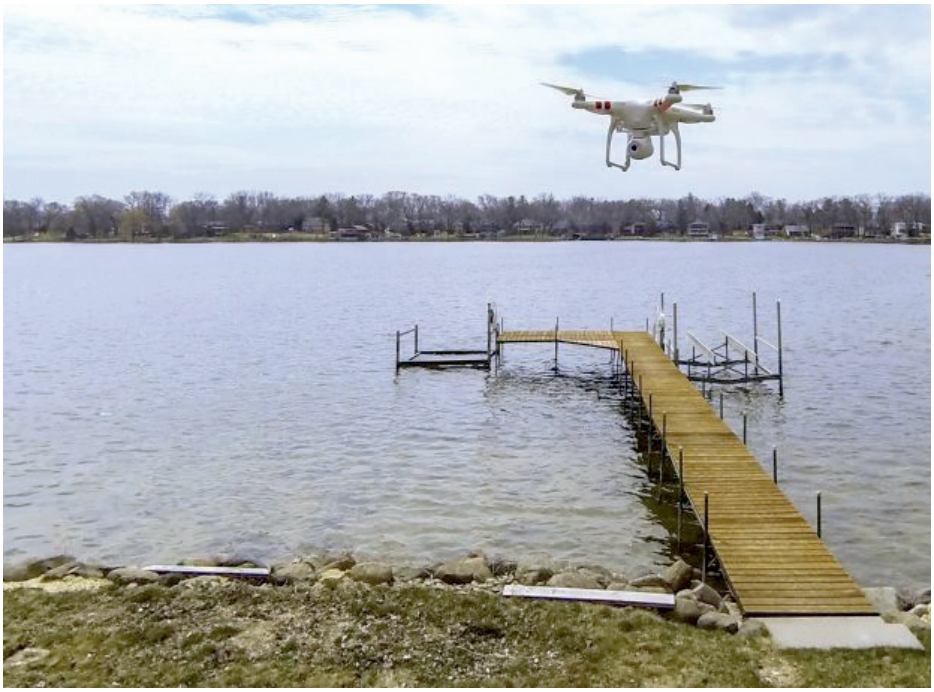
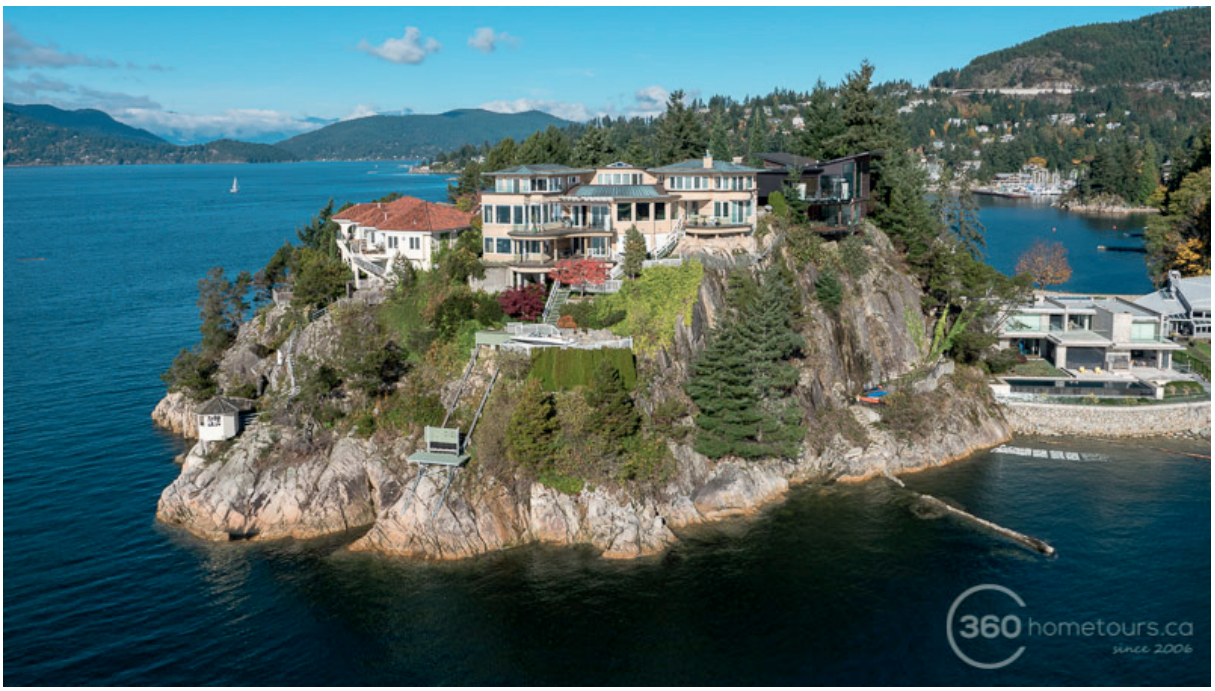


Figure 4b.

Professional Real Estate Photography Firms Combine Drone Video With Other Video Sources

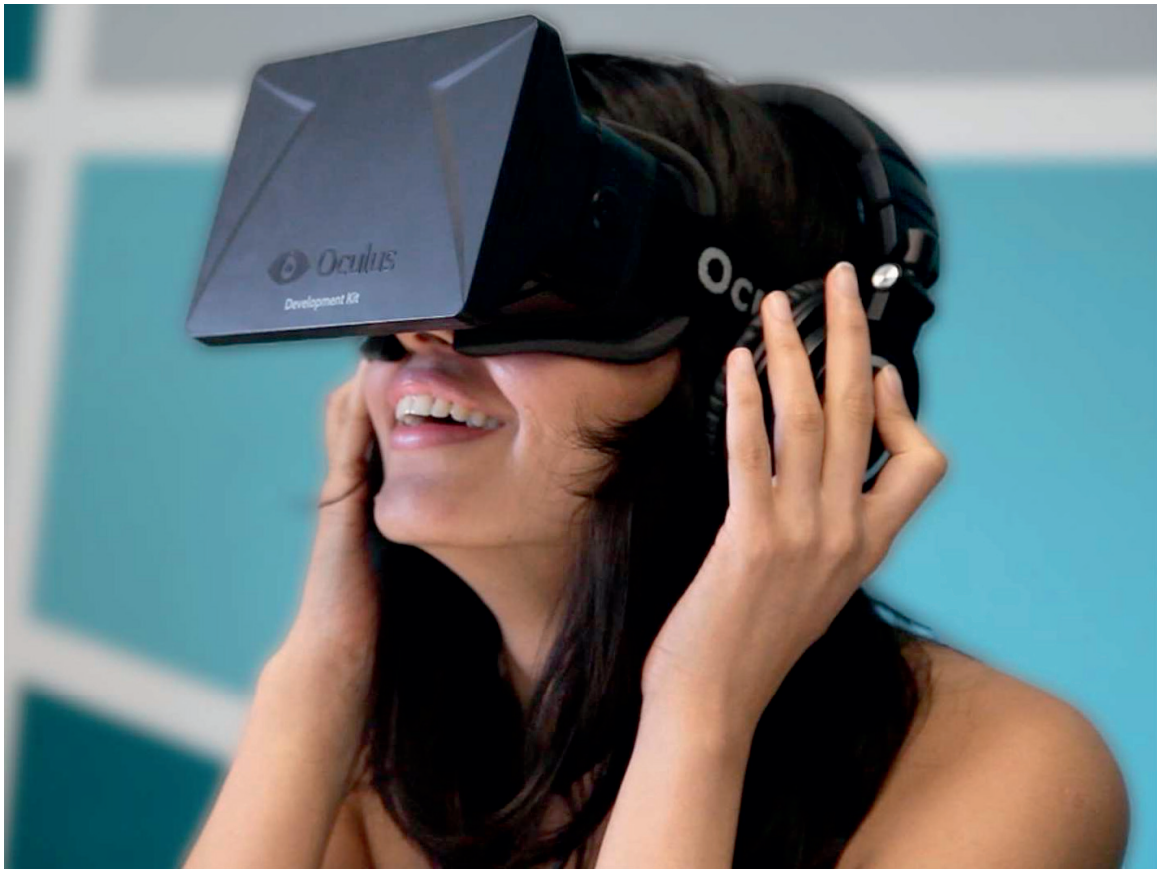


- **Virtual is a broad term that (approximately) means not engaging directly with something that physically exists, but having some type of representation (say visual or simulated interaction) instead.** In the IT world, virtualization can reside anywhere: starting between the physical technology and the software layer and going all the way up the stack to a digital representation of a real person or thing. When it comes to changing how we work, virtual could be considered as: 1) referring to the digital representation of a person or thing over a network, Skype, or Facetime, 2) virtual or simulated worlds like Second Life, and 3) virtual assistants along the lines of Apple's Siri or IBM's Watson.

In some ways, virtual is the easiest of the three emerging work trends to imagine because most of us already use some version of virtual technology when it comes to engaging with other workers. For example, video conferencing is a reality for many workers as companies (or the workers unofficially) move toward video over Webex, GoToMeeting, Skype or Google Hangout. But most of these business uses are for ad hoc meetings that haven't revolutionized the world of work. However, the promise for new virtual experiences in the world of work has taken a huge jump forward with Facebook's multi-billion acquisition of Oculus — breakthroughs may literally be around the corner. (see Figure 5 for an example of Oculus.)

Figure 5.

Oculus Rift Sets Off a Race in Virtual Reality Technology

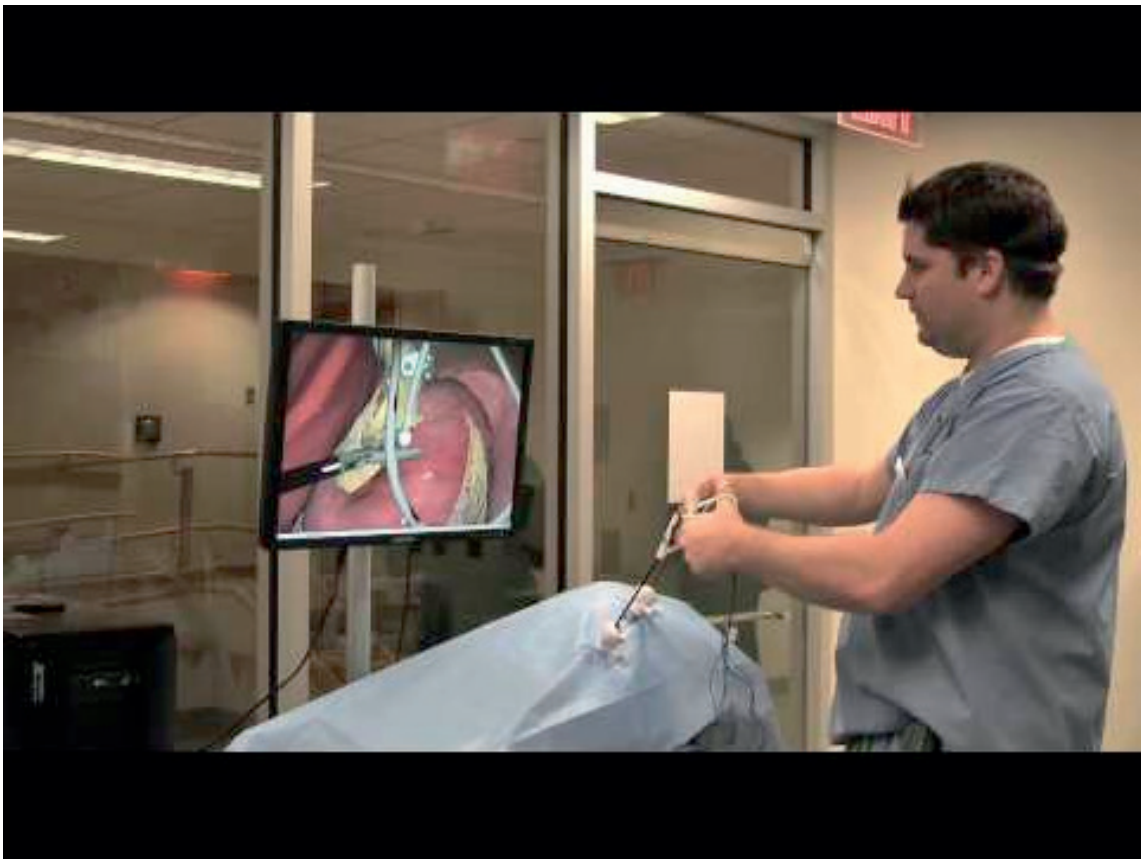


Just imagine that an advanced research hospital starts using video to link to hospitals in remote locations in developing countries, allowing the top medical teams in the world to participate virtually in demanding, risky surgery. (See Figure 6 for an example of a virtual surgery prototype.) Or imagine a search and rescue operation being conducted by both people on the ground and by a team of specialists in another part of the world reading digital outputs, satellite data, heat maps and providing critical information to the onsite team, dramatically altering the outcome. Or consider more mundane situations where a customer contacts a call center using video not only to communicate, but also to show the damaged product and reproduce the strange sound it makes. All of these are real examples of virtual communication changing how workers engage with one another or customers.

Headsets (which combine virtual and wearable technology) that provide fully immersive virtual reality are also coming to a job near you in the not too distant future. Examples of business applications currently in use include testing new product features, training new employees, conducting more realistic meetings, showing real estate remotely, selling products and the experiences customers can have when using them, virtual shopping from a retailer, and data visualization in many industries for a range of applications.

Figure 6.

Virtual Lap Band Surgery



Don't Wait -- Make a Plan for Going Forward

So, there you have it. Will wearables, drones and virtual be as disruptive as mobile, cloud and social? You bet. Plus wearables, drones and virtual will build on the breakthroughs that mobile, cloud and social created, leading to an amplified effect for the latest breakthrough technologies to enter the scene.

Here's what companies should do about wearables, drones and virtual:

1. Take all of these technologies seriously; start evaluating possible use cases for each of them.
2. Include feasible use cases in the organization's three-year strategic plan, while eliminating the unlikely use cases and focusing specifically on the most realistic ones.
3. Develop some test scenarios and make modest investments to see how effective the technologies are.
4. On an ongoing basis, monitor the adoption of these technologies within your industry or in adjacent industries in which the adoption could cause disruptive ripples.

Notes

1. See "Appian's BPM Software Vision – Crazy Like A Fox." http://www.digitalclaritygroup.com/appians-bpm-software-vision-crazy-like-a-fox/
2. For an impressive graphic depicting the use of wearables in industries, see http://emrtime.com/wp-content/uploads/2014/07/BRL-Wearable-Technology-Applications-Chart-2014.jpg
3. See "8 Mind-blowing Uses of Wearable Technology." Andrew Sheehy, Generator Research, March 6, 2014. http://www.govtech.com/fs/news/8-Mind-blowing-Uses-of-Wearable-Technology-Seriously.html
4. For more information, see "Wearable Technology Future is Ripe for Growth – Most Notably among Millennials, Says PwC US." http://www.pwc.com/us/en/press-releases/2014/wearable-technology-future.jhtml
5. For a comprehensive overview of drone adoption, see "THE DRONES REPORT: Market forecasts, regulatory barriers, top vendors, and leading commercial applications." http://www.businessinsider.com/uav-or-commercial-drone-market-forecast-2015-2#ixzz3b4laFCT9
6. For more details on the high growth industries, see "20 great UAV applications areas for Drones." http://air-vid.com/wp/20-great-uav-applications-areas-drones/
7. For more on the growth of non-military drone applications, see "DRONES: Commercial Drones Are Becoming A Reality, With Huge Impacts For Many Industries." http://www.businessinsider.com/drones-navigating-toward-commercial-applications-2-2014-1#ixzz3b4ofaENQ

About DCG

Digital Clarity Group

Digital Clarity Group is a research-based advisory firm focused on the content, technologies, and practices that drive world-class customer experience. Global organizations depend on our insight, reports, and consulting services to help them turn digital disruption into digital advantage. As analysts, we cover the customer experience management (CEM) footprint — those organizational capabilities and competencies that impact the experience delivered to customers and prospects. In our view, the CEM footprint overlays content management, marketing automation, e-commerce, social media management, collaboration, customer relationship management, localization, business process management, analytics, and search. As consultants, we believe that education and advice leading to successful CEM is only possible by actively engaging with all participants in the CEM solutions ecosystem. In keeping with this philosophy, we work with enterprise adopters of CEM solutions, technology vendors that develop and market CEM systems and tools, and service providers who implement solutions, including systems integrators and digital agencies. For more information about DCG, visit www.digitalclaritygroup.com or email info@digitalclaritygroup.com.

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