



## High Tech and IT

### The Watson Writes Portfolio

*(These are just a sampling of the dozens of articles written on this subject matter)*

## The Six Ways that Internet of Things (IoT) are Changing the Retail World Forever

In 1988 “great” automotive marketing minds launched a campaign declaring that a new fleet of cars “was not your Father’s Oldsmobile.” The ad campaign was a huge failure for the cars, but it created an idiom that a modern version was going to be very different than what had come before.

Today, technology minds could easily declare, “It is not your Father’s retail experience” thanks to innovations from the Internet of Things (IoT).

IoT has been described as the most important technology of the 21<sup>st</sup> Century. The term “IoT” describes the network of physical objects and devices (things) that are embedded with technology, software and sensors that connect and send data to other systems or devices via the internet. IoT has been implemented in everything from average looking household objects to high-tech industrial tools. It is projected that there will be [30.9 billion IoT devices by 2025](#). IoT has been made possible through innovative progress on technology fronts including low-cost, low-power sensor technology, advanced connectivity protocols, and greater availability of cloud computing platforms. It has been further accelerated by machine learning, analytics to process data and increasingly more accurate conversational artificial intelligence in IoT devices like Alexa and Siri. AndPlus has developed numerous IoT based solutions, [Alerton building automation as a prime example](#).

Clearly, there is no area of the modern world that is slated to benefit from the IoT revolution as much as the retail space. [In 2020, IoT in the retail market was valued at \\$35.63 billion, and is expected to grow to \\$67.60 billion by 2026, and \\$182.04 billion by 2028.](#) The technology has been adopted most widely in North America with momentum being driven by the adoption of the technology and the changes in behavior by American consumers. [Asia Pacific is growing the quickest](#) with the highest CAGR year over year. 70% of retailers are confident that IoT will significantly impact how they do business in the future.

<https://youtu.be/nvOYIB6z6MM>

Here are six key ways that IoT is improving the retail industry, which will never return to the old ways of doing things:

- 1. Inventory management and innovations**

There has never been inventory visibility to the level that IoT provides. Goods can be “seen” from warehouse to transit to shelves with mind blowing accuracy. IoT enabled warehouse robots stock and retrieve with precision while transmitting information. Efficiencies for the retailer are enhanced, costs reduced, and the customer experience is improved. IoT sensors constantly stream the real-time data on each item’s exact location. The sensors report how long the item took to move within the supply chain and what bottlenecks in the transit need to be rectified. Delivery forecasts are more accurate as well, so that goods can be processed more efficiently. For example, Flexe, a company in Seattle Washington, has created a service to retailers where IoT data triggers agile warehousing. Their platform, a cloud-based logistics program orchestrates a cooperation between companies that have too much available warehouse space with companies that need that space on a temporary basis. Both a well-known coffee retailer and a national home and garden company have strategically used the service for their unique inventory pressures. The coffee company needed an increase of inventory for the holiday season, and the home and garden company needed to advance order products to avoid stock-out issues.

<https://youtu.be/H881x-zlurY>

- 2. Real-time monitoring of the condition of goods**

One specific factor that can spell success or failure in the supply chain is not just pristine and accurate tracking, it is the assurance that the goods are of optimal quality when they reach the consumer. Perishable food in retail is a prime example of the types of goods that are susceptible to spoilage and deterioration. Grocers lose over \$70 million annually due to this kind of loss. Environmental sensors track ambient conditions like temperature, humidity, air quality, light intensity, etc. Greencarrier Freight Services implemented a best practice in this area over cargo that was not food, but construction equipment. The equipment was being delivered damaged. They implemented environmental sensors which identified changing humidity through the transportation cycle and bumpy roads prior to drop-off as the causes. See how Onset also implemented in its InTemp CX Gateway [with AndPlus technology](#).

<https://youtu.be/749L1dIAVv4>

- 3. Customer movement data via beacon technology**

Beacons are small devices in the retail establishment that detect information and then send and receive data with other devices. Some beacons can detect a customer’s GPS on their smart phone and track the movement of that specific customer in the store. They can send welcome notes to that customer or send them a coupon. They provide essential data to the store itself

about traffic patterns in the store and data the store can use in its in-store merchandising strategy. The beacon data can suggest effective display setups, and how to layout the aisles and the store space. They can monitor checkout line wait times which allows management to make decisions about staffing or more check-out options. Multinational retailer Carrefour executed a best practice of this technology by installing it in 28 stores. The beacons sent out suggestions based on the customer's prior purchases. [It increased its overall store app users by 600% and its in-app time by 400%.](#)

<https://youtu.be/7WNGPCKcuO4>

#### 4. **Customer service and shelf stocking robots**

IoT can directly manage factors that directly impact the customer service experience in a store. Sensors can affect temperature, lighting, ventilation, and other customer comfort factors. They can also proactively monitor consumable supplies for inventory management and replenishment. IoT beacons can personalize the customer experience by sending relevant offers to them based on where they are in the store, or alert customer service personnel to an area where it is indicated that a customer needs help or can be encouraged to buy. Walmart, for example, has enhanced the customer experience with Bossa Nova and NCR robots which take images, collect data, and restock shelves so customers are not frustrated with out-of-stock issues. Chatbots are another IoT deliverable that are propelling retail customer service forward. They are available 24/7 and with artificial intelligence can solve most customer questions without human intervention.

<https://youtu.be/KRJV1SPYpIE>

#### 5. **Payment Systems and automation**

IoT payment platforms are taking frictionless transactions to unimaginable levels. Forget even cards with chips, or smartphones. New IoT payment platforms will include cars, kitchen and living room appliances, and watches. At the World Cup, Visa gave its consumers wearable wristbands that gave them the ability to pay for things at the stadium. IoT payment systems are fast including biometrics which use the users voice, fingerprint, or retina to authorize—which significantly minimizes fraud.

<https://youtu.be/ndpIChT5-TA>

#### 6. **Subscription devices and retail**

IoT payment devices and other automation create the ability of devices to institute subscriptions with consumers. A person's washing machine can reorder fabric softener. Device owners can set up their technology to browse, order and pay for goods automatically. General Motors has turned their cars into payment devices through their OnStar technology. Hewlett Packard has seven million subscribers for "instant ink". Their printers automatically reorder ink when they hit a specified level.

<https://youtu.be/aFYs9zqYpdM>

### **IoT's Impact on Retail Has Only Just Begun**

IoT and retail can only broaden and become even more revolutionary. It is based on ideas and technical abilities, and as society reacts to different challenges like pandemics, these ideas and abilities are both agile and responsive. Competition between the major technology players will also propel innovations and imagination. As Microsoft, IBM, Intel, SAP and Amazon compete, they each will launch yet another

IoT killer app in the file “The Next Great Thing.” Ofcourse, [AndPlus will be there developing your custom digital product solution.](#)

No, IoT’s impact on retail does not only make it “not your Father’s Oldsmobile”, it makes it “not your Oldsmobile of ten minutes ago.” Retail will forget about tired automotive sayings and focus on something Buzz Lightyear might say regarding the IoT possibilities for retailers:

“To Infinity and Beyond!”

<https://youtu.be/sEQoOjj7j4o>

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### **- The Mysteries of Cloud Storage Explained... No, Your Data Won’t Blow Away**

There is a meme that was being shared widely on social media. It pictured a guy looking up at a big cloud in the sky while it was raining. The caption asked, “So—when it rains like that, am I losing my data?”

Our team here at Cyber Ascend Technologies has heard the voice of that meme before! We hear it from prospective clients who, while looking for managed IT service providers and outsourced business services, end up evaluating cloud implementation services. They have heard about “the cloud”, they know a lot of businesses are “using it”, but they are both uncertain as to what it is, and more importantly, why they should trust it.

“The cloud” can be utilized in varying ways, and we can help set up the implementation that is customized for your needs. Cloud services can incorporate storage and/or computing. Some companies use it as an external storage server from which files and data are accessed as needed. Users are generally unaware that the files are coming from an external source as opposed to a server physically sitting in the office. Cloud computing provides the full replication of your computing experience including applications, software and computing power as well as all your data. Some consumers also synchronization services like Dropbox as “cloud”. Synchronization services should not be relied upon for backup functions however, since the technology is not comprehensive and if corruption occurs, there is not and effective data replacement process in place.

In the past, a small business would often hire an IT associate to set up and manage their on-premises system. That person would purchase a company-owned hardware system, load up software, manage the storage infrastructure, handle software licensing, and protect it all. The task asked of this person was huge. They had to be adept at allowing the system to scale to the needs of the business, and they had to become expert at security risks and methodologies of protection. They had to know everything about all the applications and all the new versions of those applications as they rolled out. The requirements for that physical on site system, in our current IT demand environment, are realistically, far too much for any one person to manage.

This is where “the cloud” becomes your total solution. It requires that you embrace that it is not isolated space on a machine somewhere, but that it actually represents your company’s data protection by very

large data centers with complex infrastructures, with multiple sources of power, multiple network connections and an army of engineers. We will guide you in the implementation of your applications and data in that environment so that your data and its experience is more secure and more effective than you could ever afford to do on your own.

While some worry that trusting a cloud solution platform is “putting all their eggs in one basket” it brings a plethora of expertise far beyond what your sole IT manager could provide alone. Your internal system is more expensive and ultimately a huge risk. If further back-up is a concern, additional third-party vendors who offer software as a service (SAAS) can be utilized to hold redundancy of your data at yet another location as well.

There is a shift in cost of ownership when you go to a cloud solution. Your previous IT costs as being capital expenses that are amortized over several years and will be depreciated, are shifted to an operational expense model.

In implementation, we can give you the option of a “lift and shift” process where your data and computing systems are moved exactly as you have known them, to their new cloud platform. Under this plan, you and your employees experience virtually no difference from what you have always known. You experience the same functions, same data access configurations, now with enormous protection and trouble shooting if something goes wrong.

Another option, if your business culture is open to it, is to allow your team to undergo a paradigm shift to organizing under a new web structure. Move your data and applications in a way that there is a vast improvement on how your staff can interact with it, organize it, and collaborate on it. Your data can be more agile, useful and impactful than ever before.

We are happy to show you how this can be accomplished.

Finding the exact right fit for your team is what we do. We are your cloud mystery-busters. As we develop your cloud implementation project plan, we find the platform with the cybersecurity that you need. We make sure your disaster recovery plan is in place. We help you weigh the cost of a limited self-owned equipment infrastructure against the benefits of a platform bringing the best services the industry has to offer.

We make sure that, no, your data will not “blow away,” but threats to your business and limits on how far you can go, surely will.

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## **Why You, as a Solopreneur, Need Your Own Virtual IT Department**

We at Cyber Ascend Technologies, your information technology support services serving Santa Cruz, Scotts Valley, Capitola, Soquel, Aptos, Watsonville and beyond, love all our clients! However, there is one set of customers with whom we are especially popular.

That is the solopreneur and other small businesses.

If you are a solopreneur, we salute you! We love your creativity and your enthusiasm to follow your dream and your passion. More importantly, we do not want you to feel like you are doing this alone.

Your set up for your personal IT can seem fairly basic: get a powerful smartphone, a great laptop, a fast internet connection, office equipment and peripherals. All set, right?

Well, not so fast.

You are now your own CIO, and you need your own “data center.” In the past, for many solopreneurs, this meant setting up a bunch of equipment in their garage. It meant a lot of energy to get applications assessed, purchased, loaded and protected. If you did that correctly, those efforts took a lot of your time. It was time that could have been spent on your business itself. Worse, if you DIDN'T do it correctly, it could ruin your business completely.

You have us, however. We are here as your own virtual IT department. Here is why you need us:

1. **You don't know what you don't know**

We know what applications exist to support your individual needs. We have enabled many companies just like yours, and that has exposed us to the breadth of applications the industry has to offer.

2. **Take advantage of “best practice” expertise**

Not only do we know what is available, we can do a thorough assessment as we come to understand your specific needs. We can work with the platforms and modify aspects of them to fit your requirements. We understand, through hundreds of implementations before you, what the best practices are in getting your system up and running, and how it can be used most effectively. This is far better than trying to set it up yourself and hope it all works.

3. **Trust us to seek out enhancements and improvements for you**

New applications and add-ons are being introduced all the time. You will not have the time or focus to watch for them, research their details and implement them. We can do that for you. We constantly look out for new and better ways to do things and can alert you when the next great application hits our radar.

4. **We can enable you with cloud-base functions that are powerful and affordable**

As your cloud implementation services team and your resource for cybersecurity, we would first implement a cloud strategy for you. This puts your data out of harms way, and makes it accessible to you from any device, anywhere. Beyond this we also can guide you to cloud services you have not even imagined yet. Such services might include financial applications, ERP systems or point of sale services. We can get innovative with your IT and make it flexible for your needs so that you can be innovative with your business itself.

5. **Troubleshooting**

As your virtual IT department, we are there when you need us—from printers not working to helping you migrate from one computing environment to another. We also make sure your data is backed up and security patches are in place—in other words, we trouble shoot for you before the trouble can actually occur.

6. **We keep on top of your compliance needs**

Specific industries often have IT compliance regulations as a part of their licensing requirements. If you are a solopreneur in such an industry, we keep on top of those requirements, and

implement the appropriate solution for you. This may include a more advanced firewall than your normal internet provider gives you.

7. **We help when your old equipment fails you**

One of the biggest IT failures for a solopreneur is when your old, trusted legacy equipment stops working. In many cases, this is because applications and technology has surpassed the capacity of your old machine, and the suppliers are no longer maintaining it. We are here to rescue you. We can develop the most cost-effective solution for you and get you back and running in no time.

The information technology world is both getting better, and more complicated. While your business model may be creative and DIY, your data infrastructure should not be. You need an implementation that can seamlessly meet all your needs, and your own virtual IT department to sweep down when you need them, and even before you know you need them.

That would be us. Our team comes from a heritage of technology expertise, mixed with the heart of fire fighters. We train you on how to protect yourself and your business, and are there when the unexpected happens.

You may be a solopreneur, but you are not alone. You will always have us in your back pocket.

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***- The Top Eight Business-Driving Considerations in Unified Communications Evaluations***

It should come as no surprise to anyone in our modern world that communication has changed. How we communicate, where we communicate and the devices on which we communicate—all have morphed and evolved. This is very true of the systems that deliver communications as well. Many companies are finding that their investment in legacy systems has come to an end. Not only are these systems costly to maintain, many providers are no longer supporting key applications.

It is time to look at a much lower cost Unified Communications platform. SAVVY Technology is here to help you in your evaluation process. We think of you as Goldilocks. We know the appropriate system cannot be either too robust, or too minimal. It must be, just right.

Assessment and comparison is Savvy Technology's particular specialty. Let's back up for a moment. Before you look at how you are going to evaluate a system and how it is going to be implemented, let's look at WHY.

Why are you buying this platform? To answer that, you need to define your business drivers. What are you looking to accomplish that you cannot do right now? Equally important is a question you may not be able to answer completely: What is possible that you cannot even imagine right now?

Here are seven areas to define when considering Cloud based Unified Communications:

## **1. Cloud Adoption Curve**

Where is your firm on the cloud adoption curve? Are there in-house systems you will need to maintain, or are you looking to fully embrace a 100% cloud solution? Which solutions would ideally integrate with your new cloud-based UC system? You need to take a hard look at your mission critical IT systems and determine which need to be maintained and integrated into your new UC system.

## **2. Geographic Footprint**

Is your firm global in nature? North America only, or including EU and APAC? Are you opening offices in emerging markets like the Philippines, Czech Republic, India, for example? Your company's current and future office geography/footprint will play a major role in assessing which potential UC providers will be able to fill your needs. The bigger the global requirements, the shorter the list of providers that will be able to come to the table.

## **3. User Requirements**

What are the demands from your employees, your evolving business model and the agility needs of your company to be mobile phone ready? You need to consider all the scenarios in which employees may be, or may need to be, remote workers. You also need to assess how much your employees rely on their own phone devices to conduct business.

## **4. Productivity Enhancements:**

What do your employees need to make them more productive? How will UC make your business more effective and efficient? Do you need to simplify your workflow, have more transparency? How diverse and mobile are the people in your business sphere? How can collaboration be enhanced both internally and externally?

## **5. Compliance Requirements**

One of the biggest areas to evaluate is your privacy and regulatory compliance standards. New technology cannot disrupt that and no matter what miracles it might perform, if it puts your business at risk, it is not worth it.

You likely have geo-specific regulations to consider and ones such as HIPAA or GDPR. Your new system must meet those requirements as well and it must support your privacy and security standards.

## **6. Uptime Requirements**

Any new solution must also meet your SLA parameters. Is your business highly sensitive to any server downtime? It may require an assurance of a 5 nine uptime: that your system is fully operational 99.999% of the time — an average of less than 6 minutes downtime per year. Your requirements may be a little more flexible and only need 4 nine uptime: that your system is fully operational 99.99% of the time — an average of less than 53 minutes downtime per year. Determining these parameters will qualify or disqualify some application vendors based on their ability to guarantee hitting that requirement.

## **7. Security Requirements**

The greater access provided by a UC system raises the potential for security risks. Your evaluation should include applications with protection from common threats to your infrastructure. Those can include:



- Unauthorized access- allowing the non-authorized to get into applications.
- Hacking- compromising attempts from either inside or outside the corporate network.
- Denial of Service- various strategies meant to bombard your systems and render them inoperable.
- Mobile threats- when end-user devices attached to your network are not secure and put your data and information at risk.
- Theft- when hackers exploit your system to make scam phone calls, and/or costly calls utilizing your phone system

## 8. Support Requirements

You also need to be assured of the right amount of support you will be requiring. What is the upfront support of the various application vendors? What does their backend engineering and migration process look like?

In summary, this evaluation process for business needs should help you construct a solid requirement base. It will narrow the field of available solutions to those that fit your 'must have' list. This will enable you to start your journey in getting the appropriate UC system in place.

How do you proceed? Without a smooth process and solid evaluation that leads to immediate system up-time, your implementation will be filled with delays, application failures, failed SLA standards and a group of users distrustful of what additional implementation is to come. Setting yourself up with an optimal evaluation, immediate application uptime, and greater service levels, not only inspires user trust, but enhances user enthusiasm.

Engage with SAVVY to achieve the latter. We can take your requirements list and determine the target vendors to potentially meet your needs instantly. We have the data, the matrix and the tools to map out your perfect application blends to create your Just Right solution.

Your ideal UC platform needs to be, and can be, developed to be a perfect fit – not too extensive, not too limited.

Let's call this the "Goldilocks effect". With us, that is exactly what you will get.

*Savvy Technologies provides game-changing IT solutions that transform the way a business performs and operates into the future. Through big picture thinking and a relentless attention to detail, Savvy manages each step of the vendor selection process to ensure the best fit and highest value solution is selected and implemented. When you win, we win!*

(For ideas and information on how to have a successful Unified Communications Platform roll-out, catch our next blog!)

