

## Communications, Information, Technology, and Management (CiTM)

December/January 2020/21

### THE EDITOR SPEAKS - A Forum for Innovative Thinking



Most people expect that 2021 will be a better year than 2020. Given the issues of 2020 that is not a high bar to clear, however, that does not mean 2021 will be a quick snap back to our pre-pandemic norms. While hopefully not as challenging as 2020, 2021 will be a difficult year. The COVID-19 vaccination process will have its challenges; whether these challenges manifest themselves in the form of long lines as people rush to get vaccinated or short lines for those who are overly cautious, there are hurdles to overcome. Economically, the level of unemployment must come down. Some of the unemployed will not have a job to return to and others will find that as they return, the skills required of the job have changed. Businesses have been forced to transform themselves to a more socially-distant customer model which often comes with a new business model. These changes impact cash flow, customer support, marketing, and other processes which must be reimaged after the upcoming post-pandemic reset.

In addition, while it is only now becoming visible, the approach to innovation and development is changing. Ideation and development programs that often depended upon brainstorming sessions, war-rooms, white-boards, and scrums have all gone virtual. Remote workers have discovered that where they work and where they live are independent decisions resulting in a more diverse and distributed workforce. Even processes utilized to identify customers, recruit beta testers, and support far flung clients have changed.

Some companies have reported an increase in innovative activities during 2020. Remote workers who are innovative by nature might experience a boost in productivity when working remotely because distractions are reduced and the time for creativity has increased. However, studies have shown that the innovation process should be managed differently depending on where the project is along the innovation continuum. For example, during the ideation process, a highly interactive and collaborative process provides much better results than a more siloed management processes. In contrast, remote processes may provide better results during the contemplative phases of the program.

There has been a steady increase in the number of companies that were accepting remote-worker programs. The success of these efforts have been mixed, not because of any specific technical failure, but because many companies have a culture that centered on direct interaction. Changing a company's culture is always more difficult than changing technologies in order to support remote workers. As a result, when COVID-19 forced companies to change their culture to be more inclusive of social distancing practices, many companies were not well positioned for the shift.

These new business cultures bring a high gain in productivity for processes that are analytical in nature as long as employee distractions at home are less than those at work (as a parent, I know this may be an invalid assumption). During the development and testing phases, there are a number of highly capable collaboration tools that are available to make it easier for a company to transition to a more socially distant operating culture. If the team can find the collaboration tool that fits their collective culture, productivity gains are possible.

The post-pandemic years could indeed turn out to be a golden age for innovation, however, the space that is the least mature is in the management and stimulation of ideation and networking processes. While remote workers can be more focused and therefore more productive, it is also possible that these same forces reinforce siloed thinking. If the interactions are limited to those that are connected through defined collaboration platforms, the output might be innovative within the closed internal network but the solutions fail when exposed to larger market forces.

Hopefully this newsletter will help to assuage some of these concerns and bring value to its readers by exposing innovators to thoughts and ideas that come from outside their immediate network. Often this kind of thinking can be reapplied to different technologies and businesses by stimulating out-of-the-box thinking. New ideas and concepts from non-traditional sources can serve as a catalyst that brings about a eureka moment.

### **Invitation for Reader Contributions**

Given the objective of the CiTM newsletter, we wish to encourage others to offer their thoughts about the forces that are impacting the shape of their world in the form of a short brief that can be republished in our newsletter. The articles are typically 600-1000 words – not long but of sufficient length to share a perspective with readers that might not be in your immediate network. Most articles are educational or opinion focused articles. The goal of the articles is to illuminate the author's personal reflections on a topic that might have an influential impact outside the author's immediate sphere of influence. Feel free to send me your thoughts at [jerry.power@i3-iot.net](mailto:jerry.power@i3-iot.net).

## **UPCOMING VIRTUAL EVENTS**

January 6, 2021. [CES 2021](#). Consumer Technology showcase for innovators and technical breakthroughs.

January 20, 2021. [Best Practices for Digital Transformation in the Public Sector](#). A virtual webinar hosted by the Center for Digital Government.

[Accelerating the Pace of ICT in Government](#). A virtual event sponsored by GovNet.

January 25-29, 2021, [The Davos Agenda](#). IA forum for global leaders to work together virtually to create a more inclusive, cohesive and sustainable future.

January 26, 2021. [Digital Health Innovation](#) - Reimagining Healthcare. A virtual conference focusing on the use of digital technology to redefine the healthcare space.

February 9-10, 2021. [Fierce WiFi Summit](#). A virtual event focused on the evolution of Wi-Fi systems.

February 10, 2021. [Digital Enterprise CIO and Data Transformation](#). A virtual think tank that focuses on sharing experiences associated with transformational projects.

March 18, 2021. [Horasis Extraordinary Meeting on the U.S.](#) A virtual meeting to discuss and shape the vision of the new U.S. administration.

April 13-14, 2021. [Smart Cities Connect](#). A smart cities conference associated with US Ignite,

*If you have an event that you would like us to include in our newsletter, please send an email to [manager@i3-iot.net](mailto:manager@i3-iot.net)*

## **READER CONTRIBUTION: How Automated Self-Service Improves Customer and Business Outcomes: Insights By Laurent Philonenko , CEO, Servion Global Solutions**



Customers want faster, more efficient, and more personalized service - and more often than not, they want to service themselves. Automated self-service has quietly emerged as the new norm, from interactive kiosks in banks and airports to smart shopping carts to contactless check-in and check-out at hotels. The goal is to empower customers to find the answers they need or complete a given task on their own - escalating to human interaction only if needed - using AI to automatically tailor the service experience to the individual's needs.

Studies unanimously show that most customers want self-service technology and prefer self-service over human interaction. Arguably, COVID-19 has accelerated the need for automated self-service as strained customer service staff deal with a barrage of complicated and time-consuming inquiries.

According to KPMG, the number of companies investigating automated self-service technologies has increased by 15% since February 2020, when the crisis first hit.

Top Applications of Automated Self-service (and the Business Case for Each)

**Conversational AI:** Companies can automate a large portion of the incoming chat and/or voice traffic by using an AI-powered virtual assistant that can intelligently interact with customers, helping with any number of inquiries that otherwise take up valuable employee time. Besides the clear benefit of increased productivity, companies can generate insights from keywords or phrases to identify new revenue and retention opportunities (i.e., the past 300 callers who used the phrase “XYZ” were looking for ABC) or customer intent and sentiment. Overall, the conversational AI market will experience a CAGR of 30% between 2019 and 2024. At home, Amazon Echo and Google Home devices already work as intelligent voice response, and over 25% of US consumers now own one.

**Intelligent knowledge database:** A recent study from Coleman Parkes found that 91% of customers would use an intelligent self-service option like a knowledge base if it were available to them. Knowledge base articles can include “how-to” information (i.e., how do I make a balance transfer?), educational information (i.e., what is workforce optimization?), and company-specific information (i.e., what is XX’s return policy?). These articles can be programmed to automatically appear in the context of the service journey. For example, if a customer is on a bank’s landing page for credit cards, a screen pop can automatically appear in real-time with knowledge base articles on how to apply for a credit card and other relevant information.

**Self-authentication via voice biometrics:** By recognizing the voiceprint, the system saves time that the customer would typically spend answering verification questions while improving business efficiency and costs. It’s estimated that organizations can save up to \$10 per call when voice biometrics are applied. For a large, global organization where requests for support are high, this can translate into substantial savings while maintaining compliance, security, and customer satisfaction.

#### How Companies Are Succeeding with Automated Self-service

There’s a lot to consider with automated self-service. It isn’t something you can “set and forget,” and not all self-service automation tools are created equal. You also must think carefully about what types of activities you can (or, more importantly, should) transition over to self-service. There’s also a great deal of data management and consolidation that goes into making automated self-service work seamlessly (the more massive data sets get and the more that’s needed to understand them, the more difficult it becomes to organize and manage everything).

The good news is that companies can derive many significant benefits from automation and self-service. And as technology advances and gets simpler, it becomes accessible to a much broader audience than in the past. It is why we believe that adoption will grow sharply in the next years, to the delight of customers and enterprises alike.

One last point: automation and self-service do not necessarily replace agents. With these technologies, agents become super-agents and delegate trivial tasks to technology while focusing on more complicated requests. Overall, customers get faster, better service, and enterprises get more out of their contact centers.

## THE I<sup>3</sup> CORNER

Over the last four years the I3 Consortium has done some remarkable work. The Consortium has always been a place where interested parties get together and discuss how we might rethink Internet-of-Things (IoT) and data concepts in order to maximize the potential of advancements in this space. Based on these conversations, the consortium created an open source software system that was designed to encourage interested parties to participate in a larger IoT ecosystem through the inclusion of an independent privacy/security gateway. The open source software demonstrated that conversations about best practices can be used to create tools needed by a fledgling industry. But for many, the value in being a member of the Consortium was based on those conversations and their ability to uncover emerging market requirements.

The pandemic made in-person ecosystem wide conversations that were a hallmark of the I3 Consortium unrealistic. To continue this important dialog, we decided to restructure the I3 Consortium concept and are now ready to launch a series of I3 Consortium virtual events designed to take the Consortium to the next level. On **January 28, at 1pm** we will have our next virtual I3 Consortium meeting.

After the January meeting, the Consortium plans to continue to hold bi-monthly meetings. Each meeting will be hosted by an I3 member organization. At these meetings, the hosting organization will discuss their wants, needs, and desires. The objective of each meeting is to identify collaboration partners interested in solving these open issues. The formal part of the meeting will last one hour with a second hour being reserved as unstructured conversation. If an identified problem has sufficient interest, the Consortium will establish a work-team around the project to ensure progress on the topic continues after the meeting,

The invitations for the January 28 meeting will be sent to those that have registered on the I3 email list. If you are not already on the list, you can send an email to [jerry.power@i3-iot.com](mailto:jerry.power@i3-iot.com) and we will send you an invitation with the meeting logistics.

In addition, we have changed our membership structure to simplify the program. For 2021, we have done away with the multi-tiered membership structure and replaced it with individual memberships priced at \$25 per year. Membership dues will be used to cover costs and, over time, allow us to pursue some level of academic sponsorships. Please visit the membership link at <https://www.eventbrite.com/o/i3-consortium-31816629227> to renew your membership for 2021.

## **The State of Our Connected World by Jerry Power**

The World Economic Forum (WEF) recently released the report "The State of the Connected World." In that report, the WEF reflects the growing importance of IoT technologies in a data driven world, a technology that links the digital and physical world into a cohesive fabric. The cumulative effect of these systems is the creation of a digital twin that reflects current conditions. Such systems allow data analytics processes to drive operational processes in real-time. This represents a significant shift from today's world where analytics are largely used to identify historic trends and forecast future needs. While the potential benefits of systems are breathtaking in their ability to redefine even the most basic business processes, they also open the door to new scenarios that may arise if these technologies are not provided with proper guide rails.

The report makes clear that the IoT space is still in its infancy and is expected to grow and even accelerate after the COVID-19 pandemic begins to subside. The rate of technical evolution in this space is already outpacing our ability to establish laws, policy, and standards. Despite efforts of marketing professionals to describe products as future-proof, it is impossible to predict how these guiding principles will evolve over time. Therefore, existing systems must be constructed so that adaptability is a foundational requirement. Current generation systems should anticipate that upgrades and retrofits are expected operational costs. This observation can be compounded by the fact that operational costs of such systems are often significantly underestimated.

Another point raised by the report relates to the potential for IoT systems to worsen the digital divide. COVID-19 has served to highlight that we live in a world where there are marked differences between the digital-haves and the digital-have nots. In affluent areas, access to high-quality, high speed internet is primarily a question of choice. However, in many areas access to the internet is severely limited by speed, choice, and quality. This creates a digital caste system. Those in areas where the internet has improved education, economics, information access, and consumer choice while others are being left behind in a digital world. The introduction of IoT technology could raise the ante even further by making targeted environments ripe for accelerated growth while other areas are left behind.

Privacy and security continue to be noted as key concerns. Companies struggle to provide sufficient protection for their systems which are facing a growing onslaught of external threats (e.g. hacking) and societal expectations (e.g. CPRA). At the same time, government authorities struggle to find the proper balance between the protection of personal freedoms without hindering the economic growth that arises from increased collaboration and data sharing. Tied to such deliberations are issues linked to artificial intelligence and automation, two technologies that while being independent of IoT technologies, depend on the growth of IoT technologies in order to achieve their long-term market potential.

A key point which is outlined in the report but bears further examination, is the fact that a significant portion of the value that IoT systems creates is derived by linking disparate systems together. For example, a manufacturing company can see immediate productivity gains by deploying IoT technologies to automate a factory floor. Those base level gains can be exponentially increased when an automated factory is linked to supply chain distribution companies that have also automated their delivery resources. Similarly, a smart home can make lives easier for individual residents but the composite value of such systems dramatically increases when the data from these systems are linked with the power-grid and other city services.

Despite the fact that IoT systems remain in their infancy, they have already become an indispensable part of the way we live our lives and conduct business. While we face many challenges with these first generation systems, the benefits are so significant that there are many examples where the technology is being enthusiastically embraced. As the challenges outlined in the WEF report are addressed, the benefits of IoT technologies will rise and costs will decline. Together, these factors are poised to accelerate deployment of IOT systems, data networks, data analytics, and artificial intelligence.

## READINGS FROM THE EDITOR'S DESK

- [Hospitals Without Walls: The Future of Healthcare](#). The COVID-19 pandemic has many people thinking about the future of healthcare and how it might evolve so that it is less focused on physical facilities. What does such an environment look like? Maybe it is time to think about healthcare as a collection of linked organizations that are geographically distributed. Maybe hospitals become more of a coordination point that supports a wider range of services for its community members rather than a destination that dispenses health services?
- [HIPAA 2021 – What Can We Expect](#). HIPAA was developed to provide privacy/security rules for the healthcare industry. But HIPAA's restrictive rules created an isolated and closed culture which impeded the ability to adapt mainstream IT tools and to apply data to solve community issues. HIPAA 2021 provides much needed clarifications and improvements that recognize the changing nature of healthcare.
- [Creating the Government of the Future](#). Government organizations are historically based on individual departmental missions. These missions were easily linked to a series of city initiatives but they also create functional silos that often impede potential collaborative efforts. Some have suggested that reorganizing city structure to focus on citizen cohorts may achieve better results.
- [Agility: It Rhymes With Stability](#). It is difficult for a company to be a stable and dependable customer partner while remaining agile. Agility practices are intended to make an organization more responsive to changing customer needs but as the customer base grows and needs diversify this can be difficult. Some companies have been able to balance these needs by maintaining a defined set of principles that are not violated (stable aspects) AND a set of activities that give teams the room they need to be agile.
- [CPRPA Hints at the Future of Cybersecurity and Privacy](#). In November 2020, California passed CPRPA which clarifies and extends CCPA requirements. As an example, CCPA requires companies that collect data to allow their customers to opt out of the data collection process. CPRPA added the requirement that companies track the data distribution process so if a customer asks to be removed from an existing data set, that request will be sent to any third parties that have obtained a copy of the data set. Retrofitting these requirements into established systems may be daunting. It might be easier to start a new transformation program that solves these near-term requirements while creating a more transparent system that ultimately improves customer trust at the same time.

## A PARTING NOTE

Sadly, over this last weekend, my mother passed away. While this is not especially relevant to a newsletter related to technology or business, such events do call for a period of reflection. Might I ask that as we enter into the new year, a time when each of us should consider our individual new year's resolutions, we think about our friends and family as we chart our personal course for the new year. Yes, we should strive to be innovative in our thinking, to advance technology as a means of making the world a better place, and we should balance business and economics so that those innovations can be self-sustaining. But we should also think of our efforts as creating a legacy for those that follow in our stead. In doing so, we pay homage to those that shaped our lives and provide support for the community that supports us.

## LET'S CONTINUE THE CONVERSATION

Please feel free to forward this email to your friends and colleagues who you believe would benefit from participation in our community. For those of you who wish to be included among those who believe that technology is a tool and that business success is achieved by skilled wielding of the tools available to us, feel free to reach out. If you have suggestions, topics you want to see included in future newsletter updates, or other general inquiries, feel free to email us at [manager@i3-iot.net](mailto:manager@i3-iot.net). The ideas expressed in this newsletter are intended to stimulate conversation and dialog that will lead to a better understanding of our collective future. The opinions may not necessarily reflect the opinions of any members of our community of interested people.

## ABOUT I3/CiTM

Originally founded under the guidance of USC, the Institute for Communication Technology and Management (CTM) was formed to support a deregulated telecom industry. Over time, computer and networking technologies evolved and grew changing the way we do business and live our lives. The CTM Newsletter was created as a vehicle to foster continued conversation about tech associated issues that transcend specific technologies and specific industries. CTM conducted foundational Internet-of-Things research and created a community driven IoT network vision. Working with the engineers at USC's Viterbi School of Engineering, the cities of Long Beach, Los Angeles, the County of Los Angeles, along with a host of supporting companies, academic institutions, and private individuals, this vision was turned into Open Source software that was released in December 2019. I3 Systems was formed to pursue commercial opportunities based on the work of the I3 Consortium and the concepts published in the newsletter. With this grass roots tech movement, the newsletter evolved and continues these conversations even further.

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