

## I3: Communications, Information, Technology, and Management

- From i3 Systems and The I3 Consortium -

November 2021

### THE EDITOR SPEAKS - Thanksgiving Kindnesses



Thanksgiving, like most other harvest festivals, is a day of giving thanks for the blessings from the year's harvest. Japan and Canada celebrate their Thanksgiving in October. In China, their celebration of the fall harvest is called the Chung Chiu Moon Festival and in Japan, it is called Chuseok. In Germany, they celebrate Erntedankfest and in India, they support Thai Pongal. And, while the roots of these festivals are agricultural, as society urbanizes the theme of thanks has been generalized to include many expressions of thankfulness. At this time of year, it is often customary to express gratitude for our food, friends, family, jobs, and community.

These last two years have been turbulent, dynamic, and often challenging. The blessings that we give thanks for this year are therefore especially appreciated rays of sunshine that serve to make this year's celebration especially meaningful. Perhaps at such a time we should also look beyond the gifts from nature and seek to give thanks for the acts of kindness bestowed upon us by others during the past year.

Judaism teaches that acts of kindness are a key pillar of society and it even classifies various acts of kindness in terms of their nobility. The lowest level of kindness is reserved for acts that are undertaken grudgingly. For many, paying taxes that support social needs might be classified as such an act of kindness. A higher form of kindness is represented by acts that are willingly undertaken and cause no real burden to the giver. Leaving a tip for someone who has provided a personal service might qualify as such an act. Acts of kindness that are more generous but require those in need to ask for help represent an even higher order of kindness. When someone identifies a need where they have the ability to provide assistance and proactively step in to undertake an act of kindness without being asked; that type of kindness is even more profound. However, the noblest forms of kindness come from situations where identities are obscured. A heightened form of kindness exists when the recipient is aware of the giver but the giver does not know the recipient. This form of kindness is important because the giver must help without the expectation of any gratitude from the recipients. An even higher form of kindness is represented by a situation where the giver might know the recipient but the recipient does not know the giver. One of the most important acts of giving occurs when the recipient and the giver are anonymous to one another. What makes this form of giving so important is that the giver's act of kindness must be done selflessly with no expectation of thanks and the recipient is freed from feelings of having taken on a debt which must be acknowledged or repaid. However, the highest form of giving occurs when the giver provides assistance that helps the receiver become sufficiently self-sufficient that they can then begin to help others.

I have been working diligently to bring our startup, I3 Systems, to life. The entrepreneurial experience is a difficult one because resources are constrained, demands are significant, and when the enterprise is undertaking to disrupt

markets, the pathways to success are never clear. Emotionally, the process is turbulent and demanding. This Thanksgiving, I found myself being especially thankful for those that have offered their time, advice, counsel, suggestions, and encouragement as the I3 vision has been turned into reality. Often these acts of kindness may seem small and insignificant to the giver, some words of encouragement or perhaps help to make a connection to someone with interest in what we are doing might not feel like a significant contribution but these acts of kindnesses have been of immeasurable impact and are sincerely appreciated.

## UPCOMING EVENTS

- Dec 9-10, 2021. [International Conference on Smart Cities, Big Data, and Machine Learning](#). New York City, New York.
- Dec 10, 2021. [Connected Communities Conference](#), Raleigh NC
- Dec 9-10, 2021. [Conference on Urban Studies and the Internet of Things](#). London, England.
- Jan 5-8, 2022. [Consumer Technology Show](#). Las Vegas NV
- Feb 2, 2022. [Digital Healthcare Innovation Summit](#). La Jolla CA.
- Feb 23-24, 2022. [Computer Vision Summit](#), San Jose CA
- March 17, 2022. [CIO Southern California Summit](#), Los Angeles CA
- March 22-23, 2022. [SoCalBio Digital Health Conference](#), Long Beach CA

*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)*

## THE I3 CORNER

I3 release R1.0 was released in August of 2021. We are now putting the finishing touches on R1.1 and expect to be doing final testing while looking forward to a 'soft' release of R1.1. The formal release of the software with documentation will then be scheduled to take place before the end of the year. R1.1 contains performance improvements, improved documentation, some user interface improvements, and our SDK (Software Development Kit). Most importantly, we have improved the i3 documentation and included several wrapper examples in our SDK. We have also developed a significant number of example wrappers that can be utilized as integration templates for customers that want to quickly integrate with existing data flows.



The mission of I3 Systems is to improve the 'who', 'what', 'when', 'where', and 'why's associated with data use. Historically, data was collected and managed for use by a specific application that served a specific use within the organization, by increasing the transparency and reducing the hurdles associated with the data collection process. In doing so, we increase the value organizations derive from their data and reduce the complexity of the data collection processes undertaken by applications. Ultimately the efforts of I3 Systems will accelerate the evolution of data-driven markets and enable a richer data-driven network infrastructure.

**On December 3, 2021, the I3 Consortium held a meeting that discussed the sharing of data related to digital health and wellness across specific regions, communities, and populations. There was a**

discussion of methods to improve incentives related to the voluntary sharing of information. Over the past years, consortium members and guest presentations have discussed challenges that impact the cost of innovation and the rate of adoption of digital technologies at the community level. There are existing incubators and accelerators that facilitate biotech, digital innovation, and healthcare technology development. Consortium members have noted the significant additional costs to test behavioral, market, and clinical healthcare assumptions. R&D facilities by major hospitals, academic medical centers, or universities exist in the Southern California region. But, for start-ups, integration efforts can be expensive, heighten the financial risk, and create unexpected delays. Although consortium participants understand the value-add of increasing data reuse and distribution, it is challenging for small dev teams to fund multi-party proofs-of-concept to test connectivity between large secondary users. Therefore, the discussion considered whether shared access to a model residential or clinical service environment might help consortium members test assumptions related to system integration in their use case. Such a facility could also function to perform actual validation studies, engineering proof-of-concept, and clinical use case analyses in go-to-market programs. One attendee suggested a template might exist to define the structure and function of such a physical site. Discussion included consideration of existing accelerator spaces in Southern California and related to specific tech and communications corporations. It was concluded that a draft document should be assembled for review in the next 30-90 days. The document will be circulated among individuals who have volunteered to participate in a targeted workgroup. If you would like to participate in this discussion, send an email to jerry power ([jerry.power@i3-iot.org](mailto:jerry.power@i3-iot.org)) as we will hold a series of breakout meetings on this topic.

One of the projects the I3 Consortium has taken on, with the sponsorship of the City of LA's Department of Sanitation, relates to mobile video. The Department of Sanitation intends to use its sanitation trucks as a video platform that can actively monitor the streets for issues that the City can proactively act upon in support of its citizens. We have developed a wrapper capable of passing video traffic through I3 and should be integrating those data streams with video monitoring software before the end of the year.

## READER CONTRIBUTION: Healthcare Changes Due to COVID-19 Part 2: Social Trends

by Eric Eskioglu, MD. EVP-Chief Medical & Scientific Officer Novant Health



Having been in healthcare for over 21 years, including on the front lines of medicine as both a neurosurgeon and a physician executive, I would like to share my personal thoughts about evolving trends. This is part two of the series discussing Social Trends in Healthcare during the era of COVID-19.

### 1. Healthcare is a basic human need.

Equal access to healthcare is a basic promise of democracy. Healthcare is part of the social fabric that binds us all as a society. It is an essential service and not discretionary like retail goods such as clothing and dining. Unfortunately, COVID-

19 will acutely exasperate prior challenges to our universal needs

## **2. The opioid and substance use disorder problems will get worse.**

With the economic and social damage occurring across our country, it will take some time to recover. This will lead to increased opioid and substance use disorders for many. "Rising unemployment and reduced opportunities caused by the pandemic are also likely to disproportionately affect the poorest, making them more vulnerable to drug use and also to drug trafficking and cultivation in order to earn money," according to a report published by the United Nations Office on Drugs and Crime. We clearly have seen this in prior economic downturns, including the Great Recession in 2008.

Moreover, the circumstances of the pandemic itself are not causing just increased use but increased overdosing. Monthly overdoses are up as much as 42% compared to the same time last year. Disrupted supply chains have caused people to turn to new substances they are unfamiliar with, leading to a higher risk of fatal overdose.

In addition, the isolation of lockdown means other people are not around to make lifesaving interventions. Interventions are not only important during this phase, but even more so during the aftermath of an economic crisis. As the economy improves, there is a chance that many people will be left out of it, making the situation worse.

## **3. Behavioral health needs are soaring.**

The impacts of mental health during the pandemic include, but are not limited to, negative effects of social distancing, the psychological toll of a humanitarian crisis, the fear surrounding a healthcare crisis (particularly for those who already have obsessive-compulsive disorder or other forms of anxiety), the well-documented link between economic downturn and mental health, and the multidirectional causal link between substance use disorder and mental health.

## **4. Domestic abuse issues are on the rise as well.**

Domestic abuse also has a documented relationship with economic downturns. Workforce gender composition shifts, which are going to be at play in the U.S., have been known to cause an uptick in domestic violence as the role of "breadwinner" is transitioned from the male to the female.

In particular, during this crisis, social distancing is, quite literally, locking victims in with their abusers and isolating them from their support system. Technology can help here, but it also poses risks of its own.

## **5. This could be the demise of the skilled nursing facility model.**

Our country has hundreds of independent retirement homes and skilled nursing facilities. These care models have been mostly one-size-fits-all with little individualization. Even before the COVID-19 pandemic, 82% of all skilled nursing facilities had infection prevention and control deficiencies cited in one or more years from 2013-2017, according to the Government Accountability Office, and 48% had such a deficiency in multiple years.

With advancements in remote patient monitoring, it is becoming increasingly possible to realistically take care of more patients in their homes, or even in much smaller groups of four to eight people who live in home-like facilities

with full-time caregivers. A smaller number of people living together lessen the chance of the next pandemic ravaging skilled nursing facilities where hundreds of residents reside.

## **6. Healthcare disparities are widening.**

COVID-19 will, unfortunately, make housing, food, transportation, job, and healthcare insecurities much worse. Minority and immigrant communities will be disproportionately affected. Without equitable healthcare to all, there will be no upward economic mobility.

As conversations around racial equity remain at the forefront of our collective consciousness right now, we must take healthcare and health outcomes into account.

## **7. Many will be affected by the stigma of COVID-19 and the guilt of having had the disease.**

Unfortunately, as we have seen, some ethnic groups are unfairly targeted as having COVID-19 and even implicated in being complicit in it. This is intolerable and completely unacceptable. As a society, we must categorically reject the stigmatization of anyone with COVID-19. This virus knows no boundaries.

People who survive the ordeal will most likely be ridden with guilt, especially if they have loved ones pass away. They will need social and emotional support for many years to come. Moreover, others in their community may react to them with fear or distrust. Unfortunately, there are no easy answers here. As we continue conversations about how individual stakeholders, organizations, and policymakers can address this crisis, we must understand these interconnected and essential challenges.

## **The Coming IT Revolution by Jerry Power**

Gartner recently published their report “Top Strategic Technology Trends for 2022.” End-of-year summaries and next year’s forecasts that fill inboxes this time of year are often discounted. But this report was significant in that the identified trends suggest a significant shift in the tech culture.

Among the trends identified by Gartner was a shift away from siloed applications where the infrastructure and processes needed to support applications are treated as independent needs toward a networked architecture where data, security, cloud, and privacy needs are managed cohesively across the entire enterprise. The need for such a shift was echoed by multiple speakers at last month’s IoT World Conference. The speakers discussed the need to reimagine existing data infrastructures in order to shift to horizontal platforms that better serve the enterprise. Such a systemic restructuring requires enterprises to adopt a layered structure or a tech stack that compartmentalizes functionality and increases data visibility across the organization. This leads to a more trusted approach to IT by increasing access to data and tools. Ultimately, data utilization and collaboration are improved and the organization increases its return on investment.

Another highlighted trend is based on a movement toward a more dynamic applications environment. The last few years have shown that nimble organizations are better able to adapt to changing business conditions.

Organizational agility can only be achieved if the IT organization is able to deliver in the face of evolving requirements if its toolkit includes composable applications, automation tools, business intelligence systems, and configurable artificial intelligence. As IT evolves away from the idea of an all-encompassing application that limits adaptability, they are (1) adopting new systems that treat applications as a series of functional modules that can be restructured as needs change, (2) managing data as dynamic data flows that provide the freedom to rebalance data distribution systems as necessary, and (3) deploying rule-driven systems that allow insight advancement based on derived insights.

Trending data also demonstrate that organizations are moving to embrace technologies that serve to adapt to the desired user experiences. This trend represents a shift away from systems that might improve operational efficiencies if it comes at the cost of the human experience. The days of deploying technologies that require organizational changes or significant employee retraining exercises are coming to a close as organizations embrace systems that enhance desired customer and employee experiences. Technologies are emerging that support the needs of a distributed organizational structure. Tools that emphasize customer (and employee) experiences are becoming expectations rather than desires. And active intelligence systems that are able to process data and directly impact operational processes are supplanting systems that first capture data, mining the data for insights, and then recommend management action.

The trends identified in the report go well beyond references to technology that an organization can purchase and deploy in an effort to achieve incremental process improvement. They represent a new IT philosophy about how data systems are architected, operationalized, and perceived by the organization as a whole.

IT function is continuing to evolve away from its roots as a service function to become an important component of any organization's strategic mission. Recent events have accelerated this migration in that the strategic objectives of any organization are either enhanced or limited based on the capabilities of the IT organization. The trends identified by Gartner signify an acceleration of this movement. Once these technologies are more fully deployed, the IT function further shifts from the role of being a key strategic advisor to the organization to being a much more active member of the management team. IT is effectively shifting from being a strategic enabler (or inhibitor) of the organization to becoming a primary actor on the stage of future business.

## READINGS FROM THE EDITOR'S DESK

- [Accenture Digital Health Technology Vision 2021](#). Accenture reports an acceleration of the healthcare industry transformation as participants shift from supplier-customer relationships to ecosystem-based partnerships that are much more agile and dynamic.
- [Enablers of the Eight Platform Accelerants](#). Platforms are tools that cost money/time upfront but save significant resources as the tools are used over time. Building tools that pay for themselves over time makes sense but it demands that the tools not be allowed to become specific to a project.
- [How to Stop Trusting Your Gut and Build a Data-First Culture](#). Creating a data-driven corporate culture cannot be done by simply deploying new technology. Having the right tech is important but the organization has to know what data is available to them and how to properly use the data to drive action.

- [Preparing Your Organization for Growth](#). McKinsey says organizational issues are often overlooked when pursuing a strategic program. Organizational issues include structural challenges, procedural adjustments, and scaling issues. Any such issue hurts an organization's ability to onboard a new tech.
- [Seven Lessons Learned from the Vatican's Artificial Intelligence Symposium](#). Some thoughts on the future of AI as a technology that sits at the intersection of social science, engineering, ethics, theology, and law/regulation. Most prior technologies focused on targeted issues but AI has the potential to impact all these areas.

## About I3 and I3 Systems

Originally founded under the guidance of USC, the Institute for Communication Technology and Management (CTM) was formed to support a deregulated telecom industry. I3 Consortium spun out of CTM based on the position that increased technology collaboration must be married to increased business and data collaboration. I3 Systems was formed to develop software tools and pursue commercial opportunities based on these concepts. This Newsletter was created as a vehicle to foster continued conversations about issues that transcend specific technologies and specific industries. When the CTM organization was shut down, support for this newsletter was picked up by I3 Systems to ensure these valuable conversations continue to occur.

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