Communications, information, Technology, and Management (CiTM)

March 2020 - Communications, information, Technology, and Management

THE EDITOR SPEAKS - A New Normal

The COVID-19 pandemic continues to grow. It is extremely contagious, there is no vaccine, treatment protocols are uncertain, and testing kits are in short supply. Practicing social distancing appears to be the only way to slow the virus spread so the medical facilities are not overwhelmed while we wait for the supply of testing kits (and protective gear) to improve and vaccines to be developed.

Social distancing does not really solve the problem as it effectively treats everyone as though they might be a carrier of the virus. Social distancing slows the virus's progress blunting the spike associated with such a contagious virus, thereby giving time for treatments to be developed. It is important to understand that efforts to blunt the contagion will save lives but in doing so it also effectively prolongs the duration of the social distancing measures. Testing kits will improve the ability to identify known carriers allowing a more targeted response but it does not eliminate the health concern.

The medical industry is working hard to develop a vaccine, improve diagnostic and treatment processes, and manufacture more medical supplies. But the administration of a large scale vaccination program will take time. This virus has had a dramatic effect on our business and social behaviors and the expectation should be that if the public does not heed the calls for caution seriously, they will be escalated as the government tries to minimize damage to public health. We should expect the more stringent orders to remain until the disease progression begins to level off. As we become comfortable with these new behaviors some of these behaviors will remain with us post-COVID-19. Some of the behaviors we have reluctantly adopted in a response to the virus will form the basis for our new normal.

Suggestions to shelter in place and work from home where possible are an attempt to reduce the spread of the virus. While these orders may be looked upon as an inconvenience, if the public fails to support these initiatives, the enforcement mechanisms will be increased. As work-from-home programs become a standard part of our work-life (instead of a benefit) and video conferencing becomes the norm, these practices will become the norm rather than the exception.

Retailers might cede additional ground to on-line shopping and there will be an increase in demand for delivery services. Over time, it is possible the consumer market will began to look for "virus-free" assurances from these service companies or perhaps there will be a surge in demand for personal shoppers.

Shelter in place directives have also impacted movie theaters, restaurants, bars, concerts and other social events. Restaurants that previously looked to food delivery services as an augmentation of their dining room experiences now must consider delivery options as a prime source of revenue. As we move toward a post-virus environment, prepackaged meal services, personal chefs, and other more focused dining experiences may become the new food industry norm. Such a conclusion is far from certain, but the post-COVID-19 business environment will not be the same as the pre-COVID-19 environment.

Today's situation is extremely fluid and the rules that govern society are rapidly changing. There are more questions than answers as we try to deal with a particularly nasty pathogen. It is extremely difficult to operate a business in a climate where the rules are changing at such a rapid pace; most organizations do not have time to consider the impacts COVID-19 might have to their post-COVID-19 business practices. Nonetheless, we can be confident we will recover from the current crisis AND that the business environment after that recovery will evolve to be different from the pre-crisis environment.

If business's accept this, as they are organizing their COVID-19 response processes, they can do so with an eye that looks forward and prepares their business for the next new normal.

UPCOMING EVENTS

- ***Almost all face-to-face events have been canceled due to COVID-19.***
- **June 5-6, 2020**, International Conference on Smart-Cities, Transportation, and Buildings, San Francisco, 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

READER CONTRIBUTION: Fighting Coronavirus with WiFi
## by Nader Fathi, CEO, Kiana Analytics

Nader is the CEO of Kiana Analytics. He has over 25 years of proven performance as an entrepreneur, CEO, mergers & acquisitions, business development, technical marketing and global sales. Experienced in direct major account consultative selling, developing partnerships to drive revenues, and all aspects of marketing. Proven expertise in launching and rapidly growing new enterprise companies. Able to rapidly quantify a vision into a mission, and map to specific deliverables.

The 2019–20 coronavirus outbreak is an ongoing global outbreak of coronavirus disease 2019 COVID-19) that has been declared a Public Health Emergency of International Concern by the World Health Organization. It is caused by the SARS coronavirus 2(SARS-CoV-2) initially identified as Novel Coronavirus that was first identified in Wuhan, China in December 2019. J.P. Morgan Research reported that this pandemic has weighed on global financial markets and is expected to heavily impact business and travel. This virus is non-discriminatory. It affects the financial and psychological well being of all people and companies.

Kiana WiFi location analytics software, in connection with the unique identifier of a person's mobile device, can be leveraged in the location tracking of people infected with Coronavirus, and the identification of others who have come into close proximity. WiFi is already installed and in daily use in many locations. Kiana WiFi analytics can then be used to identify devices that have been in contact with a "device of interest", and the length of time of that contact. This analysis allows for a rapid response to isolate infected individuals and groups/areas. In enterprise and campus environments, where individuals are known, immediate outreach is possible. In city and public spaces, privacy prevents "knowing" individuals, but the information can assist communities in managing social distancing rules, identifying clusters of individuals and facilitating quick cleanup of areas where groups were assembled.

What is Coronavirus? Coronaviruses are a family of hundreds of viruses that can cause fever and respiratory problems. Since emerging in China in December 2019, this new Coronavirus has caused a global health emergency, sickening almost 125,000 people worldwide. As of March 11, 2020, over 1,100 cases had been reported in the US.
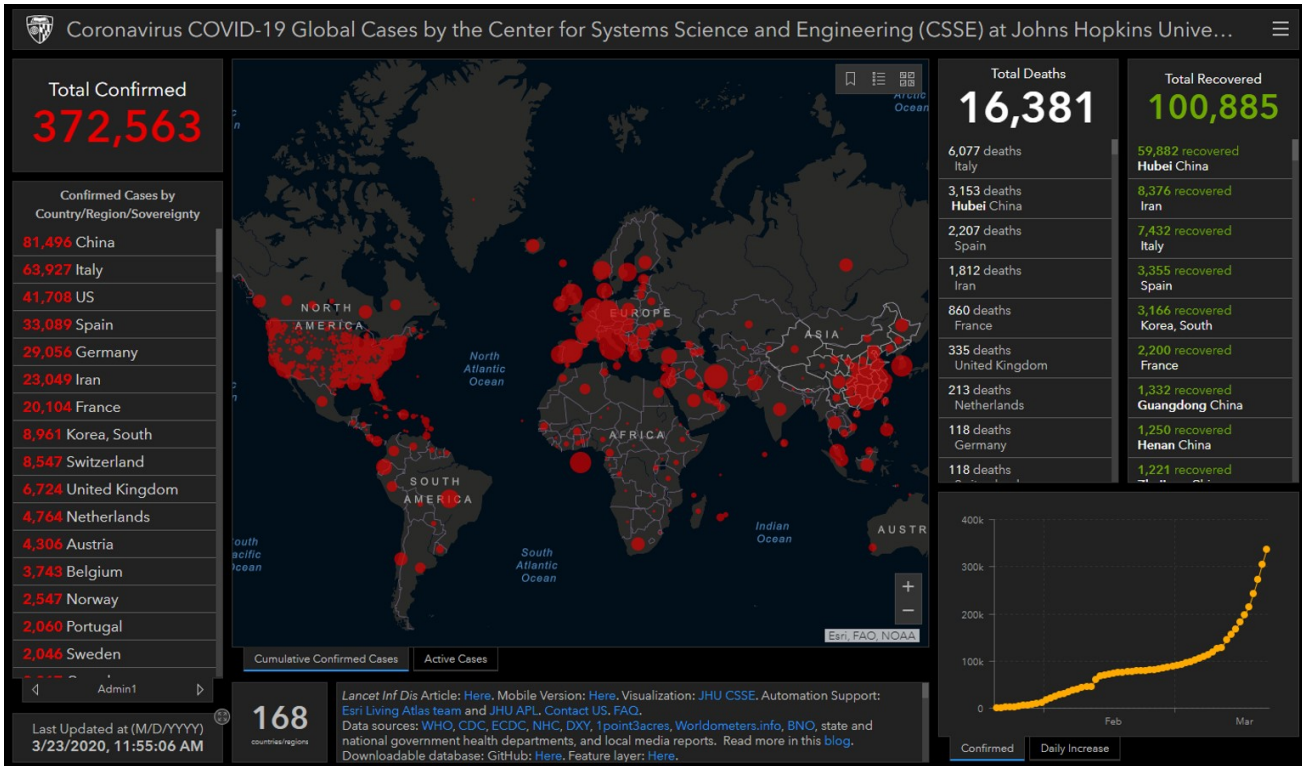
Source: March 23 CSSE at John Hopkins University (click here for latest statistics)

How does Coronavirus spread? Researchers are still trying to understand the spread of this virus. It's likely to be transmitted in droplets from coughing or sneezing, with a14-day incubation period. Growing numbers of cases of Community Spread illness in California and Washington suggest that the virus may be circulating more widely than case numbers might indicate.

As an outbreak spreads, public health officials track cases based on where they originated. Cases can enter a location via travel, or when a person has come from an area known to have the disease and brought it to a new place. Or the virus can be community spread, meaning a person who got it from an outbreak area has passed it to someone else in their community.

Can Technology Help us Pin-Point At-Risk Individuals and Populations? WiFi Can Help. Today we all own and carry WiFi-based systems, such as mobile phones, tablets, smartwatches, and more.

Using the signal from such a device is ideal for the understanding of dwell times (time spent in the same position) and the location of people's devices visiting an area. Each device has a unique MAC address and although not identifiable to a person, it is itself identifiable. Therefore, dwell time and repeat visits to a location can be calculated. As the MAC address is unique the same address can be tracked from sensor to sensor, giving a pathway within a building. The same address can be tracked from location to location to identify area transition.
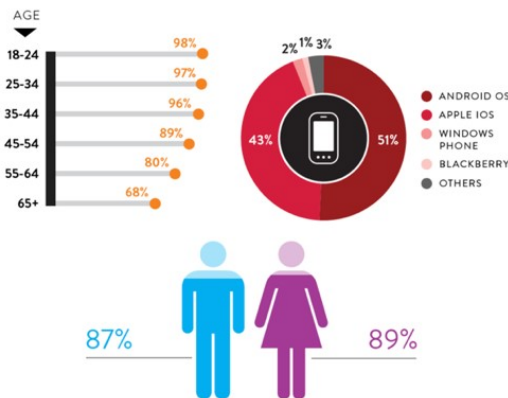

Source: Who owns Smart Phones? – Source: Nielsen Mobile Insights

Furthermore, the location of a device can be calculated using various methods such as using RSSI (Received Signal Strength Indicator) or triangulation.

1- Finding the phones   2- Locating phones   3- Store & analyze device data
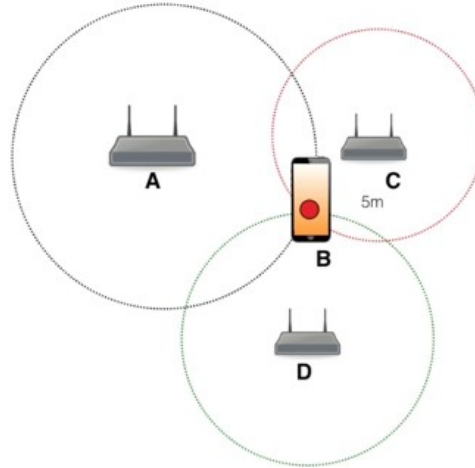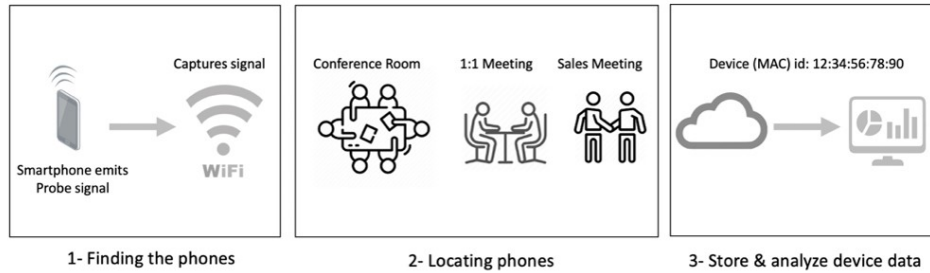
Example of locating a device (smartphone B) using three WiFi access points (A, C & D)

You Don't Need to Install Anything New – Leverage existing infrastructure. WiFi is already installed and in daily use in corporate facilities, universities, cruise ships, and hospitals. Leveraging WiFi analytics can then be used to identify devices that have been in contact with the "device of interest" and for how long (dwell time). This information can then be used to identify persons of interest (i.e., infected person), the people they contacted and the length in time of contact. This allows people infected to send alerts to others who may have been exposed to the same virus due to proximity and may have spread the virus. Health care providers can use this information to accelerate the response rate to avoid the spread of the virus. The benefit of WiFi is that it is ubiquitous and unlike beacons, no App download is needed on the user's smartphone.
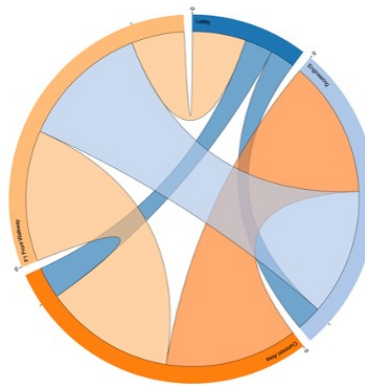
Example Area Transition – Source: Kiana Analytics, Inc.

Caveat on use of WiFi analytics. This solution has its limitations. The infected person may not have a smartphone or the WiFi may be turned off (in Airplane mode). Data may not be available in areas not covered by WiFi or not collected. In some regions due to data protection and privacy concerns, such data collection may not be permitted. Although not perfect, WiFi analytics offers a seamless solution to identify and eventually prevent community spread of Coronavirus which is impacting all of us worldwide.

Still, this is a time when the global community is working together through social distancing and other collaborative and scientific digital efforts to stem the spread of COVID-19. Likely your employees and communities would be willing and eager to use a collaborative WiFi analytics platform such as Kiana to do their part and help keep their businesses running smoothly and community healthy.

THE I³ CORNER (I3.usc.edu)

Because of the potential risks associated with the Corona Virus (COVID-19), we canceled the I3 Consortium face-to-face meeting that had been scheduled for March 23. Slowing COVID-19 spread requires social distancing. While such measures have been put in place, there can be no assurances how long these or other measures may be in place because we are essentially in uncharted waters.

So as to continually move the ball forward, we have scheduled a three hour virtual conference for April 21.   We are still working on the agenda and have some speaking slots still open - if you are interested in presenting at the April 21 virtual event, please let me know ASAP (jerry.power@i3-iot.net). You can register for the event and get logistics information at https://www.eventbrite.com/e/i3-consortium-virtual-workshop-april-2020-tickets-100846849642

As a reminder, if you are looking for the I3 opensource code, it can be found at https://github.com/ANRGUSC/I3-core.

Privacy vs Corona

by Jerry Power

In South Korea and in China, cellphone location data records are routinely utilized by the government to track individual movements. When a COVID-19 infection is identified, these records allow the government to observe an individual's movements to identify with whom the infected individual has had contact. This allows the authorities to identify individuals who may have been exposed and notify them about them about the potential issue. Using location data to track individuals and identify their contacts requires the use of location data and associated with identifying information. If the location data is provided without personal identification information (anonymous data), crowd host-spots can be identified and utilized to target social distancing enforcement actions. However, trace backs for individual notifications are not possible unless this data is coupled to personally identifiable information.

In the United States, privacy laws require that the government obtain a court order before companies with location data are permitted to surrender location tracking information to the government. The courts typically only provide a court order if there is reasonable proof that a suspect has broken a law. While there are instances where companies with location records could release this data to the authorities without a court order, many companies have policies and some states even have laws that preclude the release of data without court action.

After 911 some privacy laws related to wiretapping were modified to simplify government efforts to pursue terrorists. The argument was that by reducing privacy safeguards, society could be made safer. Proponents argue these measures are needed as democracies balance between societal and individual freedoms; a balance that needs to be periodically adjusted. Similarly, the laws which govern how a private organization operates are codified in their mission statement, employee handbook, policies, and procedures must be periodically reconsidered as the organization's operating environment changes.

The topic of privacy and personally identifiable information has been a topic of considerable debate for several years. Governments, states, industries, and companies have developed privacy policies that attempt to strike a balance between individual liberties and the needs of society. While government efforts focus on the demands of citizens in general, private organizations focus on customers, partners, and employees.

Privacy concerns have been a topic of vigorous debate in recent years. However, these debates did not foresee the impact that COVID-19 might have and the arguments that sought to find a balance individual vs societal needs should be reconsidered.

In general, younger generations report that they have no expectation of data privacy, they have effectively already traded their privacy for access to on-line goods and services. Older generations (myself included) are more concerned about privacy related issues. It is not that the immediate trade of privacy for a specific societal good in not justified, the concern is that once the data is released there is the possibility it will be used for other purposes. Consider the situation where immigrants are fearful of seeking health care because they are worried the data will be released to the immigration officials. This is an example of a community where the seeds of distrust serve to hamper efforts to slow the progression of this virus. This is a time when prior efforts to build a trust-dividend would have resulted in a huge reward.

The need for social distancing is an absolute requirement for today. If the situation persists for an extended period of time, it will be necessary to find new ways to avoid exposure that allows some relaxation of these rules. Relaxation will likely require a modification of current privacy rules but the key will be to change the laws in a way that prohibits reuse of the data for other purposes. If such limits are not established, we will never gain the trust required to allow such a program to become successful

Actions that undermine trust come at a price that at some point must be paid. At the same time, actions that serve to build trust can pay dividends in the future. This may be one of the reasons the federal government has not proven to be as effective in combating the virus as local government. While a government example related to trust and distrust is clear, those same motivational issues can be applied to businesses.

Businesses that are seen as doing all they can to support their employees and their customers will build loyalty among their own base. Conversely, businesses that are seen as callous or perhaps taking advantage of the situation will ultimately be called to task once the emergency situation subsides. At a time like this, more than any other, businesses must be cognizant of the fact that their actions today play an even more profound role in shaping customer's opinions.

READINGS FROM THE EDITOR'S DESK

- **We're Not Going Back to the Way Life Was Before**. The corona virus pandemic is a nasty one. Slowing its spread will require behavioral changes. Once we get past this immediate threat, we should expect that some of the lifestyle changes we adopt will become the new normal.
- **How to design a smart city that's built on empowerment—not corporate surveillance**. Who owns a smart City? The citizens own the smart city, decide policy, and vote for officials that serve as proxies for the citizens. When companies deal with city management they have to understand they are dealing with proxies for the deciders.
- **Data is the lifeblood of your business - that's why you need a data strategy at its heart**. It has been said that data is the new oil. If that concept is accepted, the organization requires a data strategy that maps how data enters, exits, and flows through the organization -- the same as the organization tracks the flow of money.
- **Digital transformation projects don't fail because of a shortage of 'tech'**. Digital transformations must focus on tech, people, and process in order to succeed. With the growing importance of privacy, businesses must add data management and agility to the list to know where data is located and how to evolve as requirements change.
- **Digital transformation: What nobody tells you about innovation in your company**. Digital transformation projects are not technology projects and it can be an egregious error to manage them as a tech program. Transformation projects change a business's culture and in today's world it includes tech tools as a part of the solution.
- **Coronavirus Will Change the World Permanently. Here's How.** A speculative but interesting collection of 34 opinions highlighting how the coronavirus might have long lasting impact to the world.

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 to us. If you have suggestions, topics you want to see included in future newsletter updates, or other general inquiries, feel free to email me at 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 other member of our community of interested people.

ABOUT 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 opensource software that was released in December 2019. Operational management of the I3 program is spun out of USC in 2020 as the I3 Consortium to allow the university to focus on research while the consortium supports the operational needs of the I3 community. The CTM newsletter evolved to become the CiTM Newsletter in order to continue the conversation even further.