

***Personal Primer for
Frank Lopez on
Catai.Solutions
June 3, 2021***

***The Coalition/Center Advancing
Innovation and Technology
(Catai.Solutions) is a tax-exempt
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Catai.Solutions offers technical guidance, education, and expertise for commercial and federal partners, and stakeholders in state, local, and education (SLED) markets to learn and leverage the benefits of IoT development for consumers and taxpayers.

Catai.Solutions actively engages with decision-makers in both the public and private sector to help empower the intelligent transformation of governments and businesses and distill solutions redefining experiences in urban, rural or harder to reach austere environments.

Catai.Solutions team and network includes senior leaders from multiple states, local governments, and respected companies with expertise spearheading complex initiatives and integrations, with deep experience across verticals and major areas of policy.

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Principals & our network of advisors include:

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- **Joseph M. Shields, Esq. Managing Director:** Joseph is a former counsel and executive to Governors Corzine, Christie, and Cuomo and a successful attorney and executive representing companies and causes across the nation.
- **Robert S. Garrison, Esq. is Chairman of Catai's board.** Garrison most recently served as Director of the Bergen County Department of Planning and Economic Development and the Executive Director of the Bergen County Improvement Authority. His work centered on transportation policy, conduit bond financing, community development. Mr. Garrison has served on various boards including the Westfield Board of Education, Casino Reinvestment Development Authority (CRDA), the Governors Ethics Task Force, the North Jersey Transportation Planning Authority, the Hudson County Board of Elections and the Union County Planning Board. Robert received his Juris Doctorate from Rutgers Law School, a Masters degree in Government Administration **from** the University of Pennsylvania's Fels Institute of Government.
- **LTG. Larry D. Nicholson (Ret.):** General Nicholson earned a Masters Degree from the United States Army Command and General Staff College and he retired as passed command of the Marine Expeditionary Force in 2019. In addition to his decorated military action, he previously served a senior aide to the Deputy Secretary of Defense.
- **Khalid Pitts:** Khalid is a Board Advisor of the Washington DC Health Exchange, a successful restaurateur and advisor to Catai.
- **Charlie Moscowitz, Esq.** Charlie consults for Catai and served for a decade as counsel and advisor to the U.S. Senate in areas of homeland security, trade and disaster recovery.
- **John McLaughlin (Ret.):** is 30-year Army Veteran, Major McLaughlin was the Director for C4 operations for SOCOM, Commander at DISA global and JCU and consults with Catai.
- **Jason Brown** is a Catai team member and a seasoned expert in digital tech and marketing. A graduate of the University of Pennsylvania, with graduate studies at the University of London, Jason has worked for an array of leading companies focusing on interactive experience, application development and touch-screen digital signage solutions & global language translation

What is done by Catai.Solutions?

- ▶ **Organize Local Workshops:** We engage local leaders from a variety of business sectors, from all levels of government and from a diversity of agencies. Each quarter we facilitate targeted local workshops so we can learn, educate, and design plans to address critical needs.
- ▶ **Educate Policymakers:** We educate decision-makers on key issues and champion impactful initiatives through digital media and communications, advancing thought leadership and spearheading community education forums.
- ▶ **Public & Private Partnerships (P3):** Launching and funding new deployable and integrated platforms, is hard, complex and deliberative. We work step by step with partners and look to take inventory of a diversity of funding streams, from private sector financing to philanthropic programs to government investment, to foster success.
- ▶ **Guide & Direct Research:** White-papers, beta-testing, and demonstrations are often crucial to formal adoption of solutions ,especially in government markets. We have a network of researches and practitioners capable of stewarding this work.

Why What Catai.Solutions Does Matters: The Benefits of IoT are clear and include:

- ▶ **Safety, Comfort, Efficiency:** Imagine measuring and managing hazardous environments while juggling many factors. You must do this without putting people at risk. And don't forget to optimize all physical environments for comfort and productivity.
- ▶ **Better Decision Making:** If you can analyze larger trends from empirical data, you can make smarter decisions giving you data-backed visibility into every aspect of your operations and business.
- ▶ **Reduced Cost/ROI and Revenue Generation:** The economic impact and benefits of the IoT will be huge. [Gartner predicts](#) that the aggregated value and economic benefit of the IoT will exceed \$1.9 trillion in the year 2020 alone.

Areas of Focus

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The time that leads to mastery is dependent on the intensity of our focus.

Robert Greene

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Smart Cities

A smart city is an urban area that uses different types of electronic methods and sensors to collect data. Insights gained from that data are used to manage assets, resources and services efficiently; in return, that data is used to improve the operations across the city.

A smart city is a framework, predominantly composed of Information and Communication Technologies (ICT), to develop, deploy, and promote sustainable development practices to address growing urbanization challenges.

Perhaps more so, smart cities require leaders with a long-term vision and people committed to collaboration. Multiple agencies, consultants, and private firms track the development of smart cities, and there are eight generally recognized subjects that combine to make a city smart.

Readiness/Connected Battlefield

- The modern-day unified battlefield is characterized by collaborative combat in ... A swarm is a network of cooperative and connected unmanned systems which engage targets collectively to overwhelm the enemy. Combined with artificial ... Maintenance • Higher operational readiness: and sortie rates • Lower transportation costs ...
- Three major trends are shaping warfare: an asymmetric battlefield, Click to add text costs of modern weaponry, and maintaining deterrence in an environment of a growing arms race.
- The Internet of Battlefield Things will connect soldiers with smart technology in armor, radios, weapons, and other objects, to give troops "extra sensory" perception, offer situational understanding, endow fighters with prediction powers, provide better risk assessment, and develop shared intuitions.

Grid Intelligence

- Based on metrics of state support, customer engagement and actual **grid** operations, California is first in **grid intelligence** maturity, while Illinois, Texas, Maryland and Delaware round out the top five. The GridWise Alliance measured these results in its annual **Grid** Modernization Index.
- Advanced **Grid Intelligence** and Security (AGIS) is a long-term strategic initiative to transform the electrical distribution business to enhance security, efficiency and reliability, to safely integrate more distributed resources, and to enable improved customer products and services.
- Grid modernization, or the two-way flow of power, information, and communications, is a vital component of the electric system to facilitate management and optimization of the grid; meet changing consumer demands; incorporate distributed energy resources (DERs), such as electric vehicles, microgrids, solar, wind, and storage; and, ensure continued and increasing reliability, resilience, security, flexibility, and affordability.

Safe Cities

"Safe City Technologies & Market (with COVID-19 Impact) - 2021-2026" report is a resource for executives with interests in the industry. It has been explicitly customized for industry and urban decision-makers to identify business opportunities, developing technologies, market trends and risks, as well as to benchmark business plans.

Major shifts in technologies are fueling the digital transformations of urban security, changing our businesses and lives. New advancements in Artificial Intelligence, 5-G connectivity, Face Recognition, Video Analytics, Big Data, Emergency Traffic Management, PSIM, PSAP, NG911 and GIS Based Emergency Notification offer great opportunities to those who best understand how to capitalize on change.

The world's population is constantly increasing. To accommodate everyone, we need to build modern, sustainable cities. For all of us to survive and prosper, we need new, intelligent urban planning that creates safe, affordable and resilient cities with green and culturally inspiring living conditions.

Smart Farming

"Smart farming" is an emerging concept that refers to managing farms using technologies like IoT, robotics, drones and AI to increase the quantity and quality of products while optimizing the human labor required by production.

Smart farming can be referred to as the 4.0 green revolution in the field of agriculture combining agriculture methodologies with technology - Sensors & Actuators, Information and Communication Technology (ICT), Internet of Things (IoT), Robotics and Drones to achieve desired efficiencies of production with managed cost.

Smart Farming is focused on the use of data acquired through various sources (historical, geographical and instrumental) in the management of farm activities. Technologically advanced doesn't essentially mean that it is a smart system. Smart systems differentiate themselves through their ability to record the data and make sense out of it.

Connected Vehicles

Connected Vehicle (CV) technologies are equipment, applications, or systems that use V2X communications to address safety, system efficiency, or mobility on our roadways.

Over the past several years, the U.S. DOT and its operating administrations have engaged in numerous activities related to connected vehicles, which generally encompass vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I), and vehicle-to-pedestrian (V2P) communications, collectively known as "V2X."

Global Connected Vehicles Technology Market Growth (Status and Outlook) 2020-2025 is the fresh report by MarketsandResearch.biz that is formulated with the exact understanding of customer requirements. The report covers comprehensive market analysis, evaluation of findings, as well as assumptions taken from a variety of sources.

Digital Health/Telemedicine

The broad scope of digital health includes categories such as mobile health (mHealth), health information technology (IT), wearable devices, telehealth and telemedicine, and personalized medicine.

On the other hand, telemedicine is generally defined as a more direct communication between a clinician and a patient, regardless of whether it is video or audio-only. If a one-to-one "visit" is virtual, rather than in person, that's telemedicine.

Telehealth, telemedicine, and related terms generally refer to the exchange of medical information from one site to another through electronic communication to improve a patient's health. Innovative uses of this kind of technology in the provision of healthcare is increasing.

E-
Procurement/Smart
Supply Chain

By making use of accelerated connections and communications, smart companies are empowered with the tools necessary to quickly and easily bring about innovative procurement practices. When these smart technologies are integrated with contemporary procurement methods, it creates what is known as e-procurement, or Procurement 4.0.

In today's unstable market conditions, e-procurement, or electronic procurement, has become more important than ever. Once thought to be the next logical step in supply chain management, e-procurement software now helps businesses stay agile, digitize their processes and become data-driven powerhouses.

Smart Supply Chain enhances oversight of customer demand and accuracy of the supply and services pipeline. Asset information across the supply chain enables greater traceability and trust of goods by limiting damage and tampering and detecting risks.

Industrial Internet

The Industrial Internet will transform industry through intelligent, interconnected objects that dramatically improve performance, lower operating costs and increase reliability. GE & Accenture's Industrial Internet Insights Report 2015 Marco Annunziata: Welcome to the Age of the Industrial Internet - Ted.com

Solutions designed for the Industrial Internet of Things (IIoT) use connected sensors and edge devices to help improve product quality and factory operational efficiency in real time. Intel provides secure and scalable building blocks for industrial IoT solutions that bring intelligence to your operating assets and reveal insights from data.

The industrial internet of things (IIoT) refers to the extension and use of the internet of things (IoT) in industrial sectors and applications. With a strong focus on machine-to-machine (M2M) communication, big data, and machine learning, the IIoT enables industries and enterprises to have better efficiency and reliability in their operations.

CASE STUDY: Connected Battlefield Advancing readiness at the edge

- ▶ By using edge computing and deployable platforms, we've learned the military is better able to understand how to collect, store and correlate data to make military actions safer and "connect the battlefield," capable of gathering and transmitting data from many sources back to analytics and command centers. Moreover, preliminary analysis of edge use-cases within the defense and security community shows sizable cost-savings, greater mobility, and improved cyber-security and capacity. As stated in the National Defense Strategy (NDS) and emphasized the National Defense Authorization Act (NDAA), "increasingly complex security environment are defined by rapid technological change, (with) challenges from adversaries in every operating domain." In this environment, "there can be no complacency." (The National Defense Strategy 2018).

CASE STUDY: Clean water during Hurricane Irma Continuity of Critical Service

- ▶ Leveraging IoT and smart applications in Florida, during Hurricane Irma, our partners rapidly deployed solutions working with local leaders and federal agencies. Innovative technology reinforced critical power, infrastructure, and water systems in the Florida keys restoring clean water to vulnerable communities. In Puerto Rico, solutions augmented the islands public safety network, providing support to emergency personnel, first responders, residents and law enforcement.

CASE STUDY: **Public** **Service** **Continuity** **of Critical** **Service**

- ▶ Cisco along with Klas Telecom stewarded disaster relief efforts of Hurricane Maria, for two key Puerto Rico Police and Emergency Management Agency sites. Their relief efforts provided real-world basic communications capabilities leveraging baseband and satcom backhaul for two remote sites giving the State Emergency Management Team the ability to communicate across the island and back to the US Mainland. This collaborative effort has resulted in opening up channels to manage logistics and provide real-time common operational reports and updates

CASE STUDY: Green Vision San Jose, California

- ▶ The city of San José and Intel Corporation are collaborating on a public-private partnership to further the city's "Green Vision" goals. The project, known as Smart Cities USA, is expected to help drive San José's economic growth, foster 25,000 clean-tech jobs, create environmental sustainability and enhance the quality of life for residents.

Representative Partners

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Our success has really been
based on partnerships from
the very beginning.

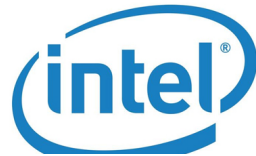
Bill Gates

Microsoft



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CATAI.SOLUTIONS: Representative Industry Partners

The Verizon logo, featuring the word "verizon" in a bold, black, sans-serif font with a red checkmark above the "v".The Cisco logo, consisting of a blue signal icon above the word "CISCO" in a blue, sans-serif font.The Intel logo, featuring the word "intel" in a blue, lowercase, sans-serif font inside a blue oval.The Dataranx logo, featuring a blue circle with a white triangle inside, above the word "DATARANX" in a blue, sans-serif font.The Davra Networks logo, featuring four overlapping circles in shades of gray, teal, and blue, above the text "davra networks" in a lowercase, sans-serif font.The Fluidmesh Networks logo, featuring a stylized red "fm" above the text "FLUIDMESH NETWORKS" in a black, sans-serif font.The Rialto Inc logo, featuring a stylized arch above the text "RIALTO INC" in a black, sans-serif font.The NTS logo, featuring a cluster of red circles above the text "NTS" in a black, sans-serif font.The FR logo, featuring the letters "FR" in a stylized, italicized font inside a gray oval.The Bylight logo, featuring a blue square with a white diagonal line, above the text "BYLIGHT" in a bold, black, sans-serif font, with the tagline "Lighting the Path" below it.The SafeNet Assured Technologies logo, featuring the text "SafeNet." in a bold, black, sans-serif font above the text "ASSURED TECHNOLOGIES" in a red, sans-serif font.The Nutanix logo, featuring the word "NUTANIX" in a blue, sans-serif font with a green "X".The World Wide Technology logo, featuring a stylized "W" and "T" in red and blue, above the text "World Wide Technology" in a black, sans-serif font.The Force3 logo, featuring a stylized "F" and "3" in green and blue, above the text "FORCE3" in a bold, black, sans-serif font, with "A SIRIUS COMPANY" below it.The VMware logo, featuring the word "vmware" in a lowercase, black, sans-serif font.The Thales logo, featuring the word "THALES" in a blue, sans-serif font.The Riverbed logo, featuring the word "riverbed" in a lowercase, orange, sans-serif font.The NetApp logo, featuring a blue square with a white "N" inside, above the text "NetApp" in a black, sans-serif font.The Klas Telecom logo, featuring a stylized globe icon above the text "KLAS TELECOM" in a black, sans-serif font.The CodeMettle logo, featuring a stylized "E" icon above the text "CODEMETTLE" in a black, sans-serif font.

CATAI.SOLUTIONS: Representative Key Defense & Security Partners

- ▶ United States Army
- ▶ United States Marine Corps
- ▶ United States Navy
- ▶ United States Air Force
- ▶ United States Coast Guard
- ▶ Defense Intelligence Agency (DIA)
- ▶ Defense Information Systems Agency (DISA)
- ▶ Joint Communications Support Element (JCSE)
- ▶ MARFORPAC
- ▶ Pacific Warfighting Center
- ▶ PACOM
- ▶ USARPAC
- ▶ United States Army Special Operations Command
- ▶ United States Army Reserve
- ▶ Naval Information Warfare Center Pacific
- ▶ Pearl Harbor Naval Shipyard
- ▶ 311 Signal Command
- ▶ White House Communications Team
- ▶ NSA
- ▶ Members from the Chairman of the Joint Chiefs of Staff Communications team
- ▶ The Secretary of Defense Communications
- ▶ SOCOM
- ▶ JCU
- ▶ JSOC
- ▶ Elite communications support units
- ▶ FBI
- ▶ NATO
- ▶ Department of Homeland Security
- ▶ Representatives from the Australian, Belgian Special Forces

We can
help!
Get In Touch
With Us.

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➤ **Contact Us!**