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MACHFU
MOST PROMISING
**TECHNOLOGY COMPANIES
FOUNDED AND MANAGED
BY INDIANS IN THE U.S.**
2020
AWARDED BY
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**ENTREPRENEUR
OF THE YEAR**

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*The annual listing of 20 Most Promising Technology Companies
founded and managed by Indians in the U.S that are at the
forefront of tackling customer challenges*

Machfu

Fostering Innovations in IIoT

Consumer IoT has shifted the gear of life to a digital fast lane. While the technology is enroute to redefining the way people live and work, on the industrial front, it is augmenting process automation, by wrapping itself around the notions of traditional networks, machine to machine communications and systems such as SCADA. It's a no brainer that IoT is key to the modernization of several industries such as manufacturing, energy and power generation, oil and gas, and agriculture. The dawn of Industrial IoT marks the proliferation of internet technology from the "people" realm to the "machines" realm. As a visionary entrepreneur, Prakash Chakravarthi, the CEO and Co-founder of Machfu was quick to recognize the implications of this shift during the early years of internet, way before IoT even became a buzzword.

Prakash has come a long way from being a research fellow at Jet Propulsion Laboratory to becoming the CEO of Machfu today. His journey spanning 20 years commenced at Comsat Labs as a Manager. Its acquisition by Lockheed Martin was precisely the catalyst he needed to step out of Comsat Labs and, along with the four other partners and colleagues, start the venture, Eka Systems, in the year 2000. This company was an early pioneer in the electric smart grid space and eventually launched its products globally. In many ways, as Prakash describes, Eka Systems was ahead of its time, drawing heavily on the notions of IoT for smart grids, which in itself was a relatively new idea back then. The concepts of the internet, data, and energy management were relatively new to the space that led the founders of Eka Systems to persevere for a long time to keep the company afloat. Nonetheless, the endeavor turned out to be a success and was sold to Cooper Power.

In light of the technology experience that they acquired, Prakash and team went on to found an IoT consulting firm, Captiva. The idea of starting this



Prakash Chakravarthi,
CEO and Co-founder

enterprise was to help Fortune 500 companies with their IoT initiatives. They offered consulting services and developed reference architectures from the design up to the implementation stages. In parallel, the industrial space was growing increasingly familiar with IoT and its possibilities, which the founders perceived as the perfect window of opportunity to broaden the scope of IoT with open-source software and cloud technology, to ultimately redefine and standardize industrial automation. The time was right for Prakash and his team to form Machfu. The rest, as they say, is history.

Leveraging IoT to Modernize Legacy Infrastructures

Today, Machfu is a global pioneer in the IIoT space offering one of the most power-efficient industrial gateways capable of edge computing and connectivity. Machfu grew out of a simple idea that developing and maintaining applications in the industrial IoT world should be as easy as it is with consumer IoT. In essence, the company integrates the legacy and modern systems and allows businesses to transition the old to the new gracefully in a capital-

constrained environment. “With experience across multiple verticals such as utilities, oil and gas, water, agriculture, rail, transportation, factory floors, and building controls, we understand the customer pain points, the historical barriers, and why now is perfect timing for IoT to revolutionize these industries,” states Prakash.

In the world of machines, only the top five percent of the industrial assets are expensive and fully automated. This poses a major challenge for industrial entities as the rest of the 95 percent of the devices and assets are not automated. Owing to high costs, legacy, and proprietary purpose-built nature that don’t necessarily facilitate sound integration, they were difficult to automate. This further became a significant barrier in scalability, and in leveraging predictive analytics. Even after adopting automation solutions, companies often struggle to scale the solutions or add new ones.

To this end, Machfu serves clients by offering seamless connectivity between valuable industrial assets, legacy systems, and cloud-based platforms. The company’s IIoT gateway, MACH Gateway, helps connect industrial controllers and sensors to existing backend systems and the cloud. Further it translates legacy industrial protocols into modern cloud-based applications, without impacting existing operations. These applications are equipped with low power edge computing capabilities along with a sandboxed, customizable framework that simplifies configuring, connectivity, managing, and processing data from industrial sensors and controllers. The data allows clients to make better decisions, get a holistic view of all the issues existing with the operations and performance of machines, and enables improved connectivity of workforces to devices in the field. Apart from the MACH Gateway device, Machfu’s MachIO offers standards-based wireless data collection of industrial sensors. It complements the capabilities of the Machfu ecosystem to interface with sensors in remote or harsh conditions. This product

“With experience across multiple verticals, we understand the customer pain points, the historical barriers to scaling, and why now is the perfect timing for IoT to revolutionize industries

facilitates the collection, communication, computation, and transportation of data from several analog and digital sensors to backend monitoring systems and the cloud, or existing SCADA systems. All these capabilities translate to achieving remote diagnostics and configuration in a web services-oriented way that allows clients the complete visibility into their entire fleet of assets and make decisions based on real-time data.

Promising Roadmap Forged by Customer Success

Machfu’s sheer brilliance reflected through one of its latest achievements when the company is collaborating with a client with 60,000 gas wells in the Appalachian Mountains, covering areas of West Virginia, Pennsylvania, and Ohio. This company has approximate yearly revenue of \$ 2 billion, but it costs them \$220 every month to send in field service to monitor the sensor readings of each gas well. They then performed an analysis and found that automation solutions from prominent industry players would not provide meaningful RoI. Machfu entered the picture with its standardized approach and sent them tubing and casing pressure readings, at regular intervals to the cloud, at one-third of the conventional cost. At present, the company receives real-time diagnostics information on their system’s functioning and performance at a lower price than before.

According to Prakash, Machfu’s success owes to the tight knit team he has in place. “There are many startups with bright and talented people. But if people can’t work together in a unified way, it is difficult to succeed,” adds Prakash. All the founders of Machfu are incredibly dedicated and entrepreneurs at heart. From a leadership perspective, the power to persuade is of utmost importance for the team, both internally and externally. It not only encourages people within the company to work cohesively but also helps the company to attract more investors and therefore grow in the process.

With the current global pandemic situation, automation of industrial assets has gained greater value not just from an economic point of view, but also from the safety side. Machfu is leading the way by helping clients achieve their automation goals through modern web services and enhance the safety factor of being able to manage and monitor their operations remotely. The short-term impact of COVID-19 has been minimal for Machfu, and the company looks to keep executing plans to grow and expand its products and services to customers worldwide. “The value of automation that Machfu brings is enhanced, now more than ever, not just its basic value but also the intangible value of comfort that we can offer to our clients,” concludes Prakash. 