

DIGITAL EDGE RECOGNIZES GALAXY AS

'TOP IT SOLUTION PROVIDER OF INDIA' 2022

Digital Edge has awarded us the **'TOP IT SOLUTION PROVIDER OF INDIA'**

considering our very high level of customer satisfaction and our performance over this year. This encourages us to keep on investing in people and technologies to continue providing the best solutions to keep our customers ahead of their competition.



Anoop Pai Dhungat
Chairman & Managing Director

MD SPEAKS

Dear Readers,

Last month, we had predicted that blockchain technology would see multifold adaption during this year. One of the budget announcements was the introduction of a digital rupee during the next fiscal year. This would catapult India to being one of the first countries in the world to introduce a digital currency backed by the central bank. I am sure, many others will take the cue and further the growth of blockchain technology based solutions.

Another technology that will see good growth over the next couple of years would be Data Fabric. With most enterprises moving to the cloud in some way or there other, their data is now distributed across environments, processes and geographies. With a data fabric, access to this data can be optimised and securely delivered much faster than traditional methods. This will enable enterprises to drastically simplify data management and governance in complex hybrid and multicloud environments at much lower costs and risk. To understand more about data fabrics please reach out to our technical experts who can take you through this journey.

Stay safe and happy reading.



Future Is Now

Humans can now use mind control to direct swarms of robots

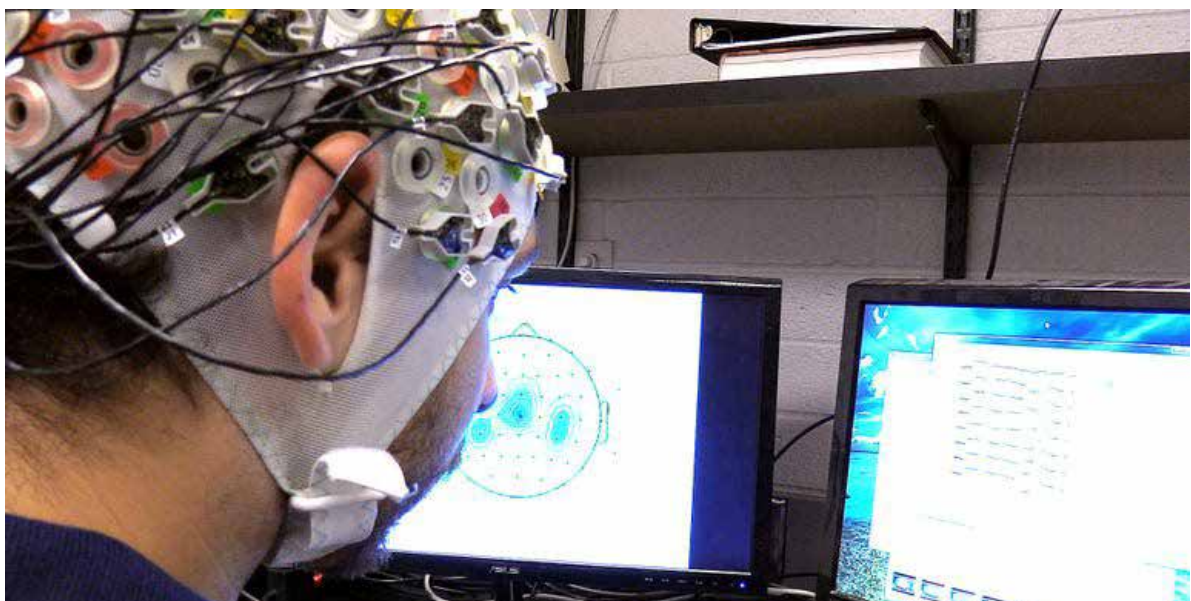
Researchers at Arizona State University have created a brain-to-machine interface that humans can use to mentally control several robots at once. There have been some amazing breakthroughs that enable humans to control a single machine with their thoughts. The next step is figuring out how to operate an entire fleet of robots with mind control.

A team of researchers at Arizona State University's (ASU) Human-Oriented Robotics and Control Lab have developed a system for managing swarms of robots with brain power. ASU's new system can be used to direct a group of small, inexpensive robots to complete a task. If one robot breaks down, it's not a big loss, and the rest can continue with their mission. ASU researcher Panagiotis Artemiadis tells ZDNet that swarms of robots can be used for "tasks that are dirty, dull, or dangerous". In the future, humans can use their thoughts to manage a team of robots that will work together to accomplish a goal. Artemiadis says: Applications of this research can be found in

a plethora of tasks that include delivery of medical help to remote areas, search and rescue to inaccessible environments and disaster areas or exploration of unknown and remote environments, ranging from underwater to space. Since most of the applications require the human in the loop, our work focuses on the optimization of the human control interface in order to increase the operation efficiency and accuracy.

In the prototype system, a user wears a skull cap with 128 electrodes wired to a computer. The cap records electrical brain activity, which is then translated by advanced-learning algorithms into commands that are wirelessly sent

to the robots. The user watches the robots and mentally pictures them doing different tasks, such as spreading out or moving in a certain direction. Conventional joysticks only control one robot at a time, but our minds can control an entire flock. It's much easier for the brain to control objects that resemble human limbs, which is why this study is so surprising. Artemiadis says, "The complexity of a system that requires the brain to activate areas to control robotic artifacts that do not resemble natural limbs, in our case a swarm of drones, is significant and so far unexplored." His research group discovered that specific areas of the brain are activated when we observe collective behaviours, such as a flock of birds or a school of fish. He explains, "The fact that the brain can adapt to output control actions for a swarm of multiple robots is fascinating and quite useful for human-robots interaction. "The challenge is that people have to stay completely focused on the robots; they can't let their minds wander, or the system won't work. The ASU team also had to make sure the decoding of brain activity was accurate and repeatable. This wasn't easy, since brain recordings are time-varying and quite sensitive to the precise location of the electrodes. "We tackled this challenge by developing advanced learning algorithms that adapt to changes of the recordings in real-time," says Artemiadis. "So even in cases the brain signals are varying with respect to time, our decisions for controlling the robot swarm are robust and accurate. "Although this research is still quite early, the researchers estimate that we'll see this kind of brain-swarm interface start to complement or replace joysticks in the next 10 years. Artemiadis says, "We are going to see those interfaces used in applications ranging from military to entertainment and missions that involve exploration of unknown and/or dangerous environments."





Technology Focus

Digital twin - A real time, virtual representation

Digital twins are real-time, virtual representations of objects, processes, and systems. While digital twins can represent purely digital things, they most frequently serve as a bridge between the physical and digital domains. For example, a digital twin could provide a digital view of the operations of a factory, communications network, or the flow of packages through a logistics system.

“The implementation of a digital twin is an encapsulated software object or model that mirrors a unique physical object, process, organization, person, or other abstraction,” according to Gartner. “Data from multiple digital twins can be aggregated for a composite view across a number of real-world entities, such as a power plant or a city, and their related processes.”

Benefits of digital twins

These virtual clones of physical operations can help organizations monitor operations, perform predictive maintenance, and provide insight for capital purchase decisions. They can also help organizations simulate scenarios that would be too time-consuming or expensive to test with physical assets, create long-range business plans, identify new inventions, and improve processes.

Digital twins offer five key benefits, according to digital product engineering company GlobalLogic:

- Accelerated risk assessment and production time. Digital twins can help companies test and validate their products virtually before they exist in the real world. They can be used by engineers to identify process failures.
- Predictive maintenance. Organizations can use digital twins to proactively monitor equipment and systems to schedule maintenance before they break down, improving production efficiency.
- Real-time remote monitoring. Users can monitor and control systems remotely.
- Better team collaboration. GlobalLogic notes that process automation and 24x7 access to system information lets technicians focus more of their time on collaboration.
- Better financial decision-making. By integrating financial data, organizations can use digital twins to make better and faster decisions about adjustments.

Digital twin technology

Digital twins consist of three primary elements, according to systems integrator, SL Controls:

- **Historical data:**
Data on the past performance of machines, processes, and systems.
- **Real-time data:**
Digital twins receive continual updates from equipment sensors and outputs from platforms and systems, like manufacturing equipment, customer service, and purchasing.
- **Future data:**
This includes machine learning and inputs from engineers.

Digital twin market

The digital twin market is growing at a rapid clip. Research firm, Markets and Markets, says the global digital twin market was \$3.1 billion in 2020 and is expected to reach \$63.5 billion by 2027. It considers digital twin a key component of the fourth industrial revolution (or “Industry 4.0”).

“In Industry 4.0, the digital twin is considered to integrate the manufacturing techniques with advanced technology like IoT that helps in developing interconnected manufacturing systems,” Markets and Markets says in its report. “Thus, digital twin technology seems to be an ideal solution that facilitates the companies in realizing the Industry 4.0 standards.”

The firm believes the automotive and transportation, energy and power, and aerospace and defense verticals are the key end-users of digital twin technology.



<https://bit.ly/3hc5CVz>



Special Focus

Dell expands Apex cloud and on-prem storage options

7 new Dell systems and services cover multi-cloud offerings and more. Dell Technologies is charging ahead with its Apex consumption-based sales portfolio with a total of seven new launches, while also expanding its public cloud integration for a broader multi-cloud experience for its customers.

Dell sees the writing on the wall and that the future is hybrid and multicloud. Today, 92% of organizations have a multi-cloud strategy in place or underway, and 82% of large enterprises have adopted a hybrid cloud infrastructure. And a new Forrester study commissioned by Dell Technologies found that 83% of organizations have adopted a multi-cloud approach or plan to within the next 12 months.

The company sees that the mainstream enterprise market is adopting the hybrid, multi-cloud model with a mix of on-premises and public cloud deployments and wants to get in on that business.

"Today's multi-cloud reality is complex as data becomes more distributed across on-premises and colocation data centers, multiple public clouds and edge environments," said Jeff Boudreau, president, Infrastructure Solutions Group, Dell Technologies in a statement.

The first new offering is Apex Multi-Cloud Data Services, which will provide file, block, object and data protection services for simultaneous access to all major public clouds from a single source of data. It will connect storage and data protection to preferred public clouds and services through its integration with the Apex Console.

The second storage-related announcement is Apex Backup Services, which scalable end-to-end, secure data protection with centralized monitoring and management for SaaS applications, endpoints and hybrid workloads. It can be deployed in minutes and scaled on-demand, covering SaaS applications like Office 365 and Salesforce.

Third, the company will extend its storage portfolio with Project Alpine, an effort to bring Dell's flagship block- and

file-storage software to public clouds. Customers will be able to purchase storage software as a managed service using existing cloud credits, taking advantage of a consistent storage experience from on-premises to public clouds and easily sharing data across multiple clouds.

Keeping with the storage news, Dell announced an expansion of its Apex Data Storage Services into 13 foreign countries. Apex Data Storage Services is an on-premises, as-a-service solution of scalable and elastic storage resources. Think of it as AWS S3 for your data center. Apex Data Storage Services is now available across multiple Europe and Asia Pacific nations. And while Apex Data Storage Services are meant as an on-premises play, Dell also announced that the services are now available with colocation services via Equinix in the US, UK, France, Germany, and Australia.

Also, Apex Cloud Services with VMware Cloud is now available in the US, UK, France and Germany. The services, jointly developed by Dell and VMware, provide a secure and consistent Dell-managed platform for workloads running across multiple cloud and edge environments.

For Developers

Dell is expanding its Kubernetes offering, Amazon EKS Anywhere, so it can run on its PowerStore and PowerFlex storage products, which will enable running Kubernetes orchestration across public or on-premises clouds. It also announced that SUSE's Rancher container-management platform is available on VxRail, Dell's HCI-based clustered solution, providing multi-cluster, multi-cloud Kubernetes management. Finally, Dell said it is expanding its Dell Technologies Developer portal to serve as a one-stop shop for application developers and DevOps teams looking to provide infrastructure as code. The portal will provide continual access to the latest Dell APIs, SDKs, modules and plug-ins.

Don't let multi-cloud complexity delay your journey! Galaxy can help your organization extend a consistent solution set across cloud optimization. Our strong OEM partnerships help you create a lasting cloud strategy that unites environments and reduces risk. To talk to our experts, email us at marketing@goapl.com



The Indian PC market witnessed strong sales in 2021 with 44.5 per cent year-over-year

The Indian PC market witnessed strong sales in 2021 with 44.5 per cent year-over-year (YoY) shipment growth, according to the latest report by International Data Corporation (IDC). It says that the notebook category was the main volume driver as 11.6 million units were shipped last year. The desktop category, which saw a steep decline in 2020, also witnessed 30 per cent YoY growth. This was driven by strong demand in the Education and VLE segments. In 2021, the PC market was dominated by HP, followed by Dell and Lenovo.

The report reveals that HP retained its top position in the PC market with a 31.5 per cent market share. Its shipments grew by 58.7 per cent YoY in CY2021 as it shipped 1.3 million units. IDC says strong demand coupled with consistent supplies helped the brand maintain its top position in the Indian PC market. Following this, HP India's MD Ketan Patel said, "the PC industry is going through a super cycle owing to the robust growth driven primarily by hybrid work, digital education, gig workers and the gaming segment. With

our focus on insights-driven innovation, we are confident that we will stay focused on providing the best offerings to our customers and elevate their computing experience even further." Dell managed to garner the second spot with a 25.6 per cent market share and 47 per cent YoY growth in CY2021. Lenovo is currently on the third position with a 17.4 per cent share. The company did witness some growth, but constrained supplies impacted its overall shipments, according to the report. IDC says the demand for PCs may not be as high as we have witnessed in the last two years. Navkendar Singh, Research Director, Client Devices, IDC India said, "The market witnessed unprecedented demand for PCs in the last two years in both the commercial and consumer segments, but demand is expected to soften in 2022. While digitalization and remote working are expected to be primary drivers for the SME and enterprise segments, component shortages, supply challenges, and increased prices might continue to impact the government and education segments negatively, leading to further delays in projects." "We may also witness some traction for the newer vendors in the consumer segment as supplies start improving in the second half of the year," he added.





Digital rupee to be issued by RBI, 30% tax on income from virtual digital assets

Many countries are now launching their own digital currencies as Bitcoin and other cryptocurrencies are gaining prominence across the world

In a major boost to crypto players, Finance Minister Nirmala Sitharaman in her Budget Speech 2022 said 30% tax would be charged on income from transfer of virtual digital assets. The FM said no set off would be allowed in case of losses. For a few months now, the crypto industry in India has been demanding clarity on taxation. She also said that gifts in virtual digital assets would be taxed in the hands of the recipient. Also, a blockchain-based Central Bank Digital Currency (CBDC) will be introduced by 2023, Sitharaman said. This will be

backed by the Reserve Bank of India (RBI). The digital rupee move will give a big boost to the economy, Sitharaman said.

Many countries are now launching their own digital currencies as Bitcoin and other cryptocurrencies are gaining prominence across the world. Earlier, Principal Economic Adviser Sanjeev Sanyal had said that the government would take a balanced view on the issue of regulation of cryptocurrencies. Last year, in November, Prime Minister Narendra Modi held a meeting on cryptocurrencies with senior officials and they discussed many regulatory steps that could be taken on cryptocurrencies. Many crypto players in India have been witnessing record volumes in transactions for the past few months now. They have been introducing new tokens/coins to attract millennials and new-age investors.



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