iziar
e-magazine

ISSUE 09 | JUNE 2023

VIDEO MARKETING

UNLEASHING
THE POWER OF DATA

CRYPTOCURRENCY IN REAL WORLD

CONTENTS

1. About Us.....01
2. Future Trends in Embedded Systems.....02
3. Technical Advancement towards Digitization of Business.....07
4. Modbus TCP vs Profinet.....10
5. Video Marketing 13
6. Role of VR in industrial Automation.....16
7. Unlock The Future Of Digital Marketing.....20
8. Unleashing the Power of Data.....24
9. Cryptocurrency in real world.....29

ABOUT US

In 2008, we started our journey by launching the company's first office in Kochi with an operation team executing industrial automation projects and within one year we opened our first training centre in Kozhikode. By providing the finest service, in a short span we got students from various parts of India and Africa too. As a next step, we expanded our training centres to diverse locations in India, Nigeria, Qatar, UAE, Kenya, and the KSA and now in 2022, we have altogether 18+ branches. IPCS Global, one of the most renowned Core Technical Instruction Providers in the World, has been offering training on numerous programmes that are focused on the future.

The programmes that we choose for training segments are influenced by a variety of factors, including the stream's potential growth, the employability of our trainees, the accessibility of various employment markets, and many other aspects. Our current stream list includes Industrial Automation, Building Management and CCTV Systems, Embedded and Robotics, Internet of Things, Digital Marketing and IT and Software Development. 100% live and interactive classes, global certifications and placements are our major highlights.

Our next step is to expand IPCS to every single continent and to build a career oriented generation that stands with the future. We IPCS always focus on the upcoming trends and updates on every stream to make our students best and hold professional ethics and moral values tightly and never turns our clients un-satisfied. We firmly believe in the virtue of team spirit. All throughout, a culture of professionalism and mutual respect is upheld. Technology is the engine of business success and innovation. We believe that in the current digital world, it is important to understand how they affect our lives. As a part of our Corporate Social Responsibility, Team IPCS gave birth to "Iziar", a magazine that reflects technology trends and current trends in the market related to the same. The main goal is to raise awareness of available technologies and make them accessible wherever you are. It's about technology, inventions, startups, cyberpunk life & much more. Iziar was developed to give you insight into the latest innovations and keep you on top of the latest trends.

Technology is like air, You can't live without it. So we welcome you to the technological world of Iziar.

FUTURE TRENDS IN EMBEDDED SYSTEMS

Ramachandran P
Senior Embedded Engineer

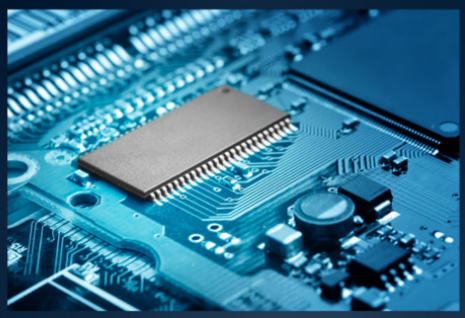
Right now we hardly ever complete any tasks alone. Everywhere we go, we use gadgets and devices. The vast majority of the devices are digital and electronic. Before, everything was done manually. But we can accomplish a lot by simply clicking. We can order meals and goods if we need them. Every answer is available on Google, in any book, or by consulting an authority.

Today's systems are so advanced that we may simply say "on" to turn on the lights. The programme can be automated and tested by the programmers. It's amazing how far humanity has evolved. It merely altered how we previously conducted ourselves. It modified how old machines worked. Furthermore, there will be a lot more development in this; it won't stop at this point.

This is the start. Embedded System Technology is one of the technological advances. An embedded system is a small functional component that serves a specific purpose within a bigger device. Hardware, software, and real-time operating systems make up its three components. An embedded device is, for instance, the car's audio system.

WHAT IS AN EMBEDDED SYSTEM ?

An Embedded System is a hardware and software setup that operates within a larger mechanical or electrical system and is based on a Microprocessor or Microcontroller. The embedded system can, however, occasionally work on its own



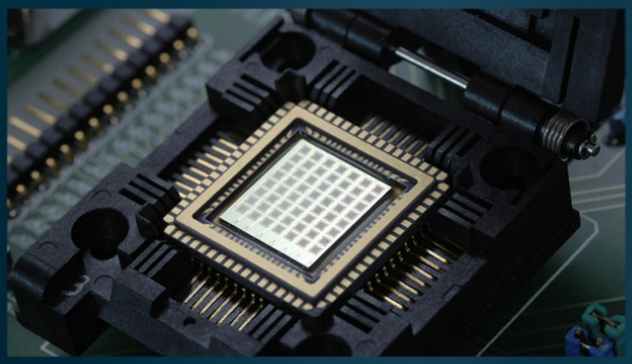
Consumer electronics, equipment for the agricultural and processing industries, home appliances, vending machines, medical gadgets, digital watches, toys, heavy machinery, cars, cameras, and mobile devices can all use embedded systems. The market for embedded systems is anticipated to grow from USD 86.5 billion in 2020 to USD 116.2 billion in 2025, at a CAGR of 6.1% over the study period.

Trends in Embedded Computing

An embedded system is a system created specifically for a given application using a mix of hardware and software to adhere to time-sensitive requirements. Speed, security, size, and power are among embedded industrial systems' essential properties.

Patterns insight from the applications of embedded systems in real life

Embedded systems play a significant role in daily living. For instance, it is impossible to envisage living without personal communication on mobile devices. In almost every aspect of human endeavour, it is almost unavoidable. We can plainly see the path towards which embedded systems are moving when we look for patterns in each of these application sectors.



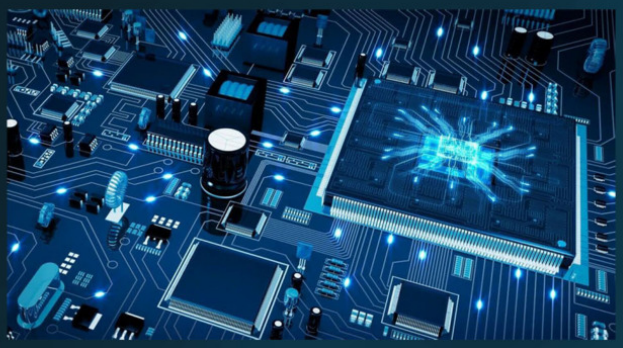
Multicore in embedded

The demand for high performance in embedded systems has become unavoidable as more functionalities are introduced, hence developers are increasingly moving towards multicore processors in their systems design decisions.

- It caused increased thermals and higher power usage;
- The overall cost rose as a result of the peripherals' need to work at the same speed, which wasn't always practicable, and which ultimately drove up expenses.

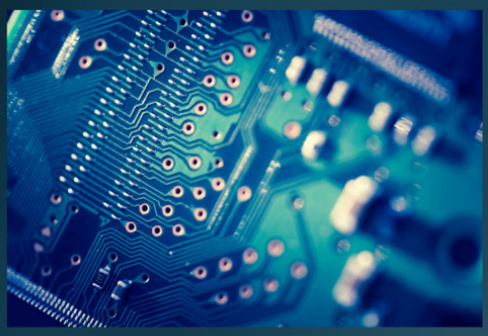
Embedded operating systems

As systems became more complex, it became necessary to have an operating system (OS) that offered low latency real-time response, low footprint both in time and space, and gave all of the traditional functionality such as memory protection, error checking/reporting, and transparent interprocess communication. Traditionally, embedded systems did without an OS, instead using lightweight control programmes or monitors to provide limited I/O and memory services.



Embedded digital security and surveillance

Digital security and surveillance are currently being used in a variety of innovative embedded applications that are taking advantage of the multicore phenomenon. New systems offer intelligent systems to operate multisite, integrated, and net centric systems that optimise the resources needed to perform the task, in contrast to older systems that required more human participation. The use of computer vision and tracking applications in security video capture, post-processing, identification, and real-time alerting has many advantages.



Healthcare

With the convergence of biotechnology, nanotechnology, manufacturing technology, communication technology, device, and sensor technologies, electronic medical devices and other technical advancements are radically altering healthcare delivery and establishing new healthcare paradigms.

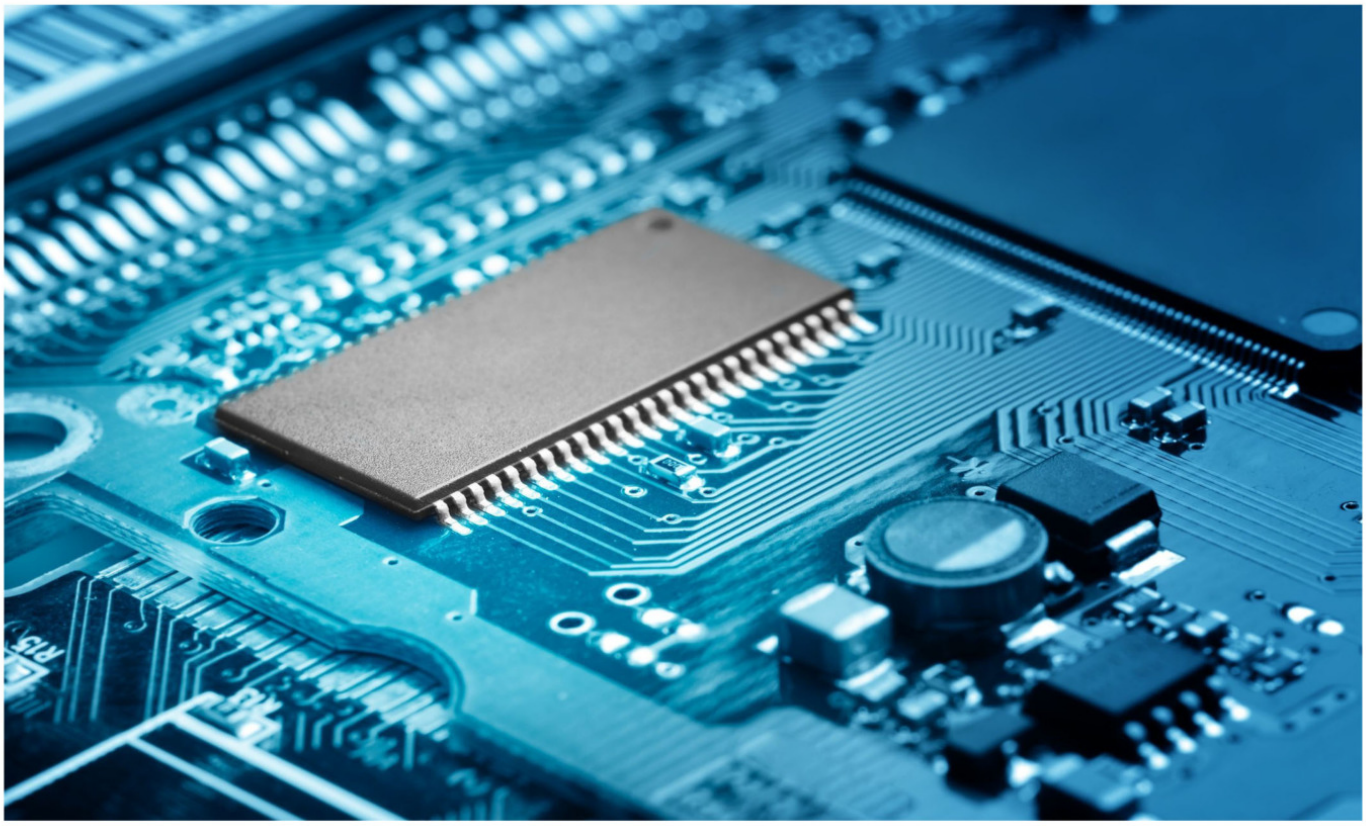
With recent innovations paving the way for device miniaturisation, replacement organs and tissues, earlier use of more accurate diagnostics, and advancements in information technology, biomedical devices technology is being applied to a wide variety of analytical problems including medicine, surgery, and drug discovery. These devices are portable diagnostic imaging and home monitoring such as cholesterol monitors, blood glucose meters.

Improved Security for Embedded Devices

The Internet of Things (IoT) is growing, and manufacturers and developers are primarily concerned about security. In addition to microcontroller security solutions that separate security operations from regular operations, sophisticated technologies for embedded security will emerge in 2019 as important generators for recognising devices in an IoT network.

Cloud Connectivity and Mesh Networking

In the conventional development cycle, connecting embedded industrial systems to the internet and cloud can take weeks or months. As a result, cloud connectivity tools will be a significant market for embedded systems in the future. By minimising the complexity of the underlying hardware, these technologies are made to make the process of integrating embedded systems with cloud-based



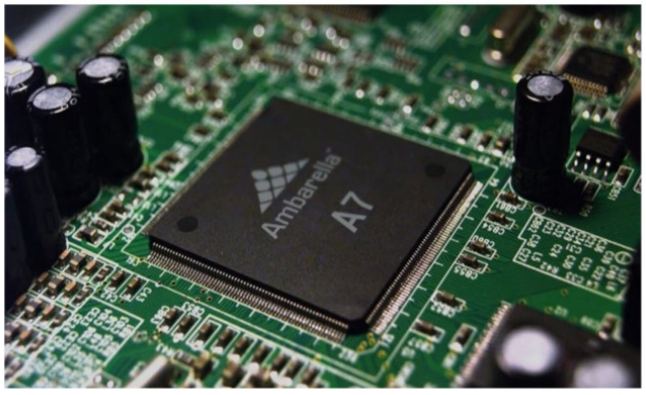
In the conventional development cycle, connecting embedded industrial systems to the internet and cloud can take weeks or months. As a result, cloud connectivity tools will be a significant market for embedded systems in the future. By minimising the complexity of the underlying hardware, these technologies are made to make the process of integrating embedded systems with cloud-based services simpler.

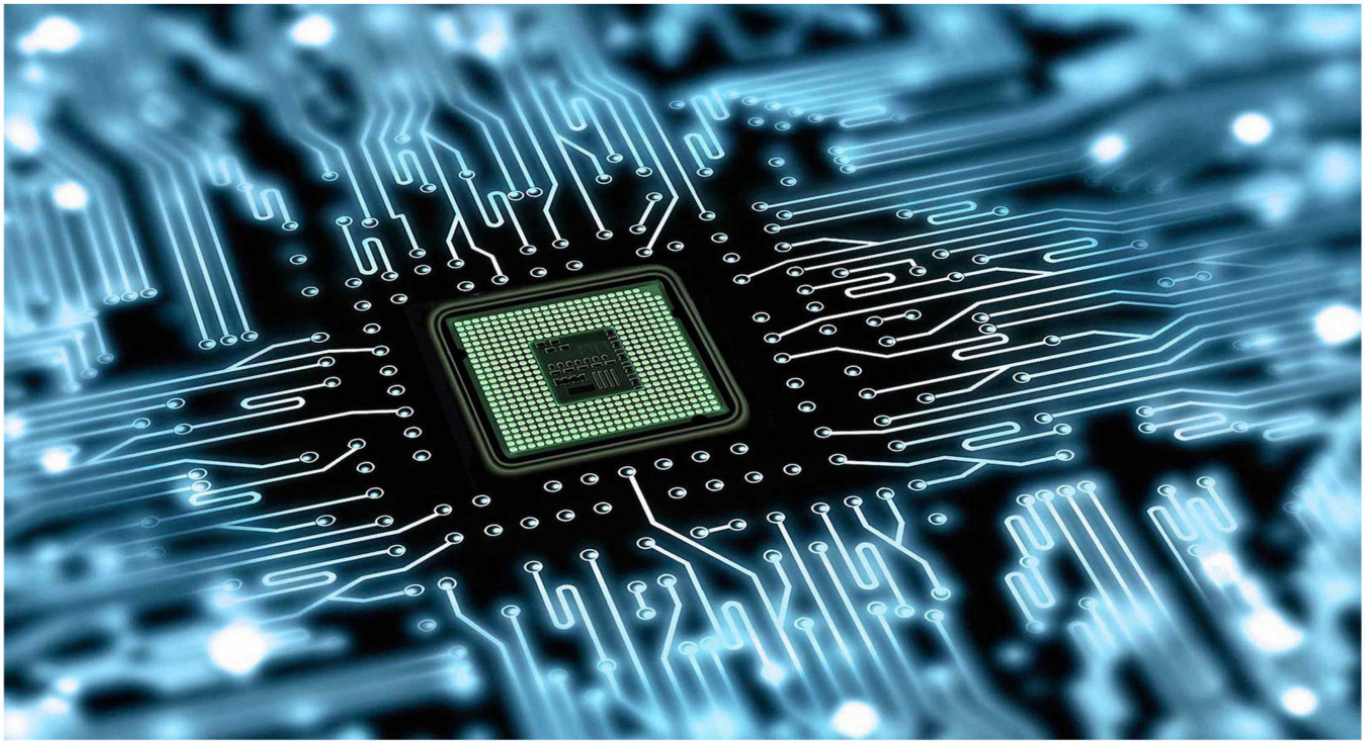
Cloud Connectivity and Mesh Networking

The optimisation of battery-powered devices for minimal power consumption and high uptime presents a significant challenge for developers. For monitoring and lowering the energy usage of embedded devices, a number of technologies are currently being developed that we may anticipate seeing in 2019. These include advanced Bluetooth and Wi-Fi modules that use less power at the hardware layer as well as energy monitors and visualisations that can assist developers in optimising their embedded systems.

Visualizations in Real Time

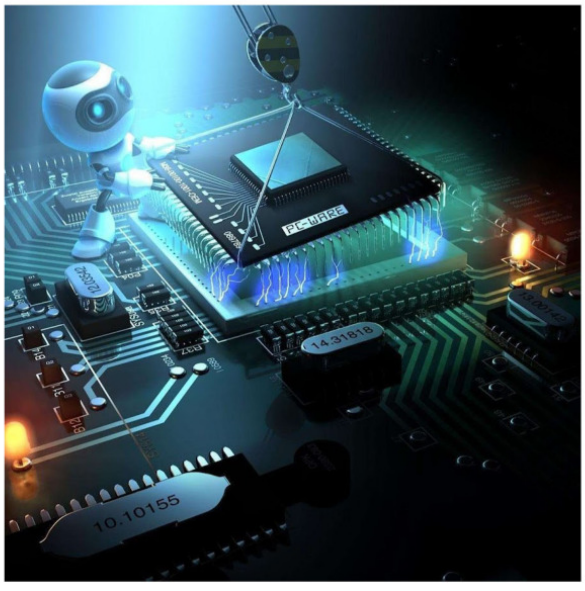
Tools for monitoring and real-time visualisation of embedded industrial systems are currently unavailable to developers. Real-time visualisation tools are being developed by the industry to enable software engineers to monitor the execution of embedded software. With the help of these tools, developers will be able to monitor important indicators for monitoring the performance of embedded systems, such as raw or processed sensor data and event-based context shifts.





Deep Learning

Deep learning solutions represent a large, untapped market for embedded systems with a variety of uses, including audio analysis and picture processing. Although security and cloud connectivity are currently the main areas of focus for developers, deep learning and artificial intelligence concepts will soon become popular in embedded systems.



Conclusion

In summary, embedded systems are a crucial component of the modern world. A customer may be able to benefit from using it while minimising power usage and expense because to the systems' ability to be designed and optimised for specific purposes. Studies reveal that embedded systems have had a significant impact on the military, industry, and healthcare, with technologies and movements like the internet of things, the industrial revolution, and intelligent homes and cars continuing to gain ground. The largest market shares of microcontrollers and embedded systems applications used in networks connected to wireless communications are found in the telecommunications sector. Artificial intelligence, the Internet of Things, cybersecurity, machine learning, speeds, and the Python programming language are some of the trends in embedded systems. The recommendations made by customers who use the items are influenced by embedded system trends. They have various requirements and preferences in terms of things like privacy and security, data storage, processing speeds, power usage, and price. It is shown that embedded systems are developing, with a focus on speeding up performance, creating cybersecurity systems, consuming less power, and being economical.

TECHNICAL ADVANCEMENT TOWARDS DIGITIZATION OF BUSINESS

Swapnil Patil
Digital Marketing Analyst

We are at such a stage where technology is everything and everyone wants things to get digitized! And yes, it is happening! Recently the world has been given an AI tool named ChatGPT. Digitization is not a new concept to this world but an opportunistic view to help and ease the workflow to focus on gains. Traditional marketing was a way to go a few years ago but now that has been developed and is yet developing on different levels. By just sitting in front of the computer you can make your product or business reach a thousand miles away, in a different country that is called the use of technical advancement. With a few tools and less physical work, tasks are getting accomplished simply because of technology.

The ease in the operations and completion of tasks attracts everyone to be part of these gradual and opportunistic movements. Just as we speak, the best change of this generation is now really happening, that is, fuel vehicles being replaced by electric vehicles.

Automation and Mechanics are not only core concepts and backbone of manufacturing but an irreplaceable asset for engineering. But, from being underdeveloped to developing and developing to being developed, it is natural to make progress and go forward with creating new ways which will be remembered as historical and courageous moves ever taken. When a mechanical stream is combined with software or digital phases, it generates digitized technology.

Technology plays an important part in personal lives, but it plays an even more important role in enhancing your business. Marketing has grown exponentially, and digital marketing is now considered as the most demanding branch in almost every company. Making sales and generating revenue is the goal of every company but reaching out to the whole world and creating the brand name of the company is hugely possible now because of the digital marketing and tools utilized for it. Businesses always want to stay one step ahead and the ultimate target is to capture the market as well as give out something that has never been shown before. Getting accurate figures in predicting the sales and targeting crowds as per their interests is just possible because of the combination of technology and marketing.

Social media platforms, connecting businesses to other businesses, creating videos, monetizing content, analyzing the competition these are the noticeable and motivating aspects for digital marketing. Due to technical growth, there have been different impacts on businesses, Industries have been changing. This drastic change has been brought by development in technology. Businesses have been adapting the use of technology in their tasks, as the results have shown to be positive and inclining. The sales and marketing teams have been renowned as essential parts of organization and now they work together to achieve goals for the company. Digital marketing became a highly paid and in demand job. It requires consistency, skills and understanding of tools on different platforms such as social media. The best thing about technology is that all the companies and people have started working with a result-oriented mindset.

However, technology comes with its benefits and drawbacks, we must accept that there is no turning back from it. Technology, growth, opportunities and business gains are considered as the most essential parts of our personal as well as professional growth. Criticism opens doors beyond imagination, so there will be opinions in support as well as against technology and its growth. In many ways people oppose technical betterment, no one can deny that the world runs on technology and that is how society works. We as people are trained in such a way that we modify ourselves according to the situation. AI, Programming, Technical evolution will always happen, old ways will be turned into new, but no matter what, our intellect will never be replaced.

Whether we need it or not, learning and understanding the use of technology and upskilling and updating ourselves are the best things we can do to keep on moving forward. Being in the search of the knowledge and up gradation to live life, that is the best motivation that will help us attain the smiles on our faces and satisfaction to our minds and that would be the best growth which will make us all winners of changing times!

MODBUS TCP VS PROFINET

Glory Santharaj
Sr Project Engineer

Communication plays an important role in exchanging information. With regard to Industrial Automation, there are a plethora of industrial communication protocols which are used to put different PLCs, DDCs, PACs & other devices on the same network. Communication protocols normally incorporate a list of all formal requirements and standards, including syntax, restrictions, procedures, error recovery, and synchronisation of communication. The purpose of using the protocols is to collect data from the sensors & transmitters which are termed data communications and to control the actuators which are termed control applications.

As the automation pyramid describes there are following different levels:

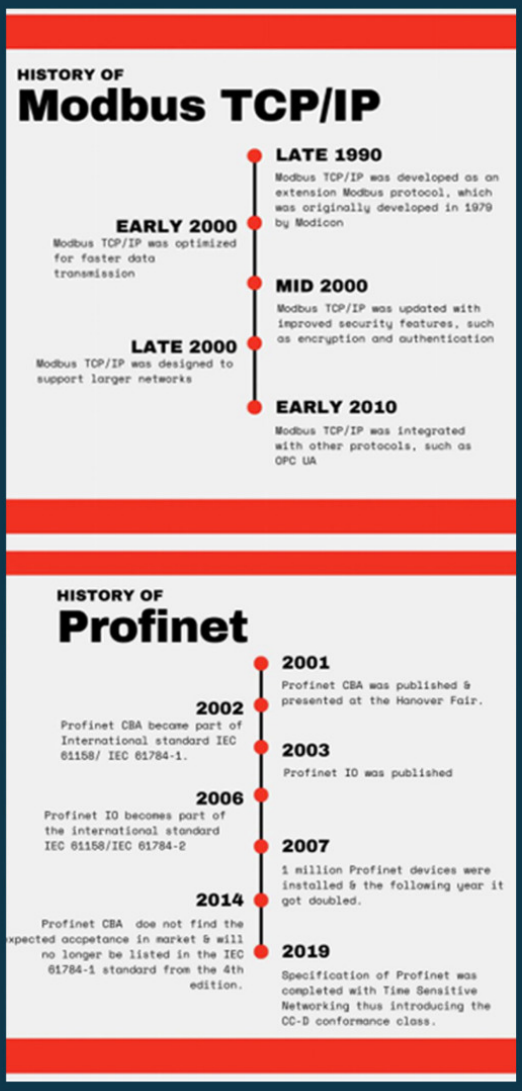
Field level: a bottom level where sensors & actuators that control processes are located.

Control level: PLCs are located in this level which executes the programs based on the states received from sensors to control the actuators.

Management level: SCADA systems at this level collect information about the production and allow the generation of schedules derived from the enterprise level.

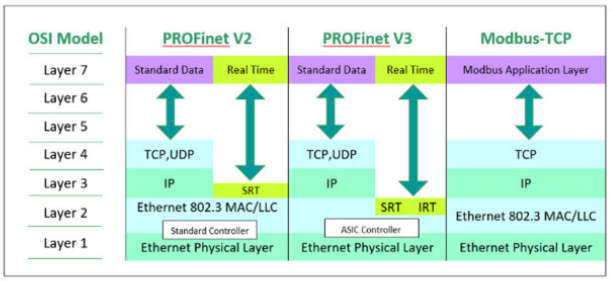
Enterprise level: ERP systems that focus on the company and its resources of it.
Each level controls the level beneath and reports data to the level above.

History of Profinet & Modbus TCP/IP



Modbus is the first to be introduced and is preferred for its simplicity & open architecture. Profinet was introduced later but gained popularity with distinct features in it.

OSI Layer, Speed & Determinism



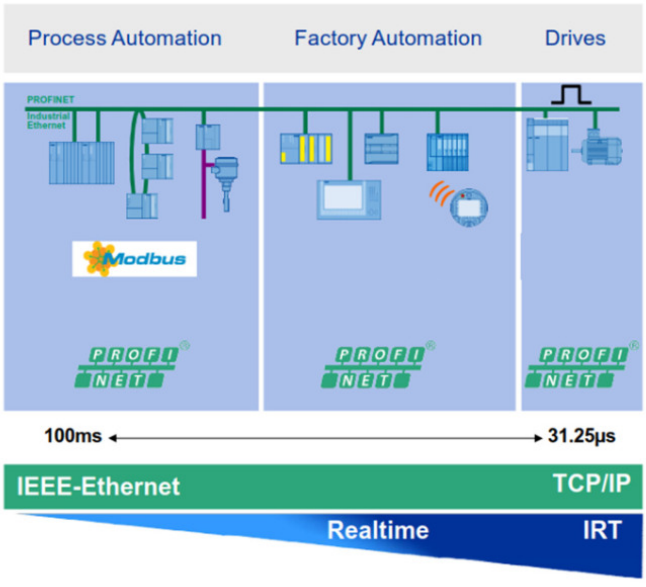
Modbus	Profinet
It provides client/server communication between devices means request/reply protocol and offers services specified by function codes. It uses **half duplex communications at Layer 4 of the OSI model.**	It uses TCP/IP and IT standards, and is, in effect, real-time Ethernet which allows for only a limited time for the execution of real-time services within a bus cycle. It uses a **full duplex at Layer 2 of the OSI model.**

Application

Modbus	Profinet
The performance of a Modbus-TCP network is highly dependent on the type and design of the Ethernet network that is used and on the performance of the respective devices. **Jitter with the IO is high up to 100ms.** It is typically used in **Process Automation** because the timing is not important, even though we have to be more careful when planning for **factory automation.** Modbus can be used for motion control but isochronous communication won't be possible & also there will be a lag in cycle times.	The difference between IRT and RT communication is essentially the high degree of determinism so that the start of a bus cycle is maintained with high precision. The data exchange cycles are usually in the range of a few hundred microseconds up to a few milliseconds. The start of a bus cycle can deviate **(jitter) only up to 1 µs.** It can work for **factory, process, and motion control** applications simultaneously from the most simple to the most complex.

Configuring the communication

Modbus	Profinet
It is a **programmed** communication that must be set up in the PLC code via a programming function, block, or tool. We have to write special PLC codes or setup blocks just for the communications.	It is a **configured** communication, and only in ***exceptional cases would require programming*** in code (e.g. isochronous motion control). The device to be configured in the engineering tool is provided with a general station description file known as GSD by its respective Profinet vendor.



Data representation

Modbus	Profinet
It has two data types for data representation: a coil (bit) or a register (word).	It has many forms of data representation including bits, bytes, words, double words, real numbers, strings, and more.

Device Diagnostics

Modbus	Profinet
It is able to detect a few message handling errors such as protocol communication timeout (message transfer error, device busy, etc.).	It has many diagnostic capabilities built into the protocol for process, device, or network errors. It supports SNMP (Simple network management protocol) and HTTP (web pages), diagnostics for network statistics (network load, CRC errors, etc)

Sι pport

Modbus	Profinet
There are 90 members for Modbus with the primary backer being Schneider, 1 test lab, and zero training centres.	It is supported worldwide in many different languages by PI-certified training centres, test labs, and competence centres, but there are over 1600 member companies using PROFINET and supporting the technology.

Finally, PROFINET has many more features than Modbus, such as a process automation profile, peer-to-peer, functional safety (PROFIsafe), controller redundancy, shared device, fast startup, network, etc. These above said features enhance the applications that you can achieve and future fail-proof the system. Also, PROFINET is working towards future enhancements, such as easy integration with Industry 4.0, IIoT, TSN, APL, and OPC UA. On the contrary, according to their website, the Modbus organisation is keeping Modbus TCP the way it is for simplicity reasons.

VIDEO MARKETING

CREATING ENGAGING CONTENT TO ATTRACT TARGET AUDIENCE

K.Karthi
Branch Head

The video has become a powerful tool in the world of digital marketing. With the rise of social media platforms like Instagram, TikTok, and YouTube, creating engaging videos has become more important than ever. Videos are a highly effective way to grab the attention of your audience, increase engagement, and ultimately drive conversions.

In this blog, we'll explore some tips and tricks for creating engaging videos that attract audiences.

1.Know Your Audience

Before you start creating your video, it's essential to know who your audience is. Who are you trying to reach? What are their interests and pain points? What kind of content do they like to consume? Understanding your audience is the key to creating a video that resonates with them. Take the time to research your target audience and use that information to inform your video content.

2.Keep it Short and Sweet

In today's fast-paced world, attention spans are shorter than ever. If your video is too long or slow-moving, you risk losing your audience's interest. Keep your videos short and sweet, with a clear and concise message. Aim for a video length of no more than 2-3 minutes, and make sure to get to the point quickly.

3.Use Storytelling

One of the most powerful ways to engage your audience is through storytelling. People love stories, and they're more likely to engage with a video that has a compelling narrative. Use storytelling techniques to create an emotional connection with your audience. Whether you're telling a personal story or sharing a customer's success story, make sure your video has a clear

4.Show, Don't Tell

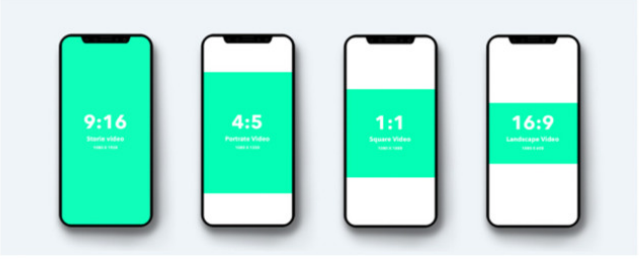
Visuals are more engaging than text, so make sure your video is visually appealing. Use high-quality visuals and animations to capture your audience's attention. If you're showcasing a product or service, show it in action. Use real-life scenarios and situations to demonstrate how your product or service can solve a problem or improve the lives of your customers.

5.Add Music and Sound Effects

Music and sound effects can add depth and emotion to your video. Choose music and sound effects that complement your brand and message. Make sure the music and sound effects are not too distracting and do not overpower the message of your video.

6.Use Humor

Humor is a powerful tool that can help you connect with your audience. If appropriate for your brand and message, use humor to make your video more engaging. Humor can help your audience relax and feel more comfortable with your brand.



7.Optimize for Social Media

If you're creating a video for social media platforms like Instagram or TikTok, make sure to optimize it for the platform. For example, on Instagram, you can add stickers, hashtags, and other interactive elements to your video to make it more engaging. On TikTok, you can use popular hashtags and challenges to increase your video's visibility.

8.Use Calls to Action

Your video should have a clear call to action (CTA). What do you want your audience to do after watching your video? Do you want them to visit your website, sign up for your newsletter, or purchase your product? Make sure your CTA is clear and prominent, and make it easy for your audience to take action.

Conclusion

In conclusion, creating engaging videos is essential to attracting and retaining audiences in today's digital landscape. By understanding your audience, using storytelling, visual elements, music, and humor, and optimizing for social media, you can create videos that capture the attention of your audience and drive conversions. Remember to keep it short and sweet, use calls to action, and continually track and optimize your video content for

ROLE OF VR IN INDUSTRIAL AUTOMATION

Mr. Naveen Narayanan
Jn. Project Engineer.

A lot of industries and production plants around the world are increasing the application of automation to improve their production, quality and efficiency. But these methods tend to be largely olden methods using hard-coded automation logic. These processes show improvement through the efforts taken by the operation personnel while they have hands on working in the field. But once logic has been installed in a system it is often difficult to make any major changes. The constant researches conducted in the field have given way to the development of new technologies that overcome the above mentioned challenges. In this article we will be seeing about big advancement in the field of Virtual Reality Technology in Industries.

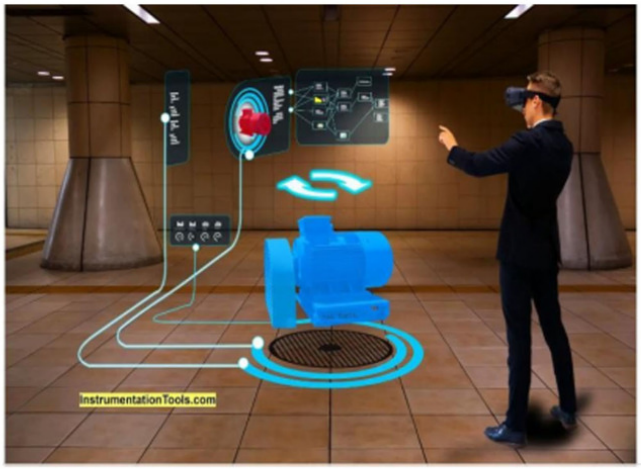
Industrial design based on Virtual reality aims to streamline production processes, increase product quality, and improve safety standards. Industry 4.0 has revolutionized industrial automation methods and has made production and control capabilities easier for companies. Out of many techniques in this revolution, one such feature that stands out is Augmented Reality (AR) and Virtual Reality (VR).

These terms are common in the gaming industry, medicinal practices, entertainment and education and training sectors. We are in the emerging era of this technology and this helps us to operate machines from remote locations allowing us to get the work done with more flexibility.This also paves way to train the new comers to the field who require the understanding of the practical working knowledge of different industrial machines.

TRAINING

Training with VR will be easier than ever before. You will be able to practice using tools and materials that would otherwise not be available to you, receive training from tutors who are thousands of miles away, and make mistakes with no financial or safety repercussions.

Organizations like NASA, ISRO use Virtual Reality to train their engineers and scientist to work in zero gravity conditions using limited tools. This is an area where AR could prove its full potential and provide huge benefits. AR is augmented reality which is the combination of real-world visual information with 3D overlays. AR can help to outline specific parts of a project that needs correction, like a blueprint model, and also provide visual demonstrations for how to interact with tools, and more.



WHY VR IN INDUSTRIAL AUTOMATION

In the traditional old-school production process, we would require to create a prototype model of the product before manufacturing in large. So, this allows you to check for errors and to test if the items look good from every angle and performs well. Such prototypes can also be used to present before investors to get funding for further researches to be performed. This can definitely help to improve safety and avoid major accidents. According to the reports the automobile manufacturer Ford has been able to reduce the employee injury rate by 70%.

By actually seeing the product as if it were real, we will have a much better understanding of the way the product or machine works and hence be able to expand your knowledge wider.

The different functions available in the software will highlight the systems with in-depth elements and their real-time data with proper animation and thus help the operator in controlling the system. AR and VR will have the capability to identify the devices and machines in an industry and give the required information about them. This helps reducing the human intervention to explain the parts or to wait for someone else to assist them in operating the equipment. As we know this will take extra time if we wait for the person to be present there.

It also helps in the reduction of human visit or presence required in a hazardous environment or in conditions where it is not possible to reach on time. The devices will just simulate everything in front of him and just wait for his actions to deliver.

Also, with the recent advancements in 5G technology, AR and VR will become stronger to use and operate. It is just a matter of time before this technique reaches an advanced mode in functioning of the industrial equipment.

So as a result of such technologies the business model of the industries will also attain a new level in the world of investing and business. With this growing business model, the technologies and process methodologies will see another huge change in the years to come, making the world operate on its own.

UNLOCK THE FUTURE OF DIGITAL MARKETING

Mr. Vineeth Jayaram
Digital Marketing Analyst

The digital marketing sector stands as one of the most rapidly evolving industries in existence. Every year, technological advancements become increasingly astounding, and the progress has been further propelled by the pandemic. With younger generations being born into a world saturated with technology and digital devices, digital marketers are faced with new challenges.

Now is the opportune moment to assess which digital marketing practices have become outdated and determine the marketing tools that should be embraced going forward. Below are seven present-day digital marketing trends that demand the attention of all digital marketers.

1 Increased Focus on Personalization

In an increasingly competitive market, businesses face the challenge of distinguishing themselves from their counterparts. One effective approach is to prioritize personalization in the user experience. This involves leveraging data to deliver customized content and targeted advertisements, as well as tailoring the user journey to suit individual preferences. Personalized marketing encompasses various strategies, such as adapting messaging across different channels, engaging in chat conversations, utilizing social commerce on platforms like social media, and facilitating social shopping experiences with other users.

2 Content Marketing is Expanding to New Spaces

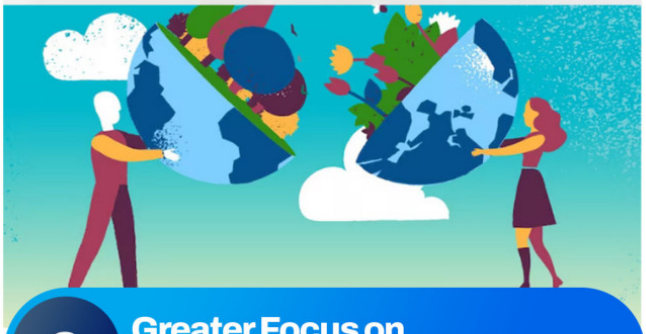
The rise of the metaverse and the utilization of augmented reality (AR) and virtual reality (VR) platforms have sparked a noticeable shift towards more immersive content experiences. This prompts businesses to contemplate how they can create captivating content that effectively harnesses the potential of these emerging platforms. While this may initially appear distant for many companies, particularly small businesses, larger global brands are already capitalizing on the opportunities offered by the metaverse.

A compelling example is the luxury fashion brand Gucci, which has introduced a virtual Gucci Garden tour—a digital replica of their physical museum in Italy. Users have the ability to explore the museum virtually and even request additional information about featured products. The primary objective of such augmented reality platforms is to enhance brand awareness, particularly among younger consumers who are avid gamers and adept at navigating the digital realm.

Considering the current pandemic, it is worth noting that many young individuals and children have become more accustomed to the virtual world than physical public spaces. Consequently, this demographic represents a significant customer segment both in the present and future.

The transition to the metaverse also brings forth the relevance of digital assets, non-fungible tokens (NFTs), and crypto currency. This is precisely why there is a surge in popularity surrounding crypto and NFT development.

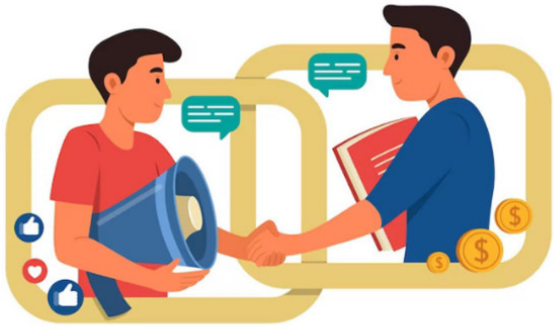
Additionally, it is crucial to acknowledge the ongoing popularity of visual content and video marketing as another noteworthy trend in the realm of digital marketing.



3 Greater Focus on Sustainability and Other Values

As consumers become increasingly conscious of the environmental impact of their purchases, businesses must adapt to maintain a positive reputation. This requirement extends beyond marketing and necessitates action across all aspects of the company. It involves implementing environmentally friendly packaging, offering more sustainable products and services, and embracing overall sustainability. However, sustainability is not the sole value that newer generations expect from businesses.

4 Conversational Marketing



According to a 2021 report from Drift Insider, customers now have higher expectations for digital experiences, seeking personalized content and instant responses to their inquiries at all times. People's impatience leads them to avoid spending unnecessary time searching for information or navigating complex websites. The solution to this challenge lies in conversational marketing, which aims to actively engage customers through targeted messages and conversations.

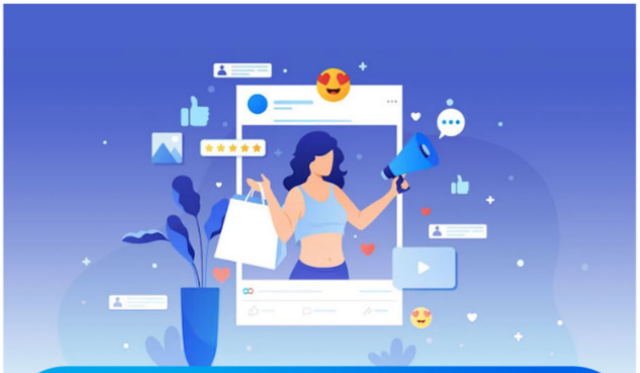
To meet these expectations, marketers have begun reaching out to customers through platforms like **Facebook Messenger, WhatsApp**, and **Slack**. Additionally, individuals rely on voice assistants such as Alexa and Siri to inquire about brands. Chatbots and live chats play a significant role in enabling conversational marketing, as they provide a means to stay connected with customers 24/7 and deliver a more personalized experience.

In particular, AI-powered chatbots utilizing natural language processing and machine learning are set to gain increasing popularity in the years to come. They offer enhanced capabilities to understand and respond to customer queries, contributing to a seamless conversational marketing experience.

5 Social Commerce on New Social Media Platforms

Social commerce refers to a specific form of electronic commerce that takes place within social media platforms. It enables social media users to directly engage with brands and other users while making purchases without leaving their preferred social media channels. Personally, I have made multiple purchases through Instagram and Facebook after being enticed by advertisements. In this regard, I embody the characteristics of a typical Millennial or Gen Z consumer. In fact, it is projected that we will contribute to 62% of the global social eCommerce revenue by 2025. It is highly likely that shopping on social media platforms like TikTok, YouTube, and Instagram will continue to grow in popularity.

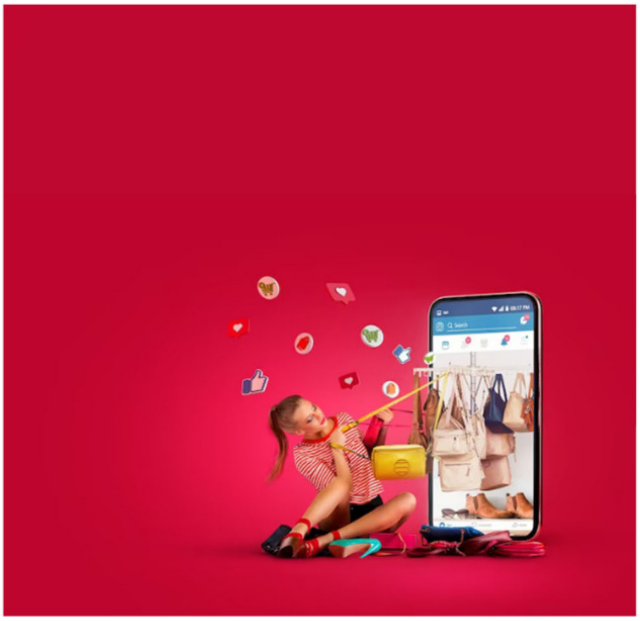
Livestream shopping is another emerging phenomenon within this domain. It combines the realms of e-commerce and entertainment. People can participate in real-time product demonstrations on social platforms and interact with the hosts. This immersive livestream shopping experience allows customers to communicate with sellers and ask questions about the products, similar to the experience of being in a physical store. Such interactions often instill confidence in customers and positively influence their purchasing decisions.
If you utilize any social media platforms, chances are you have come across such livestream shopping events. TikTok, for instance, is filled with small business owners organizing live sessions to showcase their products and engage in conversations with viewers.



6 Social Shopping

Social shopping plays a significant role in social commerce as it involves the active participation of a buyer's friends throughout their purchasing journey. This concept mirrors real-life situations like visiting a mall or farmer's market, where people engage in discussions about products alongside others. Consequently, influencer marketing and user-generated content gain heightened importance. Individuals increasingly depend on recommendations, reviews, and testimonials from influencers, as well as regular consumers.

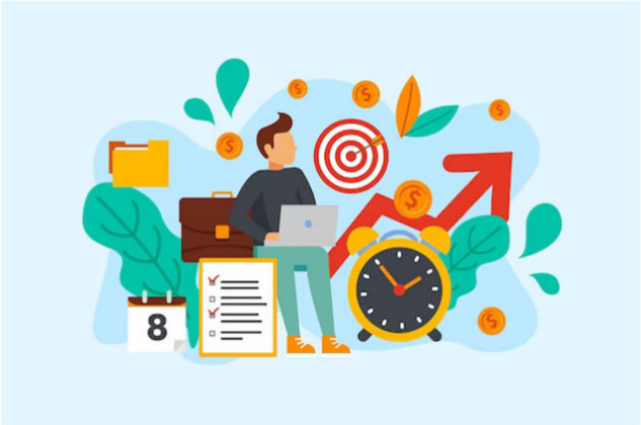
To capitalize on the social shopping phenomenon, a beneficial strategy is to incorporate reviews and testimonials from satisfied customers into your website and social media channels.



7 Time to Change Your SEO Strategy

Search engine optimization holds significant importance, particularly when it comes to achieving visibility on Google. Attaining top positions in search engine results pages can attract millions of views to your content. Nonetheless, it appears that organic search is not as effective as it once was. As a result, it may be necessary to embrace alternative SEO strategies compared to those employed in the past.

Artificial intelligence (AI) and machine learning have already found their place in various aspects of digital marketing, including personalized experiences and targeted advertising. As we look ahead to 2023, we anticipate a further adoption of these technologies by businesses, leading to improved outcomes. Let's delve deeper into the anticipated AI trends for 2023 and explore some recommended AI tools for the year.



Adarsh .S
Jr. IT Engineer

UNLEASHING THE POWER OF DATA

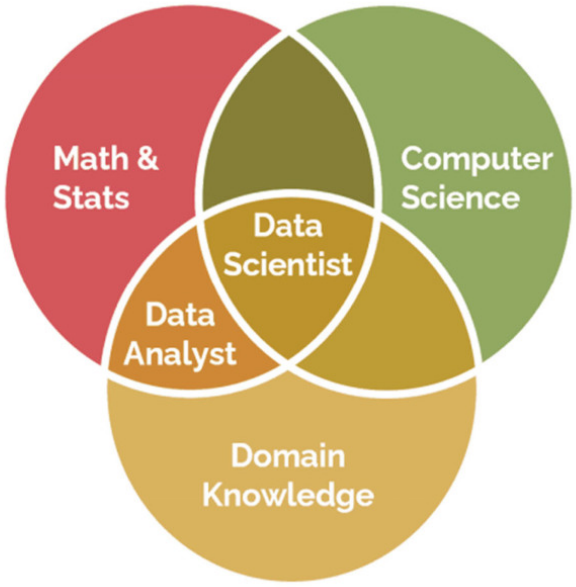
UNLEASHING THE POWER OF DATA: THE INCREDIBLE BENEFITS OF HIRING A DATA SCIENTIST

In today's digital age, businesses generate an enormous amount of data. According to IBM, 90% of the world's data was created in just the last two years. The volume and variety of data can be overwhelming, but businesses that can effectively manage and analyze it can gain a competitive advantage. This is where data scientists come in. In this article, we will explore the incredible benefits of hiring a data scientist and how they can help your organization unleash the power of data.

What is a Data Scientist ?

A data scientist is a professional who uses statistical and computational methods to extract insights from data. They are skilled in programming languages such as Python, R, and SQL, and have expertise in machine learning, data mining, and data visualization.

A data scientist is responsible for collecting, processing, and analyzing data, and using this information to inform business decisions.



The Incredible Benefits of Hiring a Data Scientist:

1. Improved Decision Making

One of the most significant benefits of hiring a data scientist is improved decision making. By analyzing data, a data scientist can identify trends, patterns, and relationships that are not immediately apparent. They can also use predictive modeling to forecast future outcomes and make informed decisions based on this information. With the help of a data scientist, businesses can make better decisions that are based on data rather than intuition.

Data scientists can also help businesses implement data-driven decision-making processes. By establishing metrics and KPIs, data scientists can track progress towards business objectives and identify areas for improvement. This can help businesses make data-driven decisions and achieve their goals more effectively.

2. Increased Efficiency

Data scientists can help organizations increase efficiency by automating processes and identifying areas for improvement. By analyzing data, a data scientist can identify bottlenecks and inefficiencies in business processes and develop solutions to streamline operations. This can lead to significant cost savings and improved productivity.

For example, data scientists can use machine learning algorithms to automate tasks that are currently performed manually. This can save time and reduce errors, freeing up employees to focus on higher-value tasks. Data scientists can also help businesses optimize their supply chain by analyzing data on inventory levels, delivery times, and transportation costs. By optimizing the supply chain, businesses can reduce costs and improve customer satisfaction.

3. Competitive Advantage

In today's competitive business landscape, having a competitive advantage is essential. Hiring a data scientist can give your organization a competitive edge by providing insights that your competitors do not have. By analyzing data, a data scientist can identify new opportunities, market trends, and customer behavior, which can help your organization stay ahead of the competition.

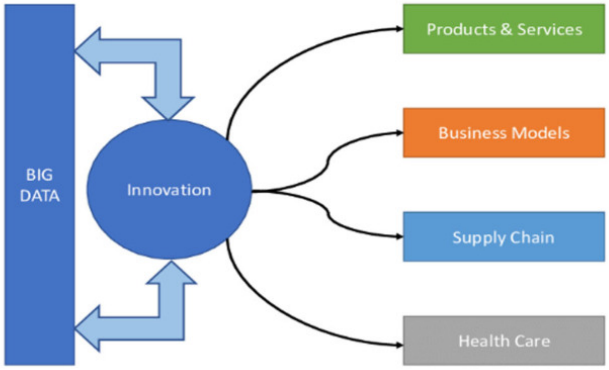
For example, data scientists can help businesses identify new markets and target audiences. By analyzing data on consumer behavior, data scientists can identify new customer segments that may be interested in your products or services. They can also help businesses stay ahead of trends by analyzing data on social media and other digital channels. By staying ahead of the curve, businesses can remain relevant and competitive in their industry.

4. Improved Customer Experience

Data scientists can help organizations improve the customer experience by analyzing customer data and identifying areas for improvement. By understanding customer behavior, a data scientist can develop personalized marketing strategies and improve customer engagement. This can lead to increased customer satisfaction, loyalty, and retention.

For example, data scientists can analyze customer data to identify the most effective channels for customer communication. They can also use predictive modeling to anticipate customer needs and preferences, allowing businesses to personalize their marketing messages and improve customer engagement. By improving the customer experience, businesses can build stronger relationships with their customers and increase their lifetime value.

5. Data - Driven Innovation



Data scientists can help organizations drive innovation by using data to identify new opportunities and develop new products and services. By analyzing data on customer behavior, market trends, and emerging technologies, data scientists can help businesses stay ahead of the curve and develop innovative solutions to meet the changing needs of their customers.

For example, data scientists can use predictive modeling to identify new product opportunities. They can also use machine learning algorithms to analyze customer feedback and identify areas for improvement in existing products and services. By using data to drive innovation, businesses can create new revenue streams and stay ahead of their competition.

6. Better Risk Management

Data scientists can help businesses manage risk by analyzing data and identifying potential threats. By developing predictive models, data scientists can anticipate and mitigate risks before they occur. This can help businesses avoid costly mistakes and protect their bottom line.

For example, data scientists can use predictive modeling to identify potential fraud and security breaches. They can also use data to assess credit risk and develop risk management strategies. By managing risk effectively, businesses can protect their assets and maintain the trust of their customers.

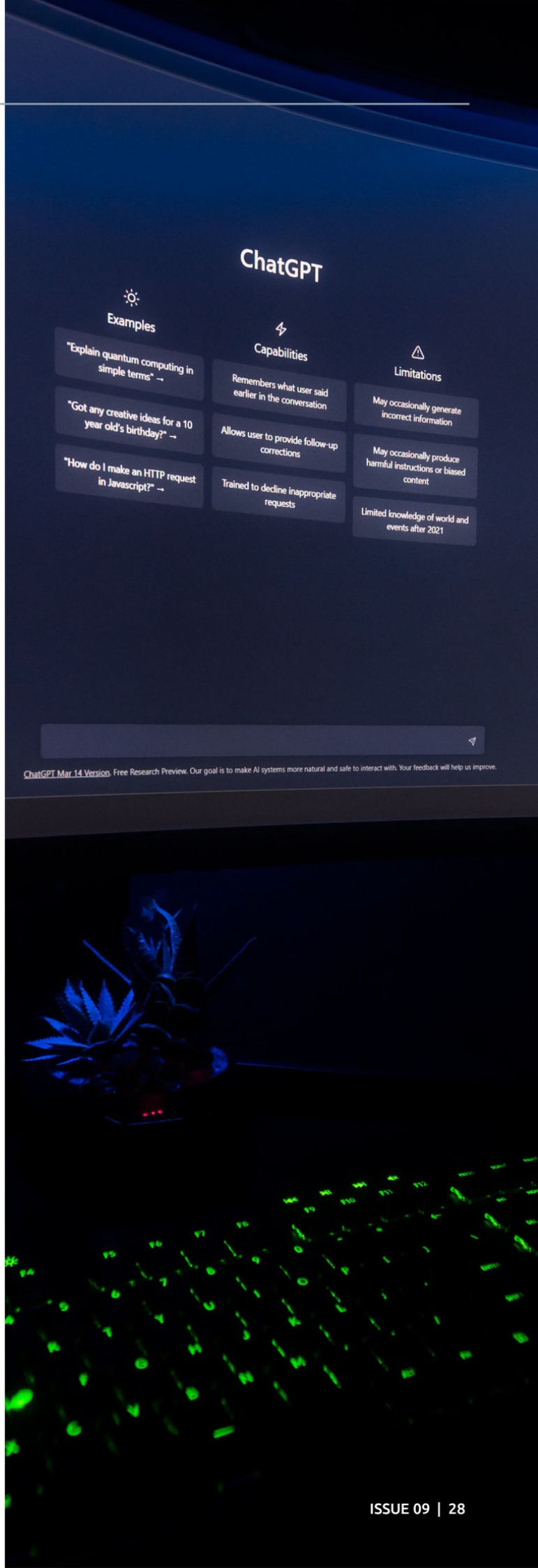
7. Improved Hiring Processes

Data scientists can also help businesses improve their hiring processes by using data to identify the best candidates for the job. By analyzing data on job performance, employee satisfaction, and turnover rates, data scientists can identify the qualities that make a successful employee. This can help businesses make better hiring decisions and reduce turnover.

For example, data scientists can use predictive modeling to identify the characteristics of successful employees and use this information to screen candidates. They can also analyze data on employee satisfaction to identify areas for improvement in the workplace. By using data to improve hiring processes, businesses can build a more productive and engaged workforce.

Conclusion

In conclusion, hiring a data scientist can provide significant benefits to businesses of all sizes. From improving decision making to driving innovation, data scientists can help organizations unleash the power of data and gain a competitive advantage. By analyzing data and identifying new opportunities, data scientists can help businesses stay ahead of the curve and meet the changing needs of their customers. With the help of a data scientist, businesses can unlock the full potential of their data and achieve their goals more effectively.



CRYPTOCURRENCY IN REAL WORLD

RAMESH KUMAR
IT Engineer

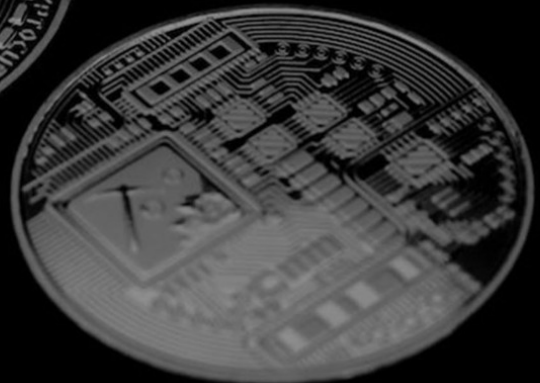
Cryptocurrency refers to a type of digital asset that uses distributed ledger, or block chain, technology to enable a secure transaction. Even though the technology is widely misunderstood, many central banks are now considering launching their own national crypto currency. First let us understand the difference between a digital currency and crypto currency.

Digital currency is a form of currency that just exists in the digital form but on the other hand, crypto currency is also a digital currency but in the form of decentralized digital currency. A crypto currency requires cryptography and no central authority to manage its balances and ledgers.

The main advantages of crypto currencies are it is cheaper and money transfer can be very fast and decentralized systems that do not collapse at a single point of failure. Almost every data in financial economics, detailed data on the history of every transaction in the crypto currency are freely available.

Rise of Cryptocurrency

In 2008, the pseudonymous "Satoshi Nakamoto" posted a white paper describing an implementation of a digital currency called bit coin that used block chain technology. More than ten years later, hundreds of crypto currencies and innumerable other applications of blockchain technology are now readily available.



What is blockchain technology?

A blockchain is a decentralized ledger of all transactions across a peer-to-peer network. Using this technology, participants can confirm transactions without a need for a central clearing authority.

From a business perspective, it's helpful to think of blockchain technology as a type of next-generation business process improvement software. Collaborative technology, such as blockchain, promises the ability to improve the business processes that occur between companies, radically lowering the "cost of trust." For this reason, it may offer significantly higher returns for each investment dollar spent than most traditional internal investments.

Financial institutions are exploring how they could also use blockchain technology to upend everything from clearing and settlement to insurance. These articles will help you understand these changes—and what you should do about them.

The rise of crypto currencies poses an existential threat to many tradition l functions in finance. Indeed, a crypto currency "wallet" serves the same function as a bank vault. With a smart phone and the internet, the potential exists for a revolution in financial inclusion.

Crypto currencies transactions potentially enable near real-time micro payments. Credit cards are not designed to be used for a one-cent charge to download, for example, a product or service from the internet.Cryptocurrency systems promise to make micro payments seamless and allow businesses to offer real-time pay-per-use consumption of their products, such as video, audio, cell phone service, utilities, and so forth.

A crypto currency like bitcoin can be though to as a decentralized autonomous organization (DAO), an open-source peer-to-peer digital network that enforces the rules it is setup with. In this DAO setting, the money supply is set by an algorithmic rule, and the integrity of the network replaces the need to trust the integrity of human participants.

The growth of crypto currency technology therefore poses a challenge to traditional monetary authorities and central banks, as Facebook's "Libra" coin pre-emission market acceptance suggests (Taskinsoy, 2019).Central banks understand this, and many banks have initiated their own national crypto currency initiatives (Bech and Garratt, 2017).

THANKS

Expert panels	Anand H S Rakesh K C Jomesh Jose Sanjith Vasudev Jayakumar M
Magazine Editor	D A Anand
Content Editing	Ramachandran.P, Swapnil Patil, Glory Santharaj, K.Karthi, Naveen Narayanan, Vineeth Jayaram, Adarsh .S, K.Ramesh Kumar
Design	Ummukulsu C A, Jobin T Rajan
Editing	D A Anand

Articles

FUTURE TRENDS IN EMBEDDED SYSTEMS	RAMACHANDRAN.P - ANNANAGAR, CHENNAI
TECHNICAL ADVANCEMENT TOWARDS DIGITIZATION OF BUSINESS	SWAPNIL PATIL - PUNE
MODBUS TCP VS PROFINET	GLORY SANTHARAJ - MUMBAI
VIDEO MARKETING	K.KARTHI - MADURAI
ROLE OF VR IN INDUSTRIAL AUTOMATION	NAVEEN NARAYANAN - COIMBATORE
UNLOCK THE FUTURE OF DIGITAL MARKETING	VINEETH JAYARAM - KOLLAM
UNLEASHING THE POWER OF DATA	ADARSH .S - TRIVANDRUM
CRYPTOCURRENCY IN REAL WORLD	K.RAMESH KUMAR - TRICHY

iziar e-magazine powered by IPCS GLOBAL

www.ipcsglobal.com