ISSUE 06 | MARCH 2023

XTS with
NO Cable Technology (NCT)

EPIC WAYS **AI & CHATGPT**
ARE TRANSFORMING **EMBEDDED SYSTEM**

AI & Future Technology
A Beginner's Guide

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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 unsatisfied. 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.

AUTOMATION
IN DISTRIBUTION SYSTEMS

The essentials of automation applied to distribution systems via PLCs, SCADA, IEDs and RTUs

Afnan
Junior Project Engineer

Nowadays, it seems that everything we do trends to be somehow automated. The very same is happening in electrical distribution systems. The distribution system at the medium voltage (mv) or low voltage (lv) levels is designed using different structures such as radial, double radial, open ring, and closed ring. Each one is selected based on load priority and the desired reliability level.

Accordingly, the system switching in case of emergency operating conditions is either manual or automatic, depending on the permitted duration of interruption periods and obviously the nature of loads. The distribution systems feeding the industrial and commercial loads must be automated in most cases. Distribution system automation helps to raise the reliability level by decreasing the interruption duration, isolated the faulty parts, keeping the system equipment functioning, and automating the required switching processes during system operation.

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SCADA SYSTEM

SCADA system stands for Supervisory Control and Data Acquisition System. It refers to the combination of telemetry and data acquisition. It commences with measurement of the data by specific devices in the field of application and collected via intelligent electronic devices (IEDs), then transferring these data to a master station to implement the necessary processing and control algorithms.

SCADA COMPONENTS

It consists of four components

INSTRUMENTATION (SENSORS)

TELEMETRY

Telemetry is the initial step in applying SCADA by defining the technique used for measuring the data (voltage, current, speed, etc.) from different locations in the real-time process and transferring it to the IEDs such as remote terminal units (RTUs) or PLCs in another location through a communication circuit.
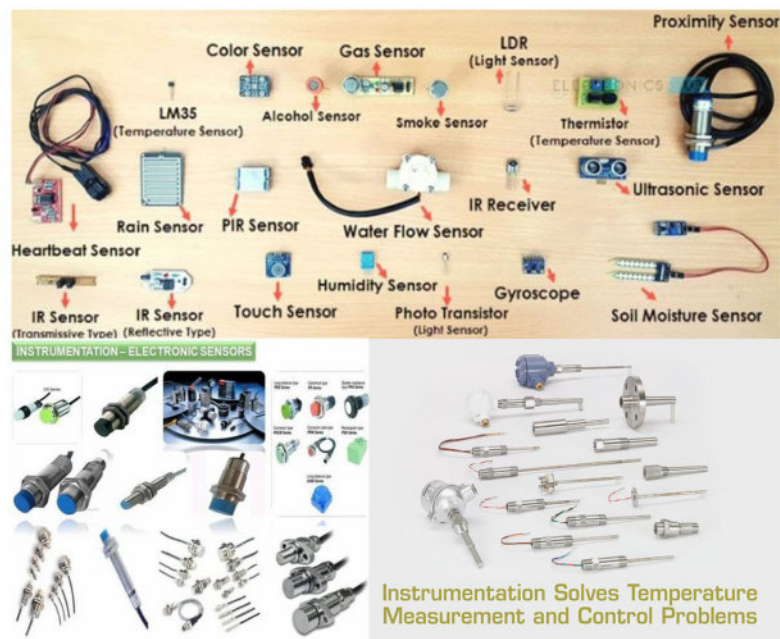
DATA ACQUISITION

Data acquisition refers to the method used for accessing and collecting the data from the devices being controlled and monitored, and to be forwarded to a telemetry system ready for transfer to the various sites. The data may be analog or digital gathered by sensors such as ammeters, voltmeters, speedometer and flow meter. It can also be data to control equipment such as actuators, relays, valves and electric motors.

The devices used for monitoring certain parameters such as sensors and the devices used for controlling certain modules such as actuators. In general, these devices are connected to the equipment or machines being monitored or controlled y the SCADA system. Their main function is to convert the parameters from the physical forms to electrical form as continuous (analog) or discrete (digital) signals readable by the remote station equipment (RTUs or PLCs).

REMOTE STATIONS (RTU/PLC)

The measuring devices (first component) connected to the plant being monitored and controlled are interfaced to the remote station. Functioning of remote stations are

1. Gathering data from the different devices in the plant being monitored and controlled.

2. Holding the data gathered in its memory and waiting for a request from the master station (master terminal unit MTU) to transmit the data.

3. Receiving data and control signals from MTU and transmitting the control signals to the plant devices.

The remote station is either RTU or PLC. The RTU is used effectively in the event of difficult communications. The RTU has digital/analog inputs and outputs with light-emitting diode (LED) indication (selectable per channel), optically isolated for surge protection, and also protected against short circuits. On the other hand, the PLC is usually expected to be already available in the plant processes, so it is of great worth to be used also in the SCADA systems.

COMMUNICATION NETWORKS

The geographically dispersed RTUs are connected to the MTU through a variety of communication channels, including radio links, leased lines and fiber optics. The design of both RTUs and MTU is largely affected by the availability limitation and high cost of communication channels.
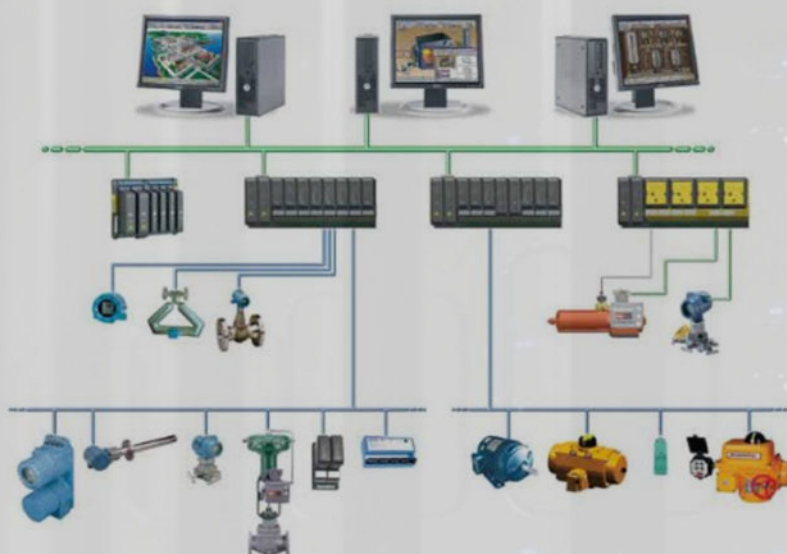
The configuration of the communication system depends on:

1. Number and location of RTUs.
2. Number of points at RTUs and required update rates.
3. Available communication equipment, techniques and facilities.

MASTER TERMINAL UNIT (MTU)

It is called "central control station or central station or SCADA master". It is considered as the heart of the system where its main functions are:

1. Making the communication, gathering data, storing information, sending information to other systems.

2. Processing the data gathered by remote stations to generate the necessary actions.

3. Interfacing with the operators mainly via monitors and printers.

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EPIC WAYS
AI & CHATGPT
ARE TRANSFORMING
EMBEDDED SYSTEM.

Dhanunjay T.M
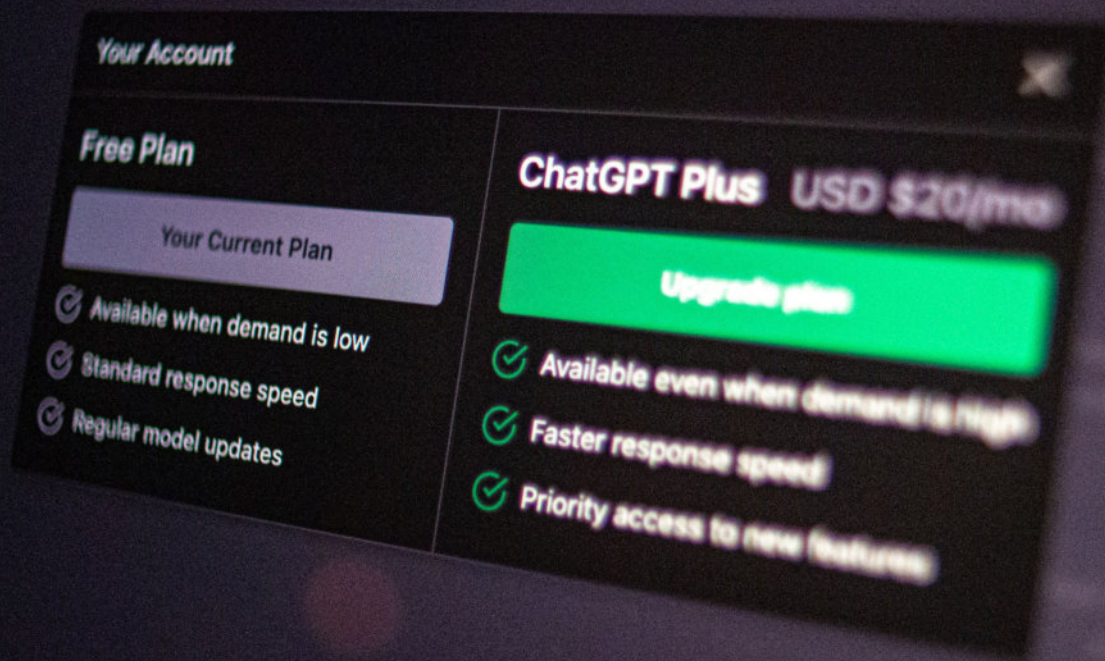Junior Project Engineer

What is AI and ChatGPT?

AI (Artificial Intelligence) is a branch of computer science that focuses on creating machines that can perform tasks that typically require human intellect, including observation, logic, and judgement.

A language model driven by AI called ChatGPT was created by OpenAI. It is trained on a large corpus of text data and can generate human-like text responses to questions and prompts in multiple languages.

The model uses deep learning techniques and has the ability to understand and respond to user input in a conversational manner, making it beneficial for programmes like chatbots and language translation.

ChatGPT is considered a state-of-the-art language model and continues to advance the field of AI.

WHY are we using the AI and ChatGPT in EMBEDDED SYSTEM?

Artificial Intelligence (AI) and ChatGPT are used in embedded systems to improve functionality and enhance the user experience.

The main reasons for using AI and ChatGPT in embedded systems are:

1. Enhanced User Interaction:
AI and ChatGPT can be used to build conversational interfaces, making it easier for users to interact with embedded systems in a natural and intuitive way.

2. Improved Decision Making:
AI algorithms can process data from embedded sensors and make real-time decisions, allowing embedded systems to respond to changing conditions and take appropriate actions.

3. Advanced Analytics:
AI can be used to perform advanced analytics on data generated by embedded sensors, providing insights into system behaviour and enabling optimization and improvements.

4. Predictive Maintenance:
AI can be used to predict when maintenance or repairs are needed for embedded systems, reducing downtime and increasing reliability.

5. Increased Efficiency:
AI can automate certain tasks and process data more quickly and accurately, increasing the overall efficiency of embedded systems.

In summary, AI and ChatGPT are used in embedded systems to provide enhanced functionality, improved user interaction, and increased efficiency and reliability.
There are several ways AI will change how embedded software developers learn, work, and write software coding.

LET'S EXPLORE A FEW THINGS ABOUT IT

EPIC WAY

Accelerating Development through AI Pair Programming

EPIC WAY

Faster Debugging

EPIC WAY

Pointing Developers in the Right Direction

Here we are going to discuss about Faster Debugging:

I've discovered that ChatGPT is decent for spotting coding errors or making recommendations for code enhancements. According to the 2020 Embedded Marketing Survey, debugging code took up 20% of developers' time on average.

To Decreasing debug time can save months and thousands of dollars in development costs. With the help of AI tools the developer can achieve it.

I used embedded code to demonstrating how it finding out the mistakes. The code was as follows:

I took this code, pasted it into ChatGPT, and asked it to find the errors. The result was the following:
This program has a couple of syntax errors:

1. In the main function, the semicolons are missing after each assignment to PORTB.
2. In the delay function, the variable 'i' is not declared.

```
#include <pic.h>

void delay();
void main()
{
TRISB=0x00;
while(1)
{
PORTB=0x00
dlay();
PORTB=0xff
delay();
}
}
void delay()
{
int;
for(i=0;i< 1000;i++)
{}
}
```

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This program has a couple of syntax errors:

1. In the main function, the semicolons are missing after each assignment to PORTB.
2. In the `delay` function, the variable `i` is not declared.

Here's the corrected code:

```scss
#include<pic.h>
void delay();
void main()
{
TRISB=0x00;
while(1)
{
PORTB=0x00;
delay();
PORTB=0xff;
delay();
}
}
void delay()
{
int i;
for(i=0;i<1000;i++)
{
    // Empty loop body
}
}
```

Copy code

Although it may appear little, the potential is intriguing. ChatGPT was able to find the errors, suggest ways to fix it and explain the cause.

A developer might have spent more than 10 – 20 seconds finding such errors, especially if the error was more complex.
To make our code better, we already employ static and dynamic analysis techniques.

The natural next step is to examine code with AI tools and offer changes.

SOME OF THE ADVANTAGES OF AI AND CHATGPT IN EMBEDDED SYSTEMS INCLUDE :

Improved efficiency

AI algorithms can analyze large amounts of data and make decisions faster than humans, leading to improved efficiency in embedded systems.

Personalization

AI algorithms can learn from user behaviour and personalize their experiences, making the systems more user-friendly and efficient.

Real-time decision making

AI algorithms can process and analyze data in real-time, enabling embedded systems to make quick decisions and respond to changes in their environment.

ChatGPT

ChatGPT can be used to provide conversational interfaces in embedded systems, allowing users to interact with the system in a natural and intuitive way.

Reduced human error

AI algorithms can make decisions based on data and rules, reducing the risk of human error and improving reliability in embedded systems.

Increased accuracy

AI algorithms can make decisions based on a large amount of data and multiple factors, increasing accuracy and reducing the risk of error

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WITH THE HELP OF AI & CHATGPT IN EMBEDDED SYSTEMS,

WE CAN DO NEW THINGS SUCH AS:

1. Natural Language Processing:
AI and ChatGPT can enable embedded systems to understand and respond to natural language commands, making it easier for users to interact with these systems.

2. Machine Learning:
AI and ChatGPT can bring the ability to learn from data and make predictions or decisions, allowing embedded systems to continuously improve their performance and functionality.

3. Predictive Maintenance:
AI and ChatGPT can help embedded systems predict when they will fail, allowing maintenance to be performed before a failure occurs, reducing downtime and increasing system reliability.

4. Context-Aware Computing:
AI and ChatGPT can allow embedded systems to understand context and respond to changing situations, making them more flexible and adaptable to new environments.

5. Intelligent Automation:
AI and ChatGPT can help embedded systems make complex decisions and take actions autonomously, reducing the need for human intervention and increasing efficiency.

6. Personalization:
AI and ChatGPT can allow embedded systems to learn from user behavior and preferences, personalizing the user experience and making it more tailored to individual needs.

Overall, AI and ChatGPT have the potential to bring new capabilities to embedded systems, enabling them to perform new and more complex tasks, making them more efficient, and improving the user experience.

CONCLUSION

In conclusion, AI and ChatGPT has the potential to revolutionize the field of embedded systems by bringing new capabilities, such as natural language processing and machine learning, to these systems.

However, it is important to understand the limitations and challenges associated with using AI in embedded systems, such as limited knowledge, lack of contextual awareness, potential for bias, and lack of empathy.

By carefully considering these factors, engineers and developers can use AI and ChatGPT in embedded systems to create innovative and powerful solutions that can bring new levels of efficiency and effectiveness to a wide range of applications.

AI AND FUTURE TECHNOLOGY

A BEGINNER'S GUIDE

Arafat Ali
Jr. Project Engineer

As the world continues to progress, Artificial Intelligence (AI) and future technology play an increasingly important role in our lives. AI is defined as the ability of a computer or a machine to think and learn, and is used to automate processes, solve problems, and make decisions.
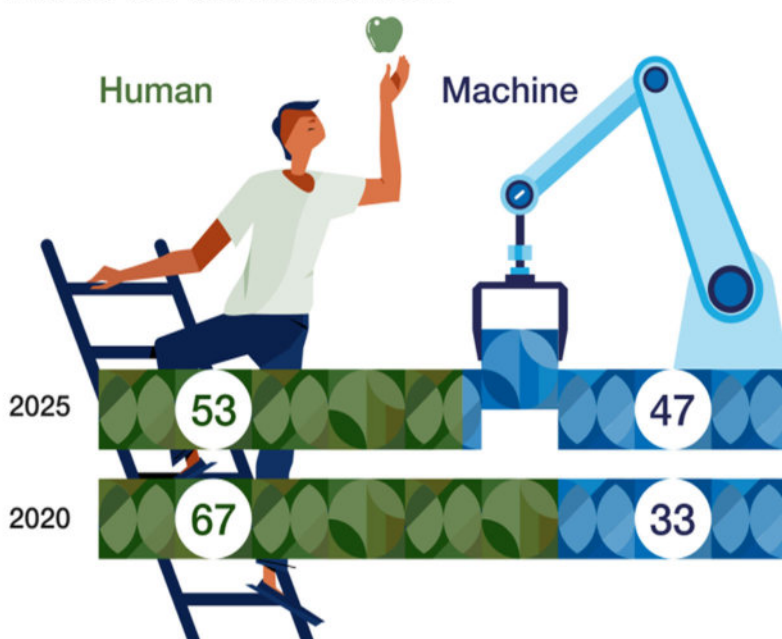
AI technology has been around for decades, but its capabilities have improved significantly over the years. With AI, machines can now do tasks that previously only humans could do, making it an invaluable tool for the future.

One of the most important aspects of AI is automation. Automation is the process of eliminating manual labor and replacing it with machines. This can range from simple tasks like sorting items, to more complex tasks such as analyzing data or making decisions.

Automation has the potential to reduce labor costs and increase productivity, making it an attractive option for many businesses.

Rate of automation

Human   Machine

Year	Human	Machine
2025	53	47
2020	67	33

The use of AI and automation is becoming increasingly widespread in many industries, including healthcare, manufacturing, retail, finance, and transportation.
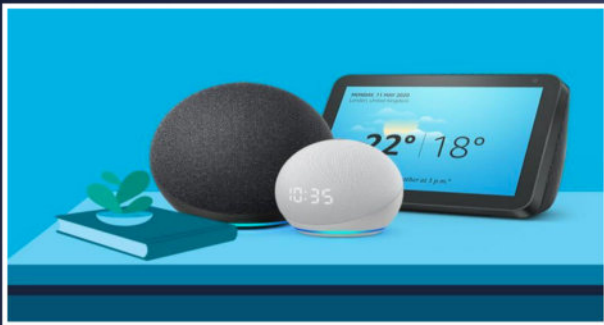Automation is being used to improve the accuracy and speed of processes, as well as to reduce costs and increase efficiency. AI can also be used to help with decision making and problem solving.

For example, AI can be used to analize large amounts of data and identify patterns that can be used to inform decisions.

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Future technology will continue to be an integral part of our lives. In the coming years, AI and automation will become even more sophisticated and will have a greater impact on how we live and work. rather than say that AI is already on the move.

For example we are already using AI tools in our day to day life. here's some examples –

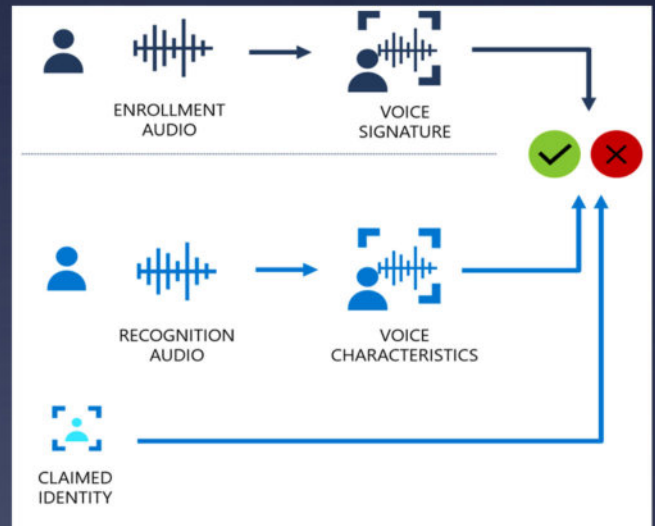## 1. Smart assistants like Amazon Alexa and Google Home.

2. Smart home security systems that can detect motion, sound, and temperature changes.

3. Autonomous vehicles like self-driving cars and trucks.

4. Voice recognition and speech-to-text applications.

5. Smart home appliances like robotic vacuums and refrigerators.

6. Online banking and investment platforms that use AI algorithms to make decisions.

7. Natural language processing (NLP) and automated chatbots.

8. AI-powered healthcare applications used for diagnosis and treatment.

9. AI-enabled facial recognition for authentication and security.

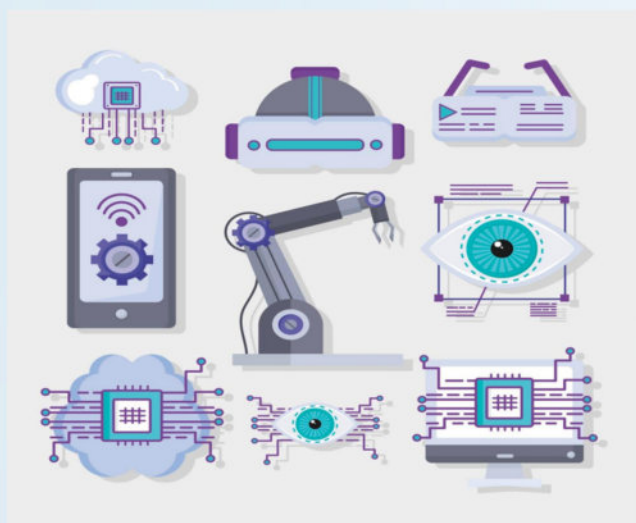## 10. AI-based recommendations for streaming services and online shopping.

These are the example that are in the pick level, now for some advance level of AI uses are

1. **Webmaker AI (to make a website)**

2. **Netlify is a free AI tool that can be used to host a website.**

3. **Chatfuel is a free ai tool for digital marketing .**

4. **Buffer is a free AI-powered social media marketing tool.**

5. **Reverse Engineering Tool (RET) is a free and open source reverse engineering tool for Windows, Linux, and Mac OS X. It is designed to help reverse engineers to analyze executable files and recover the source code.**
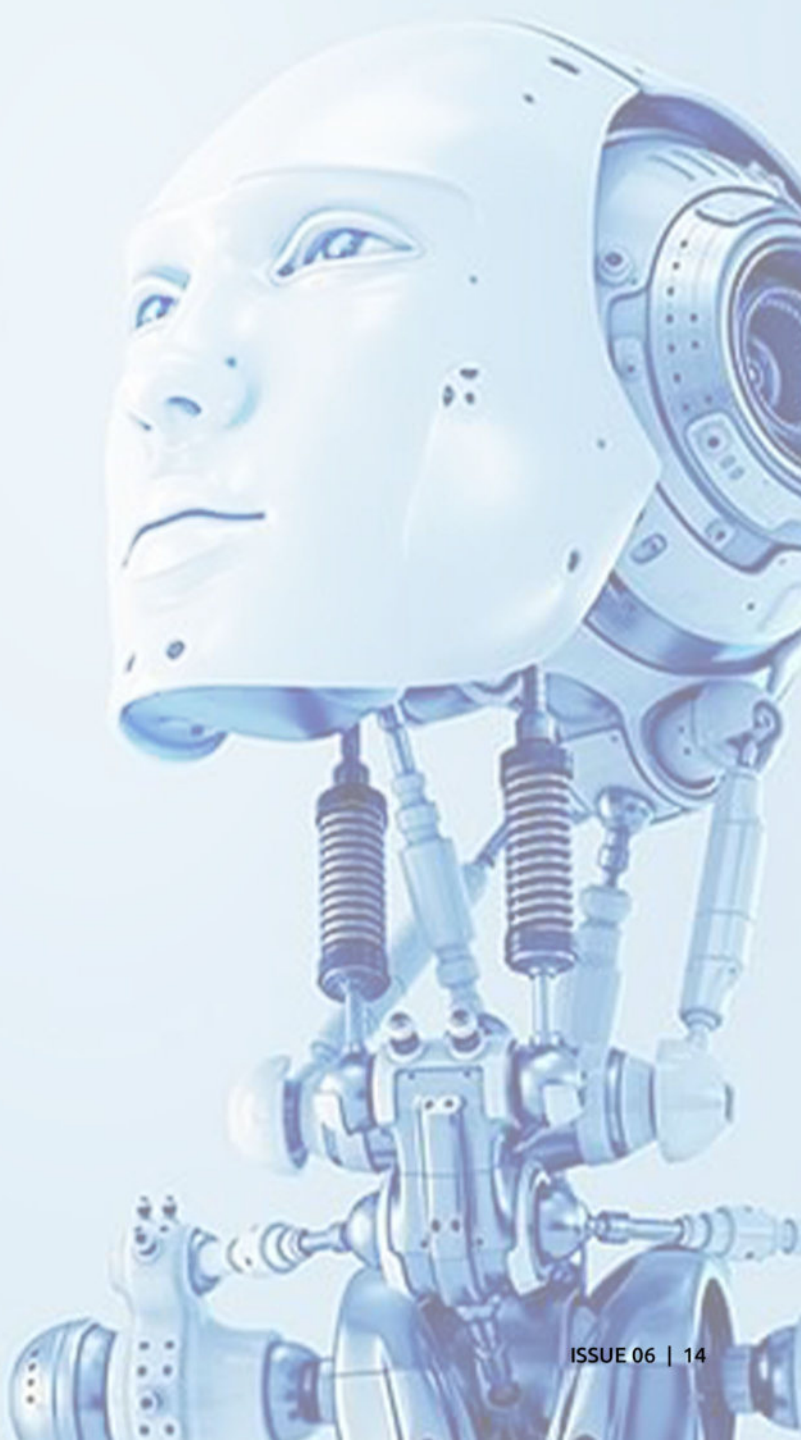
Tons of AI is available now that can be helpful to start an online business as well , and can make profit.

In conclusion, the impact of AI on our lives is both a blessing and a curse. AI can help us simplify and automate mundane tasks, making life easier, but it can also create economic instability, replace jobs and increase inequality.

AI is a powerful technology and should be used with caution and care to ensure its benefits are maximized and its risks are minimized. Ultimately, it is up to us to decide how to responsibly use AI to ensure it is a blessing, not a curse.

ECOMMERCE:
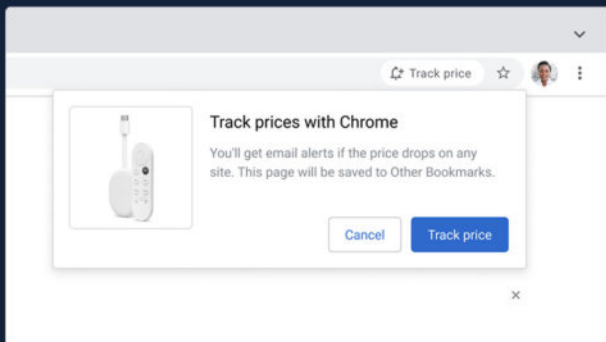## SHOP NOW – MORE QUICKLY, LIKELY AND AFFORDABLY

Neelima C. S
Digital Marketing Analyst

Google

The search bar is more powerful than ever before - Price tracking and search bar in the side panel are two of the new and intriguing capabilities that Google Chrome has added to its search bar. As people continue to adopt more and more online behavior, this has significant benefits for both browsing and online shopping.

Source: Google Blog

For customers who frequently purchase online as well as, of course, for eCommerce companies, this functionality is a game-changer. With this upgrade, users should be able to shop more quickly, likely and affordably.

WHAT DOES IT DO?

○ The search bar will now be able to compare prices across multiple online retailers at once when consumers are shopping online.

○ Users will receive an email when the price of any visited website drops.

HOW DOES IT WORK?

1. Users have the option to click "Track price" at the Address bar after finding the desired product in an online store.

2. To track the item's price, users must click "Track price."

3. Users will get an email to the Google Account they are signed in with when the prices drop.

4. Customers must manually deactivate the feature in the Address bar to deactivate tracking a product.

AMAZON

Video and streaming features for ads will be introduced by Amazon Ads. Brands of all sizes can now use Amazon Ads to use the potential of video and live streaming. As the company stated during the unBox 2022:

"Our video ad solutions work together and make it simpler for brands to reach relevant audiences at scale, so they can deliver their creative work alongside popular content, engage viewers with delightful experiences and measure and optimise their impact," said Tanner Elton, VP of US sales for Amazon Ads. "We want to bring the power of video advertising to more brands, no matter their size or level of resources."

This innovative solution, designed with small brands in mind, gives merchants the power to ultimately increase their level of trust by generating simple-to-make campaigns with creative video formats.

What kind of content can a merchant create with Amazon video ads?

○ Live demos
○ Testimonials
○ Tutorials
○ Unboxing
○ Product Showcase
○ Live Q&A

If you are anxious about tracking the performance of these new ads, this roll-out is simply measurable through the standard Sponsored Display metrics.

Amazon is testing its public beta version of Video Builder, a tool that allows businesses to easily produce videos for their Sponsored Display campaigns using pre-made templates, in parallel with this new launch. Lifestyle photographs and ready-to-use products are also included in the software.

We are well aware of the popularity that video formats have recently achieved, therefore we are confident that this change will enable more brands to use the platform to tell their stories and promote their products to consumers.

PINTEREST

Soon, Pinterest will enable live-stream shopping.

Source: Pinterest Newsroom

The well-known visual search engine has embraced China's expanding live-stream shopping trend in eCommerce. Pinterest is introducing "Pinterest Tv," which will feature live shopping events.

ACCORDING TO PINTEREST:

"Today we're announcing Pinterest TV, a series of live, original and shoppable episodes featuring creators right on Pinterest. Pinterest TV episodes are refreshed each weekday and will be recorded and available for Pinners to view on-demand, and save and rewatch later."

HOW DOES IT WORK?

1. Set of live and shoppable episodes

2. Creators will be featured on Pinterest itself

3. TV episodes are refreshed each weekday and will be able to watch later

4. Streaming Monday to Friday on Android and iOS in the U.S.

Due to the instantaneous interactions and shopping activity this new endeavor will bring to the platform, it will alter the scope of the eCommerce landscape. Along with the human-to-human interaction, "Pinners" will have access to special offers and discounts on the app while watching broadcasts from their favourite creators.

Patagonia, All Birds, Crown Affair, Melody Ehsani, Outdoor Voices, Mented, and other brands are among those taking part.

We are certain that this roll-out, which has already demonstrated tremendous traction and engagement in China, might represent the next major change in the eCommerce industry. Not only is it instant and genuine, but it also appeals to consumers' emotional needs, prompting impulsive buying behaviour.
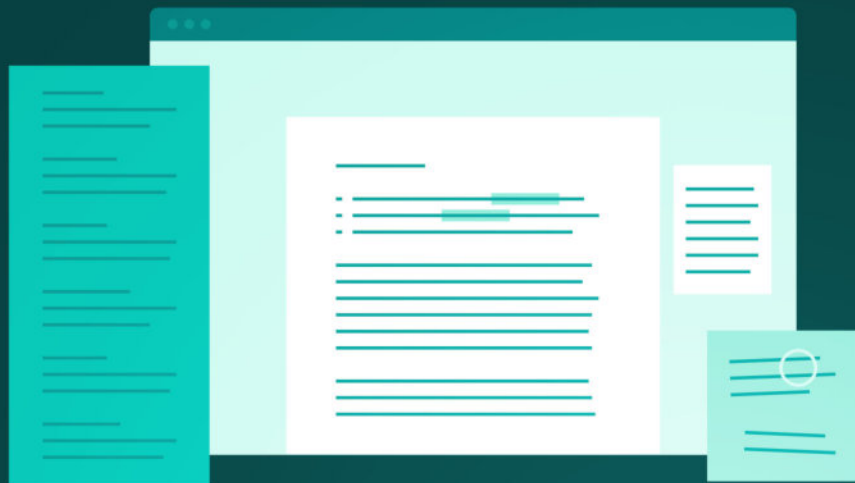
And additionally, here are the 17 best live shopping sites to stream your store to the world.

1. GoLive
2. Bambuser
3. NTWRK
4. Amazon Live
5. Facebook Live Shopping
6. Instagram Live Shopping
7. Livescale
8. ShopShops
9. TalkShopLive
10. Popshop Live
11. Channelize
12. Smartzer
13. CommentSold
14. Confer With
15. Klarna
16. Streams.live
17. Whisbi

ULTIMATE GUIDE TO
WRITE A BLOGPOST

K. Karthi
Digital Marketing Analyst

Writing a blog post for SEO (Search Engine Optimization) involves a few key steps to ensure that your post is optimized for search engines and can rank well in search results. Here is a step-by-step guide to writing a blog post for SEO:

CONDUCT KEYWORD RESEARCH:

When you start writing, conduct research to find relevant keywords that you can incorporate into your post. Use tools like Google Keyword Planner to find keywords with high search volume and low competition. Conducting keyword research for SEO involves finding relevant keywords and phrases that people are searching for, and then incorporating those keywords into your website and content. Here are the steps you can take to conduct keyword research for SEO:

1. Define your target audience: Start by thinking about the people you want to reach with your website and content. Consider their demographics, interests, and main points.

2. Identify your target keywords: Use tools like Google Keyword Planner or SEMrush to find keywords that are related to your target audience and the topics you want to cover on your website. Look for keywords with high search volume and low competition.

3.Analyse your competitors: Research your competitors and see what keywords they are targeting. You can use tools like SEMrush to find the keywords that are driving traffic to their website.

4.Organize your keywords: Once you have a list of keywords, organize them into categories based on the topics they relate to. This will help you to identify the main themes for your website and content.

5. Incorporate keywords into your website: Once you have identified your target keywords, make sure to incorporate them into your website's meta tags, title tags, and content. Use the keywords naturally and avoid keyword stuffing.

6. Monitor and adjust: Continuously monitor your keyword rankings and adjust your strategy as needed. Use tools like Google Analytics to track your website's performance and

By conducting keyword research, you can identify the keywords that are most relevant to your target audience and optimize your website and content for those keywords. This will help your website to rank well in search results and attract more relevant traffic.

CREATE A COMPELLING HEADLINE:

Your headline is the first thing that readers will see and is also one of the most important elements of SEO. Make sure your headline is attention-grabbing and includes your primary keyword.
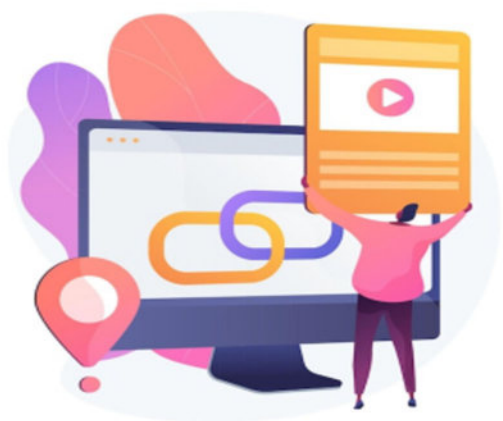
OPTIMIZE YOUR META TAGS:

Meta tags, such as the title tag and meta description, provide important information to search engines about your post. Make sure to include your primary keyword in these tags and keep them under the recommended character limit.

Title Tags: Title Tags are the most important tag which is shown on SERP Page / Site Title / Social media Page. When you are writing the meta title tag focus for 50 – 60 characters limit.

Meta Description Tag: This one is the summary of your blog post, which should be from 150 – 160 characters.

LINKS IN BLOG POST:

Use internal and external links: Internal links to other content on your site can help search engines understand the structure of your site and external links can help to establish the authority of your site.

EXTERNAL LINKS:

1. Link to high-quality, authoritative websites. This will help to establish your website as a credible source of information.

2. Use external links to provide additional information or context to your readers.

3. Use relevant keywords in the anchor text of external links.

4. Link to other pages on the same website when relevant, this will help to improve the visibility of other pages on the website.

INTERNAL LINKS:

1. Organize your website's content into categories and subcategories. This will make it easier for you to link related content together.

2. Use anchor text that is descriptive and includes relevant keywords. This will help search engines understand the context of the link.

3. Use internal links to guide readers through your website. This will help to keep readers engaged and on your website for longer.

4. Use internal links to promote older content. This will help to drive traffic to older content that may be less visible on your website.

In summary, internal links help search engines understand the structure of your website and guide readers through your content, while external links establish the authority of your website and provide additional information to readers. By focusing on both internal and external links, you can improve the SEO of your blog post and drive more traffic to your website.

USE IMAGES AND VIDEOS:

Visual elements can make your post more engaging for readers and can also provide additional opportunities for optimization. Use keywords in the file names of your images and videos and include alt tags with a brief description.

OPTIMIZE YOUR POST FOR READABILITY:

In addition to optimizing your post for search engines, make sure that it is easy to read and understand. Use short paragraphs, subheadings, and bullet points to break up the text and make it easy to scan.
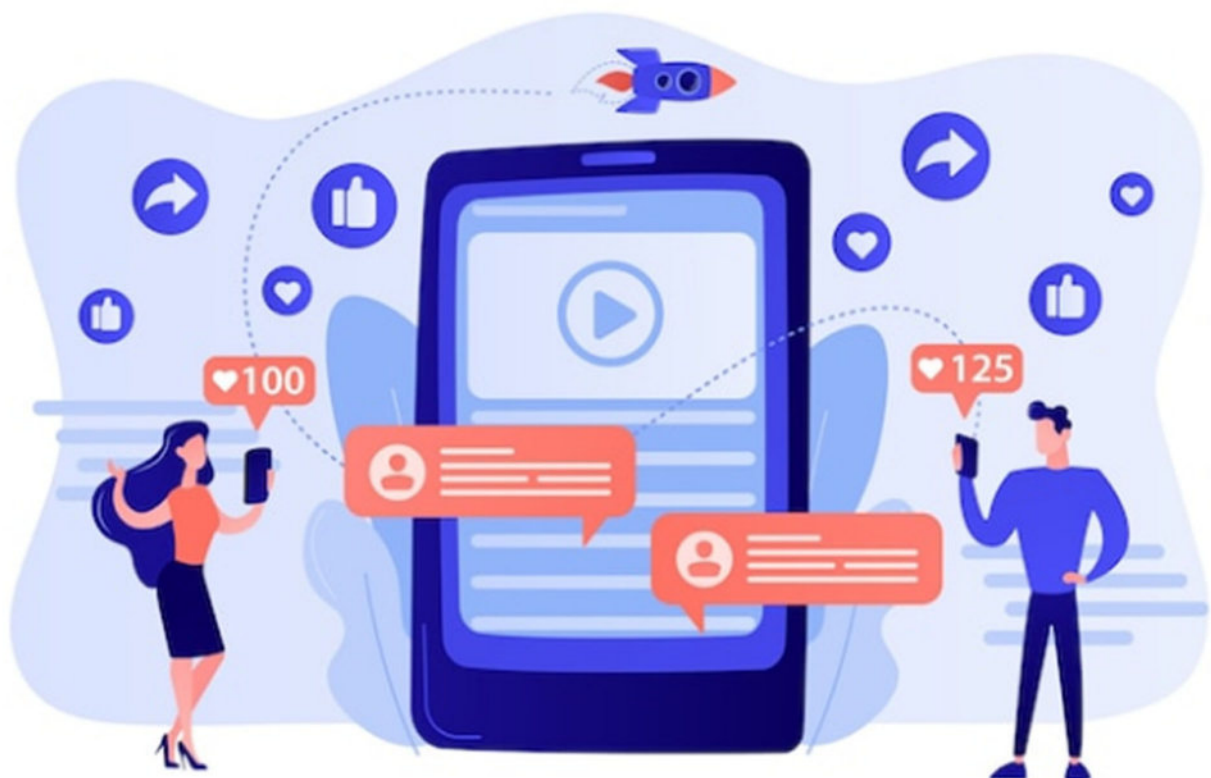
PROMOTE YOUR POST:

Once your post is published, promote it on social media and other platforms to drive traffic to your site.

MEASURE AND IMPROVE:

Use tools like Google Analytics to measure the performance of your post and make improvements as necessary.
By following these steps, you can optimize your blog post for search engines and increase its chances of ranking well in search results.

XTS WITH NO CABLE TECHNOLOGY (NCT)

NILIMA SHARMA
Academic Head - Mumbai

XTS with NCT increases quality through "on the fly" measurement technology.

The supply voltage on the mover can be used for heating or cooling.

e.g. To temper the product during transport.

Measuring tasks can be carried out in parallel to the processing station or "on the fly"

during the transport movement.

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Beckh off achieves a further quantum leap in terms of machine flexibility with a new type of technology for the XTS: No Cable Technology (NCT) enables contactless, continuous power supply and synchronous real-time data transmission to the XTS movers.

The XTS modular system has been expanded to include a special motor module and electronics that can be mounted on the mover. The hardware required for NCT is fully integrated into the monitor module, so that the existing functions and compact design are retained. No additional connections or supply lines are required.

With NCT, processing steps and quality control are possible for the first time directly on the mover during the running process. Sufficient power and fast communication with the Twin -cat control system make the connection of sensors and actuators easy.

Data communication with each mover is real-time capable and, in conjunction with Ether -CAT synchronizes system-wide events with µs precision so that a specific event can be triggered at an exact position. Especially in the areas of product handling, processing and measuring parallel to transport as well as machine adaptations for quickly changing production batches, NCT offers users new solution possibilities.

XTS FUNCTION EXTENSION WITH NCT ENABLES NEW DIMENSION OF MACHINE FLEXIBILITY

With the No Cable Technology extension of the XTS system, production companies can tap into the advantages of highly flexible systems with minimal effort in order to meet current market trends.

The increasing number of variants with shorter product life cycles and limited production space require the most versatile use of the machine possible.

To meet this challenge, the XTS offers numerous possibilities to replace complex external mechanics with individual movements of the XTS movers, and thus with pure software functionality.

In addition to the previous purely passive product transport, NCT enables additional process sequences directly on the mover itself – both during movement and when at a standstill.

XTS WITH NCT INCREASES PRODUCTION OUTPUT:
THROUGH MOBILE PROCESSING STATION

NCT transfers energy wirelessly to the mover. This energy is available to realize different motion sequences directly on the mover with the help of motors. The CNC-based motion sequence is synchronized with the positioning of the mover in real time. The central software approach in Twin-CAT allows simple synchronization with external processing stations. In this way, the mover becomes an active part of the manufacturing process as a mobile processing station,

e.g. by performing a product alignment by means of a rotary movement or by manipulating a product in order to position a carton or screw on a screw cap.

The process times for feeding and removal at alternative processing stations are eliminated and the product flow no longer needs to be interrupted. Consequently, the efficiency of the machine increases and the production output increases.

APPLICATION EXAMPLES:

○ Alignment of products, e.g. aligning a workpiece holder to processes

○ Processing of products, e.g. drilling of small holes or pinching

○ Rotation of products, e.g. mixing of products, 360° product detection by a camera

○ manipulation of products, e.g. positioning a carton

THANKS

Articles

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