

# Analytics, New Technologies: AR, VR, Application of AI

## Part 6

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## Google Analytics

Google Analytics, a free & powerful tool by Google, empowers website owners to collect & analyse data on users'

- Demographics: Age, gender, location
- Behavior –
  - ✓ How visitors navigate in website
  - ✓ Identification of most viewed pages
  - ✓ Browsing preferences and affinities



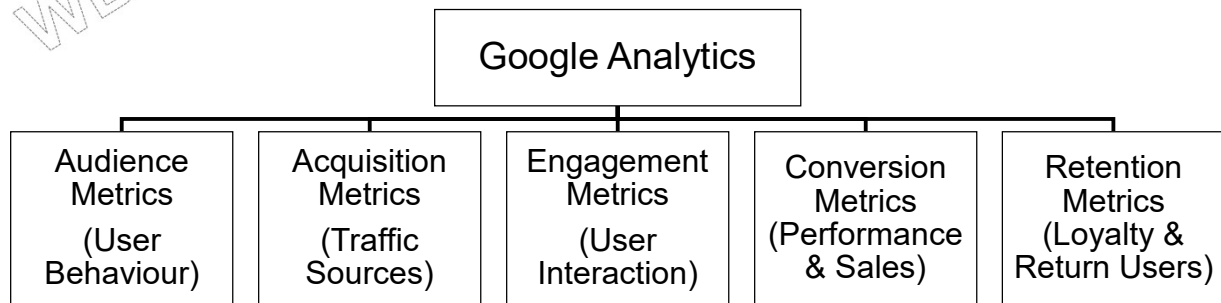
Google Analytics -

- Provides valuable insights into how people interact with the site.
- Helps in making data-driven decisions.
- Creates custom reports & dashboards to what's working and what are the areas of improvement.

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# Google Analytics - Metrics

Google Analytics provides a wide range of key metrics to track website performance, user behavior, and marketing effectiveness. Google Analytics 4 (GA4) is the latest version of Google Analytics, designed to provide advanced insights into user behavior across websites and apps..



Ref. <https://support.google.com/analytics/answer/10089681?hl=en>

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# Google Analytics - Metrics

## 1. Audience Metrics (User Behavior)

- ✓ Users: The number of unique visitors to your website.
- ✓ New Users: First-time visitors to your website.
- ✓ Sessions: Total visits to your website (a session lasts until inactivity for 30 minutes).
- ✓ Session Duration: Average time users spend on the website.
- ✓ Bounce Rate: Percentage of users who leave the website after viewing only one page.
- ✓ Pages Per Session: Average number of pages viewed per session.

## 2. Acquisition Metrics (Traffic Sources)

- ✓ Traffic Sources: Organic Search, Direct, Social, Paid, Referral.
- ✓ Click-Through Rate (CTR): Percentage of users who click on a link in an ad /email.
- ✓ Cost Per Click (CPC): If using Google Ads, the cost per user click.
- ✓ Conversion Rate by Source: Percentage of conversions based on traffic sources.

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## Google Analytics - Metrics

### 3. Engagement Metrics (User Interaction)

- ✓ Average Engagement Time – The time a user actively interacts with the site.
- ✓ Event Count – The number of tracked interactions (clicks, downloads, video views).
- ✓ Scroll Depth – How far users scroll on a page.
- ✓ Goal Completions: Number of times users complete predefined goals (e.g., form submissions, sign-ups).

### 4. Conversion Metrics (Performance & Sales)

- ✓ Conversion Rate: % of users completing a desired action (purchase, sign-up).
- ✓ Revenue: Total earnings from tracked transactions (for eCommerce).
- ✓ Transactions: Total completed purchases.
- ✓ Cost Per Acquisition (CPA): Cost to acquire a customer.
- ✓ Cart Abandonment Rate: % of users who add to cart but don't complete checkout.

### 5. Retention Metrics (Loyalty & Return Users)

- ✓ Returning Users: Percentage of users who revisit the website.
- ✓ Churn Rate: The percentage of users who stop engaging over time.
- ✓ Lifetime Value (LTV): The total revenue expected from a user over time.

## Google Analytics 4

[Google Analytics 4 has replaced Universal Analytics]

Google Analytics 4, the next generation of Analytics which collects event-based data from both websites and apps.

- Collects both website and app data to better understand the customer journey
- Uses event-based data\* instead of session-based
- Includes privacy controls such as cookie less measurement, and behavioral and key event modeling
- Predictive capabilities offer guidance without complex models
- Direct integrations to media platforms help drive actions on your website or app

\*In GA4, all interactions—such as page views, clicks, video plays & purchases are tracked as events rather than hits or pageviews.

- ✓ Event-Based Data is important as it provides –
- ✓ More accurate user behavior tracking
- ✓ Supports cross-device and cross-platform analytics
- ✓ Allows for custom and granular reporting
- ✓ Helps optimize marketing campaigns with detailed event tracking

# Extended Reality (XR)

Extended reality (XR) is an umbrella term that encompasses any sort of technology that alters reality by adding digital elements to the physical or real-world environment by any extent, blurring the line between the physical and the digital world. XR includes AR, MR & VR.

| Technology             | Definition                                                         | Level of Immersion | Application Example                           | Real world visible | Hardware                             |
|------------------------|--------------------------------------------------------------------|--------------------|-----------------------------------------------|--------------------|--------------------------------------|
| Augmented Reality (AR) | Adds digital content to the real-world environment.                | Low to Moderate    | Marketing- Product usage e.g. Lenskart, IKEA. | Yes                | Smartphone, Computer                 |
| Virtual Reality (VR)   | Creates a completely virtual environment replacing real world.     | High               | Tourism, Gaming, Flight Simulators.           | No                 | VR Headset e.g. Meta Quest 3         |
| Mixed Reality (MR)     | Blends digital and physical objects so they interact in real time. | High               | Education, training.                          | Yes                | MR Headset e.g. Microsoft HoloLens 2 |
| Extended Reality (XR)  | Umbrella term that includes AR, VR, and MR.                        | Varies             | Industrial training using AR/VR/MR            | Depends            | Any Immersive Device                 |

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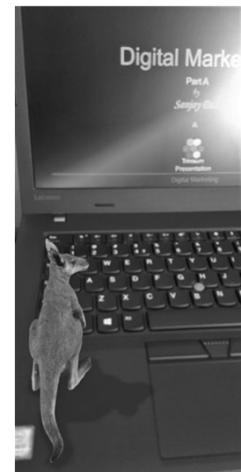
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# Augmented Reality (AR)

Augmented reality (AR) :

- Adds digital elements over real-world views with limited interaction.
- Overlays computer-generated images, text, animations, or sounds onto the user's view of the real-world using smartphones, tablets, or AR glasses creating a reality that is enhanced or augmented.
- The user continues to see the real environment while interacting with virtual objects.
- Usually requires a smartphone, tablet, or AR glasses.



<https://play.google.com/store/apps/details?id=com.ibosoninnov.unitear>

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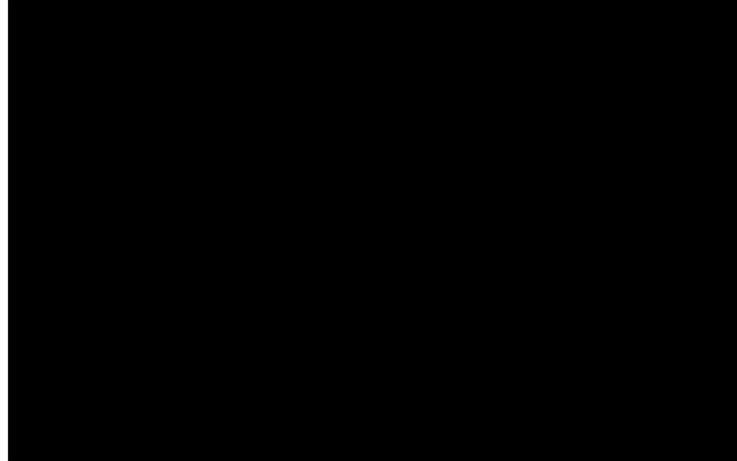
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# Augmented Reality

AR bridges the digital and physical worlds.

- ✓ As the Simulated experience can be like or completely different from the real world, these are considered as potential ways of creating impactful impression.
- ✓ Dramatically expands ways of expressing



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## Augmented Reality (AR) -Application Marketing

1. Timberland's virtual fitting room
2. Lenskart

### Advantages-

- ✓ Differentiation
- ✓ Creative Impactful Communication
- ✓ Allows review of proposed usage without using the product
- ✓ Preview how the products might look like at home / body / face.
- ✓ Confidence
- ✓ Comfort & Convenience leading to Conversion



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## Virtual Reality

Interactive software that immerses users in a three-dimensional environment-usually by way of a headset with special lenses - to simulate a real experience. Ideally, VR allows people to simulate the experience in 360 degrees. (Ref. <https://blog.hubspot.com/>)



- Applications : Entertainment (video games), Driving training in automobile industry
- Takes the customer totally away from surroundings
- Preview of location as if being there
- Education/training. Example : Lowe's Innovation Lab – VR based DIY clinics <https://youtu.be/OIYItG1RKuI>

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## Virtual Reality - Application

- Toyota teamed up with Facebook using Oculus, to warn teenagers of the dangers of distracted driving.
- Samsung teamed up with Audi to offer VR test drives of the new TT Coupé.
- The Meta Quest 3S is a mixed-reality headset that blends digital objects with real environment. Primarily used for gaming, fitness, productivity, and media consumption.



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## Mixed Reality

Mixed reality (MR) is an emergent technology that blends VR and AR. Mixed reality headsets like the Microsoft HoloLens are opening up possibilities in the gaming world for mixed reality experiences.



Microsoft HoloLens 2



These head-mounted displays include cameras that constantly map the wearer's environment. When you play games made for these devices, characters can walk around the physical world you're in and even help themselves to a seat on your couch.

[https://www.adobe.com/in/products/substance3d/discover/mixed-reality.html#:~:text=Mixed%20reality%20\(MR\)%20is%20an,world%20for%20mixed%20reality%20experiences.](https://www.adobe.com/in/products/substance3d/discover/mixed-reality.html#:~:text=Mixed%20reality%20(MR)%20is%20an,world%20for%20mixed%20reality%20experiences.)

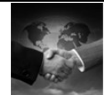
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## Customer Relationship Management



CRM is an information system that combines methodologies, software, internet to help an organization to establish stronger customers relations by gaining insight of customer behavior to achieve better customer service and higher revenue. CRM is about how customer information is used to create an ongoing profitable relationship with the customer.

In e-CRM acquisition & retention of customers are done through multi-channel buying process & customer lifecycle management by improving customers' satisfaction through service delivery.

SaaS CRM is cloud-based software, which gives permanent access to the CRM functionality and support with no need to invest in installing and maintaining it. SaaS-based CRM brings transparency in relationships with customers and helps businesses automate and personalize marketing, sales and customer service.

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# Software as a Service (SaaS)

Business applications and software services are provided through Internet and web protocols with the application managed on a separate server from where it is accessed through a web browser on an end user's computer with data stored within 'The Cloud'.



## Examples -

- ✓ Google Workspace
- ✓ Trello
- ✓ Customer 360
- ✓ Slack
- ✓ Adobe Creative Cloud

- SaaS applications are also known as Web-based software, on-demand software, or hosted software.
- The SaaS provider manages access to the application, including security, availability, and performance.
- Ready to be up and running quickly with high-performance cloud servers.
- Customers can choose the "Hosting Environment" to meet exact workload needs and pay only for what is used- Easy Customisation, Scalable & Profitable.

# CRM Benefits

- ✓ Stores, tracks & manages customers details efficiently as it can gather, combine and process large volume of information.
- ✓ Intelligently captures customer interactions.
- ✓ Plays major role in resolving customer complaints providing fast and accurate 3R i.e., Response, Resolution, Recommendation.
- ✓ Simplifies repetitive tasks.
- ✓ Helps in processing leads and loyalty programmes.
- ✓ Delivers insights & recommendations.
- ✓ Provides analytics for monitoring and control.
- ✓ Brings in transparency through availability of real-time based same information any time anywhere.
- ✓ Customers' participation : e.g., Reviews.
- ✓ Cost-effective.

## AI in Digital Marketing

**Chatbots:** AI-powered virtual assistants engage with customers; answer queries & guide through buying process.

**Email Marketing Optimization:** AI analyzes customer data to generate personalized emails segmenting recipients based on demographics, location & interests to ensure more opens, clicks, and conversions.

**Dynamic Pricing:** AI adjusts prices based on real-time data, demand, and market conditions. Dynamic pricing optimization can boost sales and revenue.

**Content Recommendations:** AI analyzes user behavior & preferences to recommend personalized content enhancing engagement.

**Sentiment Analysis for Social Media Monitoring:** AI gauges public sentiment by analyzing social media posts. Marketers can understand customer opinions, identify trends, and respond effectively. NLP can analyze social media conversations; track brand mentions and identify potential reputation risks.

**Social Media Insights:** AI tracks trends and analyzes consumer feedback on social media. This helps companies create more relevant and engaging content for their audience.

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## AI in Digital Mktg-Hyper-personalisation

Hyper-personalisation is a business strategy that uses artificial intelligence (AI), generative AI, machine learning (ML) and real-time data analytics to deliver highly tailored individualized customer experiences, products or services based on individual customer behavior and preferences.

Goes deeper than traditional personalization addressing customers by name sending hyper personalized messages recommending products based on

- ✓ Behavioral data: browsing, purchase history, clicks
- ✓ Demographic data: age, gender, location
- ✓ Psychographic data: interests, lifestyle
- ✓ Real-time data: current location, time of day, birthday/anniversary, device used

Delivers highly relevant, individualized experiences that feel genuinely unique to each customer and can foster a sense of connection and trust.

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## Service Customer Relationship Management (Service CRM) - Chatbots

- Usage is popular for managing sales process & responding to service inquiries.
- Provides 24/7 customer service access
- Offer common resolutions instantly
  - Can ensure better consistency & integration across multiple channels - websites, social media, and mobile applications.
- Reduces workload of handling simple tasks.
- For complex inquiries, chatbot can seamlessly transfer the ticket to customer service agents.
- Integration with CRM database can enhance performance of agents by equipping them with list of past interactions to determine the best resolution.
- Used for churn detection.