

Visual Communication Is Becoming Multidimensional in A Changing Socio-Economy Impacted by Science and Technology

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ABSTRACT

The landscape of visual communication is undergoing a significant transformation, influenced by rapid scientific and technological progress alongside dynamic socioeconomic shifts.

Innovative digital tools, Artificial intelligence, immersive technologies like virtual and augmented reality, and the metaverse are reshaping how information is shared and interpreted.

This evolving multidimensional approach enhances user engagement, accessibility, and interaction with the help of the explorative method, redefining communication in an increasingly interconnected society. As these advancements continue, visual communication remains integral to shaping perceptions, influencing behaviours, and crafting cultural narratives.

1. INTRODUCTION

To know how:

Science and technology, including 'Digital platforms and AI,' have influenced the socioeconomics of the country and have ushered in a new lifestyle. In a chain effect, there is a greater need to evaluate the following:

A) The scope for 'Visual' in the Communication Industry is ever-widening in the context of the new Socio-economy. (We are progressing from 2D and 3D to Virtual Reality, Augmented Reality, Metaverse, and so on.)

B) Visual communication is becoming Multidimensional in the changing socio-economy impacted by science and technology.

C) As a result, the Media has become the New Creative in Modern Communication.

Structure:

PART-1: The landscape of Visual Communication over the past. (Evolution)

(In short, the developmental stages of visual forms since the prehistoric period till today.) **PART-2:** The changing socio-economy brings in a change in Lifestyle.

(The difference between the lifestyles of old and new Socio economy. - In short, the lifestyle before and after the mobile/internet revolution.)

PART-3: Impact of Science and Technology.

(Advent of New age media with Digital Platform... transforms the Visual Communication from 2 dimension to VR, AR, Metaverse ... and so on.

PART-4: Future Scope and Challenges of Visual Communication

It will result in multidimensional Visual Communication in all respects. (in Personal, Professional, and Social Life) In terms of User engagement, Accessibility, Interactions, with real-time feedback, in the most cost-effective way.

Research Methodology: Explorative

Qualitative research involves observations, examination, and understanding of Human behaviour regarding Personal, Professional, and social life.

It deals with the present opportunities and the future challenges in the new Socio-economic environment in regard with Visual Communication.

PART-1: The overview of the visual development since the prehistoric period

Progression of the Visual Element over the past. Sharing here some of the key examples.



Fig. No.1 – ancient Egyptian hieroglyphs

2D visuals, such as prehistoric cave paintings, portrayed scenes of daily life, hunting, and animals on the flat surfaces of cave walls. Egyptian hieroglyphic symbols conveyed both written language and visual representations of their beliefs and narratives.



Fig. No. 2 - Storyline of Mehendi



Fig. No. 3- Hand fan

In France in the 18th century, hand fans depicting heroic scenes and landscapes were popular. A storyboard of Mehendi.



Fig No 4 – Cupboard Curtain - Fig No 5– Old Wedding Card - Fig No 6– Door Toran

We Indians have adorned our homes and temple doors with Torans or Bandanwaar. The tradition of putting a Toran and a cupboard curtain can be traced back to the Puranas.

What is visual?

"Visual" relates to anything perceived by sight, including images, graphics, and videos. In communication and design, visuals are used to convey information, attract attention, and support the message.

What is communication?

It's a basic instinct of a human being to share their thoughts, feelings, and emotions. The need for communication evolved out of this basic instinct.

The Power of Visual in Communication A picture is worth a thousand words. "Seeing comes before words.

(The child looks and recognises before it can speak." - John Berger

It's a universal truth that humans understand the world around them through the 5 sense organs. (Eyes-Ears-Nose-Tongue-Skin)

And visual alone contributes 82% of the human perceptual world.

1. Sight: The Foundation of Visual Communication
2. Sound: Enhancing the Visual Experience
3. Touch: Interactive Visual Media
4. Smell: The Overlooked Dimension in Visual Communication
5. Taste: The Connection Between Visuals & Flavour

Visual communication is a multifaceted key to unlocking the door of effective expression in a world dominated by diverse audiences and information overload. The three fundamental aspects of Visual Communication are comprehension, engagement, and lasting impressions. Visual communication is the bridge that connects diverse minds, creating a shared understanding irrespective of language-related differences. Visually communicating is not just limited to creating aesthetically appealing graphics but is, in fact, strategically selecting and arranging various elements to use visual communication to enhance understanding and retention. The fundamental goal is to transform complex ideas into accessible and digestible formats, ensuring that the intended message is delivered and received cost-effectively.

The language of visuals speaks volumes. It's not merely about what is seen; it's about the story that unfolds, the emotions evoked, and the lasting impact created through the artful integration of visual elements.

In short, why is visual communication more effective?

- Visual has a universal language.
- It makes communication more effective with words.
- Visual breaks the language barrier.
- It bridges minds with diverse geographical and historical cultures,
- Visual has the power to overcome illiteracy.
- Visual has an instant impact.

Visual communication is a powerful tool for practical expression in a world overwhelmed by information., It is a crucial skill that enhances comprehension, engagement, and retention.

The place and Role of Visual in Communication in the new socio-economy, driven by Digital platforms with AI.



Fig. No. 7. Old watch and digital watch. Fig No. 8 Book in Old Economy and Kindle Book in New socio-

These are some of the examples, self-explanatory about the progression of the Visual element.



Fig.No.9-Conventional School slate and an iPod.

From scrolling through Instagram to coming across LinkedIn posts, aren't we constantly surrounded by visuals? Visual communication is the art of blending elements like GIFs, text, and images to illustrate information and ideas effectively.

In this new-age world, every minute task demands a visual design. Can you visualise messages without emojis or GIFs? Not anymore, right? That's the power of simple and effective visual communication. Its especially relevant today as visual design has been established as a language or medium to convey issues and trends.

For example, posts and memes on social media, particularly Instagram, are our latest news source and help us connect to what's trending. The key reason for flourishing visual communication is time constraints. People prefer getting takeaways concisely rather than engaging in lengthy texts to understand the concerns.

Today, visual communication design is more than conveying thoughts. It's one of the most effective marketing solutions.

Here are some examples of presenting information through different means of visual communication: A strategic use of visual design basics like graphics, logos, images, and signs helps grab audiences' attention and establish a deeper connection. Where the colours and imagery talk...[Visual design principles](#) make the message more powerful, approachable, and efficient. The human brain is known to capture and remember pictures better than text. Our brain processes visuals [60,000 times faster](#) than text. This is why visual communication has evolved and stayed at the forefront.

It's a fact that certain colours help in evoking specific emotions. For example, you feel calm around blue tones, whereas red induces excitement. Brands adopt a strategic colour scheme to impact the audience psychologically. Further, the use of expressions and striking visuals drives emotional reactions from consumers, leading to better engagement and connection. When we come across an advertisement, the creative approach, colours, and imagery entice us more into buying than the features. About [62% of consumers](#) prefer buying a product with images over one with textual descriptions.

(Consider an example of [Apple's](#) advertisements with silhouettes. It resonates with a particular lifestyle and, at the same time, sets a unique identity for the brand.)

Visual communication is a way to express emotions that aren't possible through words. It engages and influences the

audience.

Visual design thinking is the key driving factor in making social media sites more interesting. Whether it's LinkedIn, Twitter, Facebook, Instagram, YouTube, or any other platform, visual information rules there.

Photos, videos, and infographics help spark conversations and catch users' attention. The visual design presents even the most complex message as digestible content. Journalism and visual design are two inseparable entities.

No more boring texts!

PART 2: The changing socio-economy brings in a change in Lifestyle, too.

The following are the two key drivers that transformed the lifestyle in the old economy (before the internet era) from the new one (New Economy-internet-driven)

Simple lifestyle with contented living. Life was simple and need-based. Commons were less aspiring and comparatively contented with a simple life. The scope for the application of visual was also limited.

Absence of Science and Technology:

Life was close to basic needs. The old socioeconomic system had no competitive element to distract its attention. Hence, communication Challenges were simple and easy to meet. There was neither a brand war nor the need for extensive marketing. Truly, 'Necessity is the mother of all inventions.' It is the primary driving force to boost the Socio-economy. As a result, the power of visual remained underplayed because of less awareness.

Today, along with the lifestyle changes, the scope of visual in Communication also keeps changing.

The New Age Media has emerged, taking a lead role to meet the Communication needs of the changing Socio-economics, and in the process, **Visual in Communication is playing a key role in the entire Communication Industry.**

The following examples are self-explanatory to prove the positive difference between the two eras (Old Socio economy without Digital platform as against New Socio economy with Digital revolution)

Example No. 1

We mentioned this in the beginning. The difference between referring dictionary in a conventional way and On Google search. In Google search, we get to see the movements to better understand the phonetics and pronunciation.

search with lip.

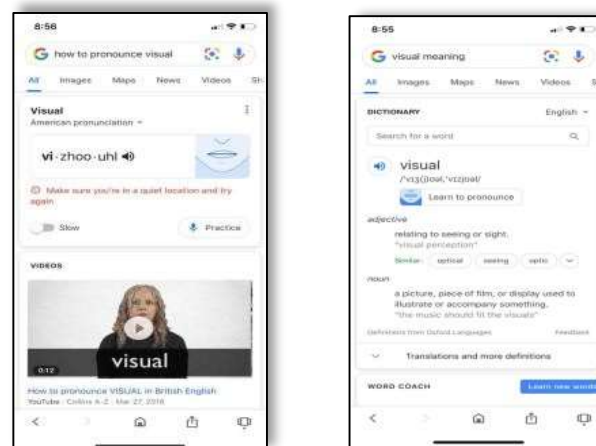


Fig No 10: see the Lip movements

Example No-2

Similarly, in the olden days, the use of visuals was limited to only window displays in festive seasons like Diwali and Christmas. Today, a new branch has emerged, called Visual merchandising, that gives a total buying experience to the

customer.



Fig No. 11 Visual Merchandising Fig No. 12.- Window display

Example No-3

In the olden days, People used to travel with a road map in hand. Today, Miss Siri guides you on the console of a car. (In most modern cars like Tesla and BMW, even simple waving actions of hands are followed by sensors, and the car takes you by the road to your home.)

Example No-4

The Windows program on the Laptop has 3 devices to unlock. Pin- Finger - and Face recognition. Apple operates on the same.

Example No. 5

Today, the entire purchase at the mall is calculated within a minute, just because of a barcode device (a visual input). Earlier, it was done manually by a Grocery owner for 15 minutes.



Fig. No. 13. Bar code on the object

Example No-6

Today, UI/UX design has become a major source of employment for students in visual communication. This would have never been possible without a Visual element.

Example No-7

A child learns a language much faster in the early days. (Not by learning grammar) But, through voice backed by Visual observations (Face+ Eyes+ Lip movements)

Example No-8



Fig. No. 14. Deaf and Dumb Gestures

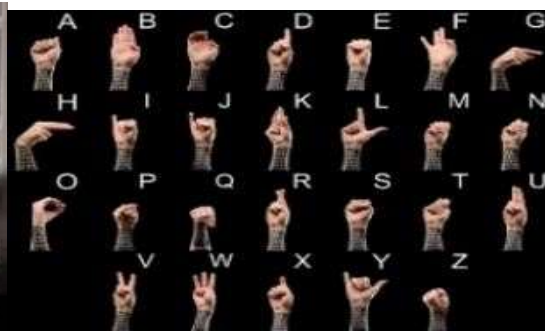


Fig. No. 15 Deaf and Dumb Gestures

I observed once at the Railway Station, a group of students discussing an exam paper. (I thought they had conflicts. Because of their vigorous Visual actions)-When we went closer, we came to know that they were Deaf and Dumb.

Example No-9

Earlier, we used to visit travel offices to book a tour, or we used to read brochures. Today, instead of going out, we complete the whole process by booking an air ticket and watching the places on YouTube that we are willing to visit. Websites are the easiest medium to upload complex information that is transformed into visually engaging infographics and interactive charts. This makes complex information more accessible and actionable.

Challenges in Visual Communication in the New Socio-Economy

While a powerful tool, visual communication comes with its challenges that professionals need to navigate strategically. Understanding and addressing these challenges is crucial for ensuring that your visual messages are not only impactful but also well-received across diverse audiences.

1. **Information Overload:** One of the primary challenges in visual communication is striking the right balance between providing sufficient information and avoiding overload. With a large amount of data available, there's a constant struggle to distil complex concepts into visually digestible elements without overwhelming the audience.
2. **Cultural Sensitivity:** Visuals may carry different connotations and interpretations across diverse cultural contexts. What may be harmless in one culture can carry significant meaning in another.
3. **Technology Constraints:** The ever-evolving landscape of technology introduces challenges in maintaining consistency across different devices and platforms. Diverse devices, screen sizes, and resolutions can affect the way visuals are displayed. Compatibility issues may arise, impacting the visual presentation and reception of the communication materials.

These challenges in Visual Communication can be overcome in three ways. Effective visual communication extends beyond words alone; it involves strategically integrating visual elements to enhance understanding and engagement.

Here, we'll explore three impactful techniques

- A. **Using Data Visualisation:** Data visualisation, in simple words, is a comprehensible and engaging manner of presenting data-related information. Bar charts work well for comparisons, line graphs for trends, and pie charts for illustrating proportions. It simplifies intricate data, but it also facilitates quicker comprehension. Visual representations enable your audience to grasp statistical insights effortlessly, enhancing the impact and retention of your verbal communication.
- B. **Understanding Colour Psychology:** Applying colour psychology isn't just about aesthetics; it's about enhancing the resonance of your message. For instance, warm colours like red and orange can evoke passion and energy, while cooler tones like blue and green convey calmness and trust. Consider your audience and the emotions you aim to elicit.
- C. **Creating Visual Metaphors:** Crafting visual metaphors involves carefully selecting symbols and icons that resonate with your audience. They are powerful memory aids, helping your audience connect with and retain the core message. Visual metaphors transcend language barriers, making your verbal communication more accessible and memorable for a diverse audience. (Airbnb's success in visual communication lies in its strategic use of impactful infographics. This minimalistic approach ensures clarity and accessibility, fostering trust and reliability among)

Let's understand the Power of Visual Communication

1. **Enhanced Comprehension:** Unlike text-heavy content, visuals can convert complex concepts into easily digestible

components, enabling a quicker understanding of elaborate ideas. It transcends linguistic barriers, offering a universal language that everyone can grasp effortlessly.

2. **Increased Engagement:** Well-crafted visuals in the communication can transform a mundane presentation into an insightful experience. These visuals not only break the monotony of text but also captivate the audience's attention, ensuring they stay focused and engaged throughout the presentation.

3. **Memorable Impact:** The human brain is wired to remember visuals more effectively than text alone, a phenomenon known as the [picture superiority effect](#). Studies reveal that after three days, people generally retain only 10-20% of written or spoken information. However, when paired with relevant visuals, this retention rate increases to a staggering [65%](#). From scrolling through Instagram to coming across LinkedIn posts, we are constantly surrounded by visuals.

Visual communication is the art of blending elements like GIFs, text, and images to illustrate information and ideas effectively. Can you visualise messages without emojis or GIFs? That's the power of simple and effective visual communication. Visual design has been established as a language or medium to convey issues and trends.

The key reason for flourishing visual communication is time constraints. People prefer getting takeaways concisely rather than engaging in lengthy texts to understand the concerns.

PART 3: The impact of Science and Technology

The advent of science and technology took the exploration of Visual Communication to the next level. The impact of Science and Technology on lifestyle in the New Socioeconomics

1. **Education & Training Immersive Learning:** AR/VR classrooms offer interactive 3D models for subjects like history, science, and medicine. Virtual Laboratories: Hands-on experiments in a simulated environment reduce costs and risks. Corporate Training: VR simulations for soft skills, crisis management, and industrial training (e.g., pilot or firefighter simulations).
2. **Healthcare & Medicine AR in Surgery:** Surgeons use AR overlays for precision-guided procedures. Medical Training: VR enables realistic anatomy exploration and emergency response drills.
3. **Business & Marketing** Virtual Showrooms: Customers can try products (e.g., furniture in their homes, virtual fashion fitting). Immersive Advertising: Brands use AR-enhanced billboards and interactive 3D ads.
4. **Entertainment & Media** Metaverse & Gaming: VR-based metaverse worlds create fully interactive digital experiences. Cinematic VR: Movies and concerts become 360-degree immersive experiences. AI-Generated AR Content: Personalized and interactive storytelling in social media and gaming.
5. **Architecture & Real Estate Virtual Property Tours:** Buyers explore properties remotely in 3D VR walkthroughs. AR Blueprint Visualization: Architects can overlay digital designs on real-world locations.
6. **Retail & E-Commerce** Try Before You Buy: Virtual dressing rooms and AR-enabled makeup try-ons. Interactive Shopping Experiences: Customers scan products for real-time AR product details. Smart Mirrors & AI Shopping Assistants: Enhanced in-store experience with personalized recommendations.
7. **Tourism & Hospitality** Virtual Travel Experiences: Tourists explore destinations in VR before visiting. Hotel & Resort Previews: 360-degree VR tours before booking a stay.
8. **Military & Défense** VR Tactical Training: Simulated combat environments for soldier preparation. Drone Surveillance & AR Data Integration: Enhanced situational awareness.
9. **Sports & Fitness** Virtual Coaching & AR Sports Analysis: Real-time feedback for athletes.

Role of Visuals in Traditional Media vs. New Media

Comparison of print, television, and early digital visuals with interactive and immersive media. The transition from passive viewing to active engagement (social media, AR/VR, AI-generated visuals).

Socio-Economic Factors Affecting Visual Communication: Globalization and Digital Access Disparities.

- Consumer behavior and personalized content.
- Branding and marketing shifts in digital spaces.
- Impact of Science and Technology on Visuals in New Media
- AR/VR and immersive experiences in communication and entertainment.
- Evolution of UX/UI design in app development and web media.
- Ethical concerns: deepfakes, misinformation, and digital manipulation.

- Changing Placement of Visuals in Digital Ecosystems
- Shift from static billboards to programmatic digital advertising.
- Role of interactive elements in user engagement (social media, streaming platforms, Gamification, and visual engagement in educational and commercial fields.

The advent of science and technology took the exploration of Visual Communication to the next level.

Citing some of the exclusive examples, making a great difference in visual exploration is impacted by science and technology.

1) Minakshi Mandir's ability to see the Mandir in 360 degrees has been made possible with the help of an AI Application.

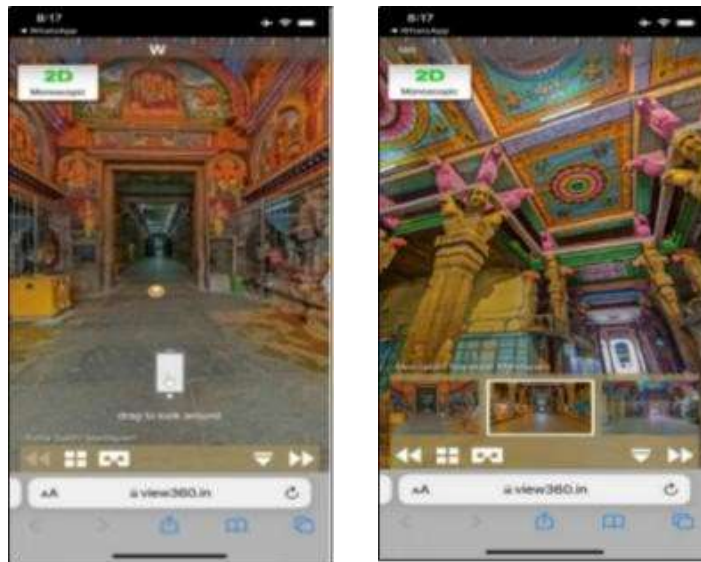


Fig No. – 16 Minakshi Mandir in 360% with the Help of Technology

Today on the flight, you can get to see the Complete information of the status of your journey in real-time and perspective. Every passenger can experience a pilot's view of that specific mode.

2) AI has taken Raja Ravi Varma's imagination forward by bringing it to life.



Fig. 17 Fig. AI Application of AI Application

Example: Characters of Raja Ravi Varma's painting come alive with great imagination. Discover Hamsa Damayanti, Shakuntala, and more in a completely different light. The famous creations of Raja Ravi Varma have been stagnant for a very long time. Now they are suddenly taking on a completely new life.

Discover how Artificial Intelligence brings new life to the iconic works of Raja Ravi Varma, Similarly, **it happens with transforming still pictures into live.**

Example: People get nostalgic and preserve pictures of their dear ones who are no longer with them. Today, these pictures have come alive with the help of AI Applications.

Sharing herewith some more examples (Category-wise) in terms of Visual Application.

3) Advertising

Another example of Amul's new product launch in the new media



Fig No 18 Amul new product launching with the help of Augmented Reality)

4)Aviation: Today on the flight, you can get to see the Complete information of the status of your journey in real-time and perspective. Every passenger can experience a pilot's view of that specific mode.



Fig No 19 –in-flight real-time status of the journey

5) Information/Hospitality/Entertainment industry: Can we imagine an iconic personality who is no more, appearing on the stage and talking to us (for example, Martin Luther, Mahatma Gandhi), coming on the platform and talking to us.

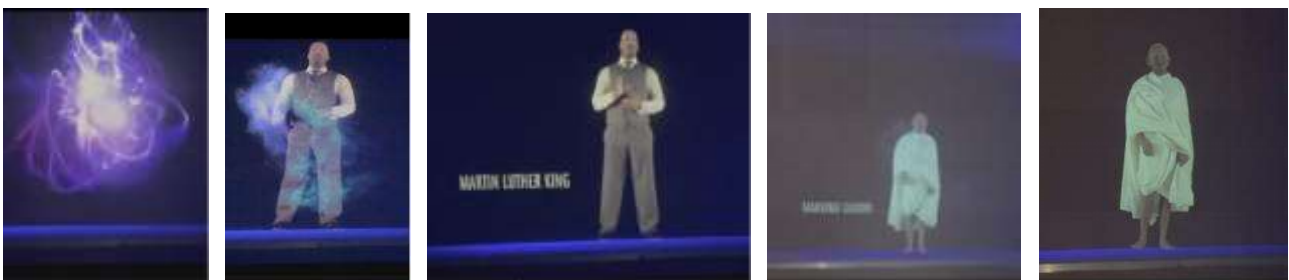


Fig No 20 – With the help of AR/VR, of appear on the stage and talk to us.

- 6) **Sports:** With the help of cricket graphics, we get the idea of the correct scoreboard. These graphics help you to understand in how many directions the ball has been played.



Fig No 21– With the help of Digital graphics, we get the idea about the correct cricket scoreboard

- 7) **Education:** Body functioning: Animated videos can make learning easy and engage attention with visuals and motion.

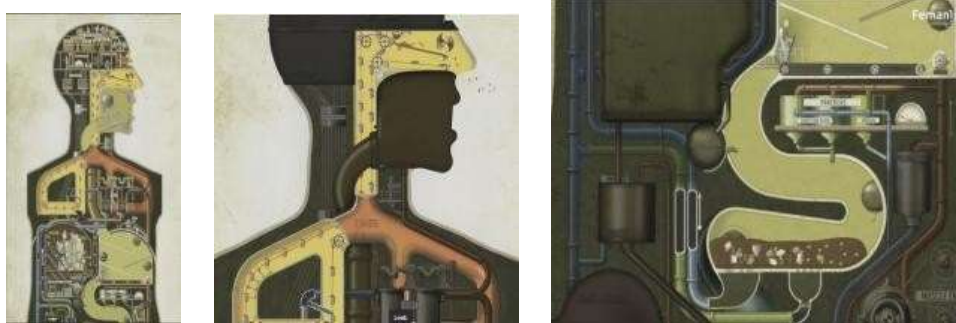


Fig. No. 22 – Body function in the form of animation

- 8) - **Medical:** You are somebody's type – an interactive, informative format.

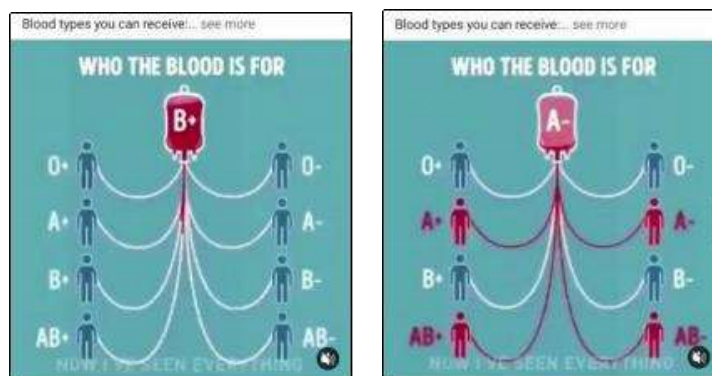


Fig. No. 23. Blood type animation <https://www.youtube.com/watch?v=B6dAPXpUjCE>

- 9) **New Avatar of Expression:** Emojis are little pictures used online to show feelings, objects, or ideas. They're colorful and cover everything from happy faces to food and animals. People often use them in texts and on social media to express themselves better.

- Smiling face with smiling eye - Face with tears of joy - Broken heart - Party popper.

10) Google Maps in a Car. Just a few decades ago, travellers used to carry physical maps while visiting new places. Today, people just feed the information to a car. Google guides you on the complete roadmap with an expected period and information about traffic jams. Google has already introduced an extension to its 3D Perspective.

PART 4: Future Scope and Challenges of Visual Communication.

Visual Communication is truly becoming multi-dimensional.

The scope of Visual in Communication will keep on expanding with changing lifestyles, impacted by Science and Technology.

From 2d and 3D form, it goes through the stages of Virtual Reality, Augmented Reality, Metaverse, and so on...

Presently, Communication involves only three senses. (Seeing, Hearing, and Smelling) Shortly, who knows, it may deal with the remaining two, i.e., Taste and Touch.

(Today, mother talks and listens to her son abroad, but can't experience the touch. It may happen future.) Communication may reach its fullest strength by integrating all five senses. And visual too will explore its complete potential up to 82%

augmented Reality (AR) and Virtual Reality (VR) are revolutionizing nearly every sphere of activity, transforming how we interact, learn, work, and entertain ourselves. With advancements in AI, 5G, and sensor technology, AR and VR are becoming more accessible and deeply integrated into daily life. Here's how different sectors are leveraging these immersive technologies:

The role of a visual has remained underplayed in the past. But today, it is enjoying a much wider horizon with technology and new media forms in a new socio-economic environment. The Scope of a visual is ever-expanding from Virtual Reality to Augmented Reality to 3D printing to ChatGPT and ... to infinite forms in the future.

In the evolving landscape of our future, marked by socio-economic changes and a fast-paced lifestyle, the importance of visuals in real-time communication with interactivity is set to rise.

A few examples of anticipated trends:

Below is a futuristic digital puja (without real smoke, physical properties, and Guruji chanting mantras).



Fig. No 24 – Digital puja and Home Fig No 25 – Digital puja chanting mantras

The new technology has offered a scope to replace the conventional screen of mobiles or laptops with any other surface. It's a great convenience and comfort.



Fig. 26 - pc – my relative



Fig. 27 pc – my relative

The above examples indicate a future course of ‘visual’ in communication. The pictures indicate that communication will be more visually oriented in the future. Visuals like emojis, GIFs, and infographics are becoming essential for quickly getting messages across, especially on social media, where attention spans are short.

Challenges of Visual Communication in the Future Course

Yes, the decline in attention span is a crucial factor affecting the role and the placement of visuals in new media.

Here’s how it influences visual communication in a technology-driven socio-economic landscape:

1. Impact of Reduced Attention Span on Visual Communication
2. Challenges in the Placement of Visuals in New Media
3. Socio-Economic Implications to be considered.
4. The Future of Visual Shapes in a Distracted Digital World.

My Conclusions:

Citing my key observations based on the premise that turned out to be conclusions:

The Future is Multisensory Visual Communication

The place and the role of “visual” in communication have become multidimensional.

Metaverse & Mixed Reality (MR) will integrate all five senses for deeper storytelling. Science and Technology with a Digital platform has become the game-changer in the new and changing socio-economy.

In the process, the Media is becoming a new creative.

Visual has started interacting with the real timeframe. (E.g. Social Media-WhatsApp)

Engagement and participation of the audience have become key elements in communication.

(Visual merchandising plays a key role)

You can’t stop developments because of the growing needs of the socio-economy in all spheres of activity.

In the ultimate analysis, Digital technology is a sword with a double edge. We must use it to improve our lives without sacrificing our values.

The Research paper may end here, but the progress and the Application of Visual In communication, I will keep exploring wider horizons.

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-