**What is CONVERGENCE?**

**Convergence**: the act of converging and especially moving toward union or uniformity  
Example: the convergence of the three rivers

**Types of Convergence**

**MEDIA CONVERGENCE**

* Content is provided in many formats.
  + Example: News available as text, audio, or video format in print or digital forms.

**NETWORK CONVERGENCE**

* A network receives and transmits many formats of content.
  + Example: Fixed broadband network processes voice, video, and data (offering multiple services such as telephony, television, and the internet).

**TECHNOLOGICAL CONVERGENCE**

* A device performs many types of functions and delivers many formats of content.
  + Example: Smartphones, smart TVs, wearable IoTs, industrial IoTs, smart city devices and platforms.

**MEDIA CONVERGENCE**

**Media Convergence (I)**

* Refers to the merging of previously distinct media technologies and platforms through digitization and computer networking. This is also known as technological convergence.
* It is also a business strategy whereby communications companies integrate their ownership of different media properties.
* This is also called media consolidation, media concentration or economic convergence.

**Media Convergence (II)**

* Phenomenon involving the interconnection of information and communications technologies, computer networks, and media content. It brings together the “three C’s”—computing, communication, and content.

**Need for Media Convergence**

* Technologically rich societies have entered the digital age.
* Media industries are grappling with new opportunities - and threats - afforded by what is called "convergence".
* Media people tend to get very excited about convergence, because it holds so much promise.
* The melding together of different media, incorporating new personalized services is both impressive and overwhelming.

**Examples of Media Convergence**

* Smartphones (converging camera, music, the internet, books, and all other media together)
* Online Radio (converging radio with the Internet)
* E-books (converging paperbacks with the digital technology)
* News Websites and Apps

**Advantages**

* The content creators can use the platform to generate customized content that is targeted at a specific group.
* This has also brought about a change in the dynamics of economy as distribution and cost structure is not the same in traditional media.
* It has brought about a sense of Post Modernism to the field of media consumption where the consumer is not an audience but is also a co creator.
* This has also brought about a change in the experience that a person goes through by consuming media. It has transcended the limitations of the traditional media.

**Negatives of Media Convergence**

* Difficulty in assessing consumer responses and reactions scattered across diverse converged platforms.
* More competition for consumer’s time and attention with various media platforms in one device.
* Audiences often feel overwhelmed with massive amounts of information overload.
* The older generation and the disabled sections of the community find it hard to learn the digital skills to use different types of media.
* Highly relied on technology and the internet thus the areas deprived of these two aspects can face issues with using online information.
* Prone to cyber-attacks and malfunctioning.

**UNIVERSALIZATION**

Refers mainly to a planetary synthesis of cultures, a process of the worldwide spread of culture, ideas, objects and experiences.

**How media convergence has led to universalization of popular culture:**

* By providing open access to cultures around the world.
* Increased cross-cultural consumption through digital media.
* Promotion of pop culture on the Internet.
* Diversity and inclusion in media (be it through the content we consume or content creators).
* The internet is an hybridization of cultures and identities as we consume content from around the world and learn about diverse cultures.

**TECHNOLOGICAL CONVERGENCE**

This occurs when the functions of different technologies are merged and interoperate as a single unit. A converged unit can typically process multiple types of media that correspond to each technology that merged. Technological convergence includes devices and systems that interface with end users.

**Emerging Technological Convergence**

* Video on demand: Think streaming services.
* Mobile-to-mobile: This has no need for fixed location capabilities.
* Location-based services: Being able to determine where the nearest ATM is located.
* Fixed-mobile convergence: Services that are irrespective of their location.
* Integrated products and bundles: These “super solutions” keep your services for multiple solutions with just one provider.
* IP Multimedia Subsystem: This integrated telecommunications network enables the use of Internet Protocols to communicate.
* Session Initiation Protocol (SIP): This is a call setup protocol that can be operated over the Internet.
* Internet Protocol Television (IPTV): The delivery of television over the Internet.
* Voice over IP (VoIP): Phone service over the Internet, made possible by SIP.
* Voice call continuity (VCC): This service determine how a voice call is delivered, enabling it to be delivered over both IP and CS networks.
* Digital video broadcasting: The standards developed for transmitting digital television.

**Selected Issues Associated with Technological Convergence**

* Regulatory Issues
* Regulating Converging Technologies
* Regulating Evolving Companies
* Digital Privacy Issues

**The Companies that Pioneered and Lead Converging Technology**

**Apple**

* The iPhone was a phone, a music player, and provided access to the Internet through a Safari web browser. After six months on the market Apple introduced the ability to add third-party applications to their iPhones, thus extending their capabilities well past those even originally intended. This completely changed the industry, as all of the other companies offering smartphones prior to the iPhone release updated their product lines to support the touch screen. Further, the iPhone was and still is connected to the Apple Store, allowing the user to add new features in the form of apps and additional data content. Smartphones became miniature computers, which is truly how smartphones are defined today. To date, there have been 10 generations of the iPhone, and other convergent products and services include the iPad, the Apple watch, and iTunes.

**Adobe**

* In the artistic arena, Adobe has developed many programs that converge technology and media. Their most well-known products are Photoshop and Acrobat. They also have their Adobe Creative Suite of products that focus on graphics for everything from print media to movies that take advantage of the digital convergence of data. Adobe is a developmental leader in what some experts consider the inevitable convergence of advertising, sales, and marketing technology.

**Amazon Prime**

* This is another example of a company being enabled by media convergence. Amazon Prime started as a subscription service for “free” 2-day shipping on all of their goods. Amazon Prime Video started streaming content in 2011, including movies and television episodes. The company also started offering e-books, photo storage, and streaming music, and got into original programming. Lastly, Amazon introduced its own line of household products and are more recently experimenting with food delivery options and smart convenience stores. Amazon’s virtual assistant in AI is called Alexa.

**Google**

* Google is considered the commercial leader of Internet search, maps, web browsing, curating information, open-source software, advertising, and the mobile platform. Although their core business is the search engine, Google developed the Android OS that competes with Apple’s iOS, and converges with telecommunications in their Google TV. Further, Google has tried its hand at every other major offering that Microsoft, Amazon, and Apple have. Lastly, Google is involved in AI with their virtual assistant, Google Now, and converges with the automotive industry through its work with self-driving cars.

**IBM**

* One of the largest information technology companies in the world, IBM (International Business Machines) offers hardware, software, and services. IBM is an example of network convergence, combining voice, video networks, and data networks. They also introduced what they call cognitive computing in 2011. Stephen Gold, who was the CMO, VP of Business Development, and expert on artificial intelligence, said that, “Cognitive computing marks the arrival of a new era in computing.” In 2014, IBM introduced the Watson IoT platform, touting the converged technology as IoT that “thinks.”

**Microsoft**

* Best known for its Office and Windows product lines, Microsoft has had its collective hand in almost all of the convergent technologies discussed here, including software and hardware. They have smartphones, game consoles, tablets, search engines, and their virtual assistant, Cortana. The company also makes apps for what once their fiercest competitor Apple, and perform research for speech recognition and AI.

**Netflix**

* A leader in delivering digital content, constantly working on new delivery methods across platforms, Netflix is an excellent example of using media convergence. Founded in 1997, as a mail-order movie rental company. The movies could be rented on the Internet and delivered on the new DVD format. Within two years, they moved to a monthly subscription model. In 2007, the company moved to providing a streaming experience, and in 2012 they invested in creating original programming. Netflix is credited with bankrupting the Blockbuster movie rental company, and in the decline of DVD’s and cable television.

**The Benefits and Challenges of Convergent Technology**

**Benefits**

* Time-saving and cost-saving devices.
* Improving human performance.
* Allows and encourages new ways to communicate.
* In media, the audience can become more active than passive.
* Encourages new product acceptance, as some of the functions are already well-known.
* Less siloed information with digital data.
* A single piece of technology simply does more.
* One set of infrastructure is cheaper to operate.
* Different price points can be addressed with essentially the same technology.
* Watching media on a wide range of devices.
* In certain fields like film production, what was once all professional-level equipment is now in the hands of everyone.

**Drawbacks**

* Some converged devices are less reliable than the devices that perform a single task; they have lower quality.
* With each added capability, the original device function is decreased.
* Potential data security issues arise.
* Possible waste of investments in separate technologies that was already made.
* Increased expense in the combination of services and products and the need for a faster network.
* Unknown regulatory issues.
* Antitrust issues.

**NETWORK CONVERGENCE**

Refers to the provision of telephone, video and data communication services within a single network. In other words, one company provides services for all forms of communication. Network convergence is primarily driven by development of technology and demand.

**MEDIA CONVERGENCE AND INTERACTIVITY**

**(I)**

* On the technological side, Quality of Service algorithms allow for the delivery of content at varying data rate and resolution, optimizing and automating the content delivery process. Torrent-based streaming solutions allow networks to provide fast live and on-demand content streaming without overloading the networks.
* It is the evolution of the Internet has reached a point where it features advanced interactivity capabilities and the tools that can support fully interactive information exchange and reproduction. As such, it provides a solid developmental platform for convergence.

**(II)**

* Convergence and multimedia content can be judged at different levels of implementation, and also in terms of journalistic practices, that refer more to solutions that attract audiences, and ensure a greater interactivity for the multimedia content.
* Developments of media products in terms of convergence are endless. Aspects of the relationship between convergence and multimedia content accessed by users on crossplatform media products.

**(III)**

* Due to mobile technologies, and various partnerships between media and IT industries, convergence is directed from the users to the media industry, and conversely. Thus, in many cases, the multimedia stories created by the users are moderated by journalists and the media product combines users’ content in a professional format.
* As a final consideration that can generate further discussions and research, it can be said that convergence requires new considerations for the visual aspect and layout of information, structure, and writing for many channels and platforms, even if the usability principles are considered for each channel and platform separately.