



The Impact of New Media on Interpersonal Communication: The Role of Social Media Platform and Visual Content in University Students' Engagement.

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Abstract. This study explores the influence of new media, particularly social media, on interpersonal communication among university students. The rapid growth of digital platforms has redefined how individuals form connection, exchange information, and construct meaning. By drawing upon Complexity Theory which explains how interconnected elements in a system interact in dynamic, non-linear ways leading to unpredictable and emergent outcomes, this research uses the theory to understand how small changes in user behavior can create large scale effects in digital communication, and relevant empirical studies, this research explores how interactivity and media addiction affect communication patterns, user behavior, and psychological well-being. A quantitative survey was conducted with 383 students from Universiti Poly-Tech Malaysia (UPTM). The findings suggest significant correlations between new media interactivity and increased social engagement, as well as between media addiction and deteriorating mental health. It is recommended that media literacy and ethical design be implemented as interventions for fostering healthy digital interactions.

Keywords: New media, social media, interpersonal communication, Complexity Theory, higher education.

1 Introduction

Digital media has become a defining element of contemporary communication, fundamentally transforming not only interpersonal interaction but also broader social practices and structures. Among the various forms of digital communication, social media platforms have emerged as particularly central to everyday life, especially among youth. These platforms offer immediacy, accessibility, and a sense of continuous social presence, thereby reshaping the norms, expectations, and dynamics of interpersonal communication. University students, in particular, have integrated social media into their academic, personal, and social routines, often relying on these platforms as primary channels for connection, interaction, and self-expression. From a theoretical perspective, this transformation can be understood through Social Learning Theory, which posits that individuals acquire behaviors, norms, and communication patterns through

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observation, imitation, and repeated exposure within social environments, including digitally mediated spaces.

New media differs from traditional communication forms due to its defining characteristics, namely interactivity, convergence, and user-generated content. Unlike conventional one-way channels such as television or newspapers, new media enables dynamic and participatory communication through a two-way flow of information. Users are no longer passive consumers but active contributors to digital discourse, empowered to create, modify, and disseminate content (Jenkins, 2006; Manovich, 2001). Within higher education contexts, this shift has significantly influenced how students collaborate, communicate, and form social networks. It has facilitated innovative learning practices and expanded opportunities for interpersonal interaction, identity negotiation, and social engagement. Drawing on Uses and Gratifications Theory, students' engagement with interactive media can be understood as a purposive behavior aimed at fulfilling social, emotional, and informational needs, which in turn shapes their communication styles and relational expectations.

However, the pervasive presence of social media has also generated growing concerns regarding its psychological and social implications. Prolonged and intensive media engagement has been linked to difficulties in balancing online and offline interactions. Many students report challenges in maintaining face-to-face communication skills, alongside an increasing dependence on digital validation, often measured through likes, comments, or shares. Consistent with Social Learning Theory, repeated reinforcement of such online behaviors may normalize digitally mediated interaction while simultaneously diminishing offline communicative competence. These patterns may contribute to mental health issues, including anxiety, low self-esteem, and depression. Furthermore, the algorithmic design of social media platforms tends to reinforce user preferences, creating echo chambers that limit exposure to diverse viewpoints and constrain critical thinking (Pariser, 2011; Singh, 2023). Such dynamics risk narrowing students' intellectual horizons and impeding the development of open-minded, reflective communication practices.

As a result, mental health professionals and educators have increasingly raised concerns about the social and emotional costs of excessive social media use. Despite the extensive integration of digital platforms into students' daily lives, empirical research that critically examines the impact of new media on interpersonal communication remains limited, particularly within the Malaysian higher education context. More importantly, existing studies often address media effects in a largely descriptive manner, without clearly anchoring empirical investigations to established communication or behavioral theories. Addressing this gap, the current study focuses on students at Universiti Poly-Tech Malaysia (UPTM) to examine how social media usage patterns influence the quality and effectiveness of their interpersonal interactions.

The ubiquity of social media among university students has also contributed to a notable overreliance on digital communication tools. While these platforms support academic collaboration and social connectivity, they may simultaneously encourage shallow communication and compulsive media habits. The relentless pursuit of digital approval can erode authentic self-confidence and replace meaningful interpersonal interactions with carefully curated online personas. From a theoretical gap perspective, there

remains limited understanding of how media addiction—conceptualized as a learned and reinforced behavior—directly affects communication effectiveness in offline interpersonal contexts. Additionally, algorithm-driven content curation can isolate users within ideological or interest-based silos, potentially undermining their capacity to engage with diverse perspectives and participate in critical dialogue (Pariser, 2011; Singh, 2023).

Given these complex and often contradictory dynamics, this study seeks to explore the dual role of new media as both a facilitator of engagement and a potential disruptor of healthy interpersonal relationships. Grounded in Social Learning Theory and Uses and Gratifications Theory, the study aims to translate key theoretical propositions into empirically testable inquiries. Specifically, the research aims to (1) examine the relationship between new media addiction and its impact on interpersonal communication among UPTM students, reflecting Social Learning Theory's emphasis on behavioral reinforcement and learned communication patterns; (2) analyze how interactivity within new media platforms influences communication behavior, information sharing, and social relationship formation among higher education students, as informed by Uses and Gratifications Theory; and (3) propose evidence-based recommendations to promote digital literacy and support healthier media usage among university students.

This investigation is guided by three central research questions: What is the relationship between new media addiction and communication effectiveness, particularly in offline interactions among UPTM students? Derived from Social Learning Theory, this question examines whether digitally reinforced behaviors translate into diminished face-to-face communication competence. How does new media interactivity affect the depth, frequency, and quality of interpersonal engagement among students in higher education? Informed by Uses and Gratifications Theory, this question focuses on how interactive affordances shape relational outcomes. Finally, what strategies can be implemented to enhance students' digital media practices and mitigate the adverse effects associated with excessive usage? This question addresses the applied gap between theoretical insight and institutional intervention.

2 Literature Review

2.1 New Media and Communication

The evolution from traditional to digital communication has fundamentally transformed how individuals create, share, and interpret messages. Unlike traditional media, which relied primarily on one-way, top-down information dissemination, new media platforms promote decentralized and interactive communication processes. Social networking sites such as Facebook, Instagram, X (formerly Twitter), and TikTok have created dynamic digital spaces in which users can share thoughts, emotions, and experiences instantaneously. These platforms support both asynchronous communication—where interaction occurs at different times—and synchronous communication, including live video streaming and real-time chat, thereby enhancing immediacy and emotional connectivity (Boyd & Ellison, 2007). This shift is theoretically grounded in Social Presence Theory, which explains how digital media differ in their capacity to convey social cues,

emotional warmth, and a sense of “being with others,” ultimately shaping communication quality and relational outcomes in online environments.

This transformation has created expanded opportunities for self-expression and identity construction, particularly among youth and university students. As Kaul (2012) notes, the rise of participatory culture has empowered individuals not only to consume content but also to actively shape public discourse, enabling students to express opinions, mobilize around shared causes, and form communities beyond geographical boundaries. The accessibility and global reach of social media platforms further allow students to present strategically curated versions of themselves, facilitating the ongoing negotiation of personal and academic identities in digital contexts (Papacharissi, 2010).

However, these evolving communication practices also introduce significant risks. Constant connectivity can blur the boundaries between private and public spheres, resulting in challenges such as oversharing, cyberbullying, and reduced digital privacy. Moreover, the pressure to maintain an appealing online persona or to gain social approval through likes and comments can heighten stress and negatively affect emotional well-being. From the perspective of Communication Accommodation Theory, excessive adaptation to perceived online norms may lead individuals to prioritize socially rewarded digital behaviors over authentic interpersonal expression, thereby weakening essential offline communication skills, including active listening, empathy, and sensitivity to non-verbal cues.

2.2 Media Addiction

Media addiction, often referred to as problematic media use, is increasingly recognized as a behavioral disorder that resembles the psychological patterns associated with substance addiction. It is characterized by excessive and compulsive engagement with digital media platforms, frequently at the expense of academic performance, physical health, and social relationships (Andreassen et al., 2012). This phenomenon is particularly prevalent among university students, who represent one of the most active user groups of smartphones and social networking applications. In this study, media addiction is conceptually grounded in Social Learning Theory, which posits that repeated exposure, reinforcement, and observational learning within digital environments can normalize and sustain compulsive media behaviors.

Empirical evidence supports these theoretical assumptions. Kwon et al. (2013) found that individuals with high dependency on smartphones or social media often experience withdrawal symptoms, including anxiety, irritability, and restlessness, when separated from their devices. Similarly, Nazir et al. (2020) reported strong associations between media addiction and negative academic outcomes, disrupted sleep patterns, and strained interpersonal relationships among students. Continuous exposure to idealized portrayals of others' lives on social media also encourages unfavorable social comparisons, which may contribute to low self-esteem, anxiety, and depressive symptoms. These effects are consistent with reinforcement mechanisms described in behavioral learning theories, whereby digital rewards—such as likes, comments, and shares—function as stimuli that perpetuate repetitive usage patterns.

Furthermore, the competitive and performance-oriented nature of social media—where visibility and success are often quantified through likes, shares, and follower counts—can foster a distorted sense of self-worth and an overreliance on digital validation. From the perspective of Uses and Gratifications Theory, such dependency reflects a shift away from intentional, goal-directed media use toward habitual and emotionally driven consumption. This shift underscores the importance of promoting media self-regulation strategies and digital literacy initiatives within higher education to help students develop healthier and more balanced relationships with digital media.

2.3 Media Interactivity

A defining feature of new media is its high degree of interactivity—the ability of users to influence the form, content, and flow of communication. Unlike traditional broadcast media, digital platforms enable users to comment, like, react, tag others, and co-create content, thereby fostering a highly participatory communication environment (Sundar, 2004). This interactivity enhances user engagement, provides a sense of agency, and supports more dynamic forms of social connection. The conceptual role of interactivity is theoretically grounded in Uses and Gratifications Theory, which explains how users actively engage with media to satisfy social, cognitive, and relational needs.

Within academic settings, media interactivity can promote peer-to-peer learning, strengthen virtual communities, and encourage collaborative knowledge-sharing. Grabowicz et al. (2011) emphasize that interactive networks often facilitate information diffusion through weak ties—casual connections that bridge otherwise disconnected social groups. These weak ties are particularly effective in exposing students to new ideas and diverse perspectives, thereby contributing to intellectual growth and critical thinking. From a Social Network Theory perspective, such weak-tie interactions enhance informational diversity and broaden communicative reach within digital learning environments.

However, the same interactive features that enhance engagement can also function as sources of distraction. Constant notifications, real-time updates, and opportunities for endless scrolling may interrupt cognitive focus and reduce productivity. When not properly managed, interactive media use can lead to time mismanagement, superficial multitasking, and digital fatigue (Rosen et al., 2013). This tension highlights the paradoxical nature of media interactivity, whereby heightened engagement may simultaneously enhance and impair communication effectiveness. Accordingly, a balanced approach to interactivity is essential to ensure that students benefit from digital collaboration while maintaining control over their attention and time.

2.4 Theoretical Framework: Complexity Theory and Intercultural New Media Studies

Understanding the complexities of digital communication requires a framework capable of accounting for dynamic, non-linear, and adaptive processes. Complexity Theory offers a valuable lens for examining the multifaceted interactions that characterize digital ecosystems. Originally rooted in the natural sciences, Complexity Theory posits

that systems composed of numerous interconnected components—such as social media platforms and their users—often exhibit behaviors that are unpredictable and emergent (Lansing, 2003). In communication research, this perspective is particularly useful for conceptualizing how individual media practices aggregate into broader social patterns that shape interpersonal norms and behaviors.

The interactions among platform algorithms, user behavior, and content creation form continuous feedback loops in which each element influences the others. For example, a single post may generate a cascade of user engagement, prompting algorithmic amplification regardless of the content's accuracy or intent. These emergent effects illustrate how digital environments function as complex adaptive systems (Mason, 2008), in which outcomes cannot be fully controlled or predicted by any single actor. Such unpredictability is especially relevant in academic contexts, where students' engagement with digital media varies according to individual habits, social contexts, and levels of digital literacy.

Complementing this systems-oriented perspective is the approach offered by Intercultural New Media Studies, which situates digital media use within broader cultural, societal, and contextual frameworks. As Valkenburg, Peter, and Walther (2016) argue, media behaviors are shaped not only by technological affordances but also by deeply embedded cultural norms, values, and expectations. This view aligns with intercultural communication theory, which emphasizes that meaning-making and communication competence are culturally situated rather than universally uniform.

This cultural dimension is particularly salient in the Malaysian context, where multiculturalism is a defining national characteristic. Malaysia's diverse ethnic, religious, and linguistic composition creates a complex media environment in which different groups may interpret and engage with digital content in varied ways. Norms related to modesty, public expression, and authority, for instance, may influence how students from different cultural backgrounds navigate social media platforms. Furthermore, multilingual digital communication—common within Malaysian social media spaces—adds another layer of complexity, shaping how messages are understood, shared, or misinterpreted across cultural lines (Yusof & Halim, 2021).

By integrating Complexity Theory with Intercultural New Media Studies, researchers can more effectively capture the nuanced realities of digital media use among university students. Complexity Theory explains the unpredictable and emergent nature of online behavior, while intercultural approaches illuminate the culturally contingent ways individuals experience and respond to media. Together, these frameworks provide a holistic foundation for understanding how digital platforms influence communication behavior, identity negotiation, and social interaction within multicultural higher education settings.

2.5 Research Framework

This study employed a quantitative research framework to examine the impact of new media on interpersonal communication among university students. A survey methodology was used to systematically investigate the relationships among three key varia-

bles: media addiction, media interactivity, and communication effectiveness. Each construct is theoretically grounded, with media addiction informed by Social Learning Theory, media interactivity by Uses and Gratifications Theory, and communication effectiveness by Social Presence Theory and interpersonal communication theories.

The proposed research model is anchored in Complexity Theory and supported by principles from Intercultural New Media Studies. It posits that media addiction and media interactivity exert direct influences on students' interpersonal communication effectiveness. By integrating these theoretical perspectives, the framework captures both micro-level behavioral processes and macro-level cultural and systemic influences that shape communication outcomes in digital environments.

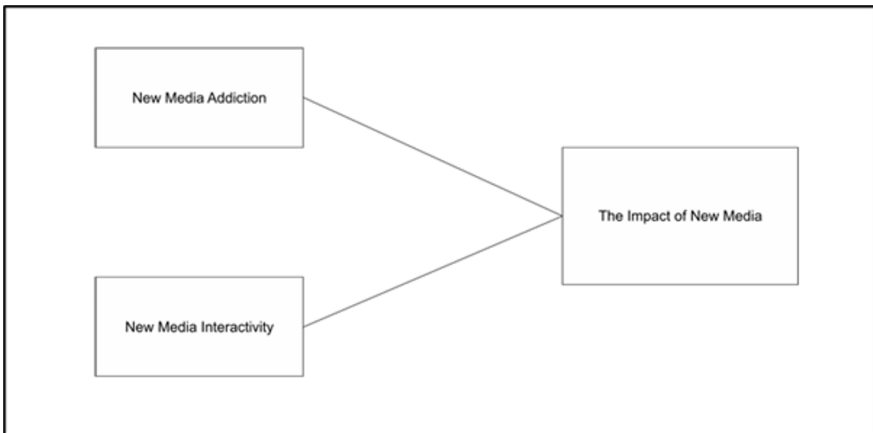


Fig. 1. Research Framework.

This quantitative approach enabled the collection of reliable, large-scale data to identify patterns and empirically test the proposed hypotheses. The conceptual framework guiding the study, illustrated in Figure 1, was developed through an extensive review of literature in digital communication, media psychology, and youth behavior. The framework was subsequently validated through quantitative analysis to examine how these variables interact within the context of student life and contemporary digital engagement.

3 Methodology

This study adopted a quantitative research approach to systematically investigate patterns of media usage and interpersonal communication among university students. A structured survey design was selected for its ability to efficiently collect standardized data from a large respondent base, thereby supporting statistical analysis. This approach is particularly suitable for testing specific hypotheses and enhancing the generalizability of findings to the broader student population.

The research was conducted among students at Universiti Poly-Tech Malaysia (UPTM), chosen due to their high level of digital engagement and relevance to the study's objectives. Participants were recruited from a range of faculties and academic programs to ensure diversity in media usage behaviors and communication styles. Using Israel's (1992) sampling formula, a sample size of 383 respondents was determined to achieve an appropriate level of statistical confidence and representativeness. A convenience sampling strategy was employed, whereby participants were recruited based on accessibility and willingness to participate. This method was considered appropriate given the exploratory nature of the study, practical time constraints, and the need to reach a broad cross-section of students across multiple faculties. To minimize potential sampling bias, efforts were made to include respondents from different academic levels, disciplines, and demographic backgrounds.

The inclusion criteria required participants to be currently enrolled as full-time UPTM students and active users of at least one social media platform. Students who were not enrolled during the data collection period or who reported minimal or no engagement with digital media were excluded. These criteria ensured that all respondents possessed sufficient exposure to new media to provide meaningful and relevant insights into media usage and interpersonal communication patterns.

Data were collected using a self-administered questionnaire, which served as the primary research instrument. The questionnaire comprised four main sections: (1) demographic information, (2) new media usage patterns, (3) indicators of media addiction, and (4) perceptions of media interactivity. Measurement items were adapted from well-established and validated instruments, including the Smartphone Addiction Scale developed by Kwon et al. (2013) and the interactivity frameworks proposed by Liu et al. (2021). All items were measured using a 5-point Likert scale, ranging from strongly disagree (1) to strongly agree (5), to capture respondents' levels of agreement in a consistent and quantifiable manner.

Prior to data collection, ethical considerations were carefully addressed to safeguard participants' rights and well-being. Informed consent was obtained from all respondents after they were provided with a clear explanation of the study's purpose, procedures, and voluntary nature. Participants were informed of their right to withdraw from the study at any time without penalty. Anonymity and confidentiality were strictly maintained by excluding personally identifiable information, and all responses were used solely for academic research purposes. The study adhered to institutional ethical guidelines, and formal permission to conduct the research was obtained from the relevant academic authorities at Universiti Poly-Tech Malaysia.

The survey was distributed through both online platforms and physical distribution on campus to maximize reach and participation. This dual-mode approach helped increase response rates and ensured the inclusion of students with varying levels of digital accessibility. Upon completion, responses were compiled and analyzed using SPSS (Statistical Package for the Social Sciences). The data underwent systematic entry, screening, and cleaning procedures to ensure accuracy and reliability. Cronbach's alpha was employed to assess the internal consistency of the measurement scales. For data analysis, descriptive statistics were used to summarize patterns of media use and be-

havioral tendencies, while inferential statistics—specifically Pearson’s correlation coefficient—were applied to examine relationships among variables such as media addiction, media interactivity, and interpersonal communication quality.

Overall, this methodological design provides a robust and systematic foundation for examining the interplay between digital media use and communication behavior, offering findings that are both statistically rigorous and contextually relevant to the Malaysian higher education environment.

4 Finding

The internal consistency of the research instruments was assessed using Cronbach’s Alpha, a widely accepted measure of scale reliability, and the results demonstrated excellent reliability across all constructs. As shown in Table 1, all alpha values exceeded the commonly accepted threshold of .70, thereby confirming the suitability of the instruments for measuring the intended variables. Specifically, New Media Addiction recorded an alpha value of .974, New Media Interactivity .964, and New Media Impact .975. These exceptionally high reliability coefficients indicate strong internal consistency, suggesting that the measurement scales are robust, stable, and appropriate for examining students’ new media behaviors and perceptions.

Table 1. Cronbach’s Alpha value.

Variables	Items	α
New media addiction	41	.974
New media interactivity	22	.964
New media impact	11	.975

A total of 383 respondents participated in the study. The demographic profile reveals a relatively balanced gender distribution, with 179 males (48.1%) and 204 females (51.9%), as presented in Table 2. This balanced composition enhances the representativeness of the sample and strengthens the generalizability of the findings within the university context.

Table 2. Frequency of respondent by gender

Gender	n	%
Male	179	48.1
Female	204	51.9

To examine the relationships among the study variables, Pearson’s correlation analysis was conducted to test the proposed hypotheses:

H1: There is a significant relationship between new media addiction and the impact of new media.

H2: There is a significant relationship between new media interactivity and the impact of new media.

The correlation analysis indicated that both hypotheses were supported. New media addiction exhibited a strong positive correlation with the perceived impact of new media ($r = .662, p < .01$), while new media interactivity also demonstrated a similarly strong positive correlation ($r = .650, p < .01$). These results indicate that higher levels of media addiction and interactivity are associated with stronger perceptions of new media's influence on students' communication behaviors.

Beyond statistical significance, the strength of these correlations highlights important practical implications. The strong association between new media addiction and perceived media impact suggests that excessive reliance on digital platforms may meaningfully shape students' communication effectiveness, behavioral patterns, and everyday interactions. For universities and educators, this finding underscores the importance of implementing digital well-being initiatives, media literacy programs, and targeted awareness campaigns aimed at promoting balanced and mindful media use.

Similarly, the positive relationship between media interactivity and media impact indicates that while interactive features can enhance engagement and participation, they may also intensify the overall influence of new media. This underscores the need to guide students toward purposeful, reflective, and self-regulated digital interaction, rather than passive or compulsive engagement.

Table 3. Relationship between variables

Hypotheses	r	N	p
H1	.662	383	.001
H2	.650	383	.001

Overall, these findings demonstrate that new media addiction and interactivity are not merely statistically associated with communication outcomes but carry meaningful real-world consequences for students' interpersonal communication practices and academic environments. This reinforces the necessity for institutional strategies that balance the benefits of digital engagement with safeguards against its potential negative effects.

5 Discussion and Conclusion

The present study examined the relationship between new media addiction, new media interactivity, and the perceived impact of new media on communication. The findings provide strong evidence that both addiction and interactivity significantly influence how users perceive the effects of digital media on their communication behavior.

The results revealed that new media addiction is strongly correlated with the perceived impact of new media ($r = .662, p < .01$). This suggests that individuals who frequently engage with social media and digital platforms to the point of compulsive use are more likely to report changes in their interpersonal communication. These may include decreased face-to-face engagement, emotional reliance on online validation (e.g., likes, comments), and increased cognitive fatigue. This aligns with existing literature indicating that media addiction may negatively affect well-being, concentration, and social interaction (Kuss & Griffiths, 2015).

Similarly, new media interactivity—which refers to the degree of user participation in online environments through actions such as commenting, sharing, and live engagement—also showed a significant positive correlation with the perceived communication impact ($r = .650, p < .01$). This finding reinforces the idea that higher interactivity enhances user involvement and shapes how individuals communicate, reinforcing Sundar's (2004) theory that interactive media influences both the form and content of communication. In highly interactive settings, users may feel a greater sense of agency and immersion, but they may also experience overstimulation and information overload, which can affect communication depth and authenticity.

Overall, the study confirms that greater engagement with new media—whether through addictive patterns or interactive features—plays a substantial role in shaping communication habits. For UPTM students, who often balance academic responsibilities with high levels of online activity, this dynamic reflects the interplay between technological affordances and cultural context, such as Malaysia's collectivist social norms and multilingual environment. From a Complexity Theory perspective, these findings illustrate how individual behaviors (e.g., frequent checking, interactive posting) can create feedback loops that amplify both positive and negative communication outcomes, demonstrating the emergent and adaptive nature of digital communication systems.

In conclusion, this study contributes to the growing body of research on digital communication by confirming that new media addiction and interactivity are key predictors of perceived changes in communication behavior. The results underscore the importance of cultivating digital awareness and self-regulation among users, particularly in academic and professional settings where effective communication is critical. Educators, communication specialists, and policymakers should consider integrating digital literacy programs that address both the opportunities and risks associated with digital media use.

To strengthen future research and enhance practical applications, several key recommendations are proposed. First, future studies should broaden the respondent demographic by including more diverse populations such as working professionals, high school students, or individuals from rural communities to enhance the generalizability of the findings.

In addition, while this study utilized a quantitative approach, incorporating qualitative methods—such as interviews or focus groups—could provide richer insights into users' emotional experiences, motivations, and coping strategies related to digital media use. Longitudinal studies are also recommended to observe behavioral changes over time and assess the sustained impact of new media on communication habits and overall

well-being. Moreover, future research could evaluate the effectiveness of interventions such as media literacy training or digital detox initiatives in reducing problematic media use and fostering healthier communication practices. Lastly, given the distinct characteristics of various platforms like TikTok, Instagram, and WhatsApp, future investigations should explore platform-specific impacts to develop more targeted and effective communication strategies. By addressing these areas, researchers can contribute to a more nuanced understanding of digital media and support the development of practical solutions for healthier media engagement in the digital age

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