

DISRUPTIVE TECHNOLOGY AND IMPACT ON PUBLIC LAW – A PERSPECTIVE FROM CRIMINAL LAW, CONSTITUTIONAL LAW, AND INTERNATIONAL LAW

Abstract

Disruptive technology, characterized by innovations that redefine industries and societal norms, poses significant challenges and opportunities across various domains of public law, including criminal law, constitutional law, and international law. This paper examines the profound impacts of technologies such as deep fakes, generative AI, and drones on these legal fields. In criminal law, these technologies complicate the authenticity of evidence and challenge traditional legal frameworks. In constitutional law, they influence democratic processes and election integrity, raising concerns about disinformation and foreign interference. Internationally, the use of drones by state and non-state actors in asymmetric warfare challenges established legal norms regarding sovereignty and the use of force. This study underscores the necessity for adaptive legal frameworks that address these technological advancements while preserving justice, security, and human rights. Through interdisciplinary cooperation and adherence to international legal standards, we can navigate the complexities introduced by disruptive technologies, ensuring resilient and equitable legal systems in the digital age.

Author

Abhijit B

Assistant Professor of Law
(Senior Scale)
School of Law
UPES Dehradun.

I. INTRODUCTION

Disruptive Technology is, in very simple terms, understood as a new technology that completely changes the way things are done.⁹ Oxford Reference defines Disruptive Technology as “A specific technology that can fundamentally change not only established technologies but also the rules and business models of a given market, and often business and society overall.”¹⁰

Coined by Harvard Business School professor Clay Christensen in his seminal work “The Innovator’s Dilemma” published in 1997, the concept of disruptive technology encapsulates innovations that often face initial challenges. They emerge with newness, appeal to niche markets, and lack established practical applications. Consequently, established players may struggle to recognize the potential of these innovations and leverage them effectively in the marketplace. Disruptive technologies frequently usher in paradigm shifts led by ‘outsiders’ who leverage them to disrupt established industries. The internet has been one of the greatest paradigm shifting technologies in all time.¹¹

Over the last decade or so, powered by significant advancements in computer software and hardware in general and the internet in particular, the world has witnessed a lot of technologies that have caused disruption. Blockchain, Cryptocurrency, advanced and hi-powered drones and UAVs and of course Artificial Intelligence and Machine Learning are some examples.

In this paper, I primarily focus on the impact that some of these disruptive technologies have had on various the various realms of Public Law. In the next section I look at the impact that the expansion of the internet and development of technology like deep fakes on has had on Crimes and Criminal Law. Subsequently, I also analyse the impact on Constitutional and Administrative Law. While this portion focuses on the impact of disruptive technologies on the domestic legal setup, I final look at disruptive technology on International Law with a special focus on the problems that defined concepts in humanitarian law face in the light of asymmetric warfare.

II. DISRUPTIVE TECHNOLOGIES AND CRIMES

In 1890, Warren and Brandies in their pathbreaking article – *The Right to Privacy*, stated that technologies “have invaded the sacred precincts of private and domestic life; and numerous mechanical devices threaten to make good the prediction that what is whispered in the closet shall be proclaimed from the house-tops.”¹² They were expressing concerns about the newly introduced concept of photography in that context. Funnily, the same continues to remain true even today, except, the concerns are now much more serious than they were a hundred and thirty years ago.

⁹ ‘Meaning of disruptive technology in English’ (*Cambridge Dictionary*) <https://dictionary.cambridge.org/dictionary/english/disruptive-technology> accessed 15 May 2024

¹⁰ ‘Disruptive Technology’ (*Oxford Reference*) <https://www.oxfordreference.com/display/10.1093/oi/authority.20110810104753313> accessed 15 May 2024

¹¹ Ibid.

¹² Samuel D. Warren & Louis D. Brandeis, ‘The Right to Privacy’ (1890) 4 Harv. Law Rev. 193, 195

The impact of disruptive technology on crimes and criminal law is a topic of growing concern and fascination in today's rapidly evolving digital landscape. With advancements in technologies such as deep fakes, generative AI, and other forms of synthetic media, the traditional boundaries of criminal activity and legal frameworks are being challenged like never before.

Deep fakes, a product of sophisticated machine learning algorithms, allow for the creation of highly convincing fake videos, audio recordings, and images that can be nearly indistinguishable from genuine content. This technology has significant implications for criminal behaviour, enabling malicious actors to fabricate evidence, impersonate individuals, and spread misinformation at an unprecedented scale. In the realm of criminal law, the proliferation of deep fakes poses challenges for evidence authentication, witness credibility, and the integrity of legal proceedings. Courts and law enforcement agencies must grapple with the task of distinguishing between authentic and manipulated media to ensure fair and just outcomes.¹³

Generative AI, another disruptive technology, enables the creation of synthetic data, including text, images, and audio, with remarkable realism. While this technology holds tremendous potential for innovation and creativity, it also presents new opportunities for criminal exploitation. Malicious actors can use generative AI to produce counterfeit documents, forged signatures, and other deceptive materials to commit fraud, identity theft, and other illicit activities. In the context of criminal law, the proliferation of synthetic data raises questions about the reliability of evidence, the authenticity of digital identities, and the adequacy of existing legal safeguards.

Just in the past few months, we have been witnesses to various instances of menace caused by the use of Generative AI and Deep fakes with various Indian actors and celebs being victimised using these Disruptive Technologies.¹⁴

The emergence of these disruptive technologies has prompted policymakers, legal scholars, and law enforcement agencies to reassess existing legal frameworks and develop new strategies to address emerging threats. In response to the challenges posed by deep fakes, some jurisdictions have proposed legislation to criminalize the creation and dissemination of manipulated media with the intent to deceive. Similarly, efforts are underway to enhance forensic techniques and technological tools for detecting and attributing digital forgeries in criminal investigations.

Furthermore, the advent of disruptive technologies has prompted a broader conversation about the intersection of technology, ethics, and law in the digital age. Questions surrounding privacy rights, data security, and algorithmic accountability have come to the forefront as society grapples with the implications of increasingly powerful and pervasive technologies. In the realm of criminal justice, these discussions have profound implications for the

¹³ FP Explainers, 'Rashmika Mandanna deepfake controversy: What are these AI-generated pictures, videos?' *Firstpost* (06 November 2023) <https://www.firstpost.com/explainers/what-is-a-deepfake-fraud-how-can-we-stay-safe-from-it-12882832.html> accessed 15 May 2024

¹⁴ *ibid*; see also Entertainment Desk, 'Alia Bhatt again subjected to deepfake as video morphs her onto Wamiqa Gabbi' *The Indian Express* (07 May 2024) <https://indianexpress.com/article/entertainment/bollywood/alia-bhatt-again-subjected-to-deepfake-as-video-morphs-her-onto-wamiqa-gabbi-9313196/> accessed 15 May 2024

protection of individual rights, the preservation of due process, and the pursuit of justice in an increasingly complex and interconnected world.

On 18 July 2019, Europol published a report entitled “Do Criminals Dream of Electric Sheep? – How technology shapes the future of crime and law enforcement.” The report aims at identifying security threats in relation to new emerging technologies, which can have disruptive effects. The report is also designed to give answers to the challenge of proactive policing and to develop Europol’s foresight analysis capacities.¹⁵

As disruptive technologies continue to evolve and proliferate, the landscape of crimes and criminal law will undoubtedly undergo further transformation. It is essential for policymakers, legal experts, and technologists to collaborate proactively to anticipate and mitigate potential risks while harnessing the benefits of innovation for the advancement of justice and security in society. Only through concerted effort and interdisciplinary cooperation can we navigate the challenges and opportunities presented by disruptive technology in the realm of crimes and criminal law.

III. DISRUPTIVE TECHNOLOGIES AND CONSTITUTIONAL LAW

The advent of disruptive technology has ushered in a new era of challenges and opportunities for constitutional and administrative law, particularly in the context of safeguarding democratic processes and institutions. One of the most pressing concerns in recent years has been the threat of election interference facilitated by advanced digital tools and platforms. As nations grapple with the evolving landscape of digital democracy, legal frameworks must adapt to address the unique challenges posed by disruptive technologies.

The proliferation of social media, online platforms, and digital communication channels has fundamentally altered the dynamics of political discourse and electoral campaigns. While these technologies offer unprecedented opportunities for civic engagement and political participation, they also create vulnerabilities that can be exploited for malicious purposes. Foreign adversaries, non-state actors, and even domestic actors have leveraged disruptive technologies to spread disinformation, sow discord, and undermine the integrity of elections around the world.

For instance, ahead of the 2024 New Hampshire primary election, an AI-generated robocall impersonated President Biden’s voice, falsely advising voters against partaking in the upcoming election. The call deceitfully implied that voters should reserve their ballots for the 2024 general election in November.¹⁶

Further, Microsoft has recently issued an advisory or a warning that China might use AI to interfere with the US, Indian, and South Korean elections.¹⁷ The report alleges that China has

¹⁵ Cornelia Riehle, ‘Europol Report on Disruptive Technologies and Future Crime’ (*eucri*, 09 September 2019) <https://eucri.eu/news/europol-report-disruptive-technologies-and-future-crime/> accessed 15 May 2024

¹⁶ Adav Noti, ‘How Artificial Intelligence Influences Elections, and What We Can Do About It’ (*CLC* 28 February 2024) <https://campaignlegal.org/update/how-artificial-intelligence-influences-elections-and-what-we-can-do-about-it> accessed 15 May 2024

¹⁷ Dan Milmo, ‘China will use AI to disrupt elections in the US, South Korea and India, Microsoft warns’ (*Guardian* 05 April 2024) <https://www.theguardian.com/technology/2024/apr/05/china-using-ai-disrupt-elections> accessed 15 May 2024

already conducted a test run of the same in the election held in Taiwan to malign a candidate who did not have a favourable outlook towards China.¹⁸ It is obvious that malicious entities might utilize AI technologies to fabricate and disseminate highly persuasive misinformation regarding the timing or location of voting, or to dissuade individuals from attending polling stations altogether. The European Commission had also come out with a report highlighting concerns pertaining to disruptive technologies and the influence that they can have on the conduct of free and fair elections.¹⁹

In response to these threats, constitutional and administrative law must evolve to protect the fundamental principles of democracy, including the right to free and fair elections, the integrity of electoral processes, and the sovereignty of democratic institutions. This requires a multifaceted approach that combines legal reforms, regulatory interventions, and technological safeguards to mitigate the risks of election interference in the digital age.

At the legislative level, governments are exploring new mechanisms to enhance transparency, accountability, and integrity in electoral processes. This includes enacting laws to regulate online political advertising, combat foreign influence operations, and safeguard the security of electoral infrastructure. For example, some jurisdictions have implemented disclosure requirements for online political ads, mandating that advertisers disclose information about their funding sources and targeting criteria to promote greater transparency and accountability in digital campaigning.

Administrative agencies and election authorities also play a critical role in safeguarding elections from digital threats. This includes implementing cybersecurity measures to protect against hacking and data breaches, enhancing voter education and awareness efforts to combat disinformation, and collaborating with technology companies to identify and mitigate malicious activity on online platforms. Additionally, election officials are increasingly turning to emerging technologies such as blockchain and cryptographic techniques to enhance the security and verifiability of electoral processes, thereby bolstering public confidence in the integrity of election outcomes.

Moreover, courts and judicial bodies have a vital role to play in adjudicating disputes related to election interference and upholding the rule of law in the digital realm. This includes interpreting constitutional provisions and statutory laws in light of evolving technological trends, adjudicating cases involving allegations of electoral misconduct or digital manipulation, and safeguarding fundamental rights such as freedom of expression and association in the context of online political discourse.

In conclusion, the impact of disruptive technology on constitutional and administrative law, particularly in relation to election interference, underscores the need for proactive legal and regulatory responses to safeguard democracy in the digital age. By embracing innovation while upholding core democratic principles, legal frameworks can adapt to address emerging threats and ensure the resilience and integrity of electoral processes and institutions in an increasingly interconnected world.

¹⁸ Ibid.

¹⁹ Trasy International, 'Study on the impact of new technologies on free and fair elections' https://commission.europa.eu/system/files/2022-12/Annex%20I_LiteratureReview_20210319_clean_dsj_v3.0_a.pdf

IV. PUBLIC INTERNATIONAL LAW AND DISRUPTIVE TECHNOLOGY

The emergence of disruptive technologies has had a profound impact on the landscape of international law, particularly in the realm of asymmetric warfare where non-state actors leverage advanced tools such as drones to challenge traditional notions of sovereignty, security, and conflict resolution. As the global community grapples with the implications of these technologies, international law faces new challenges and opportunities in addressing the complex dynamics of modern warfare and security threats.²⁰

Drones, also known as unmanned aerial vehicles (UAVs), have revolutionized military capabilities by providing a cost-effective and versatile means of conducting reconnaissance, surveillance, and targeted strikes. Unlike conventional weapons systems, drones offer greater precision and flexibility in targeting enemy forces and infrastructure, enabling states and non-state actors alike to project power and influence across borders with minimal risk to their own personnel. However, the proliferation of drones also raises significant legal and ethical questions regarding their use in armed conflict and counterterrorism operations.²¹

At the heart of the debate surrounding drones and international law is the principle of sovereignty, which traditionally asserts that states have exclusive authority over their territory and airspace. The use of armed drones in targeted killings and military operations in foreign countries without their consent has sparked controversy over the legality and legitimacy of such actions under international law.²² Critics argue that drone strikes conducted outside recognized conflict zones violate the sovereignty of targeted states and may constitute extrajudicial killings or violations of the right to life under international human rights law.

In response to these concerns, international legal frameworks governing the use of force, armed conflict, and human rights are being re-examined and adapted to address the challenges posed by drones and other emerging technologies. The United Nations (UN) and other international organizations have convened debates and discussions on the ethical and legal implications of drone warfare, with a focus on promoting transparency, accountability, and compliance with international law.²³

Furthermore, efforts are underway to develop norms, guidelines, and best practices for the responsible use of drones in accordance with international humanitarian law (IHL) and human rights law. This includes establishing mechanisms for legal review and oversight of drone operations, ensuring respect for the principles of distinction, proportionality, and precaution in targeting decisions, and providing remedies for victims of unlawful drone strikes.

²⁰ Tony Pfanner, 'Asymmetrical warfare from the perspective of humanitarian law and humanitarian action', *International Review of the Red Cross*, (March 2005) https://www.icrc.org/en/doc/assets/files/other/irrc_857_pfaner.pdf accessed 17 May 2024

²¹ Jaume Saura, 'Implications of the use of drones in international law', (*International Catalan Institute for Peace*) <https://www.icip.cat/perlapau/en/article/implications-of-the-use-of-drones-in-international-law/> accessed 17 May 2024

²² Ibid.

²³ Ibid.

Moreover, the use of drones by non-state actors, including terrorist organizations and insurgent groups, presents new challenges for international law enforcement and counterterrorism efforts. Non-state actors have exploited drones for a range of purposes, including surveillance, propaganda dissemination, and targeted attacks against military and civilian targets. This raises concerns about the proliferation of drones as asymmetric weapons and the potential for destabilizing regional security dynamics.

In conclusion, the impact of disruptive technology on international law, particularly in the context of drones and asymmetric warfare, underscores the need for a comprehensive and nuanced approach to addressing the legal and ethical challenges posed by these technologies. By promoting dialogue, cooperation, and adherence to international legal norms and standards, the global community can navigate the complex intersection of technology, security, and human rights in the pursuit of peace, stability, and justice in the 21st century.

V. CONCLUSION

In exploring the nexus between disruptive technology and various realms of public law, we have delved into the profound impact these innovations have had on our legal systems and the broader society. From the advent of the internet to the rise of deep fakes and generative AI, disruptive technologies have challenged established norms, raised novel legal questions, and prompted policymakers and legal scholars to rethink traditional approaches to governance and regulation.

In the realm of crimes and criminal law, disruptive technologies such as deep fakes and generative AI have posed significant challenges for evidence authentication, witness credibility, and the integrity of legal proceedings. The emergence of these technologies has necessitated a reevaluation of existing legal frameworks and the development of new strategies to address emerging threats to justice and security.

Similarly, in the domain of constitutional and administrative law, disruptive technologies have forced us to confront fundamental questions about the protection of democratic processes, the sovereignty of democratic institutions, and the integrity of electoral systems. The proliferation of social media and online platforms has reshaped political discourse and electoral campaigns, while also creating new vulnerabilities that can be exploited for malicious purposes such as election interference and disinformation campaigns.

Moreover, in the realm of international law, disruptive technologies such as drones have challenged traditional notions of sovereignty, security, and conflict resolution. The use of drones in asymmetric warfare has raised complex legal and ethical questions about the application of international humanitarian law, human rights law, and the laws of armed conflict in the digital age.

As we navigate the complex intersection of technology, law, and society, it is imperative that we adopt a proactive and interdisciplinary approach to address the challenges and opportunities presented by disruptive technologies. By promoting dialogue, cooperation, and adherence to international legal norms and standards, we can harness the benefits of innovation while mitigating potential risks to democracy, security, and human rights.

In conclusion, the impact of disruptive technology on public law underscores the need for adaptive and forward-thinking legal frameworks that can effectively respond to the rapid pace of technological change. By embracing innovation while upholding core legal principles and values, we can ensure that our legal systems remain resilient, equitable, and just in the face of evolving challenges and opportunities in the digital age.