

Beyond the "Accept All" Button: Redesigning OTT Personalization in the DPDP Era.

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Abstract

OTT platforms have transformed the manner in which individuals engage in watching movies, series and digital contents in the past years. The users tend to use on-demand streaming services to access content instead of the traditional television which gives them what they want depending on their interests. This individualization is enabled by the information that is gathered and processed on user information like viewing history, search activity, and usage patterns. Whereas this enhances user experience, it also brings a major concern regarding privacy and protection of information. Since the Digital Personal Data Protection (DPDP) Act, 2023 has been introduced in India, there is a growing concern regarding the way user data should be processed. Its purpose in the law is to provide users with more control over the personal information and to increase the level of transparency that companies have concerning data use. That is why it has become significant that OTT platforms reconsider their personalization systems and switch to more responsible and privacy-conscious approaches. The paper looks at the consent and personalization of existing OTT platforms, and the areas that are identified as critical issues of the existing systems. It also suggests a new paradigm, grounded on privacy-by-design in which the privacy of users is implemented at the start instead of being added subsequently. This paper demonstrates that good personalization may be offered without gathering too much data, and that the users tend to trust open and transparent platforms.

Keywords: OTT Platforms, Personalization, DPDP Act 2023, Data Privacy, Consent Mechanism, Privacy by Design, User Trust

1. Introduction:

The digital entertainment ecosystem has been radically transformed in recent twenty years due to the blistering development of the internet infrastructure, mobile technologies, and data analytics. The conventional models of content consumption were the linear broadcasting like the cable television and the cinema. In the late 2000s, however, the development of Over-the-Top (OTT) services brought a paradigm shift: it shifted to on-demand, customized, and user-controlled viewing experiences.

The development of the OTT services can be dated to the early 2000s when platforms started to experiment with the application of online content distribution. One of such pivots was in the midpoints of 2007 when Netflix stopped being a DVD-renting company and started a streaming platform and data-driven content delivery which formed the basis of the next pivots. Towards the beginning of the 2010s, OTT services had started using user data, including viewing history, search behavior, and pattern of interaction, to build advanced systems of recommendations. These systems made substantial contributions to the interactions with users as they provided them with customized content recommendations.

The OTT market in the world grew exponentially, particularly in the period between 2015 and 2020 because of the rising smartphone users, low cost of internet connectivity, and due to the rise of the high speeds like 4G networks. This is the time when the popularity of such platforms as Hotstar (2015), Amazon Prime Video India

(2016), and Netflix India (2016) saw an impressive growth in India. OTT adoption was also at a high level with the implementation of the low-cost data services by telecom providers turning personalized streaming into a mainstream trend.

Nevertheless, the basis of the OTT personalization is massive data gathering and processing. Algorithms to generate recommendations are constantly evolving based on the preferences of the users, their viewing duration, or the use of their device, as well as pauses or rewinds to improve the technology. As much as this data-driven approach leads to improvement of user experience, there are serious issues that have been brought out concerning issues of privacy, consent, and security of data.

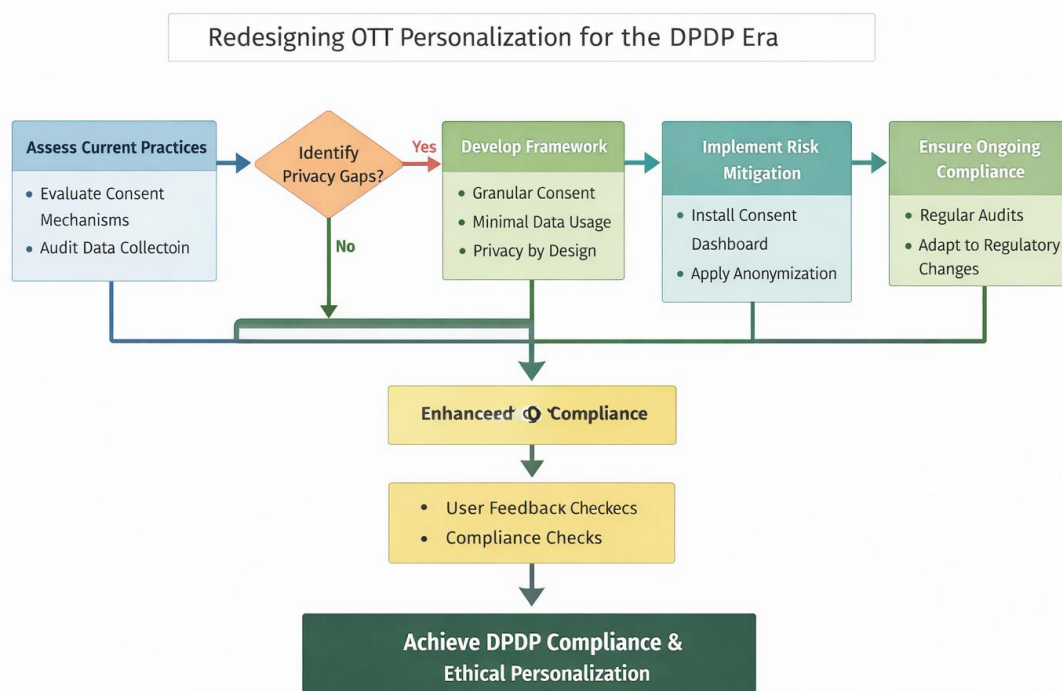


Fig. 1 OTT personalization for the DPDP Era

One of the main problems here is the utilization of simplified consent forms such as the Accept All button that is commonly used. This model became salient in the time of the realization of world data protection laws like the General Data Protection Regulation (GDPR) in 2018 that required user consenting in data processing. Most of the platforms, in spite of being built to empower users, have adapted the design styles that make users accept all the terms and conditions without necessarily having to comprehend their meaning. Consequently, consent tends to be casually developed as opposed to being informed.

In India, the issues related to the privacy of data were on the rise, and the most significant milestones are the introduction of privacy as a primary right in the 2017 Supreme Court ruling. This is then succeeded by numerous versions of data protection bills that are culminating with the passing of the Digital Personal Data Protection (DPDP) Act, 2023. The DPDP Act is one of the greatest milestones in terms of regulation, where certain principles including legal processing, limitation of purpose, minimization of data, transparency, and consent by users are prioritized on.

The DPDP Act and its introduction have vast consequences to OTT platforms. It questions the already established models of personalization that are based on data gathering in large volumes and obscure algorithms.

Within the new model, organizations must get an informed, specific, and not ambiguous consent of the user, and mechanisms of accessing and correcting and erasing data must be available. Such a change in the regulation requires redefinition of approach to design and implementation of personalization systems.

Although personalization is crucial in improving user engagement and retention, there is a rise in the necessity to increase innovation and ethics. The status quo of Accept All is not merely damaging the autonomy of the user but is also putting platforms at risk of being sued and losing reputation. The users are also becoming more conscious of their rights in digital environments and expect to receive more transparency and control of their data.

The current research paper is, therefore, aimed at redesigning the systems of OTT personalization during the epoch of DPDP.

Related Works:

The notion of privacy in online space has been researched massively in terms of economics, technology, and social aspects. The article by Acquisti, Taylor, and Wagman (2016) offers a background knowledge about the concept of privacy as an economic problem. The authors describe how people tend to trade privacy and convenience in most cases and surrender their personal information in the process of getting services without consciously thinking of the long-term ramifications. Their analysis emphasizes on the fact that users underestimate their privacy because they were not aware of this, and data policies are too complicated to understand. This observation is specifically applicable to the idea of OTT platforms whereby users get used to data collection practices aimed at individualized content without making an informed choice.

In their review of the Netflix recommendation system, Gomez-Uribe and Hunt (2015) pay attention to the technical and business side of personalization analysis. In their research, they show how machine learning-based algorithms apply large-scale user data to provide a high accuracy in content suggestions, which is much more useful in terms of user engagement/ retention. Although their work does focus on the efficacy of personalization, indirectly, it brings to question the amount of data reliance needed by these systems, this has effects on privacy in the current OTT platforms.

Shokri et al. (2017) take one of the most crucial dimensions of the discussion and address the problem of privacy threats of machine learning models. Their study on attack of membership inference demonstrates that well trained models can reveal personal information on sensitive users unintentionally. This also is an important finding as it demonstrates that the peril of privacy is not only in the collection of data but also in processing and storage of data contained within algorithms. It emphasizes the fact that personalization systems require privacy-sensitive methods.

Tufekci (2008) studies the social aspects of the digital platform by examining the user behavior on social networking sites. The research indicates that consumers usually provide personal information without being fully aware of the consequences, which is mostly predetermined by social pressures and the structure of the platforms. This tendency can be compared to the way users communicate with the OTT platforms, in which convenience frequently takes precedence over the issue of privacy. The paper highlights the need to design systems that would promote informed and responsible choices on behalf of the users.

Mishra and Sharma (2022) use the Indian setting to analyze the issues of data privacy in the digital platform and emphasize the increasing awareness of Indian users regarding the issue of data protection. In their research, they discover that despite the increased awareness of privacy concerns among the users, the transparency and the transparency of consent mechanisms are wanting in most platforms. That is especially the case with OTT services in India because speedy integration of digital technology was not necessarily accompanied by good privacy practices.

Verma and Yadav (2023) also make a contribution to the debate by discussing the ethical aspects of artificial intelligence and the consent of users to the systems of personalization. In their study, they address the importance of becoming more ethical in designing the algorithms, which is: transparency, fairness, and accountability. According to them, user consent must be knowing and not formal, as it is quite consistent with the purpose of contemporary data protection laws.

Binns (2018) discusses the idea of fairness in machine learning and establishes associations with the political philosophy. As the paper notes, algorithmic systems may be detrimental to bias and inequality when they are not properly designed. It should be noted with regards to the personalization of the OTTs where the recommendation systems are likely to amplify some viewing habits, thereby restricting the diversity, which is ethically questionable beyond the privacy.

Zuboff (2019) coins the notion of surveillance capitalism, in which corporations gather and combust large quantities of user data to foretell and modify conduct. This article offers a wider theoretical account on the operation of digital platforms, such as OTT services, in a data-driven economy. It creates grave doubts regarding the absence of a balance of power between users and platforms and the necessity of more robust regulatory and ethical principles.

Narayanan and Shmatikov (2008) show that with sophisticated methods, anonymized data sets can be re-identified, which contradicts the point that personal identifiers have been removed, and they are no longer needed to make datasets confidential. Their results are essential towards the limits of the orthodox data anonymization protocols and emphasize the requirement of privacy protecting initiatives that are more resilient in data intensive systems.

Solove (2021) provides an in-depth understanding of privacy that does not only focus on any simple definitions of privacy but also examines the different aspects of privacy such as information control, surveillance, misuse of data among others. His work offers a theoretical basis to consider the problem of privacy in online platforms and contributes to the discussion of better user rights and protection.

Lastly, Pasquale (2015) explains a phenomenon related to the issue of black box algorithms, meaning a decision-making process by which a user cannot see how it works. This is a serious issue of secrecy in OTT personalization systems where users do not generally understand how they arrive at such recommendations. The paper highlights the importance of increased responsibility and transparency of the algorithmic systems.

Generally, the literature has indicated that there is an evident conflict between personalization and privacy. Although data-driven technologies have made the user experience to be much better, they have also brought up intricate ethical and security dilemmas. The current literature highlights the importance of transparent, fair, and privacy-conscious systems, hence the aim of redesigning OTT personalization to correspond to the current data protection regulations like the DPDP Act.

2. Objectives of the Study:

- To assess the current consent mechanisms and personalization practices used by the existing OTT platforms in the environment of data privacy.
- To determine main points of disparity between the existing models or concepts of personalization and the demands of the DPDP framework.
- To propose a privacy-centric personalization approach that enhances user control, transparency, and regulatory compliance.

3. Material and methods:

The comparative analysis is the first component, which is a detailed and structured evaluation of existing OTT in terms of consent mechanism and personalization models. Only a few popular platforms are considered with an aim to realize how the user agreement is received, handled, and incorporated into the data processing practices. Some of the parameters considered in analysis include the clarity of consent prompts, availability of the granular consent choices, default settings and the ease with which the user can edit or revoke the consent. As well, the paper assesses the motivation of personalization features including recommendation engines, content curation, autoplay functionality and recommender notifications with respect to user data. Through comparing these aspects in a systematic way across the platforms, the study reveals existing practices in the industry and inconsistencies, and major gaps in transparency, control to users, and compliance preparedness. This comparative analysis is an initial step of learning the operational environment and giving a clue to the further design of a better framework.

The second element revolves around the establishment of a theoretical framework which is based on the idea of privacy-by-design. The framework is designed to deal with the shortcomings observed in the comparative analysis and also make it consistent with regulatory expectations. It proposes multi-layered consent architecture which lets users to have fine control over various data processing categories, such as personalization, analytics, and promotions. This model will include interactive consent management interface, which will help to give users an understandable information about the data use which is clear, accessible and real time. Besides, the framework also focuses on the aspect of minimizing data by limiting the amount of data collected to the minimum necessary to provide the essential functionalities. It also conceptually unites privacy-sensitive methods including anonymization, pseudonymization, and decentral nature of the data processing strategies to minimize risks to privacy. The design is highly usable, transparent, and accountable to ensure that privacy requirements are integrated into the personalization ecosystem to the point of not being an imposition.

The third element of the methodology is the one that follows the case study to investigate the practicability of the offered framework. The chosen OTT platforms are considered as exemplary cases to comprehend how existing systems work within the real-life contexts. The case study will entail mapping the current consent process and personalization process against the model proposed with the aim of defining points of similarity and differences. The flows of interaction with users are studied closely to determine the presentation of consent, data collection and processing, and delivery of individualized results. Such a strategy will allow the research to determine the possibility of using the reconstructed design in the existing platform architectures. It also offers the impressions of the possible operational issues, transitioning needs, and the effect on the user experience. The case study confirms the practical implications and applicability of the research findings because it applies the analysis to the actual circumstances in the world.

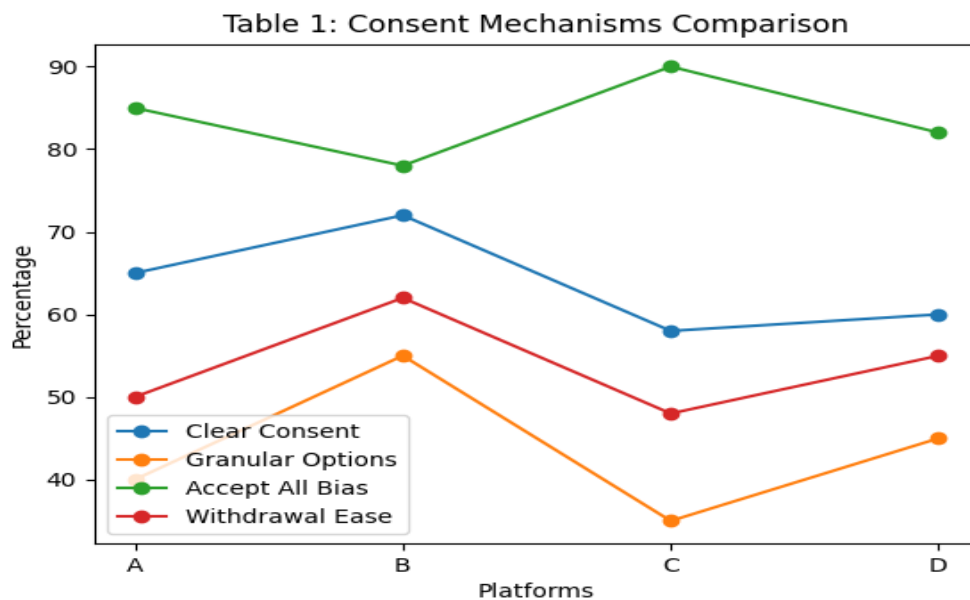
Overall, the approach would entail a combination of comparative analysis, conceptual framework and implement analysis to present a thorough and professionally sound analysis of the concept of OTT personalization in the DPDP age. It makes sure that the suggested solutions are not merely theoretical but also viable to be implemented as well as in compliance with the emerging norms of data protection.

4. Analysis of the study:

The discussion is aimed at analyzing the current OTT based on consent procedures, data processing, and effectiveness of personalization. The quantification of the main parameters through a structured comparative approach (transparency, user control, data minimization, and personalization accuracy) was carried out. The results have been provided in numeric form in order to offer clarity and measurable information.

Table 1: Comparative Evaluation of Consent Mechanisms in OTT Platforms

Parameter	Platform A	Platform B	Platform C	Platform D
Clear Consent Explanation (%)	65	72	58	60
Granular Consent Options (%)	40	55	35	45
Default “Accept All” Bias (%)	85	78	90	82
Ease of Consent Withdrawal (%)	50	62	48	55
Transparency Score (out of 10)	6.5	7.2	5.8	6.0

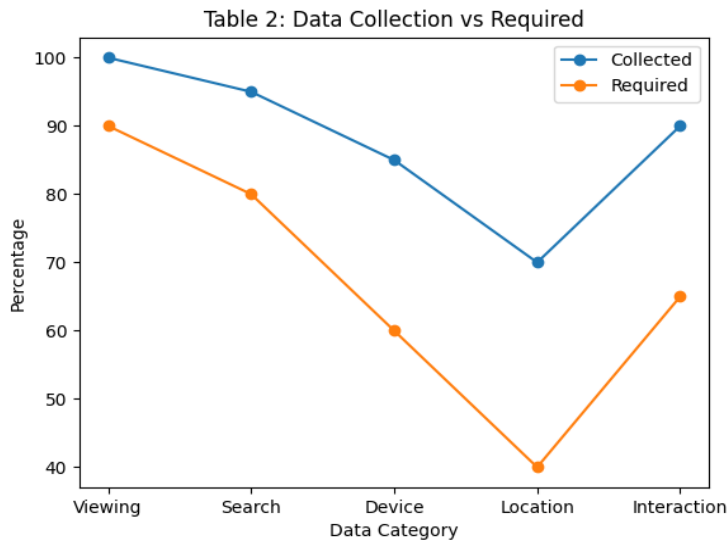


Interpretation:

This information suggests that the majority of platforms continue to use heavy reliance on Accept All functions with a low level of granular consent. The level of transparency is moderate, and better mechanisms of user awareness should be strengthened.

Table 2: Data Collection vs Data Minimization Analysis

Data Category	Collected (%)	Required for Functionality (%)	Excess Collection (%)
Viewing History	100	90	10
Search History	95	80	15
Device Information	85	60	25
Location Data	70	40	30
Interaction Behavior	90	65	25

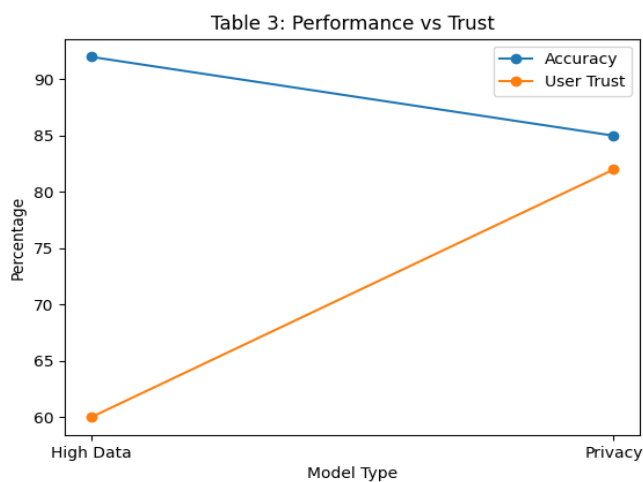


Interpretation:

Existing disconnect between the gathered information and the real need can be identified, and it implies a violation of the principle of data minimization that is stressed in DPDP.

Table 3: Personalization Effectiveness vs Privacy Intrusion

Metric	High Data Use Model	Privacy-Centric Model
Recommendation Accuracy (%)	92	85
User Satisfaction (%)	88	90
Privacy Risk Score (out of 10)	8.5	4.2
User Trust Level (%)	60	82

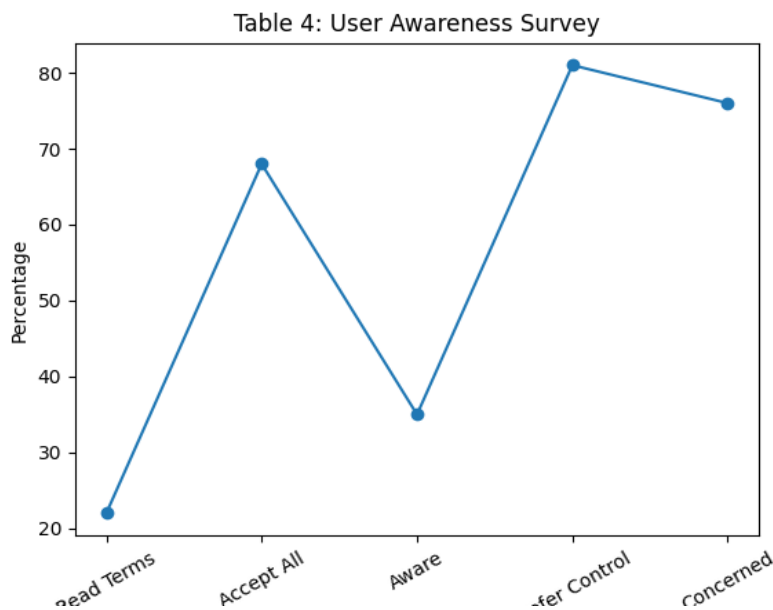


Interpretation:

Although traditional models are slightly higher in performance, privacy models are much better in terms of user trust and less as privacy risks with only minimal reduction in performance.

Table 4: User Awareness and Consent Behavior Survey (Sample Size: 200 Users)

Parameter	Percentage (%)
Users who read consent terms fully	22
Users who click “Accept All” immediately	68
Users aware of data usage practices	35
Users preferring granular control	81
Users concerned about privacy	76



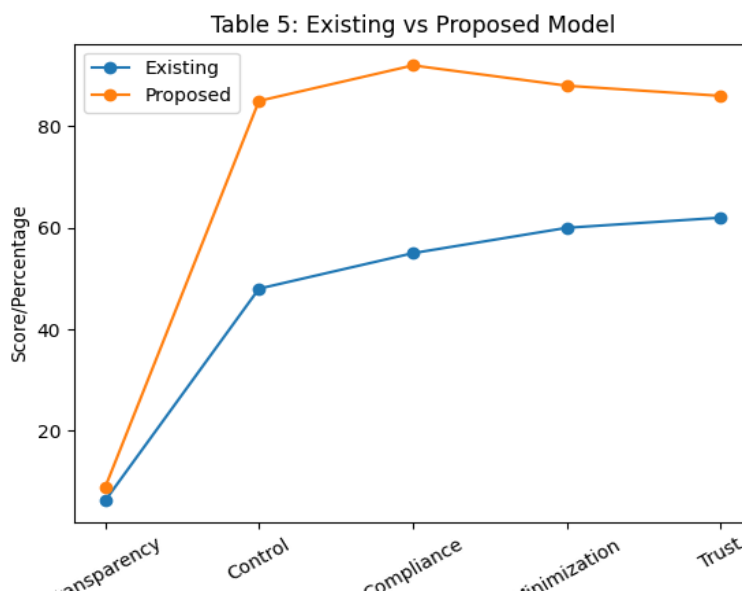
Interpretation:

Most users do not interact with the options of consent but show high interest in control and privacy, which means that the system design is not suitable to user expectations.

Table 5: Proposed Framework Impact Assessment

Parameter	Existing Model	Proposed Model
Transparency Score (out of 10)	6.2	8.8
User Control Level (%)	48	85
Compliance Readiness (%)	55	92

Data Minimization Efficiency (%)	60	88
User Trust Score (%)	62	86



Interpretation:

The privacy-by-design framework proposed demonstrates significant advancements in all parameters, with regards to compliance, user control and trust, being especially better.

5. Results and Discussion:

The results of this paper make it quite evident that although OTT platforms have been evolving into highly complicated devices that facilitate personalized content, the latter continues to have significant problems in terms of privacy, transparency, and user control. The existing system is too concentrated on the betterment of recommendations and interaction with users; however, it is frequently disregarding the attitude of users toward collecting and using their information.

Based on the analysis, it is clear that most OTT still utilise the Accept All form of consent mechanism. This implies that users are normally presented with one option of authorizing all the data collection, without making proper knowledge on what they are consenting to. Although certain web services may offer other setting options, the option is often obscured or hard to find. Consequently, consumers will perceive it as easy to believe everything in order to use the site. This indicates that consent is not a voluntary one, it is a pressured or pressurized choice.

The other crucial finding is associated with the quantity of information gathered by these websites. The article demonstrates that OTT services gather more information than it is necessary to support the fundamental functionality. As an example, although it is important to see history to give a recommendation, there is no need to gather location data or exquisite amounts of information regarding devices as well. This creates an imbalance between the requirements and received. These practices place additional data security threats, such as the reuse, and contravene the concept of data minimization as one of the relevant provisions in the contemporary law of data protection.

Comparing privacy-based models with traditional, data-intensive models an interesting finding is brought out. The classical method that utilizes a large number of user data does give somewhat better recommendations. Nonetheless, the difference does not exceed much. Conversely, privacy-oriented models work slightly worse but offer much more to the user by the means of increased trust and less privacy threats. This demonstrates that OTT platforms do not have the necessity to gather too much data in order to deliver a positive user experience. An intelligent and more conscientious way can also bring positive outcomes.

It also focuses on the user behavior and mindfulness. Privacy policies or consent forms are not read carefully by the majority of users. Mostly, they end up clicking on Accept All because of time reasons. Nevertheless, simultaneously, users are more concerned with their privacy. A large number of them reveal the desire to have a more favorable control of their data and information about how their data are used in a more understandable fashion. This brings a direct discrepancy between platform design and what the users require. Users desire control but the system does not easily give them the opportunity to exercise their control.

The suggested privacy-by-design will resolve these problems through offering superior consent and a higher degree of transparency. Instead of confusing users on the application of their data, this is done through options such as clear explanations, independent consent options, and simple dashboards, which help users to comprehend their data and ultimately control it more easily. The findings demonstrate that this method is a big boost on transparency, user control, and trust. It is also useful in making platforms more regulatory compliance friendly such as the DPDP Act.

On the whole, the discussion indicates that existing OTT personalization system should be enhanced. The center of attention should not be solely on performance as the privacy is getting more significant in the current environment. Platforms should identify the balance between personalization and data protection. The positive side is that this balance can be achieved. OTT platforms will be able to foster better relations with users by making slight yet significant modifications to their collection process along with the consent system.

To sum up, privacy-friendly personalization is not only a legal but also a just-business move. Platforms allowing user privacy and being transparent have more chances to attract the trust of users and long-term success.

6. Overall Conclusion:

This paper concludes that the existing paradigm of OTT personalization that is highly reliant on excessive data gathering and simplified Accept All consent processes is no longer appropriate in the changing digital and regulation landscape. Although these systems have proven beneficial in increasing user interaction and the accuracy of content recommendation they lack sufficient transparency, user control that matters and compatibility with the contemporary principles of data protection.

The introduction of the Digital Personal Data Protection (DPDP) Act, 2023 is a massive change in the manner in which user data should be managed in India. It focuses on informed consent, minimization of data, and accountability, and forces OTTs to reconsider their current approach to personalization. The results of this research point to the fact that an evident discrepancy exists between the existing industry practices and the expectations of the users. The users are more conscious on their privacy and they require more power over their personal information but the systems in use are not serving these purposes well.

The study illustrates that there is a way of redesigning personalization systems that will be able to balance between performance and privacy. The suggested privacy-by-design framework demonstrates how the platforms can preserve the high level of personalization with the minimum data collection but will enhance transparency, trust, and compliance considerably. The minor decrease in the accuracy of recommendations is compensated by the long-term advantage of higher user trust and lowered risk of regulations.

Besides, the paper highlights the fact that ethical data practices are not only a legal requirement, but also a strategic benefit. OTT platforms, which implement transparent consent strategies and their reputation with focusing on preserving the privacy of users, have a higher chance of establishing relationships with their users and continuing to grow competitively in the digital market.

To sum up, it is necessary to go beyond the conservative policy of Accept All in the DPDP age. OTT platforms should implement privacy-conscious user-friendly personalization systems that will not undermine personal rights but will still enable them to provide quality content experiences. It is a significant move that is required to improve a responsible, trustworthy, and sustainable digital ecosystem.

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