



JIPeL

NYU Journal of Intellectual Property
& Entertainment Law

VOLUME 13

NUMBER 2



Statement of Purpose

Consistent with its unique development, the New York University Journal of Intellectual Property & Entertainment Law (JIPEL) is a nonpartisan periodical specializing in the analysis of timely and cutting-edge topics in the world of intellectual property and entertainment law. As NYU's first online-only journal, JIPEL also provides an opportunity for discourse through comments from all of its readers. There are no subscriptions or subscription fees; in keeping with the open-access and free discourse goals of the students responsible for JIPEL's existence, the content is available for free to anyone interested in intellectual property and entertainment law.

The New York University Journal of Intellectual Property & Entertainment Law is published up to three times per year at the New York University School of Law, 139 MacDougal Street, New York, New York, 10012. In keeping with the Journal's open access and free discourse goals, subscriptions are free of charge and can be accessed via www.jipel.law.nyu.edu. Inquiries may be made via telephone (212-998-6101) or e-mail (submissions.jipel@gmail.com).

The Journal invites authors to submit pieces for publication consideration. Footnotes and citations should follow the rules set forth in the latest edition of *The Bluebook: A Uniform System of Citation*. All pieces submitted become the property of the Journal. We review submissions through Scholastica (scholasticahq.com) and through e-mail (submissions.jipel@gmail.com).

All works copyright © 2024 by the author, except when otherwise expressly indicated. For permission to reprint a piece or any portion thereof, please contact the Journal in writing. Except as otherwise provided, the author of each work in this issue has granted permission for copies of that article to be made for classroom use, provided that (1) copies are distributed to students free of cost, (2) the author and the Journal are identified on each copy, and (3) proper notice of copyright is affixed to each copy.

A nonpartisan periodical, the Journal is committed to presenting diverse views on intellectual property and entertainment law. Accordingly, the opinions and affiliations of the authors presented herein do not necessarily reflect those of the Journal members.

The Journal is also available on WESTLAW, LEXIS-NEXIS and HeinOnline.

NEW YORK UNIVERSITY
JOURNAL OF INTELLECTUAL PROPERTY
AND ENTERTAINMENT LAW

VOLUME 13

SPRING 2024

NUMBER 2

PERSONALIZING PATENT LAW WITH SOCIAL CREDIT
DATA

TAORUI GUAN*

In the era of digitization, data has become a pivotal force driving advancements across various sectors and transforming legal systems worldwide. China, in particular, is exploring new data-driven governance models. A prime example of this is its integration of the patent system with the Social Credit System (SCS). This paper aims to fill the void in theoretical research on this subject, moving beyond the prevalent narrative of the SCS as either a tool of state surveillance or a reputation-based regulatory mechanism. Instead, it introduces the concept of personalized law in the context of China's patent system.

The paper suggests that the integration of social credit data within China's patent law system aligns the system's operations more closely with its objectives. This offers a personalized approach that provides individual market entities with tailored incentives based on their unique characteristics. To analyze this approach, the paper proposes a novel four-part analytical framework: profiling, personalization, communication, and adjustment. The paper then applies this framework to the two core mechanisms that result from the integration of the patent system with the SCS: the Reward and Punishment Mechanism and the Tiered Regulation Mechanism. This analysis reveals

* Research Assistant Professor, University of Hong Kong Faculty of Law; S.J.D. University of Virginia School of Law. The author would like to thank Ariel Porat, Adam Davidson, Greg Klass, Peter Salib, Lauren Scholz, Andrew Verstein, Christopher S. Yoo, Anupam Chander, Xuan-Thao Nguyen, Peter Yu, Dongsheng Zang, Doris Long, Bob Gomulkiewicz, Danny Friedmann, Haochen Sun, Ryan Whelan, and the participants of the Asian IP Scholars Roundtable jointly held by UW School of Law and Texas A&M School of Law and of the Tech Law Faculty Workshop at the University of Hong Kong for their helpful feedback, comments, and suggestions. All errors and omissions remain mine alone.

that these mechanisms are still in the stage of crude personalization and grapples with challenges such as narrow data scope, lack of transparency, and over-penalization.

The paper discusses two implications of personalized law reform: the redistribution of power toward administrative bodies—which necessitates a rebalancing of powers to avoid abuse and protect individual rights—and the possible expansion of the law’s functions—which might not align with existing normative theories and might have unintended consequences. The process of personalization requires scholars and policymakers to adapt and refine these theories as well as to identify and eliminate unintended consequences.

INTRODUCTION	329
I. TOWARD PERSONALIZED PATENT LAW	338
A. <i>Patent Law Faces Two Challenges</i>	338
B. <i>Personalization of Patent Law as a Solution</i>	341
II. ANALYSIS	345
A. <i>An Analytical Framework</i>	346
B. <i>The Reward and Punishment Mechanism</i>	349
1. <i>Profiling Rules</i>	351
2. <i>Personalized Rules</i>	353
3. <i>Communication Rules</i>	355
4. <i>Adjustment Rules</i>	357
C. <i>The Tiered Regulation Mechanism</i>	358
1. <i>Profiling Rules</i>	360
2. <i>Personalized Rules</i>	362
3. <i>Communication Rules</i>	363
4. <i>Adjustment Rules</i>	364
D. <i>Assessment of the Two Mechanisms</i>	366
1. <i>Profiling Rules</i>	366
2. <i>Personalized Rules</i>	366
3. <i>Communication Rules</i>	368
4. <i>Adjustment Rules</i>	369
III. IMPLICATIONS	370
A. <i>The Redistribution and Rebalancing of Powers</i>	370
B. <i>The Expansion of the Function of Law</i>	374
CONCLUSION	377
APPENDIX	379

INTRODUCTION

In the digital age, the increasing prominence of data is reshaping diverse fields beyond the realm of technology, influencing commercial practices and the foundations of governance.¹ In the legal sector, this shift is evident as governments employ data to enhance the operation of their legal systems.² The response to the COVID-19 pandemic exemplified the pivotal role of data, where law enforcement strategies informed by real-time data were instrumental in addressing public health challenges.³ Such scenarios illustrate the burgeoning trend of integrating data analytics into legal and governance frameworks,⁴ establishing data-driven laws as an imminent reality.⁵ China's adoption of the Social Credit System (SCS) within its

¹ See generally Dan L. Burk, *Algorithmic Fair Use*, 86 U. CHI. L. REV. 283, 283 (2019) (“Legal governance and regulation are becoming increasingly reliant on data collection and algorithmic data processing.”); Niva Elkin-Koren & Michal S. Gal, *The Chilling of Governance-by-Data on Data Markets*, 86 U. CHI. L. REV. 403, 404 (2019) (noting that Big Data has emerged as a crucial resource in both commercial and legal domains, significantly influencing governance by shaping enforcement priorities, altering evidentiary methods, and even transforming legal norms); Cary Coglianese, *Moving Toward Personalized Law 2* (Univ. of Pa. L. Sch., Public L. Rsch. Paper No. 22, 2022) (noting that advancements in predictive analytics tools, such as machine learning and artificial intelligence, are enabling more accurate and personalized decision-making in various fields).

² See Coglianese, *supra* note 1, at 11 (suggesting that governments are progressively digitizing their functions and sometimes utilizing algorithms to aid in both adjudicatory and administrative functions, while some countries have given priority to the process of digitizing and automating various government operations); Elizabeth E. Joh, *Policing by Numbers: Big Data and the Fourth Amendment*, 89 WASH. L. REV. 35, 36 (2014) (highlighting Big Data's impact on government's function in various fields, including public health, transportation, and policing).

³ See generally Nahla Khamis Ibrahim, *Epidemiologic Surveillance for Controlling Covid-19 Pandemic: Types, Challenges and Implications*, 13 J. INFECTION & PUB. HEALTH 1630, *passim* (2020).

⁴ See, e.g., Lina Dencik et al., *The ‘Golden View’: Data-Driven Governance in the Scoring Society*, 8 INTERNET POL'Y REV. 1, 1–2 (2019) (noting the increasing use of data analytics in public services and governance in UK); Sofia Ranchordás & Abram Klop, *Data-Driven Regulation and Governance in Smart Cities 17* (Univ. of Groningen Faculty of L., Rsch. Paper No. 7, 2018) (noting that cities like Moscow, Los Angeles, Chicago, and New Orleans are increasingly using data analytics, including spatio-temporal data and social network analysis, for public safety and crime prevention); Isabel Debre, *At Dubai Airport, Travelers' Eyes Become Their Passports*, AP NEWS (Mar. 8, 2021, 11:56 AM), <https://apnews.com/article/dubai-airport-iris-scanner-verify-identity-4c8f2fb1f62df394e29e8365b3bd105e> [<https://perma.cc/X2YB-X5AT>] (noting that Dubai's airport has introduced an iris-scanning system that integrates with the country's facial recognition databases, allowing passengers to bypass traditional travel document checks, amidst concerns about privacy and the expansion of surveillance technology in the UAE).

⁵ Larry Catá Backer, *Next Generation Law: Data-Driven Governance and Accountability-Based Regulatory Systems in the West, and Social Credit Regimes in China*, 28 S. CAL. INTERDISC. L.J. 123, 126 (2018) (noting that the rule of law is evolving towards data-driven systems, where compliance by

legal framework, utilizing social credit data for dynamic insights into behaviors,⁶ marks a significant stride in this global movement.

The broader applications of China's SCS and its data-driven paradigm have increasingly gained scholarly attention.⁷ However, a specific and critical area remains less explored: the integration of the SCS within patent law, particularly through the implementation of two key mechanisms—the Reward and Punishment Mechanism⁸ and the Tiered Regulation Mechanism.⁹ Introduced through the State

individuals and enterprises is monitored and regulated by authorities making constrained decisions for the public interest).

⁶ See generally Yongxi Chen & Anne S. Y. Cheung, *The Transparent Self Under Big Data Profiling: Privacy and Chinese Legislation on the Social Credit System Special Issue: Transparency Challenges Facing China*, 12 J. COMP. L. 356, 377 (2017); Daithí Mac Síthigh & Mathias Siems, *The Chinese Social Credit System: A Model for Other Countries?*, 82 MOD. L. REV. 1034, 1034 (2019); Sheng Zou, *Disenchanting Trust: Instrumental Reason, Algorithmic Governance, and China's Emerging Social Credit System*, 9 MEDIA & COMMUN. 140, 140 (2021).

⁷ See, e.g., Chen & Cheung, *supra* note 6, at 356; Anne S. Y. Cheung & Yongxi Chen, *From Datafication to Data State: Making Sense of China's Social Credit System and Its Implications*, 47 L. & SOC. INQUIRY 1137, 1137 (2022); Yu-Jie Chen, Ching-Fu Lin & Han-Wei Liu, *Rule of Trust: The Power and Perils of China's Social Credit Megaproject*, 32 COLUM. J. ASIAN L. 1, 4 (2018); Rui Hou & Diana Fu, *Sorting Citizens: Governing via China's Social Credit System*, 37 GOVERNANCE 59, 59 (2022); Fan Liang & Yuchen Chen, *The Making of "Good" Citizens: China's Social Credit Systems and Infrastructures of Social Quantification*, 14 POLY & INTERNET 114, 114 (2022); Síthigh & Siems, *supra* note 6, at 1034; Rogier Creemers, *Disrupting the Chinese State: New Actors and New Factors*, U. LEIDEN 1, 1 (May 24, 2016), <https://papers.ssrn.com/abstract=2978880> [<https://perma.cc/47E7-93W9>]; Rogier Creemers, *China's Social Credit System: An Evolving Practice of Control*, U. LEIDEN 1, 1 (May 22, 2018) [hereinafter Creemers, *China's Social Credit System*], <https://www.ssrn.com/abstract=3175792> [<https://perma.cc/2MEZ-S7BR>].

⁸ Zhi Shi Chan Quan Xin Yong Guan Li Gui Ding de Tong Zhi (《知识产权信用管理规定》的通知) [Provisions on the Administration of Intellectual Property Credit] (promulgated by the St. Intell. Prop. Admin., Jan. 24, 2022, effective Jan. 24, 2022) [hereinafter Credit Management Regulations], CLI.4.5113906(EN) (Lawinfochina); Shichang Jiandu Guanli Yanzhong Weifa Shixin Mingdan Guanli Banfa (《市场监督管理严重违法失信名单管理办法》) [Management Methods for the Serious Illegal and Untrustworthy Entities List] (promulgated by the St. Admin. for Mkt. Regul., July 30, 2021, effective Sept. 1, 2021) [hereinafter Untrustworthy Entities Management Methods], CLI.4.5054683(EN) (Lawinfochina). See also *infra* Appendix Table 1. While the specific title “Reward and Punishment Mechanism” is not directly mentioned in the cited legal documents, I’ve used this term to effectively encapsulate the functionalities of the described regulations in a way that is understandable for an international readership unfamiliar with the intricate details of China’s legal reforms.

⁹ Zhuanli Daili Xinyong Pingjia Guanli Banfa (Shixing) (《专利代理信用评价管理办法 (试行)》) [Patent Agency Credit Evaluation Measures (Trial)] (promulgated by the St. Intell. Prop. Admin., Mar. 31, 2023, effective May 1, 2023) [hereinafter Credit Evaluation Measures], CLI.4.5163809(EN) (Lawinfochina). See also *infra* Appendix Table 2. The State Intellectual Property Administration carries out the Credit Evaluation Measures regulation through the Tiered Regulation Mechanism. While the specific title “Tiered Regulation Mechanism” is not directly mentioned in the cited legal documents, I’ve used this term to effectively

Council's 2014 initiative for "credit construction in intellectual property," these mechanisms represent a pioneering approach to melding social credit data with the operation of the patent system.¹⁰ This strategic integration of the Reward and Punishment Mechanism and the Tiered Regulation Mechanism, crystallized in the 2019 *Regulation on Management of the List of Joint Punishments for Seriously Untrustworthy Entities in the Patent Field (Trial)*, reflects China's commitment to enhancing intellectual property laws and curbing infringement using data-driven methods.¹¹ Studying this integration is crucial, as it exemplifies the evolution of a legal regime of property into a data-driven domain, offering a distinctive example of how legal systems can be transformed through the application of data analysis.

Existing literature primarily oscillates between portraying the SCS as a tool for state surveillance and as a model for reputation-based regulation.¹² However, these interpretations do not fully capture the essence of the Reward and Punishment

encapsulate the functionalities of the described regulations in a way that is understandable for an international readership unfamiliar with the intricate details of China's legal reforms.

¹⁰ Shehui Xinyong Tixi Jianshe Guihua Gangyao (2014-2020 Nian) (社会信用体系建设规划纲要(2014-2020年)) [Outline of the Plan for the Construction of the Social Credit System (2014-2020)] (promulgated by the St. Council, June 14, 2014, effective June 14, 2014) [hereinafter Outline of Social Credit System Construction], https://www.gov.cn/zhengce/content/2014-06/27/content_8913.htm [<https://perma.cc/5BNP-HP8T>] ("Establish and improve the intellectual property integrity management system and introduce credit evaluation methods for intellectual property protection. . . . Carry out credit building for intellectual property service institutions and explore the establishment of various types of intellectual property service standardization systems and integrity evaluation systems.").

¹¹ Zhuanli Lingyu Yanzhong Shixin Lianhe Chengjie Duixiang Mingdan Guanli Banfa (Shixing) (专利领域严重失信联合惩戒对象名单管理办法 (试行)) [Regulation on Management of the List of Joint Punishments for Seriously Untrustworthy Entities in the Patent Field (Trial)] (promulgated by the St. Intell. Prop. Admin., Oct. 16, 2019, effective Dec. 1, 2019), CLI.4.336686(EN) (Lawinfochina). The phrase "enhancing intellectual property laws" in this context refers specifically to the enhancement of the efficacy of these laws. This is achieved through the alignment of the laws' operational mechanisms more closely with their fundamental objectives, which are to protect intellectual property rights and deter infringement, thereby fostering innovation.

¹² Compare Fan Liang et al., *Constructing a Data-Driven Society: China's Social Credit System as a State Surveillance Infrastructure*, 10 POL'Y & INTERNET 415, 416 (2018) (describing SCS as a state surveillance tool), and Nicholas Loubere & Stefan Brehm, *The Global Age of the Algorithm: Social Credit, Xinjiang, and the Financialisation of Governance in China*, in XINJIANG YEAR ZERO 175, 181 (Darren Byler, Ivan Franceschini & Nicholas Loubere eds., 2022) (describing SCS as a state surveillance tool), with Xin Dai, *Toward a Reputation State: A Comprehensive View of China's Social Credit System Project*, in SOCIAL CREDIT RATING: REPUTATION UND VERTRAUEN BEURTEILEN 139, 139 (Oliver Everling ed., 2020) (describing SCS as a reputation-based regulatory tool), and Síthigh & Siems, *supra* note 6, at 1048 (describing SCS as a reputation-based regulatory tool).

Mechanism and Tiered Regulation Mechanism within the realm of patent law. Scholars like Nicholas Loubere, Stefan Brehm,¹³ and Fan Liang¹⁴ depict the SCS as surveillance infrastructure, integral to state control and the maintenance of stability. This narrative, which Lauren Yu-Hsin Lin and Curtis J. Milhaupt developed further under the concept of “surveillance state capitalism,” regards the SCS as a tool for monitoring and controlling economic actors, enhancing corporate compliance, and aligning market behavior with the political objectives of the Chinese Communist Party.¹⁵ Anne S.Y. Cheung and Yongxi Chen have further developed this perspective, portraying the SCS as a mechanism that could transform China into a “data state.”¹⁶ In this data state, the government would use data collection and data-driven methods extensively to monitor, assess, and regulate the behavior of its citizens.¹⁷ Scholars holding this view generally believe that the integration of SCS with the legal system is likely to have undesirable consequences, including curtailing individual autonomy,¹⁸ infringing on human rights,¹⁹ and undermining the principles of the rule of law.²⁰

However, framing the SCS solely as an instrument for consolidating state power does not reflect its actual application and impact. While there are legitimate concerns surrounding privacy and security risks associated with the SCS, Xin Dai suggests that focusing exclusively on these aspects may overlook the system’s potential to advance China’s regulatory regimes.²¹ The alignment of the SCS with policies like “streamlining administration, delegating powers, and improving services”²² indicates a move away from stringent governmental oversight, as

¹³ Loubere & Brehm, *supra* note 12, at 181.

¹⁴ Liang et al., *supra* note 12, at 416.

¹⁵ Lauren Yu-Hsin Lin & Curtis J. Milhaupt, *China’s Corporate Social Credit System: The Dawn of Surveillance State Capitalism?*, 256 CHINA Q. 835, 838–40 (2023).

¹⁶ Cheung & Chen, *supra* note 7, at 1157.

¹⁷ Cheung & Chen, *supra* note 7, at 1157.

¹⁸ See, e.g., Cheung & Chen, *supra* note 7, at 1137–38.

¹⁹ See, e.g., Chen, Lin & Liu, *supra* note 7, at 5.

²⁰ See, e.g., Marianne von Blomberg, *The Social Credit System and China’s Rule of Law*, 2 MAPPING CHINA J. 77, 80 (2018); Shen Kui (沈焜), *Shehui Xinyong Tixi Jianshe De Fazhi Zhi Dao* (社会信用体系建设的法治之道) [*The Approach Consistent with the Rule of Law to Constructing the Social Credit System*], 5 ZHONGGUO FAXUE [CHINA L. SCI.] 25, 26 (2019).

²¹ See, e.g., Dai, *supra* note 12, at 139.

²² Guowuyuan Bangongting Guanyu Yunyong Dajushujiaqiang Dui Shichang Zhuti Fuwu He Jianguan De Ruogan Yijian (国务院办公厅关于运用大数据加强对市场主体服务和监管的若干意见) [*Several Opinions of the General Office of the State Council on Strengthening the Service and Supervision of*

evidenced by reduced state oversight in certain domains.²³ This contradicts the concerns about heightened control. Furthermore, a national survey showing over 80% of China's connected population engaging with the SCS and acknowledging its positive role in promoting accountability, regulations adherence, and quality of life,²⁴ suggests that the perceptions of the SCS are varied and may be influenced by its integration into various facets of governance, likely including those that streamline and improve administrative services.

Dai's alternative perspective views the integration of SCS into the legal system as the introduction of a reputation-based regulatory model that relies on social credit data. In this context, the SCS employs mechanisms like blacklisting and scoring in response to a range of governance issues, from market deception to government misconduct.²⁵ While these mechanisms might resemble aspects of state surveillance, the primary focus of a reputation-based state is on encouraging compliance and self-discipline through reputational incentives, rather than on pervasive monitoring and control. Echoing this view, Daithí Mac Síthigh and Mathias Siems note that the SCS has facilitated China's transition from a

Market Entities by Utilizing Big Data] (promulgated by the Gen. Off. of the St. Council, June 24, 2015), CLI.2.250479(EN) (Lawinfochina).

²³ See, e.g., Guanyu Jin Yi Bu Shen Hua Shuiwu Lingyu "Fang Guan Fu" Gaige Peiyu He Jifa Shichang Zhuti Huoli Ruogan Cuoshi De Tongzhi (关于进一步深化税务领域“放管服”改革培育和激发市场主体活力若干措施的通知) [Notice on Further Measures to Further Deepen the Reform of “Delegating Power, Delegating Regulation and Services” in the Taxation Field and Cultivating and Stimulating the Vitality of Market Entities] (promulgated by the St. Tax'n Admin., Oct. 12, 2021, effective Oct. 12, 2021), CLI.4.5078142(EN) (Lawinfochina) (emphasizing the reduction of items, processes, and materials that relate to regulation, further unburdening and energizing market entities); Wang Ke, “Streamlining Administration, Delegating Power, and Improving Services” Unleashes New Dividends, PEOPLE'S DAILY, May 11, 2017, https://www.gov.cn/xinwen/2017-05/11/content_5192748.htm [<https://perma.cc/X2FN-GXUH>] (pointing out that the implementation of the “Streamlining Administration, Delegating Power, and Improving Services” policy has led to the cancellation of 323 administrative approval intermediary services under State Council departments and a cumulative reduction of nearly 90% in the proportion of enterprise investment projects approved at the central government level).

²⁴ The data indicating a high level of approval, particularly among the wealthier and more educated segments, suggests that many see benefits in the system. However, my intention in citing these statistics is not to challenge the prevalent negative view on the SCS and emphasize the importance of a technical analysis of the system. Genia Kostka, *China's Social Credit Systems and Public Opinion: Explaining High Levels of Approval*, 21 NEW MEDIA & SOC'Y 1565, 1570, 1585 (2019).

²⁵ Dai, *supra* note 12, at 140.

“reputation society” to a “reputation state.”²⁶ This perspective effectively captures the integration of the SCS with legal frameworks.

However, focusing solely on the reputation aspect does not adequately capture the entire spectrum of the SCS’s implications for patent law. The Reward and Punishment Mechanism and the Tiered Regulation Mechanism extend beyond reputational impact to substantive economic consequences such as limiting access to finance and constraining operational activities.²⁷ Cheung and Chen observe that the concept of “credit” in this context is becoming increasingly complex.²⁸ The SCS employs a broad range of data, moving away from a strict association with individual or corporate reputation and toward a broader set of attributes and behaviors.²⁹ This evolution in the scope and application of data calls for a more comprehensive analytical framework through which to understand the integration of the SCS with patent law.³⁰

This paper proposes that we can understand the integration of social credit data in China’s patent law more comprehensively through the concept of “personalized law” that Omri Ben-Shahar and Ariel Porat have developed.³¹ Personalized law systems tailor legal rules to individual circumstances rather than applying uniform rules in every case.³² Although theoretical discussion of

²⁶ Síthigh & Siems, *supra* note 6, at 1048.

²⁷ See *infra* Part II.B.2, C.2; see also Cheung & Chen, *supra* note 7, at 1146–50 (documenting reward and punishment measures that cause impact beyond reputational).

²⁸ Cheung & Chen, *supra* note 7, at 1152.

²⁹ Cheung & Chen, *supra* note 7, at 1152; see also Outline of Social Credit System Construction, *supra* note 10 (indicating that the SCS employs a broad range of data, moving away from a strict association with individual or corporate reputation and toward a broader set of attributes and behaviors, such as complying with legal and contractual obligations, fulfilling economic and social responsibilities, and even contributing to public welfare and charity work).

³⁰ Rogier Creemers has noted that the SCS should not be viewed as a monolithic structure, but rather as a cluster of varied initiatives sharing common goals and methodologies. This paper acknowledges the validity of other scholars’ insights into the essence of the SCS, particularly related to its integration with other legal sectors. However, it posits that these insights may not be directly applicable to the unique amalgamation of the patent system with the SCS, an area hitherto unexplored in academic research. See Creemers, *China’s Social Credit System*, *supra* note 7, at 25.

³¹ OMRI BEN-SHAHAR & ARIEL PORAT, *Personalized Law: Different Rules for Different People* *passim* (2021).

³² See Omri Ben-Shahar & Ariel Porat, *How to Evaluate Personalized Law*, U. CHI. L. REV. ONLINE, Mar. 9, 2022, at 4 (“Personalized law would reinvent disclosures, warnings, and food labels with different bits of

personalized law spans a range of legal domains, from traffic regulations³³ to consumer protection,³⁴ there has been little practical implementation.³⁵ This paper suggests that the integration of the patent system with the SCS is an example of this concept, and that it marks a significant step toward the application of personalized law.³⁶ Viewing the Reward and Punishment Mechanism and the Tiered Regulation Mechanism as forms of personalized law not only enriches our understanding of the nuanced interplay between social credit data and the patent system, but also highlights the potential of personalized law to transform legal systems in a technologically advanced and contextually relevant manner.³⁷

Part I of this paper delves into the practical challenges confronting China's patent law and theoretical underpinnings of its integration with the SCS. There are two primary obstacles impeding the effectiveness of the patent system in promoting innovation: the rise of speculative patent applications and the inadequacy of the system's remedies for infringement.³⁸ The Reward and Punishment Mechanism and the Tiered Regulation Mechanism address these challenges by allowing the patent system to incorporate social credit data strategically. Through the use of social credit data, these mechanisms personalize the rules of the patent system, aligning operations more closely with its function of incentivizing genuine innovation and effective knowledge dissemination, thereby mitigating the limitations of the traditional, one-size-fits-all approach.³⁹ Presently, this model exemplifies the crude personalization phase of personalized law as outlined by Ben-Shahar and Porat, which involves forming "discrete buckets of treatment" based on

information electronically delivered to people at the point of decision."'). *See generally* Sandra G. Mayson, *But What Is Personalized Law*, U. CHI. L. REV. ONLINE, Mar. 9, 2022, at 2 (2022).

³³ Horst Eidenmuller, *Why Personalized Law?*, U. CHI. L. REV. ONLINE, Mar. 7, 2022, at 8.

³⁴ BEN-SHAHAR & PORAT, *supra* note 31, at 71; Mayson, *supra* note 32, at 1.

³⁵ BEN-SHAHAR & PORAT, *supra* note 31, at 2 ("[T]he overwhelming landscape of legal tailoring is not personalized."); Gregory Klass, *Tailoring Ex Machina: Perspectives on Personalized Law*, U. CHI. L. REV. ONLINE, Mar. 7, 2022, at 1 (suggesting that personalized law is "a type of law that does not today exist"); H. Javier Kordi, *Personalized Enfranchisement*, 2022 U. CHI. L. REV. ONLINE, Mar. 7, 2022, at 9 ("The story of Personalized Law might remain a tale of science fiction for some time.").

³⁶ *Infra* Part II.

³⁷ *See infra* Part I.B, Part IID.2.

³⁸ *See infra* Part I.A.

³⁹ *See infra* Part I.B.

individual characteristics and applying these treatments accordingly, moving away from a uniform approach to more nuanced and individualized legal applications.⁴⁰

In Part II, this paper presents a comprehensive analysis of the Reward and Punishment Mechanism and the Tiered Regulation Mechanism of China's patent system, utilizing a novel analytical framework derived from personalized law literature. This framework—comprised of profiling rules, personalized rules, communication rules, and adjustment rules—serves as a tool for dissecting and understanding these mechanisms as forms of crude personalized law.⁴¹ Applying this framework, this paper highlights the mechanisms' intricacies and implications, demonstrating that they function as manifestations of personalized law, and evaluating their effectiveness and challenges.⁴²

Part III of this paper explores the profound implications of personalizing patent law with social credit data. This section describes how personalized law shifts the balance of power within the state, enhancing the role of administrative bodies.⁴³ It discusses the need for enhanced legislative, judicial, and public engagement mechanisms to balance this shift.⁴⁴ Additionally, Part III examines how personalized law can expand the functions of patent law—from fostering innovation to promoting a compliant and disciplined market environment.⁴⁵ This functional expansion highlights the need for reevaluation of existing legal theories and normative justifications of patent law, as well as for meticulous appraisal of the resultant societal impacts, emphasizing the necessity of academic engagement to provide robust descriptive and normative frameworks for the evaluation of legal functions in an age of personalized law.⁴⁶

This paper contributes to the literature in three significant ways. First, it provides an alternative—and potentially more fitting—theoretical perspective on the current integration of social credit data in China's patent law. This perspective is crucial, as it enhances our understanding of how law is changing in the context

⁴⁰ BEN-SHAHAR & PORAT, *supra* note 32, at 5–6.

⁴¹ BEN-SHAHAR & PORAT, *supra* note 32, at 5–6.

⁴² *Infra* Part II.B, C, D.

⁴³ *Infra* Part III.A.

⁴⁴ *Infra* Part III.A.

⁴⁵ *Infra* Part III.B.

⁴⁶ *See Infra* Part III.B.

of advanced data systems and digital governance.⁴⁷ Moreover, on a practical level, the analysis of personalized patent law not only aids domestic entities in China but also provides valuable insights for enterprises operating in the Chinese market from foreign countries, including the United States.⁴⁸ Second, the paper provides an example of personalized law in practice. This is particularly noteworthy as the field of personalized law lacks substantial real-world applications.⁴⁹ This, then, is a valuable case study, which sheds light on the potential effects of personalized law, particularly on the distribution of powers and the expanding roles and objectives of legal systems. Third, this paper pioneers an analytical framework that advances the understanding of personalized law. The novelty of this framework lies in its application to the “crude” stage of personalized law, which has not yet engaged with Big Data and algorithms. This framework would assist scholars and practitioners in comprehending the operations and impacts of personalized law during its developmental phase or as it transitions to more advanced stages.

⁴⁷ Zou, *supra* note 6, at 140 (suggesting that SCS should be understood within a global context of algorithmic governance).

⁴⁸ The U.S. and other developed nations have long criticized the Chinese government for not providing adequate protection for foreign enterprises within China. *See, e.g.*, Nan Lan, *Why Tariffs against China Are Ineffective for Intellectual Property Protection*, 11 AM. U. INTELL. PROP. BRIEF 17, 19 (2020) (noting that the “trade war” between the United States and China that started in 2016 involves tariffs imposed by both nations, with one of the U.S.’s major reasons being the protection of intellectual property); Mark Liang, *A Three-Pronged Approach: How the United States Can Use WTO Disclosure Requirements to Curb Intellectual Property Infringement in China*, 11 CHI. J. INT’L L. 285, 287 (2010) (noting that the prevalence of intellectual property infringement in China results in significant financial losses for key U.S. industries and contributes to the U.S.–China trade deficit, while also posing substantial risks for U.S. companies doing business in China); Mirjam Meissner, *China’s Social Credit System: A Big-Data Enabled Approach to Market Regulation with Broad Implications for Doing Business in China*, MERICS (May 24, 2017), <https://www.chinafile.com/library/reports/chinas-social-credit-system-big-data-enabled-approach-market-regulation-broad> [<https://perma.cc/D767-CBM9>] (noting SCS’s potential to enhance China’s economic regulatory capabilities and the resulting effect on domestic and foreign business compliance practices).

⁴⁹ *See* Ben-Shahar & Porat, *supra* note 32, at 2 (“But the overwhelming landscape of legal tailoring is not personalized.”); Ariel Porat & Lior Jacob Strahilevitz, *Personalizing Default Rules and Disclosure with Big Data*, 112 MICH. L. REV. 1417, 1418 (2013) (“Law is impersonal. The state generally does not tailor the contents of the law to people’s characteristics and traits.”).

I

TOWARD PERSONALIZED PATENT LAW

A. *Patent Law Faces Two Challenges*

The patent system seeks to promote innovation.⁵⁰ It does this in two ways. First, it awards inventors exclusive rights to their discoveries.⁵¹ This exclusivity gives them the ability to derive financial rewards from their inventions.⁵² Having exclusive rights allows creators to demand substantially greater prices for their products than would be feasible in a competitive marketplace,⁵³ which encourages creators to invent.⁵⁴ Second, rooted in the disclosure theory,⁵⁵ it makes the inventions' technical information accessible to the public.⁵⁶ With the details

⁵⁰ See generally Daniel J. Hemel & Lisa Larrimore Ouellette, *Innovation Policy Pluralism*, 128 YALE L.J. 544, 547 (2019) ("From the perspective of the inventor or creator, IP is an innovation incentive. . . .").

⁵¹ See generally Mark A. Lemley, *Ex Ante versus Ex Post Justifications for Intellectual Property*, 71 U. CHI. L. REV. 129, 131 (2004).

⁵² See generally William Fisher, *Theories of Intellectual Property*, in NEW ESSAYS IN THE LEGAL AND POLITICAL THEORY OF PROPERTY 168, 173 (Stephen R. Munzer ed., 2001) ("References to the role of intellectual-property rights in stimulating the production of socially valuable works riddle American law. Thus, for example, the constitutional provision upon which the copyright and patent statutes rest indicates that the purpose of those laws is to provide incentives for creative intellectual efforts that will benefit the society at large."); Jeanne C. Fromer, *Expressive Incentives in Intellectual Property*, 98 VA. L. REV. 1745, 1746 (2012) ("According to the dominant American theory of intellectual property, copyright and patent laws are premised on providing creators with just enough incentive to create artistic, scientific, and technological works of value to society by preventing certain would-be copiers' free-riding behavior.").

⁵³ See generally Fisher, *supra* note 52, at 169 ("Pursuit of that end in the context of intellectual property, it is generally thought, requires lawmakers to strike an optimal balance between, on one hand, the power of exclusive rights to stimulate the creation of inventions and works of art and, on the other, the partially offsetting tendency of such rights to curtail widespread public enjoyment of those creations.").

⁵⁴ E.g., Zhonghua Renmin Gongheguo Zhuanli Fa (中华人民共和国专利法) [Patent Law of the People's Republic of China] (promulgated by the Standing Comm. St. People's Cong., Oct. 17, 2020, effective June 1, 2021), 2020(5) STANDING COMM. ST. PEOPLE'S CONG. GAZ. 713 [hereinafter Patent Law], art. 1 ("This Law is enacted to protect the lawful rights and interests of patentees, to encourage invention-creation. . . ."); see also Hemel & Ouellette, *supra* note 50, at 547.

⁵⁵ See *Brenner v. Manson*, 383 U.S. 519, 533 (1966) ("[O]ne of the purposes of the patent system is to encourage dissemination of information concerning discoveries and inventions."); *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 151 (1989) ("[T]he ultimate goal of the patent system is to bring new designs and technologies into the public domain through disclosure."); see also Lisa Larrimore Ouellette, *Do Patents Disclose Useful Information*, 25 HARV. J.L. & TECH. 545, 554–57 (2012).

⁵⁶ Patent Law, *supra* note 54, art. 1 ("This Law is enacted . . . to promote the exploitation of invention-creation, to enhance innovation capability, and to promote the advancement of science and technology and the development of economy and society.").

of patented inventions, the public can enhance, modify, or freely employ these inventions after the patents expire.⁵⁷

China's patent system faces two significant challenges in fulfilling its incentive and disclosure functions. The first arises from the prevalence of speculative patent applications.⁵⁸ These speculative patent applications, often of low technical quality, stem not from a genuine need for innovation protection but rather from the desire to exploit the exclusivity of patent rights for profit.⁵⁹ Patent agencies and attorneys who, motivated by financial gains—including government subsidies for application fees—encourage and support the submission of these low-quality patents exacerbate the problem.⁶⁰ Such opportunistic behavior has led to an influx of inferior patents into the system, creating a “patent bubble.”⁶¹

These speculative applications, along with the complicit actions of the patent agencies and attorneys, obstruct the objective of patent law—promoting innovation. Patents derived from speculative applications fail to serve the system's

⁵⁷ See generally Mark A. Lemley, *Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989, 1083–84 (1996–1997) (describing that the justification of intellectual property law includes potential improvements to existing works).

⁵⁸ Yang Liu (杨柳), *Guojia Zhishichanquan Ju Qunian, Yanli Daji Fei Zhengchang Zhuanli Shenqing He Shangbiao Eyi Qiangzhu Xingwei* (国家知识产权局去年严厉打击非正常专利申请和商标恶意抢注行为) [*Last Year, the National Intellectual Property Office Cracked Down on Abnormal Patent Applications and Malicious Trademark Registration Activities*], ZHISHI CHANQUAN BAO [INTELL. PROP. NEWS], (Jan. 26, 2022), https://www.cnipa.gov.cn/art/2022/1/26/art_53_172926.html [<https://perma.cc/3F96-LKBN>]; Xu Buyi (徐卜一), Jin Peng (金鹏) & Zhu Yudi (朱雨迪), *Feizhengchang Zhuanli Shenqing de Shibie Biaozhun yu Cailiang Tanta* (非正常专利申请的识别标准与裁量探讨) [*Standards for Identification and Discretionary Discussion of Abnormal Patent Applications*], 2023(07) ZHONGGUO FAMING YU ZHUANLI [CHINA INVENTION & PAT.] 25, *passim* (highlighting both the volume and speculative nature of many patent filings in China).

⁵⁹ See Liu, *supra* note 58.

⁶⁰ See Guojia Zhishi Chanquan Ju Guanyu Chixu Shenhua Zhishi Chanquan Dai Li Hangye “Lantian” Zhuanxiang Zhengzhi Xingdong De Tongzhi (国家知识产权局关于持续深化知识产权代理行业“蓝天”专项整治行动的通知) [Notice of the State Intellectual Property Office on Continuing to Deepen the “Blue Sky” Special Rectification Action for the Intellectual Property Agency Industry] (promulgated by the St. Intell. Prop. Admin., Mar. 31, 2022, effective Mar. 31, 2022), https://www.cnipa.gov.cn/art/2022/3/31/art_75_174340.html [<https://perma.cc/FV3A-9M8Z>] (noting that the State Intellectual Property Administration of China has adopted measures to intensify scrutiny and regulation of patent agencies and attorneys who, driven by financial incentives such as government subsidies, contribute to the proliferation of low-quality patent applications).

⁶¹ Shen Yu (申宇), Huang Hao (黄昊) & Zhao Lin (赵玲), *Difang Zhengfu “Chuangxin Chongbai” Yu Qiye Zhuanli Paomo* (地方政府“创新崇拜”与企业专利泡沫) [*Local Government “Cult of Innovation” and Corporate Patent Bubble*], 39(4) KEYAN HUANLI [SCI. RSCH. MGMT.] 83, 89–90 (2018).

intended purpose of protecting the interests of genuine creators. Instead, they are often used as tools to improperly obtain financial benefits, such as government subsidies or tax breaks, without contributing to actual innovation.⁶² Moreover, they consume valuable examination resources, leading to longer processing times for substantial and innovative patent applications and potentially hindering true innovators from receiving timely rewards.⁶³ The proliferation of low-quality patents also impedes researchers and businesses in their technological research searches, which undercuts the patent system's goal of disseminating knowledge.⁶⁴

The second challenge pertains to the inadequacy of remedies for patent infringement.⁶⁵ Patent holders in China often experience extended delays before receiving court judgments, particularly in cases involving foreign parties.⁶⁶ Zhang Chenguo's empirical research shows these cases take an average of 11.7 months, with some extending to 63.3 months, far exceeding the statutory six-month limit.⁶⁷ In infringement cases, rights holders struggle to gather sufficient evidence,⁶⁸

⁶² See *Pop Patent Bubble to Promote Innovation*, CHINA DAILY (Apr. 27, 2021), <http://www.chinadaily.com.cn/a/202104/27/WS60874b8aa31024ad0baba897.html> [<https://perma.cc/Q3SL-FWPG>] (noting that the exploitation of patent incentives—like tax reductions, commutation of sentences for criminals, and favorable treatment for higher education—through speculative applications has led to a surge in low-quality patents).

⁶³ See Tang Daisheng (唐代盛), Fei Zhengchang Zhuanli Shenqing Xingwei Falu Guizhi Xianzhuang, Fansi Yu Chonggou (非正常专利申请行为法律规制现状、反思与重构) [*Current Status, Reflection and Reconstruction of Legal Regulation of Abnormal Patent Application Behavior*], 36(22) KEJI JINBU YU DUICE [SCI. & TECH. PROGRESS AND POL'Y] 112, 112 (2019).

⁶⁴ *Id.*

⁶⁵ See, e.g., Jiang Huasheng (蒋华胜) & Yang Lan (杨岚), *Minying Qiye Zhishi Chanquan Sifa Baohu Ruogan Wenti (Shang)—Jiyu Guangzhou Zhishi Chanquan Fayuan De Shizheng Shuju Fenxi Wei Shijiao* (民营企业知识产权司法保护若干问题(上)——基于广州知识产权法院的实证数据分析为视角) [*Several Issues of Judicial Protection of Intellectual Property in Private Enterprises (Part I) — An Empirical Data Analysis Perspective Based on the Guangzhou Intellectual Property Court*], 10 DIANZI ZHISHI CHANQUAN [ELEC. INTELL. PROP.] 69, 70 (2017) (conducting empirical research on intellectual property litigation and pointing out the issue of low compensation).

⁶⁶ See Zhang Chenguo (张陈果), *Zhuanli Susong “Quanli Jiuji Shixiao” de Shizheng Fenxi—Jian Ping Zhongguo Zhuanli Fa Xiuding De Chengxiao Yu Weilai* (专利诉讼“权利救济实效”的实证分析——兼评中国专利法修订的成效与未来) [*Empirical Analysis of the “Effectiveness of Rights Relief” in Patent Litigation – Commentary on the Effectiveness and Future of the Amendment to China’s Patent Law*], 2 DANGDAI FAXUE [CONTEMP. JURIS.] 81, 87–88 (2017).

⁶⁷ *Id.*

⁶⁸ *Id.* at 92; Zhan Ying (詹映) & Zhang Hong (张弘), *Woguo Zhishi Chanquan Qinquan Sifa Panli Shizheng Yanjiu—Yi Weiquan Chengben He Qinquan Daijia Wei Zhongxin* (我国知识产权侵权司法判例实证研究——以维权成本和侵权代价为中心) [*Empirical Study on Judicial Precedents of Intellectual*

and courts often award damages that are significantly lower than claimed.⁶⁹ For instance, in the city of Nanjing, courts typically award only about 40.7% of the claimed damages.⁷⁰ Enforcement of judgments also presents challenges,⁷¹ exacerbating the issue of insufficient remedies. Between 2008 and 2012, over 70% of judgment debtors in national courts attempted to evade, avoid, or even violently resist enforcement.⁷² This judicial inefficiency encourages opportunistic and repeated infringements. Insufficient compensation and frequent infringements both diminish innovators' incentives for innovation and discourage them from disclosing their technology through patents.

B. *Personalization of Patent Law as a Solution*

To address the challenges of speculative patent applications and inadequate remedies for patent infringement, the Chinese government introduced two mechanisms into its patent law: the Reward and Punishment Mechanism and the Tiered Regulation Mechanism, both of which rely on social credit data. This paper posits that these mechanisms reflect an overarching strategy to personalize the rules in the legal system, aligning its operation more closely with its objectives. In the context of patent law, this means tailoring the rules in the patent system to improve

Property Infringement in China—Focused on the Cost of Rights Protection and Infringement], 7 KEYAN GUANLI [SCI. RSCH. MGMT.] 145, 152 (2015).

⁶⁹ Wang Guozhu (王国柱), *Zhishi Chanquan “Yan Ge Bao Hu” Sifa Zhengce De Fali Jie Xi—Bianjie, Qiangdu, Shouduan, Xiaoguo De Siwei Shijiao* (知识产权“严格保护”司法政策的法理解析——边界、强度、手段、效果的四维视角) [*Legal Analysis of the “Strict Protection” Judicial Policy of Intellectual Property Rights — A Four-Dimensional Perspective of Boundaries, Intensity, Means, and Effects*], 52 HUADONG SHIFAN DAXUE XUEBAO: ZHIXUE SHEHUI KEXUE BAN [J. E. CHINA NORMAL UNIV.: PHIL. & SOC. SCIS.] 107, 111 (2020).

⁷⁰ *Id.*

⁷¹ Cf. Zuigao Renmin Fayuan Guanyu Luoshi “Yong Liang Dao San Nian Shijian Jiben Jiejue Zhixing Nan Wenti” De Gongzuo Gangyao (最高人民法院关于落实“用两到三年时间基本解决执行难问题”的工作纲要) [Work Outline of the Supreme People's Court on Implementing the “Resolution of the Difficulties in Execution within Two to Three Years”] (promulgated by the Supreme People's Court, May 11, 2016, effective May 11, 2016), <http://www.kxrmfy.gov.cn/bencandy.php?fid=37&id=1091> [<https://perma.cc/GDW9-QBS9>].

⁷² Yi Jiming (易继明), *Wo Guo Zhishi Chanquan Sifa Baohu de Xianzhuang He Fangxiang* (我国知识产权司法保护的现状和方向) [*The Current Situation and Direction of Intellectual Property Judicial Protection in China*], 5 XIBEI DAXUE XUEBAO: ZHIXUE SHEHUI KEXUE BAN [J. NW. UNIV.: PHIL. & SOC. SCIS.] 50, 54 (2018).

its fostering of innovation and dissemination of knowledge,⁷³ or at least to correct the system where it currently deviates from these objectives.

Personalization enhances the precision of legal rules by tailoring them to individual circumstances, characteristics, or behaviors,⁷⁴ as opposed to applying one-size-fits-all rules. Advocates of personalized law argue that uniform rules might be “good on average” but they often do not adequately cater to entities with diverse traits,⁷⁵ as they are potentially both “over- and under-inclusive.”⁷⁶

In theory, personalized law can apply to a broad range of legal domains, such as traffic regulations,⁷⁷ negligence,⁷⁸ criminal procedure,⁷⁹ contracts,⁸⁰ copyrights,⁸¹ consumer protection,⁸² data privacy,⁸³ and pre-commitments.⁸⁴ A ubiquitous example in academic discussions is personalized traffic regulations, where speed limits are customized based on the distinct characteristics of each

⁷³ Cf. Adi Libson & Gideon Parchomovsky, *Toward the Personalization of Copyright Law*, 86 U. CHI. L. REV. 527, 549–50 (2019) (advocating for a personalized copyright regime, utilizing Big Data to tailor penalties for copyright infringement based on the likelihood of individuals to purchase copyrighted content, arguing that this approach would enhance social welfare and efficiency, the goals that copyright law pursues).

⁷⁴ E.g., Omri Ben-Shahar, *Personalized Elder Law*, 28 ELDER L.J. 281, 285, 287 (2021).

⁷⁵ *Id.* at 290 (“A uniform rule may be good on average, but it misfires in individual cases.”).

⁷⁶ Coglianese, *supra* note 1, at 2 (noting that there is a series of enduring criticisms regarding personalized laws and regulations including that rules are imprecise tools, they can exhibit both over- and under-inclusivity, and the world’s diversity means that one-size-fits-all rules may not always be suitable).

⁷⁷ Anthony J. Casey & Anthony Niblett, *The Death of Rules and Standards*, 92 IND. L.J. 1401, 1404 (2017).

⁷⁸ Omri Ben-Shahar & Ariel Porat, *Personalizing Negligence Law*, 91 N.Y.U. L. REV. 627, 629 (2016) (“Rather than addressing each actor as a nondistinct member of a large pool and commanding her to meet the level of reasonable precautions that correspond to the average competence within the pool, a *personalized negligence law* would separate the actor from the pool and require her to meet her *own* customized standard of care.”).

⁷⁹ Deborah W. Denno, *Neuroscience and the Personalization of Criminal Law*, 86 U. CHI. L. REV. 359, 394–95 (2019); Matthew B. Kugler & Lior Jacob Strahilevitz, *Assessing the Empirical Upside of Personalized Criminal Procedure*, 86 U. CHI. L. REV. 489, 491 (2019).

⁸⁰ Omri Ben-Shahar & Ariel Porat, *Personalizing Mandatory Rules in Contract Law*, 86 U. CHI. L. REV. 255, 256 (2019); Porat & Strahilevitz, *supra* note 49, at 1475.

⁸¹ Libson & Parchomovsky, *supra* note 73, at 542–46.

⁸² BEN-SHAHAR & PORAT, *supra* note 31, at 72–73.

⁸³ Christoph Busch, *Implementing Personalized Law: Personalized Disclosures in Consumer Law and Data Privacy Law*, 86 U. CHI. L. REV. 309, *passim* (2019).

⁸⁴ Lee Anne Fennell, *Personalizing Precommitment*, 86 U. CHI. L. REV. 433, *passim* (2019).

driver.⁸⁵ Under such a framework, drivers with varying risk profiles would face different legal rules even in identical external conditions. This nuanced personalization of traffic laws considers various factors that contribute to a driver's risk level.⁸⁶ For example, it might classify a driver with a history of accidents as high-risk and would consequently assign him more conservative speed limits. In contrast, those with a clean driving record might be permitted to drive at higher speeds. This aligns the legal framework more closely with the objective of reducing road accidents by holding high-risk drivers to stricter standards. The sophistication of such personalized traffic regulations can be enhanced by leveraging Big Data and algorithmic analysis.⁸⁷ This would allow for the formulation of highly individualized speed limits based on an array of personal attributes, including a driver's eyesight, reaction instincts, driving experience, and even real-time measures of fatigue.⁸⁸ Additionally, the algorithmic model could incorporate factors like age, sex, and credit score, which actuarial models often associate with driving risk.⁸⁹ This level of detail would ensure that each driver's speed limit is optimized based on a comprehensive assessment, thereby contributing to safer traffic management.

Similarly, in the patent law context, personalized rules could subject entities with a history of filing speculative patent applications or engaging in intentional or repeated infringements to more stringent oversight or potent counter-incentives. Conversely, entities whose actions align with the goals of the patent law system could receive positive incentives, encouraging them to maintain or even elevate their standards of operation in ways that better advance the patent system's goals.⁹⁰

⁸⁵ *E.g.*, BEN-SHAHAR & PORAT, *supra* note 31, at 19–20; Casey & Niblett, *supra* note 77, at 1404 (“[M]icrodirective might provide a speed limit of 51.2 miles per hour for a particular driver with twelve years of experience on a rainy Tuesday at 3:27 p.m.”).

⁸⁶ BEN-SHAHAR & PORAT, *supra* note 31, at 19–20.

⁸⁷ BEN-SHAHAR & PORAT, *supra* note 31, at 19–20. The term “Big Data” in this paper refers to the use of massive datasets with large, varied, and complex structures to uncover hidden patterns and secret correlations. *See generally* Seref Sagiroglu & Duygu Sinanc, *Big Data: A Review*, in 2013 INT’L CONF. ON COLLABORATION TECHS. AND SYS. 42, 42 (2013), <https://ieeexplore.ieee.org/document/6567202> [<https://perma.cc/4FA2-ANKM>].

⁸⁸ BEN-SHAHAR & PORAT, *supra* note 31, at 19–20.

⁸⁹ BEN-SHAHAR & PORAT, *supra* note 31, at 19–20.

⁹⁰ *See infra* Part II.D.2.

Data plays a crucial role in enabling this personalization.⁹¹ Without data, the government could not discern individual traits and craft tailored rules that would allow it to achieve its legal objectives more effectively.⁹² The Reward and Punishment Mechanism of China's patent system classifies entities into categories based on their social credit data, which indicates whether they are "trustworthy" or "untrustworthy," and applies corresponding incentives in the forms of rewards or punishments.⁹³ The Tiered Regulation Mechanism, on the other hand, assesses entities based on their social credit scores, assigning them ratings that dictate the level of regulation they receive.⁹⁴ This differentiated approach allows the government to tailor its rules more finely.

In the realm of personalized law, scholars recognize different degrees of personalization, ranging from more sophisticated to more rudimentary. High-degree personalization involves the use of large datasets and algorithmic analysis to generate rules based on individual traits, situational contexts, and legal objectives.⁹⁵ Casey and Niblett refer to these as "microdirectives," or highly precise rules.⁹⁶ When the system cannot attain this level of detail, it uses a more

⁹¹ See Ben-Shahar, *supra* note 74, at 287 ("Personalized law depends on information."); cf. Andrew Verstein, *Privatizing Personalized Law*, 86 U. CHI. L. REV. 551, 558 (2019) ("When it is technically feasible and normatively acceptable to gather and use granular data concerning individuals, personalized law promises to better link directives with capacities and needs.").

⁹² Ben-Shahar, *supra* note 74, at 286 ("Intense customization based on every relevant individual trait is the primary defining feature of personalized law. . . . To tailor good personalized commands, we need data about people's physical and cognitive skills, preferences, income and wealth, experience and habits — any personal feature that is correlated with the desired calibration of the command.").

⁹³ Outline of Social Credit System Construction, *supra* note 10 (proposing "strengthening rewards and incentives for trustworthy entities" and "enhancing constraints and penalties for untrustworthy entities").

⁹⁴ "Shisi Wu" Guojia Zhishi Chanquan Baohu He Yunyong Guihua ("十四五"国家知识产权保护 and 运用规划) [The 14th Five-Year Plan for National Intellectual Property Protection and Application] (promulgated by the St. Council Oct. 28, 2021, effective Oct. 28, 2021) [hereinafter The 14th Five-Year IP Plan], https://www.gov.cn/zhengce/content/2021-10/28/content_5647274.htm [<https://perma.cc/63R7-HX9S>] (proposing "the establishment of a credit-based graded and categorized regulatory model in the field of intellectual property").

⁹⁵ E.g., BEN-SHAHAR & PORAT, *supra* note 31, at 19 ("At the extreme, when Big Data is used, algorithms are coded to identify relations between people's attributes and the outcome of interest, to design fully individualized commands.").

⁹⁶ Anthony J. Casey & Anthony Niblett, *A Framework for the New Personalization of Law*, 86 U. CHI. L. REV. 333, 338 (2019) (noting that microdirectives are the "extreme form" of personalization and the "idealized version" of personalized law); Casey & Niblett, *supra* note 77, at 1403 ("These microdirectives will provide ex ante behavioral prescriptions finely tailored to every possible scenario.").

preliminary approach—crude personalization.⁹⁷ According to Ben-Shahar and Porat, crude personalization in law means forming “discrete buckets of treatment” based on individual characteristics, and applying these treatments accordingly.⁹⁸ They suggest that “much of the benefit” of personalized law “could be achieved this way.”⁹⁹ Currently, both the Reward and Punishment Mechanism and the Tiered Regulation Mechanism in China’s patent system represent this form of crude personalization.¹⁰⁰

A typical example of crude personalization in law in the academic discourse is the personalized alcohol purchase age.¹⁰¹ Instead of applying a uniform age requirement, such as 21, the legal system could implement a stratified approach that reflects varying risk levels of alcohol abuse among individuals. This model could avoid reliance on highly sensitive information like mental health records.¹⁰² Instead, a stratified approach could use more general data to determine risk categories. For instance, this might allow individuals deemed least risky, based on factors such as driving records and evidence of risk-seeking behavior, to purchase alcohol at age 18.¹⁰³ It might set the legal purchase age at 20 for those with a moderate risk level, while the system might restrict the highest risk individuals until age 22.¹⁰⁴ This method of categorization would utilize less intrusive data while still attempting to tailor legal obligations to individuals’ idiosyncratic risks and behaviors.

II ANALYSIS

To understand the Reward and Punishment Mechanism and the Tiered Regulation Mechanism within China’s patent system as a crude form of personalized law, we need an analytical framework. Since no studies have yet provided such a framework, this paper proposes one by synthesizing insights

⁹⁷ Cf. Hans Christoph Grigoleit, *Personalized Law: Distinctions and Procedural Observations*, U. CHI. L. REV. ONLINE, Mar. 9, 2022, at 9 (suggesting that restricting personalized law to crude features is more realistic).

⁹⁸ Ben-Shahar & Porat, *supra* note 32, at 5.

⁹⁹ Ben-Shahar & Porat, *supra* note 32, at 5.

¹⁰⁰ See *infra* Part II B.1, Part II.B.2, Part II.C.1, & Part II.C.2.

¹⁰¹ Ben-Shahar & Porat, *supra* note 32, at 5–6.

¹⁰² Ben-Shahar & Porat, *supra* note 32, at 5–6.

¹⁰³ Ben-Shahar & Porat, *supra* note 32, at 5–6.

¹⁰⁴ Ben-Shahar & Porat, *supra* note 32, at 5–6.

from personalized law literature. While scholars initially proposed many of these insights in the context of advanced stages of personalized law that is based on Big Data and algorithms, they apply equally to the analysis of its crude form. Utilizing this framework, the paper delves into a detailed analysis and assessment of both mechanisms.

A. *An Analytical Framework*

The essence of personalized law lies in providing different rules for different individuals. However, to sustain this system, merely having personalized rules is insufficient. This paper categorizes the rules in personalized law into four types, by function: profiling rules, personalized rules, communication rules, and adjustment rules.

Profiling rules: The personalization of rules relies on identifying the characteristics of regulated entities.¹⁰⁵ Therefore, in a personalized law system, there must be rules outlining how the government may use data to create individuals' profiles.¹⁰⁶ We can call these "profiling rules." Profiling rules must address several issues. First, they need to specify the entities responsible for data collection.¹⁰⁷ Elkin-Koren and Gal note that this can involve government-collected data, such as from speeding cameras and tax returns, and data that private firms collect, such as from wearable technology or smartphones.¹⁰⁸ Where government data is inadequate, a blend of governmental and private data sources might be necessary in order to craft effective personalized laws.¹⁰⁹ Second, profiling rules must address the scope of the data collection. A broad scope can be advantageous, as more data facilitates the formation of detailed and accurate profiles.¹¹⁰ However, factors such as collection cost, the capacity of data processing, and the need

¹⁰⁵ Ben-Shahar, *supra* note 74, at 287 ("Personalized law depends on information."); Ben-Shahar & Porat, *supra* note 32, at 2 (noting that personalization is "data-guided").

¹⁰⁶ See Ben-Shahar & Porat, *supra* note 80, at 258 ("Many issues related to implementation-what data could be used. . . ."); see also Burk, *supra* note 1, at 294 ("'Big data' does not simply mean a lot of data; data must be collected, structured, and groomed for processing.").

¹⁰⁷ See generally BEN-SHAHAR & PORAT, *supra* note 31, at 2 ("Who owns the information, how may it be used, and what limits on data collection to install are the central questions of the law of digital data.").

¹⁰⁸ Elkin-Koren & Gal, *supra* note 1, at 408–11.

¹⁰⁹ Elkin-Koren & Gal, *supra* note 1, at 408–09.

¹¹⁰ See BEN-SHAHAR & PORAT, *supra* note 31, at 19 ("As the amount of information increases, more fine partitioning of people becomes possible.").

to protect privacy limit its scope.¹¹¹ Third, profiling rules also need to control the formation of profiles, ensuring that the government can derive meaningful conclusions from the collected data.¹¹² An example is Adam Davidson’s discussion of using data to identify “the dangerous few”—those most likely to re-offend.¹¹³ In this context, the essence of a profile lies in its practical application: pinpointing “the dangerous few” informs tailored approaches, such as specific incarceration or surveillance measures.¹¹⁴

Personalized Rules: Personalized rules are the crux of personalized law. The government can generate them algorithmically, including through AI, based on the collected data, to ensure alignment with the system’s objectives.¹¹⁵ However, infinitely increasing precision in personalization is impractical due to cost and technical constraints.¹¹⁶ A more feasible alternative is crude personalization, where the government creates discrete buckets of treatment based on broad profiles, and imposes them accordingly.¹¹⁷ While this approach reduces precision, it also curtails the costs of data collection and decreases reliance on algorithms.¹¹⁸ Personalized rules fall into two categories—unilateral and bilateral.¹¹⁹ Unilateral personalization, the simpler type, addresses the interests of a single party.¹²⁰ We see this in scenarios such as customizing regulations to individual consumer needs in consumer protection laws or tailoring the preferences of a testator.¹²¹ Bilateral personalization involves balancing the interests of two parties, as occurs in contract

¹¹¹ See generally Ben-Shahar, *supra* note 74, at 287 (noting cost concerns); Grigoleit, *supra* note 97, at 8 (examining data processing capacity); Casey & Niblett, *supra* note 96, at 351 (evaluating privacy concerns).

¹¹² See Burk, *supra* note 1, at 294 (“Data processing routines are structured with particular audiences and purposes in mind; they are tailored and re-tailored according to predicted uses.”).

¹¹³ Adam Davidson, *Personalized Law, Political Power, and the Dangerous Few*, U. CHI. L. REV. ONLINE, Mar. 7, 2022, at 2.

¹¹⁴ *Id.* at 4–5.

¹¹⁵ See generally Mayson, *supra* note 32, at 9 (suggesting that personalized law represents a transformative approach that leverages big-data technology to create and convey precise, individualized legal requirements aimed directly at achieving specific societal outcomes).

¹¹⁶ Grigoleit, *supra* note 97, at 7–8.

¹¹⁷ Ben-Shahar & Porat, *supra* note 32, at 5–6.

¹¹⁸ Grigoleit, *supra* note 97, at 9; see also Ben-Shahar, *supra* note 74, at 287 (“The optimal level of personalization is therefore a balance between its precision benefits and the information and technological costs of implementation.”).

¹¹⁹ Grigoleit, *supra* note 97, at 7.

¹²⁰ Grigoleit, *supra* note 97, at 7.

¹²¹ Grigoleit, *supra* note 97, at 7.

law.¹²² This approach recognizes the intricacies and price sensitivities involved in adjusting legal parameters like warranty periods, depending on each party's unique characteristics.¹²³

Communication Rules: The way that the government communicates personalized rules to the relevant entities is critical. This paper defines the strictures governing this process as “communication rules.” A vital aspect of these rules is the timing of their communication. Generally, the government should communicate an entity's personalized rules before it undertakes relevant actions, enabling the entity to adjust its behavior.¹²⁴ The communication can be immediate or non-immediate. Immediate communication uses technology to relay rules to individuals just before they act.¹²⁵ Non-immediate communication allows for the dissemination of rules in advance, giving entities sufficient time to understand and integrate these norms into their decision-making processes, and avoids the potential pitfalls of haste.¹²⁶ This is particularly applicable to circumstances where real-time behavior adjustment is not necessary.

Adjustment Rules: Adjustment rules regulate or correct both the outcomes and the formulation of the aforementioned rules. Adjustment rules are essential for maintaining the integrity of the personalized law system and for safeguarding the rights of those regulated. Ben-Shahar and Porat's discussion highlights the

¹²² Grigoleit, *supra* note 97, at 7.

¹²³ Grigoleit, *supra* note 97, at 7.

¹²⁴ See generally Casey & Niblett, *supra* note 96, at 347 (arguing personalization through Big Data allows the law's tailored effects to be communicated to a citizen based on their individual circumstances and characteristics in a timely manner, ensuring clarity “before the citizen has to act”); Grigoleit, *supra* note 97, at 4 (“[P]ersonalized rules might be generated in advance and communicated to an individual in order to allow them to adapt their conduct accordingly.”); Jared I. Mayer, *Implementing Personalized Negligence Law*, U. CHI. L. REV. ONLINE, Mar. 9, 2022, at 6. (“In order to successfully implement personalized negligence law, then, we need to (a) promote ex ante knowledge of one's standard of care while (b) not relying on self-knowledge and (c) not sacrificing personalized negligence law's wide applicability.”); Mayson, *supra* note 32, at 2 (noting that one of the shifts from conventional law to personalized law is “toward greater ex ante specification of what rules require of individuals”).

¹²⁵ Ben-Shahar & Porat, *supra* note 32, at 2 (“Personalized law would reinvent disclosures, warnings, and food labels with different bits of information electronically delivered to people at the point of decision.”); cf. Grigoleit, *supra* note 97, at 1 (noting that Big Data's role in personalized law allows for real-time communication of highly specific commands to individuals, enabling them to act in accordance with these tailored directives).

¹²⁶ Cf. Mayer, *supra* note 124, at 5 (pointing out the appropriateness of informing the regulated subjects in advance about the personalized standards they are expected to follow).

importance of these rules, arguing that personalized law, as a departure from “the uniformity of rules,” means stepping into challenging territories where “things could go wrong in many ways.”¹²⁷ The government should “regularly audit” personalized rules and actively “identify and correct unintended effects.”¹²⁸ While scholars agree on the need for this adjustment mechanism,¹²⁹ they raise concerns over its effectiveness as personalized law evolves, particularly when the government uses algorithms to generate rules.¹³⁰ In this case, the rules’ complexity and sophistication might surpass human understanding, which makes it difficult to identify and address errors.¹³¹

B. *The Reward and Punishment Mechanism*

The Reward and Punishment Mechanism in China’s patent law operates on the principle that governmental entities apply rewards or sanctions based on the profiles of individuals or enterprises. This approach is not limited to patents but extends to other sectors like taxation and environmental protection.¹³² Currently, two departmental regulations—*The National Intellectual Property Administration’s Intellectual Property Credit Management Regulations* (“*Credit Management Regulations*”)¹³³ and *The Market Supervision Administration’s Management Methods for the Serious Illegal and Untrustworthy Entity List*

¹²⁷ Ben-Shahar & Porat, *supra* note 32, at 1; accord Peter N. Salib, *Complex Algorithmic Law*, U. CHI. L. REV. ONLINE, Mar. 9, 2022, at 6 (discussing the broader challenge of “misalignment” in governance by algorithm, where the goals of algorithms are “not quite aligned with” human desires).

¹²⁸ Ben-Shahar & Porat, *supra* note 32, at 4.

¹²⁹ See Busch, *supra* note 83, at 324 (implying that personalized mechanisms should be combined with a monitoring system that provides feedback by relevant entities for future improvement of the design of the mechanisms); Casey & Niblett, *supra* note 96, at 354 (noting that while algorithms play a pivotal role in decision-making, human intervention remains crucial to address potential algorithmic errors, some of which are clear, while others may appear counterintuitive).

¹³⁰ See Burk, *supra* note 1, at 301 (“The complexity of the algorithm in operation creates opacity. Even if the system is entirely open to inspection by experts, the experts are unlikely to understand how it operates.”); Salib, *supra* note 127, at 8–9 (delving into the challenge of “intellectual debt” by highlighting the enigmatic nature of complex algorithms in personalized law, which can often make decisions based on mysterious criteria, leaving their causal mechanisms obscured).

¹³¹ See Casey & Niblett, *supra* note 96, at 354 (noting that some errors that algorithms make are difficult for humans to identify); see also Salib, *supra* note 127, at 6–7 (highlighting the complex nature of algorithms learning via feedback loops, and warning that this complexity can lead to strange and surprising misalignments that may challenge conventional human anticipations).

¹³² E.g., Cheung & Chen, *supra* note 7, at 1148.

¹³³ Credit Management Regulations, *supra* note 8.

(“*Untrustworthy Entities Management Methods*”)¹³⁴—govern the reward and punishment mechanism in the patent domain. The following diagram helps to illustrate this mechanism’s structure and functionality.

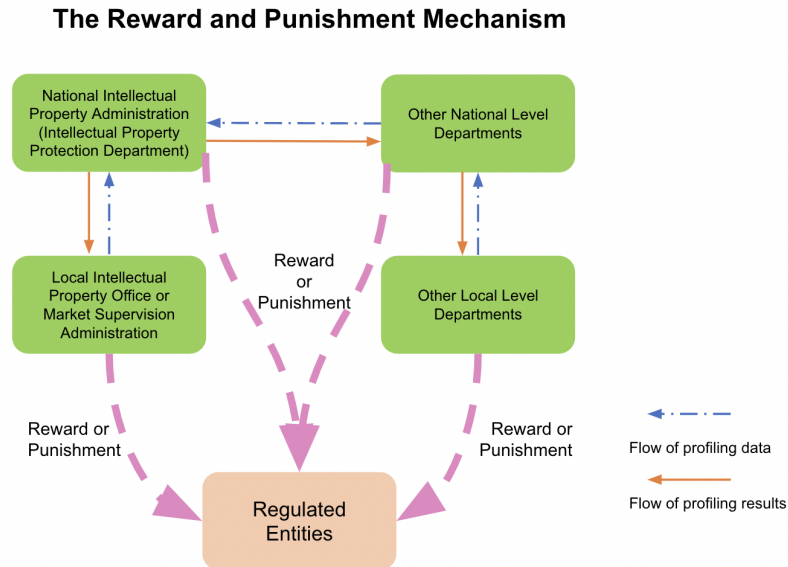


Figure 1. The Reward and Punishment Mechanism

Figure 1 illustrates the structure and key components of the Reward and Punishment Mechanism in China’s patent law. The central component is the Intellectual Property Protection Department (IP Protection Department), which aggregates social credit data and creates profiles of regulated entities.¹³⁵ The IP Protection Department aggregates data collected by other departments responsible for patent-related work and patent agency regulation.¹³⁶ Based on this data, the IP Protection Department categorizes entities into three profiles: “Untrustworthy Entities,” “Seriously Illegal and Untrustworthy Entities,” and “Entities with Good Credit for Three Consecutive Years.”¹³⁷ The first two profiles are associated with various punitive measures, while the last profile qualifies entities for rewards. The specific punitive measures and rewards are predetermined and officially declared to the public.

¹³⁴ *Untrustworthy Entities Management Methods*, *supra* note 8.

¹³⁵ *Credit Management Regulations*, *supra* note 7, at art. 11.

¹³⁶ *Credit Management Regulations*, *supra* note 8., at art. 10.

¹³⁷ *Credit Management Regulations*, *supra* note 7, at arts. 9, 16, 21.

1. *Profiling Rules*

The Reward and Punishment Mechanism primarily collects data through government channels. The National Intellectual Property Administration, particularly the IP Protection Department, is at the core of this mechanism.¹³⁸ Other departments responsible for patent-related work and patent agency regulation also contribute to data collection.¹³⁹ These departments collect data during their “execution of statutory duties and provision of public services” and report to the IP Protection Department.¹⁴⁰ Currently, the scope of data collection in the patent field is relatively narrow, limited to data concerning an entity’s specific types of legal violations.¹⁴¹ Categorization in either of the first two categories (“Untrustworthy Entities” and “Seriously Illegal and Untrustworthy Entities”) can lead to sanctions,¹⁴² while the last category (“Entities with Good Credit for Three Consecutive Years”) opens opportunities for rewards.¹⁴³

To label an individual or enterprise as an “Untrustworthy Entity,” the IP Protection Department must identify at least one act of “untrustworthy conduct.”¹⁴⁴ Strict rules govern the recording of untrustworthy conduct data, limiting records to legally effective documents such as notices of abnormal patent application rejection, administrative penalty decisions for illegal patent agency activities, and decisions or penalties recognizing refusal or evasion of execution despite having the ability to comply.¹⁴⁵ Article 6 of the *Credit Management Regulations* enumerates six categories of untrustworthy conduct, mostly related to patents. These include abnormal patent applications not aimed at protecting innovation, activities in patent agencies that violate laws or administrative regulations and result in administrative penalties, and actions involving the refusal to execute or the evasion of administrative penalties or decisions despite having the ability to

¹³⁸ See *Credit Management Regulations*, *supra* note 7, at arts. 4, 10.

¹³⁹ *Credit Management Regulations*, *supra* note 7, at art. 5.

¹⁴⁰ *Credit Management Regulations*, *supra* note 7, at art. 10.

¹⁴¹ *Credit Management Regulations*, *supra* note 7, at arts. 6, 8.

¹⁴² *Credit Management Regulations*, *supra* note 7, at arts. 9, 17.

¹⁴³ *Credit Management Regulations*, *supra* note 7, at art. 20.

¹⁴⁴ *Credit Management Regulations*, *supra* note 7, at arts. 6, 11–13.

¹⁴⁵ *Credit Management Regulations*, *supra* note 7, at art. 8.

comply.¹⁴⁶ These categories are not exhaustive, and the IP Protection Department can deem other behaviors untrustworthy as well.¹⁴⁷

To categorize an individual or enterprise as a “Seriously Illegal and Untrustworthy Entity,” the IP Protection Department relies on four types of information.¹⁴⁸ First, records of having engaged in seriously illegal patent agency activities coupled with having received “relatively heavy administrative penalties,” such as fines or license revocation.¹⁴⁹ Second, records of having refused to execute administrative decisions despite having the ability to comply, along with findings that such behavior significantly undermines the credibility of the National Intellectual Property Administration.¹⁵⁰ Third, a history of intentional patent infringement, along with heavier administrative punishment from the departments for market regulation.¹⁵¹ And fourth, being identified as having submitted abnormal or malicious patent applications, with an official determination that these applications harm the public interest.¹⁵²

In contrast to the IP Protection Department’s identification of “Untrustworthy Entities” and “Seriously Illegal and Untrustworthy Entities,” there is no established list of “Entities with Good Credit for Three Consecutive Years” under Article 20 of the *Credit Management Regulations*.¹⁵³ Consequently, entities believing they

¹⁴⁶ Credit Management Regulations, *supra* note 7, at art. 6.

¹⁴⁷ Credit Management Regulations, *supra* note 7, at art. 6 (“The National Intellectual Property Administration, according to laws and regulations, designates the following behaviors as untrustworthy conducts: ... (7) Other actions that are included in the specific entries of public credit information in the field of intellectual property and should be recognized as untrustworthy conducts.”).

¹⁴⁸ Credit Management Regulations, *supra* note 7, at art. 16.

¹⁴⁹ Credit Management Regulations, *supra* note 7, at art. 16. Article 2 of the Untrustworthy Entities Management Methods specifies that “heavier administrative penalties” include four categories: “(1) imposition of fines according to the principle of heavier punishment, based on the administrative penalty discretion benchmarks; (2) downgrading of qualifications, revocation of permits, or business licenses; (3) restrictions on production and business operations, orders to cease production or business activities, orders to close, or restrictions on employment; and (4) other heavier administrative penalties as stipulated by laws, administrative regulations, and departmental rules.” Untrustworthy Entities Management Methods, *supra* note 7, at art. 2.

¹⁵⁰ Credit Management Regulations, *supra* note 7, at art. 16.

¹⁵¹ Credit Management Regulations, *supra* note 7, at art. 16; Untrustworthy Entities Management Methods, *supra* note 7, at arts. 2, 9.

¹⁵² Credit Management Regulations, *supra* note 7, at art. 16; Untrustworthy Entities Management Methods, *supra* note 7, at art. 9.

¹⁵³ See Credit Management Regulations, *supra* note 7, at art. 20.

fit this category must declare their status in order to claim government-provided benefits.¹⁵⁴ At present, entities petitioning for this status must demonstrate that they have operated for three consecutive years without garnering negative credit information.¹⁵⁵ In practical terms, departments responsible for administering incentives only need to confirm the absence of negative credit records in the social credit system's database.¹⁵⁶

2. *Personalized Rules*

Currently, the personalization approach in China's patent system represents a form of crude personalization.¹⁵⁷ In other words, the government sorts individuals and enterprises into broad categories based on their profiles and applies corresponding sets of rules to each category. Article 9 of the *Credit Management Regulations* outlines six distinct punitive measures,¹⁵⁸ which we can put into four categories. The first increases the difficulty of obtaining benefits from the government, such as requiring stringent approval for government-funded projects and for preferential policies related to patent applications.¹⁵⁹ The second involves the withdrawal of eligibility for certain benefits, including disqualification from

¹⁵⁴ Phone call with State Intellectual Property Administration, to author (Nov. 1, 2023) (+86 010-6235-6655).

¹⁵⁵ Guowuyuan Guanyu Jianli Wanshan Shouxin Lianhe Jili He Shixin Lianhe Chengjie Zhidu Jiakuai Tuijin Shehui Chengxin Jianse De Zhidao Yijian (国务院关于建立完善守信联合激励和失信联合惩戒制度加快推进社会诚信建设的指导意见) [Guiding Opinions of the State Council on Establishing and Improving the Joint Incentive Systems for Trustworthiness and the Joint Punishment System for Untrustworthiness to Accelerate the Establishment of the Social Credit System] (promulgated by the St. Council, May 20, 2016, effective May 30, 2016) [hereinafter *Opinions on Joint Incentive and Punishment*] CLI.2.272126(EN) (Lawinfochina) (“In the course of handling administrative permits, facilitation service measures such as ‘green channels’ and ‘permissive acceptance’ [acceptance despite defects in materials] may be used for administrative counterparts who are models of honesty, or who have not had any negative credit information recorded for three consecutive years. For eligible administrative counterparts, where some of the declaration materials are incomplete, if a written assurance is given that they will be provided within a given time, they should be accepted to expedite the progress of handling, except where laws or regulations require their provision.”).

¹⁵⁶ Phone call with State Intellectual Property Administration, to author (Nov. 1, 2023) (+86 010-6235-6655).

¹⁵⁷ Cf. Ben-Shahar & Porat, *supra* note 32, at 5 (defining crude personalization).

¹⁵⁸ *Credit Management Regulations*, *supra* note 7, at art. 9 (“The State Intellectual Property Administration implements the following management measures against dishonest entities: (1) Strictly review and approve applications for fiscal projects; (2) Strictly review and approve preferential policies and facilitation measures such as reduction of patent and trademark related fees and priority examination. . . ”).

¹⁵⁹ *Credit Management Regulations*, *supra* note 7, at art. 9.

recognition as a “National Intellectual Property Demonstration and Advantage Enterprise” and from receiving the “China Patent Award.”¹⁶⁰ The third provides for intensified regulatory oversight, such as more frequent inspections.¹⁶¹ The fourth revokes the privilege of utilizing the “credit commitment system,” which simplifies administrative procedures for entities with a positive credit standing.¹⁶² Importantly, while Article 9 states these measures explicitly, it also allows for the imposition of other measures according to the relevant laws, administrative regulations, and policies of the Central Committee of the Communist Party and the State Council.¹⁶³

The restrictions for “Seriously Illegal and Untrustworthy Entities” are broader and more critical than those for “Untrustworthy Entities,” especially with respect to basic operational and market participation permissions. Similar to “Untrustworthy Entities,” “Seriously Illegal and Untrustworthy Entities” receive more regulatory oversight, with more frequent inspections and strict monitoring.¹⁶⁴ These entities lose the opportunity to utilize the notice and pledge system,¹⁶⁵ which streamlines the processing of administrative matters.¹⁶⁶ In addition, entities in this category face up to 38 punitive measures implemented by multiple government departments.¹⁶⁷ These 38 measures include restrictions on stock market financing, internet information services, and participation in public

¹⁶⁰ Credit Management Regulations, *supra* note 7, at art. 9.

¹⁶¹ Credit Management Regulations, *supra* note 7, at art. 9.

¹⁶² Credit Management Regulations, *supra* note 7, at art. 9.

¹⁶³ Credit Management Regulations, *supra* note 7, at art. 9. (“Article 9 The National Intellectual Property Administration shall implement the following management measures against untrustworthy entities. . . . (7) Other management measures that should be taken according to laws, administrative regulations, and policy documents of the Central Committee of the Communist Party and the State Council.”).

¹⁶⁴ Credit Management Regulations, *supra* note 7, at art. 9.

¹⁶⁵ Credit Management Regulations, *supra* note 7, at art. 9.

¹⁶⁶ *Say Goodbye to Proof! The Notification Commitment System Begins Piloting!*, GOV.CN, (May 17, 2019), https://www.gov.cn/fuwu/2019-05/17/content_5392564.htm [<https://perma.cc/4VGQ-2KEK>].

¹⁶⁷ Guanyu Dui Zhishi Chanquan (Zhuanli) Lingyu Yanzhong Shixin Zhuti Kaizhan Lianhe Chengjie De Hezuo Beiwanglu (关于对知识产权 (专利) 领域严重失信主体开展联合惩戒的合作备忘录) [Memorandum of Cooperation on Joint Punishment Against Seriously Dishonest Entities in the Field of Intellectual Property (Patents)] (promulgated by the Dev. and Reform Comm’n et al., Nov. 21, 2018, effective Nov. 21, 2018) [hereinafter Memorandum of Cooperation], <https://www.gov.cn/zhengce/zhengceku/2018-12/31/5434249/files/f238d9b0f3584cfc9b17b7db1de9b28a.pdf> [<https://perma.cc/QU8F-RA4M>].

resource transactions—all significantly limiting the commercial activities and operations of relevant entities.¹⁶⁸

In contrast to these punitive measures, “Entities with Good Credit for Three Consecutive Years” receive a set of beneficial personalized rules.¹⁶⁹ However, such benefits are not guaranteed, as administrative authorities retain discretion in awarding them.¹⁷⁰ According to Article 20 of the *Credit Management Regulations*, there are four categories of benefits: first, prioritization in the administrative approval processes, such as expedited processing; second, greater ease in securing government grants; third, right of access to expedited patent examination processes; and fourth, fewer inspections.¹⁷¹ Administrative authorities can implement other incentive measures as well.¹⁷² However, the scope of benefits for entities in this category is limited to the purview and services of the departments and units of the State Intellectual Property Administration,¹⁷³ which might not be attractive to entities whose business substantially relies on matters other than IP.

3. *Communication Rules*

In the current framework of China’s Reward and Punishment Mechanism, administrative agencies do not generate personalized rules in real time. Instead, they pre-formulate them. The *Credit Management Regulations* and the *Untrustworthy Entities Management Methods* detail the relevant rules and make them publicly accessible, as they do for statutory laws.¹⁷⁴ Though this approach provides a complete set of personalized rules, these rules possess inherent informational gaps, as evidenced by administrative bodies’ open-ended listings

¹⁶⁸ *Id.*

¹⁶⁹ Credit Management Regulations, *supra* note 7, at art. 20 (“Departments and units of the National Intellectual Property Administration may, depending on the situation, adopt the following incentive measures for Entities with Good Credit for Three Consecutive Years. . . .”).

¹⁷⁰ Credit Management Regulations, *supra* note 7, at art. 20.

¹⁷¹ Credit Management Regulations, *supra* note 7, at art. 20.

¹⁷² Credit Management Regulations, *supra* note 7, at art. 20.

¹⁷³ Credit Management Regulations, *supra* note 7, at art. 20.

¹⁷⁴ The Credit Management Regulations and the Untrustworthy Entities Management Methods were publicly announced by the State Intellectual Property Administration and the Market Supervision Administration in January 2022 and July 2021, respectively. *Id.*; Untrustworthy Entities Management Methods, *supra* note 8. Multiple departments, including the National Development and Reform Commission and the People’s Bank of China, issued the memorandum detailing joint punitive measures in November 2018. Memorandum of Cooperation, *supra* note 167.

and discretionary enforcement.¹⁷⁵ For instance, an entity has no guarantee that it will receive the benefits for “Entities with Good Credit for Three Consecutive Years,” as these are subject to the agencies’ discretion.¹⁷⁶ Therefore, even with access to the rules, it is difficult for individual entities to grasp the full extent and legal consequences of their personalized rules.

Although it should precede an entity’s action, the communication of these rules is not instant. Unlike the theoretical, immediate relay of personalized speed limits, there is no temporal proximity between an agency’s rule communication and the relevant entity’s subsequent actions. Additionally, when an entity qualifies for this “good credit” category, there is no direct communication with the entity itself currently. The lack of communication means that entities must instead rely on their knowledge to determine that they qualify for benefits. In contrast, for “Untrustworthy Entities,” public announcements act as the notification mechanism, and the IP Protection Department publishes the list of untrustworthy entities on the State Intellectual Property Administration’s website.¹⁷⁷ The system for “Seriously Illegal and Untrustworthy Entities” involves two layers of communication: preliminary notification of the basis for the decision basis before an entity’s inclusion on the list,¹⁷⁸ and then public disclosure on government websites and the national enterprise credit information system.¹⁷⁹

The public disclosure of “Untrustworthy Entities” and “Seriously Illegal and Untrustworthy Entities” lists is a form of public shaming that affects the entities’ reputation and potentially disrupts their social and commercial interactions.¹⁸⁰ This public portrayal can diminish the confidence of their clients, partners, and investors, limiting their business opportunities and their ability to establish financial relationships.¹⁸¹ Therefore, the communication about disclosure on

¹⁷⁵ See Credit Management Regulations, *supra* note 7, at arts. 9 (7), 20 (5); Untrustworthy Entities Management Methods, *supra* note 7, at art. 15(5).

¹⁷⁶ Credit Management Regulations, *supra* note 7, at art. 20.

¹⁷⁷ Credit Management Regulations, *supra* note 7, at art. 10.

¹⁷⁸ Untrustworthy Entities Management Methods, *supra* note 7, at arts. 13, 25.

¹⁷⁹ Credit Management Regulations, *supra* note 7, at art. 18.

¹⁸⁰ Alexander Trauth-Goik & Chuncheng Liu, *Black or Fifty Shades of Grey? The Power and Limits of the Social Credit Blacklist System in China*, 32 J. CONTEMP. CHINA 1017, 1019–21 (2023).

¹⁸¹ *Id.* at 1017.

government websites can be insufficient to correct behavior, as entities' reputations will already be tarnished.¹⁸²

4. *Adjustment Rules*

In the existing structure of China's Reward and Punishment Mechanism, adjustment rules are critical for protecting the rights of those labeled as "Untrustworthy Entities" or "Seriously Illegal and Untrustworthy Entities." These adjustment rules are twofold: duration regulations and error correction protocols.

Regarding duration, the punitive measures applied to "Untrustworthy Entities" and "Seriously Illegal and Untrustworthy Entities" have specific time limits.¹⁸³ Measures against "Untrustworthy Entities" typically last for one year, but can be extended by up to three years if the IP Protection Department discovers new data about the entity's untrustworthy conduct.¹⁸⁴ "Untrustworthy Entities" can also apply for "credit restoration" after six months if they can show that they have rectified their untrustworthy behaviors.¹⁸⁵ In contrast, sanctions for "Seriously Illegal and Untrustworthy Entities" generally last for three years.¹⁸⁶ After one year, these entities must have fulfilled their obligations under administrative penalty decisions, rectified adverse impacts, and avoided receiving additional penalties if they are to be eligible to improve their profiles.¹⁸⁷

Regarding error correction, the current system only addresses operational errors in rules enforcement; it does not adjust unreasonable rules in the personalized law system. Currently, the IP Protection Department's categorization of an entity as "Untrustworthy" must be based on administrative adjudications or similar processes.¹⁸⁸ Entities can challenge this decision through administrative

¹⁸² See generally *id.* (associating the use of negative profiles of the relevant entities with the concept of "relational punishment," where states bring the deviant's social relations into the punishment regime to reinforce and extend social control, either by applying punishment to the deviant's social relations or by mobilizing these relations as a channel for punishment); Dai, *supra* note 12, at 140 (highlighting the punitive nature of the publication of negative profiles of the relevant entities).

¹⁸³ Credit Management Regulations, *supra* note 7, at art. 10.

¹⁸⁴ Credit Management Regulations, *supra* note 7, at art. 11.

¹⁸⁵ Credit Management Regulations, *supra* note 7, at art. 13.

¹⁸⁶ Credit Management Regulations, *supra* note 7, at art. 17; Untrustworthy Entities Management Methods, *supra* note 7, at art. 21.

¹⁸⁷ Untrustworthy Entities Management Methods, *supra* note 7, at art. 16.

¹⁸⁸ Credit Management Regulations, *supra* note 7, at art. 8.

review and litigation processes, which offer entities a chance to overturn these decisions, or to have them declared illegal or invalid.¹⁸⁹ If the administrative decision is overturned, Article 12 of the *Credit Management Regulations* allows the affected entity to petition the IP Protection Department to amend its profile.¹⁹⁰ Theoretically, though, this correction should be automatic, as the regulations require any department whose decision is reversed to report the reversal to the IP Protection Department within five working days.¹⁹¹ Upon receiving this notification, the IP Protection Department must coordinate with relevant departments, cease public announcements, and remove punitive measures within five working days.¹⁹² This process leads to the removal of negative publicity and sanctions typically within ten working days. If the IP Protection Department refuses to amend the profile, then the entity can contest this decision through administrative review and litigation.¹⁹³

Similarly, an entity labeled as “Seriously Illegal and Untrustworthy” can challenge its profile via administrative review or litigation.¹⁹⁴ If the administrative penalty that led to the negative profile is overturned or declared illegal, the public announcement of its status and the revocation of sanctions should occur within three working days.¹⁹⁵

C. *The Tiered Regulation Mechanism*

The Tiered Regulation Mechanism—another significant aspect of China’s integration of social credit data with patent law—targets patent-related market entities. Initiated after the Reward and Punishment Mechanism, the Tiered

¹⁸⁹ See *Zhonghua Renmin Gongheguo Xingzheng Fuyi Fa* (中华人民共和国行政复议法) [Administrative Review Law of the People’s Republic of China] (promulgated by the Standing Comm. St. People’s Cong., Sep. 1, 2023, effective Jan. 1, 2024), at art. 11, https://www.gov.cn/yaowen/liebiao/202309/content_6901584.htm [<https://perma.cc/8J5H-4FZP>]; *Zhonghua Renmin Gongheguo Xingzheng Susong Fa* (中华人民共和国行政诉讼法) [Administrative Litigation Law of the People’s Republic of China] (promulgated by the Standing Comm. of the St. People’s Cong., Jun. 27, 2017, effective Jul. 1, 2017) at art. 12, [hereinafter *Administrative Litigation Law*], http://www.yueyang.gov.cn/amr/55964/65082/content_1924387.html [archival link omitted].

¹⁹⁰ *Credit Management Regulations*, *supra* note 7, at art. 12.

¹⁹¹ *Credit Management Regulations*, *supra* note 7, at art. 12.

¹⁹² *Credit Management Regulations*, *supra* note 7, at art. 12.

¹⁹³ *Opinions on Joint Incentive and Punishment*, *supra* note 153 (emphasizing that the parties in dispute are encouraged to seek redress through administrative review or litigation to protect their legal rights).

¹⁹⁴ *Untrustworthy Entities Management Methods*, *supra* note 7, at art. 23.

¹⁹⁵ *Untrustworthy Entities Management Methods*, *supra* note 7, at art. 19.

Regulation Mechanism currently regulates patent agencies and patent attorneys at the national level.¹⁹⁶ The broader regulation of other market entities remains experimental in various regions across the country.¹⁹⁷ This section focuses on the national aspect of the mechanism. The *Patent Agency Credit Evaluation Management Measures (Trial)* (“*Credit Evaluation Measures*”) effective from May 1, 2023, uses social credit scores to regulate patent agencies and patent attorneys.¹⁹⁸ The following diagram helps to illustrate this mechanism’s structure and functionality.

The Tiered Regulation Mechanism (National Level)

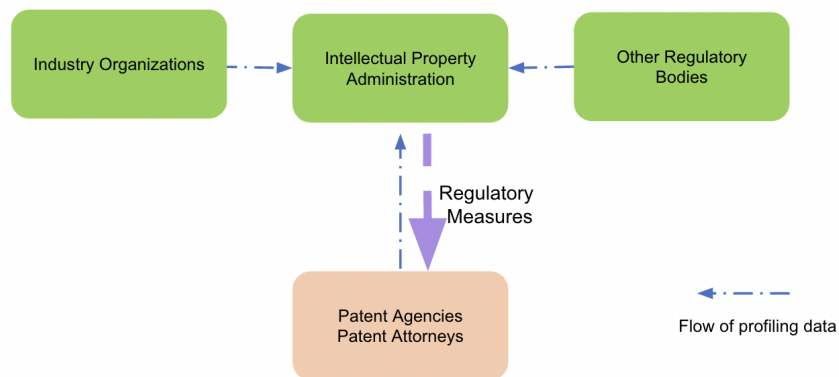


Figure 2. The Tired Regulation Mechanism (National Level)

¹⁹⁶ Credit Evaluation Measures, *supra* note 9.

¹⁹⁷ There are currently two groups of regions participating in the trial. The first group of 12 pilot areas includes Beijing, Shanghai, Jiangsu Province, and other provinces or cities; the second, also 12 pilot areas, includes Liaoning, Shandong, Chongqing, Guangzhou, and other provinces or cities. See Guojia Zhishi Chanquan Ju Bangongshi Guanyu Di Yi Pi Yi Xinyong Wei Jichu De Fenji Fenlei Jianguan Shidian Yanshou Qingkuang De Tongbao (国家知识产权局办公室关于第一批以信用为基础的分级分类监管试点验收情况的通报) [Notice of the Office of the State Intellectual Property Administration on the Acceptance of the First Batch of Pilot Projects for Graded and Classified Supervision Based on Credit] (promulgated by the Office of the St. Intell. Prop. Admin., May 7, 2022), https://www.cnipa.gov.cn/art/2022/5/7/art_2433_175891.html [<https://perma.cc/8J2R-RN99>]; Guojia Zhishi Chanquan Ju Bangongshi Guanyu Di Er Pi Yi Xinyong Wei Jichu De Fenji Fenlei Jianguan Shidian Yanshou Qingkuang De Tongbao (国家知识产权局办公室关于第二批以信用为基础的分级分类监管试点验收情况的通报) [Notice of the Office of the National Intellectual Property Administration on the Acceptance of the Second Batch of Pilot Projects for Graded and Classified Supervision Based on Credit] (promulgated by the Office of the St. Intell. Prop. Admin., Apr. 25, 2023), https://www.cnipa.gov.cn/art/2023/4/25/art_75_184623.html [<https://perma.cc/Q5UU-56SN>].

¹⁹⁸ Credit Evaluation Measures, *supra* note 9.

Figure 2 illustrates the structure and key components of the Tiered Regulation Mechanism at the national level. The Patent Agency Management System, created and operated by the National Intellectual Property Administration, serves as the central hub for collecting and integrating diverse data sources, including administrative and regulatory information from national and local intellectual property departments, input from patent agency industry organizations, data from other industry regulatory bodies and industry organizations, and self-reported data from the patent agencies and attorneys themselves.¹⁹⁹ Using this data, the Patent Agency Management System categorizes entities into one of five tiers based on their accrued credit points. The credit points are determined by the *Credit Evaluation Indicators System and Evaluation Rules for Patent Attorneys* and the *Credit Evaluation Indicators System and Evaluation Rules for Patent Agencies*. Based on their tier, patent agencies and attorneys are subject to corresponding regulatory measures, ranging from rewards and preferential treatment for those in the higher tiers to increased scrutiny and restrictions for those in the lower tiers.

1. Profiling Rules

Prior to the Tiered Regulation Mechanism's inception, the regulation of patent agencies and attorneys already occurred under existing patent laws.²⁰⁰ This earlier form of regulation facilitated the establishment of each entity's initial profile. Specifically, before providing patent-related services, patent agencies were required to secure approval from the State Council's patent administration department,²⁰¹ whereas attorneys had to pass a qualification exam and register with provincial patent departments.²⁰² These procedures enabled the documentation of the basic information of these entities, which could then be used for profiling.

The Tiered Regulation Mechanism builds on this foundation by imposing an informational component that evaluates and scores these entities based on the relevant data gathered by the Patent Agency Management System.²⁰³ Specifically, the system transforms this pre-existing mechanism for documentation into a

¹⁹⁹ Credit Evaluation Measures, *supra* note 9, at art. 7.

²⁰⁰ Zhuanli Dai Li Tiaoli (专利代理条例) [Patent Agency Regulations] (promulgated by the St. Council, Nov. 6, 2018, effective Mar. 1, 2019), CLI.2.326347(EN) (Lawinfochina).

²⁰¹ *Id.* at art. 9.

²⁰² *Id.* at arts. 10, 12.

²⁰³ See PATENT AGENCY MGMT. SYS., <https://dlgl.cnipa.gov.cn/> [<https://perma.cc/K7RS-JWR9>].

dynamic scoring framework. According to the *Credit Evaluation Measures*, the Patent Agency Management System categorizes the entities into one of five tiers based on their accrued credit points.²⁰⁴ These tiers are “A+” (over 100 credit points), “A” (90 to 100 credit points), “B” (80 to 89 credit points), “C” (60 to 79 credit points), and “D” (below 60 credit points).²⁰⁵ The initial base score for each entity is 100 points, which the system grants automatically.²⁰⁶ Subsequent data added to the system can increase scores and potentially upgrade them or can lead to score reduction and potential downgrades.²⁰⁷

The process of adding or deducting points simplifies multi-dimensional matters (such as various behaviors, punishments, and honors) into a single measurement standard: the score. The basis for scoring the entities currently follows the *Credit Evaluation Indicators System and Evaluation Rules for Patent Attorneys* and the *Credit Evaluation Indicators System and Evaluation Rules for Patent Agencies*.²⁰⁸ Both sets of rules set out similar scoring schemes. Positive data typically adds 1 to 3 points to a patent attorney’s score.²⁰⁹ This can include records of provincial or higher-level government accolades, serving as industry integrity volunteers, providing information about others’ misconduct, etc.²¹⁰ The criteria for awarding points to patent agencies largely overlap with those for attorneys. Agencies also earn points for awards, volunteer work, and providing information about misconduct by others.²¹¹

²⁰⁴ Credit Evaluation Measures, *supra* note 9, at art. 5.

²⁰⁵ Credit Evaluation Measures, *supra* note 9, at art. 5.

²⁰⁶ Credit Evaluation Measures, *supra* note 9, at art. 7.

²⁰⁷ Credit Evaluation Measures, *supra* note 9, at art. 7.

²⁰⁸ Zhuanli Dai Lishi Xinyong Pingjia Zhibiao Tixi Ji Pingjia Guize (专利代理师信用评价指标体系及评价规则) [Credit Evaluation Indicators System and Evaluation Rules for Patent Attorneys] (promulgated by the St. Intell. Prop. Admin. on Mar. 31, 2023, effective May 1, 2023) [hereinafter Credit Evaluation Indicators for Patent Attorneys], <https://www.gov.cn/zhengce/zhengceku/2023-04/17/5751863/files/fe9bb500153943388467001ddfb5477f.xlsx> [<https://perma.cc/VYX9-BNT8>]; Zhuanli Dai Li Jigou Xinyong Pingjia Zhibiao Tixi Ji Pingjia Guize (专利代理机构信用评价指标体系及评价规则) [Credit Evaluation Indicators System and Evaluation Rules for Patent Agencies] (promulgated by the National Intellectual Property Administration on Mar. 31, 2023, effective May 1, 2023) [hereinafter Credit Evaluation Indicators for Patent Agencies], <https://www.gov.cn/zhengce/zhengceku/2023-04/17/5751863/files/0736a2d2c4fb4bd481416ff418b55f16.xlsx> [<https://perma.cc/NX7T-HWS2>]. For a simplified version of both of the indicator systems, see Appendix Table 1 and Table 2.

²⁰⁹ See Credit Evaluation Indicators for Patent Attorneys, *supra* note 208.

²¹⁰ Credit Evaluation Indicators for Patent Attorneys, *supra* note 208.

²¹¹ Credit Evaluation Indicators for Patent Attorneys, *supra* note 208.

Conversely, data relating to negative matters lowers the score. Eighteen items, categorized into three groups—“unprofessional behavior,” “penalty,” and “sanctions by industry association”—can lead to deductions for patent attorneys.²¹² The most significant deductions, amounting to 100 points, are imposed for criminal penalties related to patent agency violations and revocation of the patent attorney’s license.²¹³ The smallest deduction, 15 points, results from a warning from the industry association.²¹⁴ Other items leading to deductions include refusing to execute administrative penalty decisions (a 20-point deduction), receiving a warning as an administrative penalty (30 points), engaging in speculative patent applications (40 points), or being part of an agency whose license is revoked (60 points).²¹⁵

Likewise, patent agencies are subject to 25 deduction items, arranged into categories of “unprofessional management,” “operational anomalies,” “penalties,” and “sanctions by industry associations.”²¹⁶ Deductions range from 10 to 100 points, with the highest penalties imposed for criminal violations or license revocation affecting agencies or their senior executives.²¹⁷ The lowest deduction (10 points) applies to administrative issues like delayed annual reporting.²¹⁸ Other penalties fall between 15 to 60 points for various operational anomalies.²¹⁹

2. *Personalized Rules*

The government applies personalized rules to the patent agencies and patent attorneys based on their credit tier, which ranges from “A+” to “D.” For entities rated “A+” and “A,” the *Credit Evaluation Measures* provide a series of preferential treatments to reward their good standing.²²⁰ These privileges include fewer routine inspections, streamlined administrative approval processes, and prioritization in applications and reviews for fiscal fund projects.²²¹ Entities rated

²¹² Credit Evaluation Indicators for Patent Attorneys, *supra* note 208.

²¹³ Credit Evaluation Indicators for Patent Attorneys, *supra* note 208.

²¹⁴ Credit Evaluation Indicators for Patent Attorneys, *supra* note 208.

²¹⁵ Credit Evaluation Indicators for Patent Attorneys, *supra* note 208.

²¹⁶ Credit Evaluation Indicators for Patent Attorneys, *supra* note 208.

²¹⁷ Credit Evaluation Indicators for Patent Attorneys, *supra* note 208.

²¹⁸ Credit Evaluation Indicators for Patent Attorneys, *supra* note 208.

²¹⁹ Credit Evaluation Indicators for Patent Attorneys, *supra* note 208.

²²⁰ Credit Evaluation Measures, *supra* note 9, at art. 14.

²²¹ Credit Evaluation Measures, *supra* note 9, at art. 14.

“B” receive relatively neutral measures under the *Credit Evaluation Measures*.²²² This indicates that these patent agencies and attorneys face standard business supervision and receive necessary business guidance when required.²²³

In contrast, the system subjects entities with “C” and “D” ratings to more stringent, even punitive, governance strategies. “C” entities receive heightened scrutiny, including increased inspection frequency, targeted business guidance, and policy education.²²⁴ This category of entities undergoes a rigorous review process for applications involving fiscal funds and formal records of facilitation measures, such as expedited patent examination requests.²²⁵ Entities rated “D,” the lowest credit tier, encounter the most severe restrictions.²²⁶ Designated as primary targets for regulatory oversight, these entities face frequent inspections, strict legal supervision, and limitations on the use of administrative facilitation measures like the notification commitment system.²²⁷ Moreover, their access to preferential policies, fiscal fund projects, facilitation measure records, and participation in various intellectual property activities, including evaluations, awards, and expert recommendations is significantly curtailed.²²⁸

3. *Communication Rules*

The communication of the personalized rules of the Tiered Regulation Mechanism echoes the approach of the Reward and Punishment Mechanism.²²⁹ This involves the transmission of a complete set of rules to the regulated entities.²³⁰ The authorities predetermine and officially declare the rules to the public through the *Credit Evaluation Measures*.²³¹ This document gives patent agencies and attorneys the opportunity to comprehend thoroughly the entire spectrum of personalized rules that it describes.

²²² *Credit Evaluation Measures*, *supra* note 9, at art. 15.

²²³ *Credit Evaluation Measures*, *supra* note 9, at art. 15.

²²⁴ *Credit Evaluation Measures*, *supra* note 9, at art. 16.

²²⁵ *Credit Evaluation Measures*, *supra* note 9, at art. 16.

²²⁶ *See Credit Evaluation Measures*, *supra* note 9, at art. 17.

²²⁷ *Credit Evaluation Measures*, *supra* note 9, at art. 17.

²²⁸ *Credit Evaluation Measures*, *supra* note 9, at art. 17.

²²⁹ *See Credit Evaluation Measures*, *supra* note 9, at arts. 14–17.

²³⁰ *Credit Evaluation Measures*, *supra* note 9, at arts. 14–17.

²³¹ Zhuanli Daili Xinyong Pingjia Guanli Banfa (Shixing) (专利代理信用评价管理办法 (试行)) [Patent Agency Credit Evaluation Management Measures (Trial)] (promulgated by the St. Intell. Prop. Admin., Mar. 31, 2023, effective May 1, 2023), CLI.4.5163809(EN) (Lawinfochina).

Also like the Reward and Punishment Mechanism, there is no immediate temporal connection between the communication of rules and the subsequent actions of the entities, such as engaging in volunteer activities or ceasing to submit speculative patent applications. But unlike the Reward and Punishment Mechanism, where an entity in the “Entities with Good Credit for Three Consecutive Years” category can only infer its profile, the entities in the Tiered Regulation Mechanism can figure out their profiles through the Patent Agency Management System.²³² Determining their tiers lets entities know which personalized rules they must follow. The Patent Agency Management System gives patent agencies and attorneys access to detailed information regarding their credit scoring.²³³ Patent agencies can view their profiles, detailed scoring, and the profiles of patent attorneys associated with their organizations, while individual patent attorneys can read their personal profiles and scoring details.²³⁴

The public can also see the profiles of patent agencies and attorneys through the system, although scoring details remain confidential.²³⁵ The public accessibility of these profiles creates a deterrent effect through public shaming of entities with negative profiles, affecting their reputational standing and commercial relations.²³⁶ Simultaneously, it empowers clients and potential partners by giving them crucial information, which enables them to make informed decisions about which patent agencies and attorneys to work with.

4. *Adjustment Rules*

Both Mechanisms structure their adjustment rules to include both duration and error correction components. A distinct feature of the Tiered Regulation Mechanism is its emphasis on the time-bound effect of *collected data* on an entity’s

²³² *Quanguo Zhuanli Daili Zinzi Gongshi Pingtai* (全国专利代理信息公示平台) [State Patent Agency Information Disclosure Platform], GUOJIA ZHISHI CHANQUAN JU (国家知识产权局) [ST. INTELL. PROP. OFFICE], <https://dlgl.cnipa.gov.cn/txnqueryAgencyOrg.do> [<https://perma.cc/D9B4-2NS4>] (for patent agencies’ profiles); *Quanguo Zhuanli Daili Zinzi Gongshi Pingtai* (全国专利代理信息公示平台) [State Patent Agency Information Disclosure Platform], GUOJIA ZHISHI CHANQUAN JU (国家知识产权局) [ST. INTELL. PROP. OFFICE], <https://dlgl.cnipa.gov.cn/txnqueryAgent.do> [<https://perma.cc/25VT-CBXU>] (showing patent attorneys’ profiles).

²³³ Credit Evaluation Measures, *supra* note 9, at art. 9.

²³⁴ Credit Evaluation Measures, *supra* note 9, at art. 9.

²³⁵ See *State Patent Agency Information Disclosure Platform*, *supra* note 232.

²³⁶ See generally Trauth-Goik & Liu, *supra* note 180, at 1017.

profile rather than on the regulatory measures.²³⁷ Specifically, both positive and negative data affect an entity's profile for a duration of twelve months. After this period, the influence of this data is nullified; the data is effectively reset and no longer factors into the entity's credit score.²³⁸

Furthermore, the Tiered Regulation Mechanism incorporates a credit restoration process, which allows entities to recover from past misconduct.²³⁹ Six months after the successful rectification and the fulfillment of the relevant obligations, entities may apply for credit restoration.²⁴⁰ This process requires them to submit evidence of corrective actions and fulfilled obligations for review.²⁴¹ Approved applications result in the restoration of deducted credit points, facilitating an improvement in the entity's credit tier.²⁴² However, conditions apply to this process, such as the barring of entities that have already restored credit in the previous twelve months, that submit fraudulent applications, or that are prohibited from restoration due to legal or policy constraints.²⁴³ This mirrors the duration regulations of the Reward and Punishment Mechanism, underscoring the compliance encouragement objective inherent in the social credit system.

Error correction in the Tiered Regulation Mechanism focuses on addressing the application of rules rather than on adjusting the rules themselves, mirroring the approach of the Reward and Punishment Mechanism. Article 10 of the *Credit Evaluation Measures* allows patent agencies and attorneys to challenge their credit scores or profiles.²⁴⁴ They can submit their objections, with supporting evidence, through the Patent Agency Management System, for verification by the relevant patent management departments.²⁴⁵ By law, these departments must complete the verification within fifteen working days and communicate the outcomes to the

²³⁷ See *Credit Evaluation Measures*, *supra* note 9, at art. 8.

²³⁸ *Credit Evaluation Measures*, *supra* note 9, at art. 8.

²³⁹ *Credit Evaluation Measures*, *supra* note 9, at art. 11.

²⁴⁰ *Credit Evaluation Measures*, *supra* note 9, at art. 11.

²⁴¹ *Credit Evaluation Measures*, *supra* note 9, at art. 11.

²⁴² *Credit Evaluation Measures*, *supra* note 9, at art. 11.

²⁴³ *Credit Evaluation Measures*, *supra* note 9, at art. 11.

²⁴⁴ *Credit Evaluation Measures*, *supra* note 9, at art. 10.

²⁴⁵ *Credit Evaluation Measures*, *supra* note 9, at art. 10.

applicants.²⁴⁶ If they validate the objections, then they adjust the entity's credit score and tier accordingly.²⁴⁷

D. Assessment of the Two Mechanisms

1. Profiling Rules

In the Reward and Punishment Mechanism, the scope of data collection is relatively narrow, focusing primarily on the compliance records that governmental entities generate. This limited range of data, while possibly restricting the granularity of entity profiles, has its advantages. It reduces the costs of data collection, as these records are produced and gathered during routine administrative operations, and it guarantees the authenticity of the data, which stems from formal administrative decisions.²⁴⁸ In contrast, the Tiered Regulation Mechanism adopts a more expansive data collection approach, incorporating a wider array of data from administrative, industrial, and self-reported sources.²⁴⁹ This comprehensive method, although more elaborate, introduces the challenges of ensuring the trustworthiness of data, especially the self-reported information from regulated entities. Such data necessitates stringent verification processes to confirm its authenticity and to manage the risk of misinformation effectively.

2. Personalized Rules

The personalized rules of both the Reward and Punishment Mechanism and the Tiered Regulation Mechanism mark an advancement of the rules in China's patent system towards precise regulation by tailoring legal rules based on the nuances of individual entities.²⁵⁰ The targeted approach of the Reward and Punishment Mechanism enhances the disincentives to infringers and entities that engage in speculative patent filings, while it improves the incentives to entities exhibiting consistent compliance. The differential treatment of the Tiered Regulation Mechanism makes the incentives more targeted and boosts the efficiency of resource allocation among administrative authorities, as it ensures

²⁴⁶ Credit Evaluation Measures, *supra* note 9, at art. 10.

²⁴⁷ Credit Evaluation Measures, *supra* note 9, at art. 10.

²⁴⁸ See Credit Management Regulations, *supra* note 7, at arts. 8, 10.

²⁴⁹ See Credit Evaluation Measures, *supra* note 9, at art. 7.

²⁵⁰ *Cf.* Coglianese, *supra* note 1, at 2 (“To take account of relevant particularities, rules are sometimes made complex so that they can fit better the complexities found in the world.”).

that compliant entities are not over-regulated while focusing on managing frequent violators. By shifting from uniform, one-size-fits-all rules to a more nuanced, data-driven approach, these mechanisms counteract both the over-inclusiveness and the under-inclusiveness of the conventional patent system.

However, the personalized rules of both mechanisms are not without their limitations. First, due to their nature as crude personalization models, the legal content remains relatively static, which limits the system's ability to respond dynamically to real-time changes in entities' behaviors or circumstances, potentially reducing its effectiveness. Second, both the Reward and Punishment Mechanism and the Tiered Regulation Mechanism have a transparency issue. The specific reasoning behind punitive measures, rewards, preferential treatments, or stricter treatments remains undisclosed, leading to a lack of clarity that can hinder stakeholders' comprehension and challenge the legitimacy of these regulatory frameworks.²⁵¹ Third, they raise concerns regarding the proportionality and appropriateness of the measures.²⁵² For instance, the Reward and Punishment Mechanism enacts up to 38 joint punitive actions across various governmental departments for "Seriously Illegal and Untrustworthy Entities," which can lead to excessively harsh sanctions that potentially stifle their operations and exceed the mechanism's deterrent intent. Similarly, the rewards for "Entities with Good Credit for Three Consecutive Years" are predominantly offered by departments dealing

²⁵¹ These personalized rules are pre-set rather than dynamically changing based on circumstances, making them static. Transmission of these rules and the related lack of transparency creates clarity and notice issues, leading to a potential loss of legitimacy. *See* Casey & Niblett, *supra* note 96, at 343 ("[O]ne might question the legitimacy of a law whose purpose cannot be identified."); *cf.* Lauren Henry Scholz, *Two Cheers for Cyborgs Personalized Law*, U. CHI. L. REV. ONLINE, Mar. 9, 2022, at 9 ("Can we really get humans out of the loop at all, or are we just fooling ourselves, or worse, obscuring and legitimating human choices under the cloak of automation?").

²⁵² Acknowledging these concerns, Chinese scholars have focused on legal doctrines to forestall potential SCS abuses. *See* Cheung & Chen, *supra* note 7, at 1154 (discussing the disproportionate combined punishments under the SCS); Shen, *supra* note 20, at 41–42 (arguing that the approach of "one instance of untrustworthiness leading to restrictions everywhere" should be firmly rejected as it risks making the joint punishment for untrustworthiness lose appropriate boundaries, contradicting principles like respect for human rights and the principle of proportionality); Wang Xixin (王锡锌) & Huang Zhijie (黄智杰), *Lun Shixin Yueshu Zhidu De Fazhi Yueshu* (论失信约束制度的法治约束) [*On the Legal Constraints of the Breach of Trust Constraint System*], 1 ZHONGGUO FALU PINGLUN [CHINA L. REV.] 96, 98 (2021) (noting that in the implementation of measures constraining untrustworthy conduct and dishonest behavior, a series of issues such as the absence of due process, overly harsh punitive measures, and insufficient remedies have given rise to societal concerns about the improper use, or even abuse, of the SCS).

with intellectual property, suggesting a narrow scope of incentives that might not sufficiently motivate entities toward higher compliance levels.

3. *Communication Rules*

To disseminate information to regulated entities, the Reward and Punishment Mechanism and the Tiered Regulation Mechanism adopt an approach that resembles conventional laws. By publicly disclosing both the full contents of the personalized rules and the outcomes of profiling, these mechanisms ensure that all regulated entities are thoroughly informed about the regulatory framework in which they operate. It is generally beneficial to inform regulated entities about the content of law, as the knowledge of law is inherently valuable and essential for ensuring accountability.²⁵³ Crucially, this method of conveying rules upholds the “value of shared experience in interpreting and following laws.”²⁵⁴ The collective understanding and application of these rules fosters a sense of communal participation in the legal process that mitigates the risk of alienation or fragmentation within the community. Moreover, public shaming, an outcome of disclosing the profiles of regulated entities, serves as a potent deterrent against non-compliance—creating another mechanism from which entities can be fully informed of the regulatory framework and relevant dropdown effects, such as the effect of associating with the named entity.²⁵⁵ This public awareness strategy allows the general population to avoid interactions with unreliable entities, as non-compliance is indicative of irresponsibility.

However, the mechanisms’ communication strategies also have shortcomings. The informational gaps inherent in the disclosed rules represent a significant concern. For instance, the Reward and Punishment Mechanism does not explicitly guarantee the benefits that “Entities with Good Credit for Three Consecutive Years”

²⁵³ Verstein, *supra* note 91, at 563 (“There are usually good reasons to let legal subjects know the content of the law. Legal knowledge is intrinsically valuable and instrumentally a precondition to accountability.”).

²⁵⁴ Mayson, *supra* note 32, at 10–11 (noting that one of the costs of the personalization of law is compromising the collective legal experience crucial to a cohesive political community). As both regulations set out broad categories for entity behavior, the approach of both mechanisms of personalized patent law in China would seem not to cause substantial disruption to such a collective legal experience.

²⁵⁵ See generally Marianne von Blomberg & Haixu Yu, *Shaming the Untrustworthy and Paths to Relief in China’s Social Credit System*, 49 MODERN CHINA 744, 748–50 (2023).

stand to gain,²⁵⁶ which can lead to inconsistent application. Similarly, phrases in the personalized rules section of the Tiered Regulation Mechanism like “*may* reduce,” “*relevant* administrative approvals,” “providing business guidance *when appropriate*,” and “implement *corresponding* incentives and tiered regulatory measures”²⁵⁷ leave room for discretion, introducing uncertainty for regulated entities. In addition, the fact that the authorities neither communicate nor explicitly acknowledge the positive profiles of “Entities with Good Credit for Three Consecutive Years,” might undermine an entity’s motivation to attain and maintain this status. These challenges underscore the need for more direct communication of the profiles, and for providing personalized rules in a clearer manner.

4. *Adjustment Rules*

The adjustment rules of both mechanisms are critical for fostering a balanced regulatory environment that allows for rehabilitation and redress. Notably, the duration regulations prevent indefinite sanctions. Allowing credit restoration is instrumental in ensuring that entities are not perennially tarnished by their past misdeeds, and to encourage them to reform promptly. The error correction protocols that give entities the right to challenge inaccuracies in the implementation of rules ensure alignment with the principles of due process and fairness.²⁵⁸ By facilitating administrative review and litigation, the mechanisms empower entities to seek to correct their profiles, letting them safeguard themselves against the unwarranted harm that punitive measures and stricter regulation can cause.

However, these adjustment rules have notable limitations. They focus primarily on addressing operational errors in the application of rules and overlook the substance of the rules themselves. This narrow focus might lead to scenarios in which the rules, despite being applied correctly, are inherently unreasonable or overly punitive.

²⁵⁶ Credit Management Regulations, *supra* note 7, at art. 20 (emphasis added) (“All departments and units of the State Intellectual Property Office *may* take the following incentive measures *as appropriate* for entities that have good trustworthiness for three consecutive years. . . .”).

²⁵⁷ Credit Evaluation Measures, *supra* note 9, at arts. 14, 15 (emphasis added).

²⁵⁸ Cf. Catalina Goanta, *The Ancient Alien: Good Faith as the Facilitator of Personalized Law* *Personalized Law*, U. CHI. L. REV. ONLINE, Mar. 9, 2022, at 5–7 (“[P]ersonalized law cannot exist in the absence of comprehensive procedures that facilitate its purpose and ensure transparency and accountability in an attempt to improve and respect digital footprints, as opposed to causing more harms to the individual behind them.”).

III IMPLICATIONS

This section, based on the analysis of the Reward and Punishment Mechanism and the Tiered Regulation Mechanism in China's patent system, discusses two potential implications of personalization of law. The first is institutional: legal personalization may increase administrative bodies' control of the legal environment. The second is functional: legal personalization could lead to an expansion of the functions of law, raising important questions about the theoretical justifications and normative principles underlying these new roles.

A. *The Redistribution and Rebalancing of Powers*

Professor Hans Christoph Grigoleit posits that the movement toward personalized law “will bring about major changes to the structure of power distribution in the judicial system,”²⁵⁹ with major implications for legislative, judicial, and procedural dynamics.²⁶⁰ At the legislative level, personalized law introduces complexities and reduces transparency, potentially increasing expert influence and shifting power either to administrative bodies or private actors.²⁶¹ This raises concerns about diminishing public control and democratic discourse in lawmaking.²⁶² For the judiciary, more specific legislative commands lead to a reduction in decision-making power, as the courts have less leeway in interpretation.²⁶³ Additionally, high-degree personalization could lead to decisions based on nontransparent algorithms, potentially dehumanizing the decision-making process and affecting the acceptability of outcomes.²⁶⁴

Grigoleit's concerns are particularly relevant when examining the Reward and Punishment Mechanism and the Tiered Regulation Mechanism of China's patent system. Although these mechanisms demonstrate a rudimentary form of personalization, rather than an advanced stage primarily driven by Big

²⁵⁹ Grigoleit, *supra* note 97, at 9.

²⁶⁰ Grigoleit, *supra* note 97, at 10–11.

²⁶¹ Grigoleit, *supra* note 97, at 10–11; *see also* Casey & Niblett, *supra* note 77, at 1404 (noting that it is realistic that administrative agents will be responsible for implementing technology which translates legislative standards into microdirectives, highlighting the shift in rule-making from lawmakers to specialized regulatory bodies).

²⁶² Grigoleit, *supra* note 97, at 10.

²⁶³ Grigoleit, *supra* note 97, at 10.

²⁶⁴ Grigoleit, *supra* note 97, at 10.

Data and algorithmic analysis, they signify a growing tendency toward a more administratively controlled legal environment. Notably, it is administrative bodies that formulate these personalization mechanisms in the patent system, not the national legislative authorities—the National People’s Congress and its Standing Committee. Cheung and Chen note that this pattern is not confined to the realm of patent law. They observe the establishment of various standards in the SCS without formal legislative procedures.²⁶⁵ Although there is no overt reduction in judicial discretion, it is predominantly administrative agencies, rather than the courts, that enforce these personalization mechanisms. Additionally, the lack of transparency regarding the underlying rationale obscures these mechanisms from public scrutiny, limiting the public’s capacity to influence or challenge these laws and their implementations through legislative and judicial avenues.

This paper posits that as the administrative bodies’ role in shaping and executing personalized law expands, a rebalancing of state powers is imperative in order to prevent abuses and the risk of the infringement of individual rights. In China, legislative and judicial oversight of the administrative agencies’ creation of such personalized laws is generally confined to the setting of broad guidelines and principles, while detailed monitoring of administrative regulations is outside the direct scope of the National People’s Congress and its Standing Committee. The *Legislation Law* delegates this oversight to the State Council, an administrative entity.²⁶⁶ Specifically, Article 109 of the *Legislation Law* requires the administrative bodies that make departmental regulations to file their regulations with the State Council, an administrative body, rather than submitting them for legislative review.²⁶⁷ On the judicial front, the scope of review of administrative actions does not typically extend to assessing the constitutionality or legality of the administrative rules themselves.²⁶⁸ Courts focus on the compliance of administrative actions with established laws and regulations, which leaves a gap

²⁶⁵ Cheung & Chen, *supra* note 7, at 1152.

²⁶⁶ Zhonghua Renmin Gongheguo Lifafa (中华人民共和国立法法) [Legislation Law of the People’s Republic of China] (promulgated by the Standing Comm. St. People’s Cong., Mar. 15, 2000, effective July 1, 2000) at art. 109 § 3, CLI.1.26942(EN) (Lawinfochina).

²⁶⁷ *Id.*

²⁶⁸ Administrative Litigation Law, *supra* note 189, at art. 12.

in oversight, particularly in evaluating the fairness and reasonableness of these administrative regulations.²⁶⁹

One solution to this problem could be to expand the role of the legislative branch. This would involve the creation of a specialized legislative committee, equipped not only with legal experts but also with data scientists and public representatives, responsible for comprehensively reviewing administratively-made personalized laws to ensure that they align with overarching laws and legal principles. As these personalized laws continue to evolve, this committee would engage in periodic audits to identify potential misalignments and unintended consequences.²⁷⁰ Making the outcomes of audits publicly available would enhance transparency and facilitate public trust and acceptance of these laws.

Judicial oversight could be expanded to include a substantive review of the legality and constitutionality of the administrative agencies' personalized laws. While integrating these reforms into China's current legal structure presents challenges, as this development could require substantive amendments to the existing legal framework,²⁷¹ it is a feasible endeavor that addresses the evolving needs of data-driven administrative law. Recognizing the complexities of data-driven legal systems, courts should have access to technical resources, such as data analysis experts to evaluate the rules' intricacies.²⁷² While making this resource available to courts might not seem urgent in the current stage of crude

²⁶⁹ Administrative Litigation Law, *supra* note 189, at art. 13 (“People’s Courts shall not accept lawsuits filed by citizens, legal persons, or other organizations regarding the following matters . . . (2) Administrative regulations, rules, or decisions and orders with general binding force formulated and promulgated by administrative organs.”).

²⁷⁰ See generally Ben-Shahar & Porat, *supra* note 32, at 4 (contending that for maintaining the soundness of personalization, “[the] personalization regime is to make its goals transparent, interpretable, and explainable; to have its methods regularly audited; and to identify and correct unintended effects”); Busch, *supra* note 83, at 330 (suggesting that for personalized regulations to work effectively and align with legal objectives, it is essential to conduct regular algorithm “audits”); Casey & Niblett, *supra* note 96, at 352 (“[W]e can audit the effectiveness of big data personalization by auditing its outcomes just the same way that the legal academy audits the old personalization of law by human judges.”).

²⁷¹ For example, adjudicating administrative regulations might involve deep intervention in administrative powers, which could be a sensitive issue within China’s political and social context. Consequently, there might be political resistance.

²⁷² Cf. Burk, *supra* note 1, at 301 (emphasizing that technical expertise is needed to understand the working of laws driven by algorithm).

personalization, it becomes indispensable as the system advances to a more sophisticated stage involving algorithmic personalized law.

Public oversight is also important. In the rudimentary stage of personalized law, transparency in administrative agencies' rationales vis-a-vis the four categories of rules is paramount to enable public scrutiny.²⁷³ Beyond error correction, such public scrutiny fortifies the democratic legitimacy of personalized law.²⁷⁴ The government can bolster this process by incorporating public engagement into the formulation of the system. This could manifest itself through public hearings and open forums for commenting on proposed regulations. These steps would clarify the decision-making process and offer a platform for diverse stakeholder input. As personalized law reaches more advanced stages, disclosure and public participation will continue to be pivotal.²⁷⁵ However, the focus on disclosure and scrutiny would shift toward the design of the algorithms and the data that the administrative agencies and their algorithms consider. Given the increasing complexity of algorithmic systems and the potential for opacity in their decision-making processes, ensuring meaningful public participation and oversight may become increasingly challenging. To address this, governments and administrative agencies will need to develop and implement strategies for explaining the functioning of these algorithmic systems in an accessible manner, such as the use of simplified models, visualizations, or case studies that illustrate how the algorithms operate and make decisions. Additionally, there may be a need for independent audits and assessments of these systems to ensure their fairness, accountability, and adherence to legal and ethical standards. While providing tailored introductions and explanations to the public is important, it is equally crucial to recognize and proactively address the inherent difficulties in achieving full transparency and understanding of complex algorithmic systems.

²⁷³ Cf. Casey & Niblett, *supra* note 96, at 355 (stressing the imperative for algorithms to be “transparent in their reasoning” to ensure they are used responsibly).

²⁷⁴ Cf. Klass, *supra* note 35, at 9 (emphasizing the importance of transparency and public accessibility in the legislative processes, underscoring their role in ensuring democracy).

²⁷⁵ See Goanta, *supra* note 258, at 6 (“Given its practical dimension, personalized law equally cannot exist in the absence of comprehensive procedures that facilitate its purpose and ensure transparency and accountability in an attempt to improve the respect for digital footprints, as opposed to causing more harms to the individual behind them.”).

B. *The Expansion of the Function of Law*

The data-driven personalization of laws invites a critical examination of the expanding function of legal systems. Consider, for example, the nuanced personalization of traffic laws.²⁷⁶ This approach factors in a driver's risk level, incorporating data ranging from driving experience and current fatigue to credit scores.²⁷⁷ While using credit scores in traffic law personalization might enhance road safety by assigning more accurate speed limits—a primary goal of traffic regulation—it might also inadvertently influence drivers' financial behavior. Drivers motivated to attain higher speed limits might engage in timely loan repayments and maintain minimal debt. The use of credit scores to personalized speed limits extends traffic regulation's function beyond road safety to influencing financial conduct.

Similarly, the expanded functionality of law is evident in the personalization of China's patent law. The Reward and Punishment Mechanism and the Tiered Regulation Mechanism in China's patent framework go beyond the traditional focus on innovation promotion to reflect broader policy objectives, including social and ethical considerations. The legal texts of these two mechanisms include the goals of “fostering a fair and honest market and social environment,”²⁷⁸ “promoting self-discipline and honesty,”²⁷⁹ and “strengthening industry self-discipline.”²⁸⁰ Such a blend of objectives demonstrates how the integration of diverse data sets, in this

²⁷⁶ BEN-SHAHAR & PORAT, *supra* note 31, at 19–20.

²⁷⁷ BEN-SHAHAR & PORAT, *supra* note 31, at 19–20.

²⁷⁸ Credit Management Regulations, *supra* note 8, at art. 1 (citing Guowuyuan Bangong Ting Guanyu Jinyibu Wanshan Shixin Yueshu Zhidu Goujian Chengxin Jianshe Chang Xiao Jizhi De Zhidao Yijian (国务院办公厅关于进一步完善失信约束制度构建诚信建设长效机制的指导意见) [Guiding Opinions on Establishing a Long-term Mechanism for Building Integrity] (promulgated by the Gen. Off. of the St. Council, Dec. 7, 2020, effective Dec. 18, 2020), https://www.gov.cn/zhengce/content/2020-12/18/content_5570954.htm [<https://perma.cc/54LD-A9RZ>]) (stating that the mechanism is established to implement policies including the “Guiding Opinions on Establishing a Long-term Mechanism for Building Integrity,” the stated goal of the policy is “to foster a fair and honest market and social environment”).

²⁷⁹ Untrustworthy Entities Management Methods, *supra* note 8, at art. 1.

²⁸⁰ Article 1 of the *Credit Evaluation Measures* states that the mechanism is established to implement policies including the 14th Five-Year Plan for National Intellectual Property Protection and Application, “which pursues goals including ‘strengthening industry self-discipline’ to combat unauthorized patent agency activities.” *Credit Evaluation Measures*, *supra* note 9, at art. 1 (stating that the mechanism is established to implement policies including the 14th Five-Year Plan for State Intellectual Property Protection and Application, “which pursues goals including ‘strengthening industry self-discipline’ to combat unauthorized patent agency activities”). The 14th Five-Year IP Plan, *supra* note 94, at art. 2.

case social credit data largely based on compliance records,²⁸¹ into the patent law framework contributes to the expansion of its function.

The structure of these mechanisms also reflects this expansion. For example, the Reward and Punishment Mechanism confers advantages, such as priority in patent examination, to entities with a “Good Credit for Three Consecutive Years” status. Priority patent examination and approval could lead to earlier patent grant and, consequently, earlier enforcement rights. In many jurisdictions, including China, while a patent application is pending, the applicant may have provisional rights to monetary compensation.²⁸² However, full enforcement rights are only available once the patent is granted. Although patent protection terms are primarily intended to encourage innovation, giving an entity with good compliance records the opportunity for expedited patent grant and enforcement also encourages compliant behavior across a broad spectrum.

The expansion of the function of law in data-driven personalization introduces two significant challenges. The first is the issue of theoretical justification. Traditional patent law rests on the incentive theory and the disclosure theory, which encourage innovation and the sharing of knowledge.²⁸³ However, when this temporal protection is extended to promote compliance behaviors, it introduces a new dimension that established theoretical frameworks do not currently support. This discrepancy is particularly evident as the text of the fundamental legal document of China’s patent system—the *Patent Law*—does not list the objectives of fostering fair markets and promoting self-discipline in the personalized patent

²⁸¹ See Wu Guoping (吴国平) & Tang Jun (唐), *Zhishi Chanquan Shixin Xingwei De Falu Guizhi Yanjiu* (知识产权失信行为的法律规制研究) [*Research on the Legal Regulation of Intellectual Property Dishonesty*], 9 *ZHISHI CHANQUAN [INTELL. PROP.]* 28, 28 (2011) (emphasis added) (defining “untrustworthy conducts involving intellectual property” as “conduct within the realm of intellectual property that violate the provisions of intellectual property law, deviate from the legislative purpose of intellectual property law and the principles of honesty and integrity, thereby damaging the credibility and integrity of the intellectual property system”).

²⁸² Patent Law, *supra* note 54, at art. 13. In the U.S., for example, the provisional right of patent grants the patent applicant a temporary right to obtain reasonable royalties from anyone who makes, uses, offers for sale, or sells the invention claimed in the published patent application, starting from the publication date until the patent is granted. 35 U.S.C. § 154 (2018).

²⁸³ *E.g.*, Patent Law, *supra* note 54, at art. 1.

mechanisms. Instead, the *Patent Law* still emphasizes the traditional goals of promoting innovation and sharing and implementing knowledge.²⁸⁴

Second, there is a complexity in the cumulative effects of nudges across multiple legal domains. For example, in the case of Ben-Shahar and Porat's personalized traffic laws, if a credit score is used to personalize laws across various domains, then the use of such data nudges a person's financial behavior across each of those domains, rather than individualizing the behavior to each instance or legal domain. This integration of data for law personalization could lead to intricate patterns within the legal system, potentially leading to "unintended consequences."²⁸⁵ The criticisms of China's application of social credit data in law personalization highlight these concerns, as multiple legal areas combine to produce disproportionate penalties,²⁸⁶ exemplifying the pitfalls of expanded functions and cumulative nudge effects.

In response to these challenges, scholars and policymakers must undertake two pivotal tasks. First, they must work toward creating intricate and comprehensive normative frameworks that can evaluate the law's expanded functions, integrating its traditional objectives with the new considerations that arise from incorporating diverse data sets.²⁸⁷ This updated normative theory should guide rule generation and enhance the public understanding of the rationale behind personalized laws. Second, and perhaps more challenging, is the development of precise descriptive models to analyze and assess the cumulative effects of nudges. These models would help to identify unintended consequences and find

²⁸⁴ Patent Law, *supra* note 54, art. 1 ("In order to protect the legitimate rights and interests of patentees, encourage invention and creation, promote the application of inventions and creations, improve innovation capabilities, and promote scientific and technological progress and socio-economic development.").

²⁸⁵ Dan L. Burk, *Algorithmic Legal Metrics*, 96 NOTRE DAME L. REV. 1147, 1151 ("Legal determinations such as tort liability or criminal culpability that carry their own moral weight are likely to produce unintended consequences when associated with morally charged algorithmic metrics."); *accord* Jordan M. Barry, John William Hatfield & Scott Duke Kominers, *To Thine Own Self Be True? Incentive Problems in Personalized Law*, 62 WM. & MARY L. REV. 723, 724 (2021) ("Concerns about unintended consequences may further lower regulators' willingness to personalize law.").

²⁸⁶ *See, e.g.*, Wang & Huang, *supra* note 252, at 97 (pointing out that the application of the social credit system has led to concerns and criticism from various quarters due to instances of disproportionate punitive measures and the generalized application of joint punishments).

²⁸⁷ *Cf.* Mayson, *supra* note 32, at 10 (noting that while the personalization of law can correct inequalities, it is essential to establish a clear and normative theory that defines the substantive entitlements people should receive, prioritizing the reduction of structural inequalities in legal objectives).

interventions to mitigate them, perhaps by calibrating the combined effects of multiple personalized legal domains. Overall, the personalization of law offers the opportunity to shape legal systems that are technologically advanced and contextually relevant while also presenting the challenge of ensuring that this new legal form remains ethically grounded and operationally sound.

CONCLUSION

The analysis of the Reward and Punishment Mechanism and the Tiered Regulation Mechanism in China's patent law framework demonstrates the significant impact of integrating social credit data into legal systems. These mechanisms represent a shift towards personalized law, marking a departure from traditional, uniform legal frameworks and moving towards a more nuanced, data-driven approach to regulation.

The Reward and Punishment Mechanism, which categorizes entities into "Untrustworthy Entities," "Seriously Illegal and Untrustworthy Entities," and "Entities with Good Credit for Three Consecutive Years," applies corresponding incentives or sanctions based on these profiles. This targeted approach enhances disincentives for infringers and entities engaging in speculative patent filings while improving incentives for consistently compliant entities. Similarly, the Tiered Regulation Mechanism assigns patent agencies and attorneys to one of five tiers based on their social credit scores, subjecting them to differentiated regulatory measures. This approach optimizes resource allocation among administrative authorities, ensuring compliant entities are not over-regulated while focusing on managing frequent violators.

The evaluation of these mechanisms highlights the potential of personalized law to address the limitations of one-size-fits-all legal frameworks. However, it also reveals challenges, such as the lack of transparency in the reasoning behind punitive measures and rewards, concerns about the proportionality of sanctions, and the need for more direct communication of profiles and personalized rules.

The implications of this shift are profound. Institutionally, the growing prominence of administrative agencies in the enforcement of personalized laws signals a reconfiguration of power dynamics within the legal system. This development necessitates a reassessment of the roles and responsibilities of both legislative and judicial bodies in order to ensure a balanced distribution of state powers and to protect individuals' rights within this new legal landscape.

Functionally, the expansion of the patent law's function, from encouraging innovation to fostering a compliant and disciplined market environment, challenges the traditional theoretical basis of patent law. This expanded scope calls for a comprehensive theoretical reevaluation to ensure that the laws are not only effective in their new roles but also remain grounded in normative principles and avoid unintended consequences.

In addition to the broader implications for legal systems and governance, this paper's analysis offers critical insights for innovative enterprises, both domestic and foreign, operating within the Chinese market. The integration of social credit data into China's patent law provides a unique regulatory environment that they must navigate. For transnational businesses, adapting to this data-driven legal landscape means reevaluating their operational and compliance strategies to align with the nuanced requirements and opportunities presented by China's evolving patent system. Moreover, the insights gleaned from China's experience can serve as a valuable lesson for transnational companies as they prepare for the potential adoption of similar data-driven legal frameworks in other jurisdictions.

Some describe personalized law as “incredibly timely, even visionary” and believe that it will “dramatically change the law.”²⁸⁸ China's patent law, personalized through social credit data, exemplifies the development of legal systems in the digital age. It underscores the need for scholars, policymakers, and legal practitioners to navigate the challenges and harness the opportunities that data-driven law presents. The resulting dialogue will be crucial, not only for China, but also for the global legal community.

²⁸⁸ Netta Barak-Corren, *Personalization and the Constitution Personalized Law*, U. CHI. L. REV. ONLINE, Mar. 9, 2022, at 1.

APPENDIX

Table 1

Credit Evaluation Indicators System and Evaluation Rules for Patent Attorneys (Simplified Version)	
Base Score (100 points)	
Positive Information (10 additional points maximum)	<ul style="list-style-type: none"> • Recognition awards from provincial-level or higher government departments: +3 • Individual as a volunteer for patent agency industry ethics: +1 • Fulfillment of duties as an industry ethics volunteer: +3 • Personal provision of tips on illegal activities within the industry: +3
Negative Information (points reduction)	<ul style="list-style-type: none"> • Summoned for a disciplinary meeting and required to rectify by the National Intellectual Property Administration: -15 • Summoned for a disciplinary meeting and required to rectify by the local government department managing patent work: -10 • Significantly higher than average workload per practicing patent agent: -15 • Representation of abnormal patent applications: -40 • Submission of false materials or concealment of important facts when applying for administrative confirmation: -20 • Listed on the blacklist for illegal and rule-breaking activities in the patent and trademark agency industry: -40 • Other non-standard professional behaviors causing significant adverse impact: -40 • Warning: -30 • Warning with a fine: -40 • Ordered to stop accepting new patent agency business for 6 to 12 months: -60 • Revocation of the patent attorney's qualification certificate: -100 • Criminal penalties received for patent agency illegal activities: -100 • Refusal to comply with or evasion of execution of administrative penalty decisions: -20 • Agency ordered to suspend business for 6 to 12 months: -30 • Agency's practice license revoked: -60 • Warned by the industry association: -15 • Criticized by the industry association: -20 • Expelled by the industry association: -30

Table 2

Credit Evaluation Indicators System and Evaluation Rules for Patent Agencies (Simplified Version)	
Base Score (100 points)	
Positive Information (10 additional points maximum)	<ul style="list-style-type: none"> • Recognition and awards from provincial-level or higher government departments: +3 • Patent agency as a volunteer organization: +1 • Number of practicing patent agents within the agency who are volunteers (persons): +1 • Fulfillment of professional volunteer responsibilities: +3 • Provision of industry illegal activity tips: +2
Negative Information (points reduction)	<ul style="list-style-type: none"> • Summoned for a disciplinary meeting by the National Intellectual Property Administration and required to rectify: -15 • Summoned for a disciplinary meeting by local government departments managing patent work and required to rectify: -10 • Discovery of untruthful promises or false commitments: -20 • Abnormally high agent workload per practicing patent agent: -15 • Representation of abnormal patent applications: -40 • Submission of false materials or concealment of important facts in administrative confirmation applications: -20 • Listed on the blacklist for illegal and irregular activities in patent and trademark agency industry: -40 • Agency involved in other non-standard business operations, causing significant adverse effects: -40 • Failure to submit annual report within the prescribed period: -20/-10 • Providing false information when obtaining a patent agency practice license or submitting annual report: -20 • Unauthorized changes to name, office location, managing partners, legal representatives, partners, or shareholders: -20 • Failure to complete the filing procedures for the establishment, change, or cancellation of branch offices: -20 • No longer meets the conditions for a practice license and is ordered by the provincial-level patent work management department to rectify, but still does not meet the conditions upon expiration of the deadline: -20 • Publicly disclosed information of the patent agency is inconsistent with its registration information at market supervision and administration or judicial administration departments: -20 • Unable to contact through the registered place of business: -20 • Listed on the business abnormality list for three years without fulfilling related obligations: -40 • Warning: -30

(Table 2 continued from previous page)	
Negative Information (points reduction)	<ul style="list-style-type: none">• Warning and fine: -40• Ordered to stop accepting new patent agency business for 6 to 12 months: -60• Revocation or cancellation of practice license: -100• Agency or agency executives (directors, supervisors, executives) subjected to criminal penalties for patent agency violations: -100• Refusal to fulfill, evasion of execution of administrative penalty decisions: -20• Warned by industry association: -15• Criticized by industry association: -20• Membership cancelled by industry association: -30