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A Legal Case Study as a Testing Ground for AI's Role in Aligning NPM Theory and Practice in Italian Healthcare

By Salvatore Cincimino[*]

This paper critically examines the enduring chasm between New Public Management (NPM) theory and its practical failure within the Italian healthcare system, using a detailed legal case study as a stark illustration. Despite the formal adoption of NPM principles through Italian Legislative Decree no. 502/1992, systemic bureaucratic resistance and deeply entrenched practices are demonstrably shown to have not merely hindered, but effectively nullified their implementation. The case study reveals a profound and systemic bureaucratic inertia that consistently overrides NPM reforms at every level, leading to persistent inefficiencies and significant resource depletion. In light of this fundamental failure of conventional control mechanisms and theoretical frameworks, this study explores the disruptive potential of Artificial Intelligence (AI), particularly recent advancements in reasoning-oriented Large Language Models (LLMs). AI is not presented as a mere advisory tool or another incremental reform, but as a potentially inescapable and structural element for transforming decision-making processes. While initial tests with LLMs indicate their capacity to offer timely and reasoned guidance, the core argument advances beyond simple implementation of NPM principles. The analysis ultimately posits that AI's true disruptive power lies in its ability to become an indispensable component of the administrative system itself, fundamentally altering the landscape of public administration and healthcare by overcoming previously insurmountable barriers between theory and practice in ways that conventional approaches have consistently failed to achieve.

Keywords: *artificial intelligence, large language model, reasoning AI, bureaucracy, new public management, legal case, Italian healthcare system*

Introduction

The persistent failure to translate New Public Management (NPM) theory into effective practice within the Italian healthcare system exposes a fundamental and deeply rooted systemic breakdown between policy design and practical implementation. While the core principles of NPM—efficiency, accountability, and evidence-based decision-making—have been nominally embraced and formally codified through Legislative Decree no. 502/1992 (Decreto Legislativo n. 502/1992), their real-world application consistently collides with entrenched bureaucratic resistance and a pervasive systemic inertia. This paper meticulously examines this profound disconnect through the lens of a landmark legal case study, offering a uniquely evidence-based and

[*]Associate Professor, Department of Economics, Business and Statistics, Università degli Studi di Palermo, Italy.

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sobering perspective that moves far beyond mere theoretical speculation about the potential of Artificial Intelligence (AI).

Without the concrete grounding of this case study, discussions surrounding AI's capacity to overcome bureaucratic inertia and finally align public administration with NPM principles would indeed risk being dismissed as purely academic and disconnected from reality. Critics might naively suggest that the tasks envisioned for AI, such as ensuring guideline adherence, fostering innovation, and enabling data-driven decisions, are already achievable by any diligent and competent administrator. However, the exhaustive legal proceedings detailed in this paper definitively demonstrate the fallacy of this assumption. Even the most determined and protracted efforts to implement NPM principles were systematically and relentlessly obstructed. Across an almost 20-year span, every attempt to prevent the stifling of innovation and to uphold NPM guidelines was ultimately and decisively defeated by entrenched bureaucratic resistance. The judicially validated findings paint a stark picture of how deeply embedded practices and institutional inertia not only impede progress but actively inflict irreparable damage, leaving no realistic prospect of remediation even after nearly two decades of struggle.

This context positions AI not as a convenient theoretical add-on, but as a necessary disruptive force in the face of demonstrable systemic collapse. This paper utilizes the case study as a rigorous testing ground to explore the truly disruptive potential of AI, specifically reasoning-oriented Large Language Models (LLMs), as a transformative and potentially indispensable structural component within public administration. Where traditional control mechanisms - internal audits, judicial oversight, and media scrutiny - have demonstrably and repeatedly failed, AI offers a radical departure: the possibility of embedding economic, legal, and strategic intelligence directly into the administrative fabric, creating a system that inherently combines innovation with adherence to established principles. By rigorously analyzing AI's potential to dismantle barriers proven insurmountable by all conventional approaches, this paper argues that AI is not merely a helpful tool, but a critical and perhaps inevitable catalyst for bridging the seemingly unbridgeable chasm between NPM theory and administrative practice, forging a path forward where all other methods have faltered and failed.

The paper is organized into 10 sections to comprehensively address the multifaceted aspects of the study. Following this Introduction, Section 2 reviews the theoretical background and key principles of NPM; Section 3 details the research methodology, including the data sources and analytical approach; Section 4 presents the chronology of events in the case study; Section 5 reports the results derived from the analysis; Section 6 offers an in-depth discussion of these findings; Section 7 describes the experiments conducted with AI and examines their implications; Section 8 provides a concise Questions and Answers section that distills the core insights; Section 9 critically examines the limitations and critiques of the present study; and finally, Section 10 concludes the paper, summarizing the contributions and suggesting directions for future research.

New Public Management: Theoretical Background and Key Principles

New Public Management (NPM) has fundamentally transformed public administration since its emergence in the 1980s, introducing private sector principles and practices into public service delivery. As Hood (1991) first articulated, NPM represents a paradigmatic shift characterized by performance measurement, market mechanisms, and organizational restructuring. The theoretical foundation of NPM draws from new institutional economics and neo-scientific management studies, providing a framework for understanding public sector reform initiatives (Hood 1991, Pollitt and Bouckaert 2017).

Research by Hyndman and Lapsley (2016) demonstrates NPM's remarkable resilience and adaptability, describing it as having "virus-like" characteristics that enable its continued influence across different political administrations and economic contexts. These findings align with Rovik's (2011) virus theory, which explains how management ideas can become deeply embedded in organizational structures while adapting to changing circumstances.

The translation of NPM principles has been particularly evident in the UK, where successive governments have repackaged and reinforced its core tenets under different labels, such as "modernisation" under New Labour (Hyndman and Lapsley 2016).

Dunleavy et al. (2005) argue that NPM has been superseded by Digital Era Governance (DEG), suggesting that information technology and digitalization now drive public sector reform (Osborne 2006). However, Hyndman and Lapsley (2016) demonstrate that NPM principles persist and intensify, particularly during periods of financial constraint. Hood and Dixon's (2016) analysis reveal that cost-cutting initiatives and performance-based reforms have become more prevalent in response to fiscal pressures.

Contemporary evidence indicates that NPM's influence extends beyond its original formulation, incorporating new elements while maintaining its core focus on efficiency, performance measurement, and market-oriented mechanisms (Pollitt 2016).

The synthesis of private sector management techniques with public service delivery continues to shape reform agendas, though with growing recognition of implementation challenges and unintended consequences (Hood and Dixon 2016). The framework's implementation varies significantly across contexts, reflecting local political, social, and administrative conditions (Hyndman and Lapsley 2016).

Materials and Methods

This section discusses the methodology used to analyze a significant legal case involving the implementation of NPM principles within the Italian healthcare system. This case has not yet concluded but has reached a fundamental milestone with a landmark ruling (Cassazione Civile 2024) from the CdC - Corte di Cassazione, i.e. Italian Supreme Court (Chiarloni 2014), which established general legal principles influencing the interpretation and application of administrative law within public sector operations.

The case involves a long legal battle between a healthcare consultant, referred to as FB, and the local Italian Local Health Authority (ASL). FB is a physician with expertise in AI and Information Technologies (IT) and has been an Adjunct Associate Professor at an American School of Medicine since 1989. Within the ASL, he worked as a freelance medical consultant (Beccaria 2024).

The dispute arose from the abrupt and unexplained termination of FB's consultancy contract, despite his successful development of software solutions aimed at enhancing operational efficiencies within the ASL through innovative applications of AI and IT.

The author of this paper has direct knowledge of the case, having been involved as an expert appointed by FB. To ensure maximum objectivity and reliability, the analysis is based exclusively on court-ordered expert reports and the final ruling of the CdC. This methodological choice excludes any information from party-appointed expert reports, including those involving the author. The focus on judicially certified evidence provides a robust foundation for the analysis and leverages the unique aspects of this case study. The twenty-year legal proceedings, culminating in a Supreme Court decision, offer a comprehensive and thoroughly scrutinized body of evidence. This approach aligns with best practices in case study research where the researcher has insider knowledge (Unluer 2012), while also adhering to Yin's (2018) principles of using multiple sources of evidence to ensure construct validity in case study research. The methodological approach employed in this study integrates key theoretical frameworks from recent literature on qualitative research methods, as Berger's (2015) recommendations on researcher reflexivity and Merriam and Tisdell's (2016) guidance on the importance of data triangulation as a crucial mechanism for ensuring research validity and reliability through the convergence of multiple data sources and perspectives.

The approach follows Eisenhardt and Graebner's (2007) guidelines on theory building from case studies, particularly relevant when the researcher has a privileged insider perspective which offers unique insights into organizational dynamics while requiring careful methodological consideration to balance insider knowledge with analytical rigor.

Chronology of Events in the Case Study

1. *2004-2007 - The Consultancy*: FB was hired by the ASL to develop two software programs: one for the analysis of corporate information, the other for managing outpatient clinics.
2. *2005, December - The Indicators*: FB submitted a report summarizing the first 2 years of consultancy. This report included the results of each procedure developed, showcasing improvements in service quality and potential economies and rationalizations. It detailed the rationale of the procedures, highlighting the strategic and operational benefits, and provided synthetic indicators that offered a concise overview of the effectiveness and efficiency of the implemented solutions.
3. *2007 - End of the Consultancy*: The collaboration was abruptly terminated without any justification.

4. *2007 - Start of the Legal Action*: Negotiations between FB's lawyers, the ASL management, and the independent auditing body of the ASL (Collegio Sindacale - CS) failed, leading to legal action.
5. *2008, May - First Court-Ordered Expert Report*: The first technical consultancy ordered by the judge was delivered, confirming the validity of FB's consultancy and the functionality of the software. Despite this, the ASL continued the legal process. As a result, FB terminated all work relationships with the local ASL and other Italian ASLs, dedicating himself full-time to his activities in the USA (Beccaria 2024). However, driven by a desire for justice and in solidarity with others who, lacking alternative employment opportunities abroad, had been forced to acquiesce, FB decided to continue the legal action. (Beccaria 2024).
6. *2008, July to November – The media*: The media outlets reported a story about erroneous payments from the State to the ASL and from the ASL to family physicians. The ASL and its legal office claimed to know nothing and portrayed themselves as victims, despite being aware of the issue since 2005, as it was one of the many results of FB's software. Moreover, these results were validated by the judicial expert in the presence of the ASL legal team in 2007 and documented in the court-ordered consultancy in May 2008.
7. *2012, January - Second Court-Ordered Expert Report*: This 41-page report confirmed the correct functioning of all features in the software produced by FB. It meticulously calculated the value of the functions actually used by the ASL and those that the ASL had available but chose not to utilize. Notably, among the latter, the report identified one particular unused function that could have saved the ASL €5,620,176.00.
8. *2014 - First-Degree Sentence*: The first-degree court accepted FB's claim and ordered the ASL to pay €435,000.
9. *2016 - Second-Degree Sentence*: The second-degree court rejected FB's claim, denying any compensation.
10. *2024, March - Third-Degree Sentence*: The CdC recognized FB's right to be compensated for the work performed, establishing a fundamental legal principle for similar future cases (Cassazione Civile 2024; Beccaria 2024).
11. *2025, March - Next hearing* for a new quantification of the compensation as ordered by the CdC.

Results

The Case Study and the NPM

New Public Management was formally integrated into the Italian healthcare system through Legislative Decree no. 502/1992 (Decreto Legislativo n. 502/1992). This decree emphasized the use of performance metrics, synthetic indicators, and comparative cost analyses to enhance efficiency and effectiveness in public healthcare

administration. This case study is particularly relevant to NPM because FB's software prominently featured indicators and metrics central to NPM principles (event 2).

The case study reveals a stark contrast between NPM theory and practice. Initially, the ASL requested, widely appreciated, and utilized FB's work. However, despite the demonstrated effectiveness through court-validated metrics and its alignment with legal requirements, the ASL management abruptly changed its orientation, ceased using the software, disregarded the positive performance metrics, engaged in a protracted eighteen-year legal battle, and exhibited strong resistance to innovation and data-driven decision-making.

This discrepancy between NPM's theoretical framework and its practical implementation in the Italian public healthcare sector underscores the challenges of overcoming institutional inertia, despite clear evidence of potential improvements (or perhaps because of those potential improvements). The case study thus provides a concrete example of how a theoretically sound management approach, supported by legislative mandate, can fail to achieve its intended outcomes due to entrenched resistance within public administration.

The chronology of events in the case study highlights the gap between NPM theory and practice in the Italian healthcare system:

- *Duration*: The legal case's eighteen-year span (events 4-11) starkly contradicts NPM's emphasis on efficiency and timely decision-making. While NPM advocates for streamlined processes, this prolonged legal battle demonstrates the opposite in practice.
- *Resistance to innovation*: The ASL's abrupt termination of FB's contract in 2007 (event 3), despite proven efficiency gains, shows a stark contrast to NPM's promotion of innovation and continuous improvement. This resistance indicates a deeply rooted bureaucratic culture opposing NPM's change-oriented approach (Ferlie and Ongaro 2015).
- *Missed opportunities*: The ASL's failure to implement FB's software, which could have prevented financial losses (as seen in the 2008 media case), contradicts NPM's emphasis on cost-effectiveness and performance measurement, showcasing a disconnect between NPM's focus on outcomes and ASL's practices.
- *Legal complexities*: The multiple court levels and expert consultations involved (events 4, 5, 7-11) reflect an administrative system far from the lean, efficient model proposed by NPM.
- *Media involvement*: The cases reported in the media (event 6) highlight a lack of transparency and accountability in practice, as the ASL failed to disclose known issues and their potential solutions, contradicting NPM principles.
- *Institutional inertia*: The ASL's continued legal pursuit for seventeen years after the first court-ordered technical consultancy strongly contradicts NPM's principles of flexibility and adaptability. This rigid stance, despite evidence supporting FB's claims, shows a failure to embrace NPM's emphasis on evidence-based decision-making and organizational learning.

- *Broader implications*: This case study vividly illustrates the gap between NPM theory and practice in Italian healthcare. It shows how deeply ingrained bureaucratic practices can resist and undermine attempts to implement NPM principles, even when these principles are formally adopted through legislation, as evidenced by the entire chronology of events.

These observations underscore the significant challenges in translating NPM theory into practice within the Italian healthcare system, revealing a pervasive resistance to change that extends beyond a single institution and persists over an extended period.

The Failure of All Control Systems

The case study reveals a widespread failure of multiple control mechanisms within the Italian public sector, while also showcasing the eventual, albeit delayed, effectiveness of the judicial system:

- *Internal Controls*: The ASL's internal auditing body (CS) and legal office, both of which are required to provide independent opinions relative to ASL management, failed to address the issues raised by FB's work (event 4), allowing mismanagement to continue unchecked.
- *Judicial System*: Despite its extreme tardiness, the judicial system ultimately delivered justice. The process, spanning seventeen years, concluded with a landmark ruling by the Cassation in 2024 that established important legal principles for future cases. However, the process is not yet fully concluded (event 11). While the delay significantly reduced the impact of FB's innovations and definitively compromised his collaboration, the final judgment demonstrates the system's capacity to correct long-standing wrongs.
- *Media*: Despite reporting on the media in 2008 (event 6), the media failed to uncover the connection to FB's case or the ongoing legal proceedings, missing an opportunity for public accountability.

Wealth Creation vs. Wealth Destruction

This case study provides a stark contrast between potential wealth creation and actual wealth destruction within the Italian public healthcare system.

<u>Wealth Creation</u>

- *Direct Benefits*: FB's work led to *immediate efficiency gains and cost savings*, as validated by the court-appointed technical consultant (event 5). These improvements represented tangible value creation for the ASL.
- *Quantifiable Savings*: The second Party-Appointed Expert Report in 2012 provided concrete evidence of potential savings, calculating that a single function of FB's software could have saved the ASL €5,620,176.00 (in 2005 values).

- *Indirect Benefits*: The exposure of ASL staff to advanced data analysis and AI technologies (as evidenced by FB's work in America) could have fostered long-term skill development and innovation capacity within the organization.
- *Potential for Scalability*: The software and methodologies developed by FB had the potential for implementation across other regional and national administrations, potentially multiplying the benefits (implied throughout the case).
- *Potential Improvement in Healthcare Quality*: While not directly quantified in the case study, FB's innovations had the potential to significantly improve the quality of patient care. By enhancing operational efficiency and data analysis capabilities, healthcare providers could potentially make more informed decisions, reduce waiting times, and allocate resources more effectively, all contributing to better patient outcomes. A prime example from the case study is the automatic application of Wolff's six criteria for clinical risk calculation (Wolff 1996) on 673,330 hospital discharge records, as reported in FB's 2005 summary (event 2). This application, along with numerous other indicators presented in the 2005 report, demonstrates the system's potential to significantly enhance clinical risk management and overall healthcare quality.

Wealth Destruction

- *Termination of NPM System*: The abrupt end to FB's consultancy led to the cessation of the NPM-aligned system he had implemented, *which was not replaced by any equivalent system* (as confirmed by the court expert).
- *Direct Financial Losses*: Millions of euros in preventable losses were incurred, as evidenced by the media in 2008 (event 6), and quantified by the 2012 expert report (event 7).
- *Legal Costs*: The prolonged seventeen-year legal battle resulted in substantial costs for both FB and the public administration.
- *Opportunity Costs*: Other regional and national administrations were deprived of the opportunity to benefit from FB's innovative technologies, potentially multiplying the €5.6 million loss across the healthcare system.
- *Brain Drain*: FB's complete disengagement from the Italian healthcare administration and subsequent focus on his U.S. activities exemplify the broader issue of brain drain (event 5).
- *Deterrent Effect*: The treatment of FB's case sends a discouraging message to potential innovators, likely deterring creative contributions to public administration or encouraging further emigration of skilled professionals.
- *Missed Opportunities* for Healthcare Quality Improvement: The rejection of FB's innovations likely resulted in missed opportunities to enhance the quality of patient care. While not directly quantified in the legal proceedings, these losses in potential health outcomes represent a significant, albeit intangible, form of wealth destruction.
- *Potential Increase in Medical Errors*: The failure to implement advanced data analysis and AI technologies may have resulted in a higher rate of

medical errors or missed diagnoses that could have been prevented with more sophisticated decision support systems.

- *Long-term Public Health Impacts*: The inability to leverage advanced data analytics for population health management and preventive care strategies may have resulted in poorer long-term health outcomes for the population served by the ASL, representing a substantial, though unquantified, societal cost.
- *Loss of Trust in Healthcare System*: The public revelation of inefficiencies and resistance to innovation (as evidenced by the legal battle) could lead to a loss of public trust in the healthcare system, potentially resulting in delayed care-seeking behaviors and worse health outcomes.

This analysis underscores the significant net loss resulting from the ASL's actions. Not only was potential wealth creation stifled, with concrete evidence of over €5.6 million in lost savings from just one function, but substantial resources were also wasted in defending an ultimately untenable position. The case serves as a cautionary tale of how resistance to innovation and mismanagement can lead to both direct financial losses and broader, long-term negative impacts on public sector efficiency and human capital retention.

Note on Causes and Responsibilities in the Case Study - It is important to note that throughout the legal proceedings, neither the magistrates nor the court-appointed expert investigated the underlying causes or assigned responsibility for the events described in this case study. Their focus was solely on verifying the quality and quantity of FB's work and determining his right to appropriate compensation. Consequently, as this paper is based exclusively on data validated through judicial investigation, no speculation on the specific causes of the reported events will be made. The analysis and conclusions are limited to general considerations applicable to the broader economic, social, and political context in which these events occurred. This approach ensures that the findings remain grounded in judicially verified facts while allowing for a broader discussion of systemic issues in public administration and healthcare management.

Discussion

The failure of NPM to fully deliver on its promises has been widely documented in academic literature (Hood and Peters 2004, Diefenbach 2009, Lapsley 2009). Scholars have identified various causes for this shortfall, including cultural resistance to change (Pollitt and Bouckaert 2017), misalignment with public sector values (Behn 1998), and the complexity of public sector goals. Some argue that NPM's market-oriented approach is fundamentally incompatible with the nature of public services (Denhardt and Denhardt 2000), while others point to implementation failures and the persistence of bureaucratic inertia (Dunleavy et al. 2006). However, much of this research relies on theoretical analysis or limited empirical studies. In contrast, our case study offers a unique, judicially validated perspective on NPM failure. Unlike previous studies, the findings in this case are substantiated by an extensive twenty-year legal process, culminating in a definitive ruling by the Cads.

Systemic resistance to NPM - This judicial validation offers concrete, legally verified evidence of systemic resistance to change, failure of control mechanisms, and the gap between NPM theory and practice in the Italian healthcare system, offering a robust foundation for understanding the practical obstacles to NPM implementation.

Failure of control mechanisms - The failure of control mechanisms - including internal audits, media scrutiny, and specialized oversight agencies - underscores a massive problem that cannot be resolved merely through additional regulations or control bodies. The depth and breadth of this systemic ineffectiveness, coupled with the extremely delayed (though ultimately correct) judicial resolution, call for a disruptive approach. This approach must fundamentally alter how public administration operates and is monitored, ensuring that innovations and efficiency measures are not just theoretically adopted but practically implemented and sustained in a timely manner.

Countermeasures and Automated Feedback Systems - Given the ineffectiveness of current control systems, the focus of this paper is on potential countermeasures rather than the personal, economic, bureaucratic, or political causes of systemic failure. Strengthening current mechanisms or adding more oversight would likely face the same issues and increase bureaucracy and costs. Instead, it is proposed to explore systems with 'automatic' feedback that are non-circumventable and binding. These systems should operate independently of human intervention, using technologies such as AI and blockchain to ensure transparency, accountability, and efficiency (Wirtz et al. 2019). By implementing these automated systems, a self-regulating environment can be created that overcomes resistance to change and innovation. This approach aligns NPM principles with their practical implementation, fostering a more responsive and efficient public administration system.

Automatic feedback mechanisms are not uncommon in the private sector. A typical example is when a CEO commits to achieving specific objectives within a set timeframe, with financial rewards contingent upon meeting these goals. A notable instance of this involved Elon Musk, whose compensation was directly tied to Tesla's market performance and operational milestones (Jin et al. 2024).

In the public sector, Italy, particularly Sicily, has introduced a comparable mechanism through Regional Law No. 5 of 14-04-2009, Article 20, paragraph 4 of this law states*: 'Failure to achieve economic balance in relation to the resources negotiated in compliance with the set objectives ... results in the automatic dismissal of the general director of the Regional Health Service Companies.'* (Legge Regione Sicilia 14 aprile 2009 no. 5). This mechanism has been triggered several times, although it has faced challenges from affected parties, citing reasons such as the limited freedom of action of a public manager compared to a private one.

These examples demonstrate the potential for implementing binding, automatic feedback systems in both private and public sectors. However, the challenges faced in Sicily highlight the need for careful design of such systems in the public sector, taking into account the unique constraints and complexities of public administration, even if the ASLs are called 'Regional Health Service Companies' in the law (Anessi-Pessina and Cantù 2006).

In the context of our case study, it's important to note that the Sicilian law, while innovative, would not have had any significant effect. This is because it is linked only to a general budget objective and not to a detailed series of specific efficiency targets. For FB's innovations to have been properly implemented and evaluated, a more granular approach would have been necessary.

The Need for Innovative, Irreversible Control Systems - A control system that is much less easily circumvented than the one described in the previous paragraph, and far more granular than one based on overall budget results, already exists and is in daily use in banks: the credit scoring system. This system provides a comprehensive, data-driven approach to evaluating performance and risk, offering a potential model for public sector innovations (Thomas et al. 2017).

Credit scoring systems have evolved from optional support tools to comprehensive, data-driven systems that leverage vast amounts of information and employ advanced statistical techniques and AI. This evolution has transformed their role from advisory to effectively mandatory. The result is that any bank officer wishing to "override" the system's assessment could be held personally accountable. This represents a significant qualitative leap enabled by information technology and particularly AI compared to previous systems. The key distinction is that this intervention is granular and specific, rather than generic, and is practically unavoidable. This is not due to legislative mandate (which we have seen can be regularly circumvented) but rather due to the undeniable advantages in terms of results and processing times that cannot be relinquished. The system's effectiveness stems from its ability to provide rapid, data-driven decisions that demonstrably improve outcomes, making any attempt to bypass it not only risky but also counterproductive in terms of efficiency and accuracy.

Why AI - AI is not mentioned here merely as an advanced form of IT, nor due to the currently widespread belief that it's a panacea for every problem. Instead, it's highlighted for specific, crucial reasons:

- *Irreversibility*: AI is the engine powering the credit scoring systems described earlier, which have achieved a level of 'irreversibility' that can overcome bureaucratic resistance. This irreversibility is critical in contexts where entrenched opposition might otherwise prevail against innovative solutions.
- *Complex Decision-Making*: LLMs and their forthcoming evolutions can provide insights on situations even more complex than credit scoring. For instance, they can evaluate the most cost-effective software tools or assess proposals from collaborators formally outside the bureaucratic structure, offering unconventional yet valuable perspectives.
- *Principled Adaptability*: Current AI technologies, particularly modern LLMs, are the only type of software capable of doing something that until recently was exclusively human: applying general principles, such as those of NPM, to a specific and novel operational context, and doing so effectively, comprehensibly, and consistently. This ability to adapt general principles to specific, unfamiliar situations represents a potentially revolutionary advancement.

No 'algorithmic' software to date has exhibited these three properties simultaneously. AI can do this, and it's already demonstrating this capability effectively. This unique

combination of irreversibility, complex decision-making support, and principled adaptability makes AI particularly suited to address the challenges identified in our case study, potentially bridging the gap between NPM theory and practice in ways previously unattainable (Moon 2023, Straub et al. 2023).

AI in Public Administration - As observed in the previous paragraphs, AI possesses the characteristics of granularity (micro-management) and efficiency that make its adoption inevitable, much like what occurred in the banking sector. In the context of our case study, we can hypothesize the following effects:

- *Healthcare Management*: AI-driven decision support systems could have provided real-time analysis of FB's consultancy and software solutions, demonstrating their value instantaneously. This could have prevented the abrupt termination of FB's collaboration, ensuring continued support for innovative solutions and potentially avoiding the loss of efficiency gains.
- *Auditing and Compliance*: Advanced AI could continuously monitor and analyze financial transactions and operational efficiency, conducting real-time audits and compliance checks. This might have prevented the media case reported in events 6, and fundamentally changed or even eliminated the role of traditional auditing bodies like the CS mentioned in event 4 (CNDCEC 2021).
- *Legal Analysis*: AI-powered legal tools could have processed legal documents, identified relevant precedents, and provided strategic advice. This could have led to an early settlement after the first court-ordered technical consultancy (event 5), potentially avoiding the seventeen-year legal battle described in events 4-11.
- *Judicial Proceedings*: AI could assist judges and lawyers by rapidly analyzing case documents and predicting outcomes. This could have significantly sped up the judicial process, potentially avoiding the need for multiple court levels and expert consultations.
- *Investigative Journalism*: AI could analyze vast amounts of data to uncover connections and patterns, enabling more accurate and comprehensive reporting on irregularities. This could have linked the media case reported in event 6 to the ongoing legal case, providing a more complete picture to the public and relevant authorities.

AI's potential in public administration goes far beyond a mere list of innovative functions. This paper, through its extensively validated case study, demonstrates a crucial point: even the best systems, perfectly aligned with public administration needs and theoretical and legislative frameworks, can be systematically sabotaged and replaced with nothing comparable for years, despite the activation of multiple independent control bodies and ongoing legal action.

The true significance of AI in this context lies in its potential as a disruptive innovation, in Tony Seba's sense - offering such a qualitative and/or economic leap that its adoption becomes inevitable (Dorr and Seba 2021, Fleischer and Wanckel 2024). Much like the transformation of credit scoring in the banking sector, AI in public administration has the potential to create systems that are not just innovative, but inescapable due to their efficiency and effectiveness.

This inevitability is key. It's not about the spectacular features AI might offer, but about its capacity to fundamentally alter decision-making processes in a way that cannot be circumvented. AI's integration into areas traditionally considered the exclusive domain of humans - from routine administration to complex judicial proceedings - represents a paradigm shift. This shift promises to make the kind of systemic failures observed in our case study not just unlikely, but virtually impossible.

This paradigm shift is not merely desirable; it is increasingly necessary. Without such disruptive interventions, the costs of the public healthcare system would continue to escalate to unsustainable levels, as evidenced by the wealth destruction outlined earlier in this study. Simultaneously, the quality of service would inevitably suffer. The systematic suppression of innovative contributions from the most creative individuals, as demonstrated in our case study, leads to their demotivation or even exodus to other institutions, often abroad. This brain drain represents not just a loss of talent, but a compounding factor in the decline of service quality and operational efficiency (D'Ignoti 2021).

AI's potential as a disruptive force, therefore, extends beyond mere operational improvements. It presents an opportunity to fundamentally restructure incentives and decision-making processes in a way that nurtures innovation, retains talent, and creates a self-correcting system resistant to the kind of bureaucratic inertia observed in our study. By making efficiency and effectiveness inescapable features of the system, AI could help reverse the trend of escalating costs and declining quality, creating a more sustainable and responsive public healthcare system.

The advent of AI thus heralds not just an improvement, but a transformation of public administration and healthcare. It offers the potential to create self-regulating, transparent, and accountable systems that are resistant to the kind of entrenched bureaucratic resistance documented in this study. This transformation represents one of the essential contributions this paper aims to highlight: the need for and potential of truly disruptive innovations in overcoming the persistent gap between administrative theory and practice (Mikhaylov et al. 2018).

The First AI Experiment

While this paper is firmly grounded in factual data, even certified by judicial authority, the conclusion that AI can effectively apply NPM concepts to specific contexts remains an intriguing, yet theoretical proposition. To provide a glimpse into the potential future role of AI as hypothesized in this paper, an experiment was conducted. The question depicted in Figure 1 was posed to one of the most advanced large language models currently available: Claude 3.5 Sonnet by Anthropic (https://www.anthropic.com). Figure 2 display the screenshot of its response.

This is, of course, just an experiment. The Large Language Model was not pre-trained or specialized in any way, and the question was asked in a new chat without any prior interaction. Nevertheless, the Claude ability to grasp the problem and provide coherent observations is striking. It offers a taste of the future, but one that is very nearby!

Figure 1. *Screenshot of the Question to Claude 3.5 Sonnet (July 2024 Version) (The Question is: 'Analyze the following sequence of events and apply the principles of New Public Management (NPM) to determine whether these events align with NPM principles. Provide a detailed explanation for your judgment.' Followed by the Chronology of events in the Case Study as in Materials and Methods in this paper)*

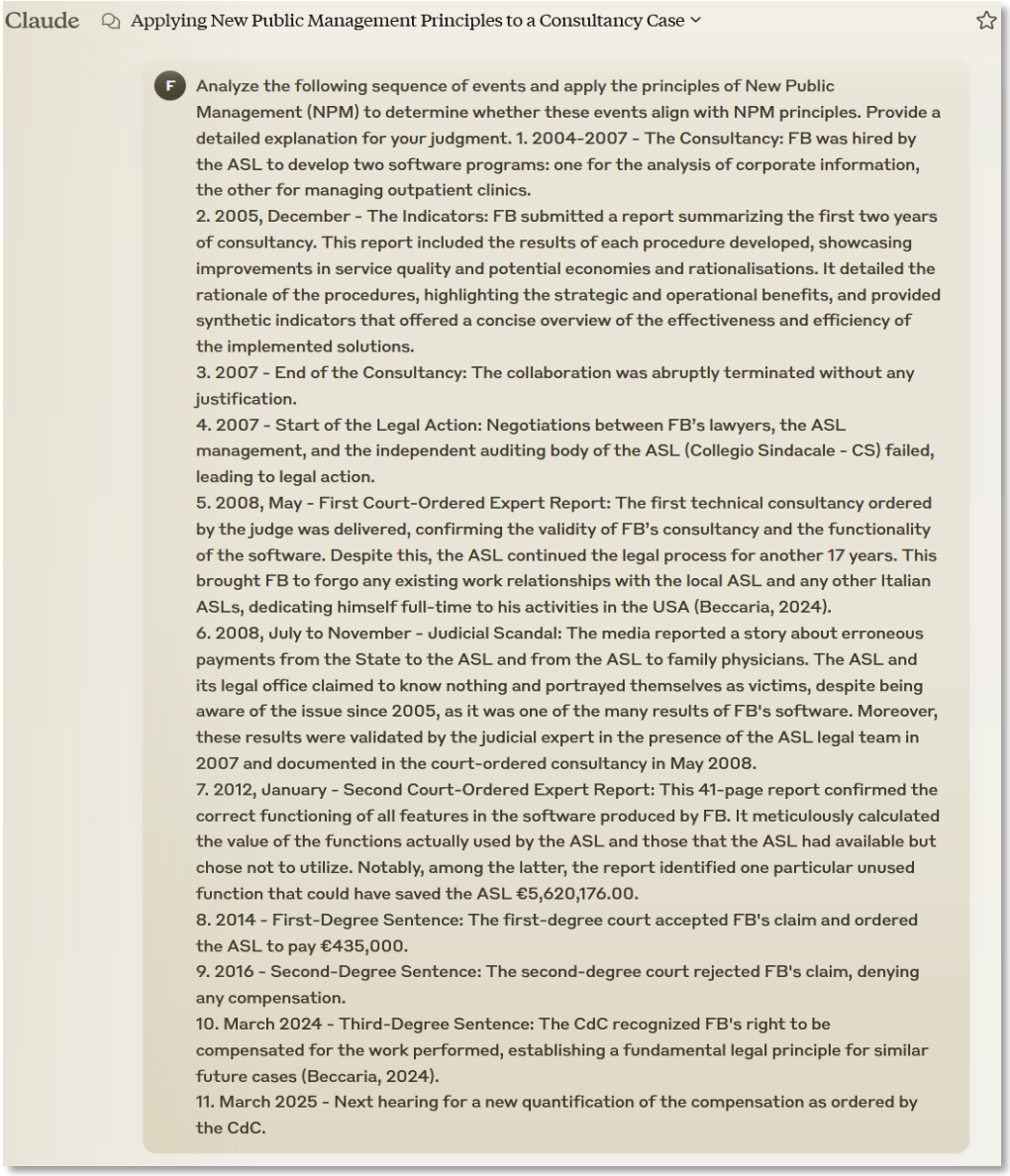
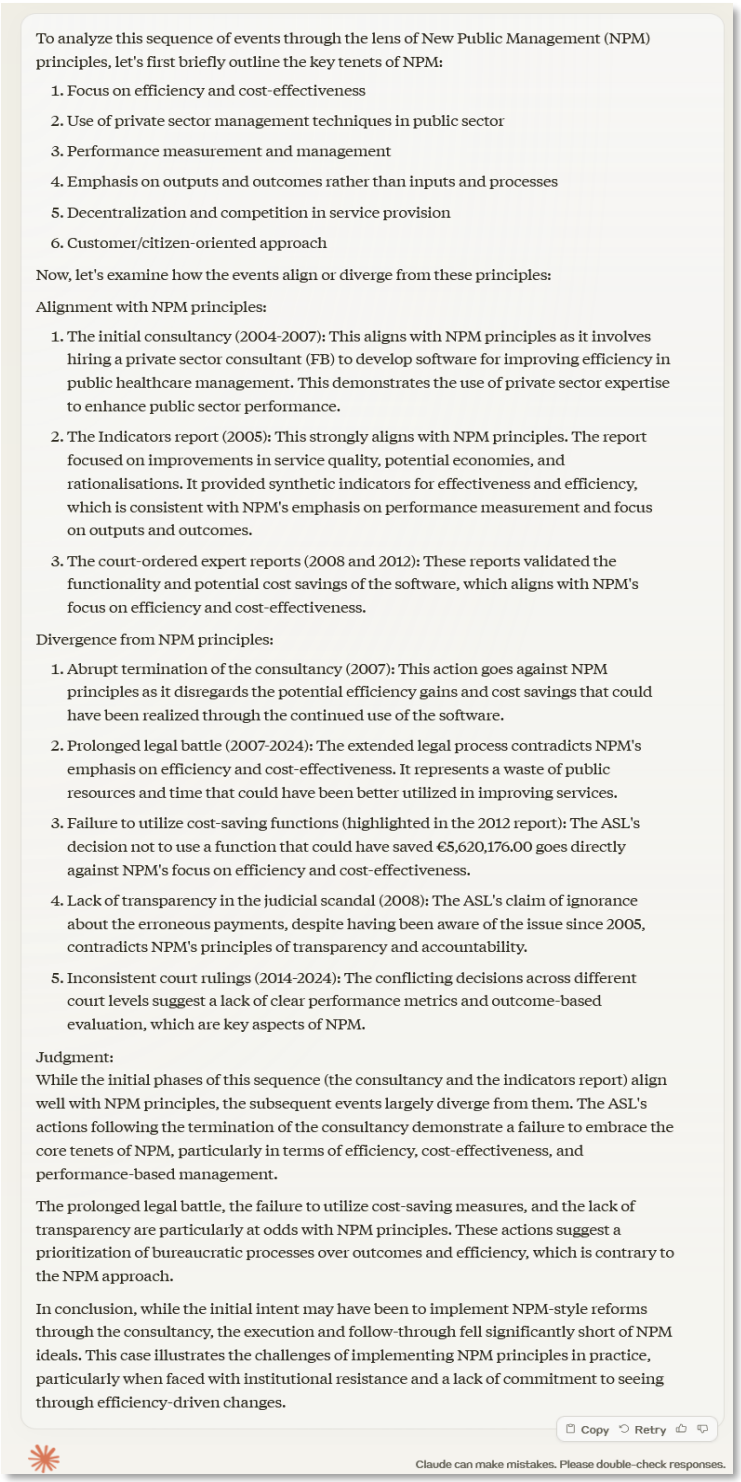


Figure 2. *Screenshot of the Answer by Claude 3.5 Sonnet to the Question Posed in Figure 1 (It's notable how the LLM delves into specifics, first enunciating the NPM principles it will apply, and then evaluating the alignment or divergence from these principles in the various events of the chronology. The analysis is comprehensive and pertinent, demonstrating the LLM's ability to apply theoretical concepts to specific scenarios)*



To analyze this sequence of events through the lens of New Public Management (NPM) principles, let's first briefly outline the key tenets of NPM:

1. Focus on efficiency and cost-effectiveness
2. Use of private sector management techniques in public sector
3. Performance measurement and management
4. Emphasis on outputs and outcomes rather than inputs and processes
5. Decentralization and competition in service provision
6. Customer/citizen-oriented approach

Now, let's examine how the events align or diverge from these principles:

Alignment with NPM principles:

1. The initial consultancy (2004-2007): This aligns with NPM principles as it involves hiring a private sector consultant (FB) to develop software for improving efficiency in public healthcare management. This demonstrates the use of private sector expertise to enhance public sector performance.
2. The Indicators report (2005): This strongly aligns with NPM principles. The report focused on improvements in service quality, potential economies, and rationalisations. It provided synthetic indicators for effectiveness and efficiency, which is consistent with NPM's emphasis on performance measurement and focus on outputs and outcomes.
3. The court-ordered expert reports (2008 and 2012): These reports validated the functionality and potential cost savings of the software, which aligns with NPM's focus on efficiency and cost-effectiveness.

Divergence from NPM principles:

1. Abrupt termination of the consultancy (2007): This action goes against NPM principles as it disregards the potential efficiency gains and cost savings that could have been realized through the continued use of the software.
2. Prolonged legal battle (2007-2024): The extended legal process contradicts NPM's emphasis on efficiency and cost-effectiveness. It represents a waste of public resources and time that could have been better utilized in improving services.
3. Failure to utilize cost-saving functions (highlighted in the 2012 report): The ASL's decision not to use a function that could have saved €5,620,176.00 goes directly against NPM's focus on efficiency and cost-effectiveness.
4. Lack of transparency in the judicial scandal (2008): The ASL's claim of ignorance about the erroneous payments, despite having been aware of the issue since 2005, contradicts NPM's principles of transparency and accountability.
5. Inconsistent court rulings (2014-2024): The conflicting decisions across different court levels suggest a lack of clear performance metrics and outcome-based evaluation, which are key aspects of NPM.

Judgment:
While the initial phases of this sequence (the consultancy and the indicators report) align well with NPM principles, the subsequent events largely diverge from them. The ASL's actions following the termination of the consultancy demonstrate a failure to embrace the core tenets of NPM, particularly in terms of efficiency, cost-effectiveness, and performance-based management.

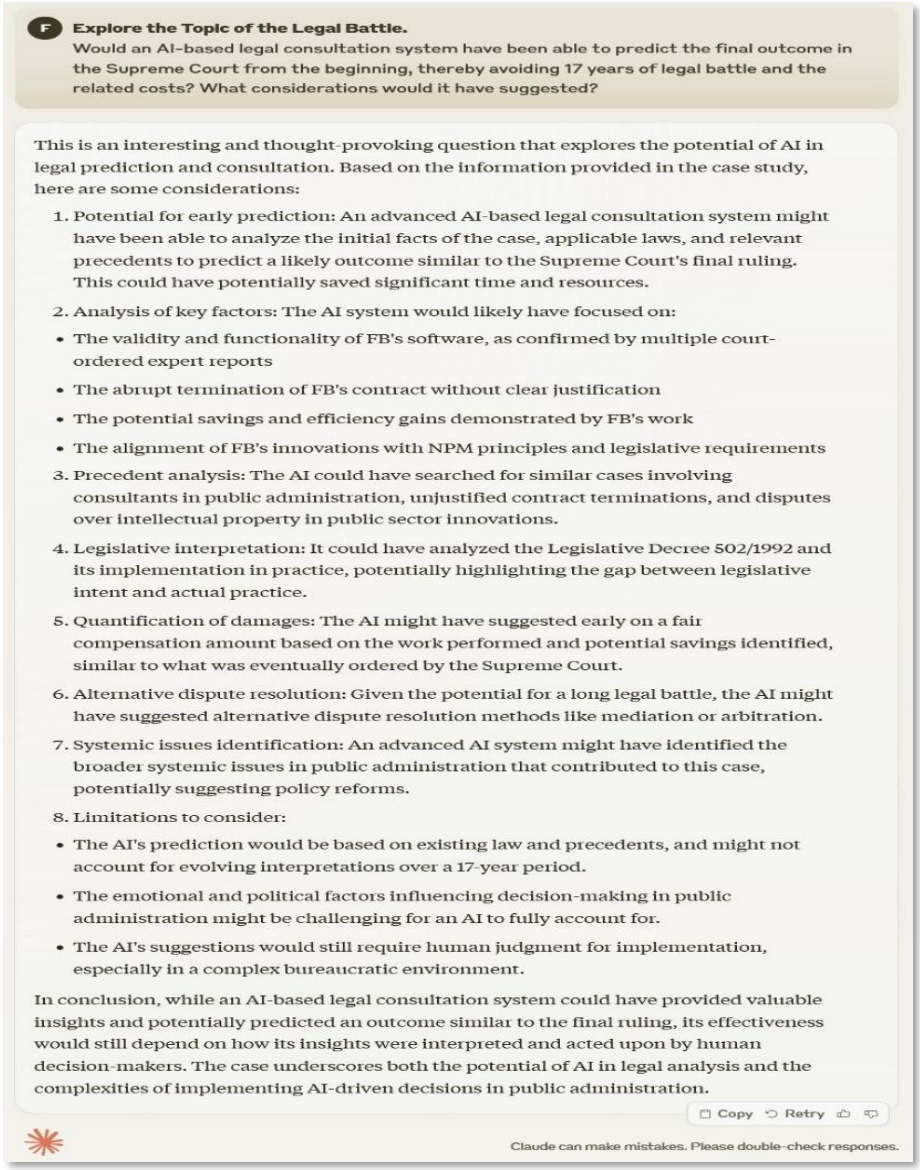
The prolonged legal battle, the failure to utilize cost-saving measures, and the lack of transparency are particularly at odds with NPM principles. These actions suggest a prioritization of bureaucratic processes over outcomes and efficiency, which is contrary to the NPM approach.

In conclusion, while the initial intent may have been to implement NPM-style reforms through the consultancy, the execution and follow-through fell significantly short of NPM ideals. This case illustrates the challenges of implementing NPM principles in practice, particularly when faced with institutional resistance and a lack of commitment to seeing through efficiency-driven changes.

Copy Retry

Claude can make mistakes. Please double-check responses.

Figure 3. *Screenshot of a Specific Question Posed to Claude 3.5 Sonnet about an AI System's Ability to Predict, from the Outset, the Outcome that would be Reached 17 Years Later (The LLM delves into specifics, demonstrating how it would have cited a series of arguments to advise the legal office and management. It goes further by exploring potential political, bureaucratic, and personal reactions to AI-generated suggestions. This response showcases the LLM's capacity to provide comprehensive legal and strategic advice, as well as its ability to anticipate human factors in decision-making processes)*

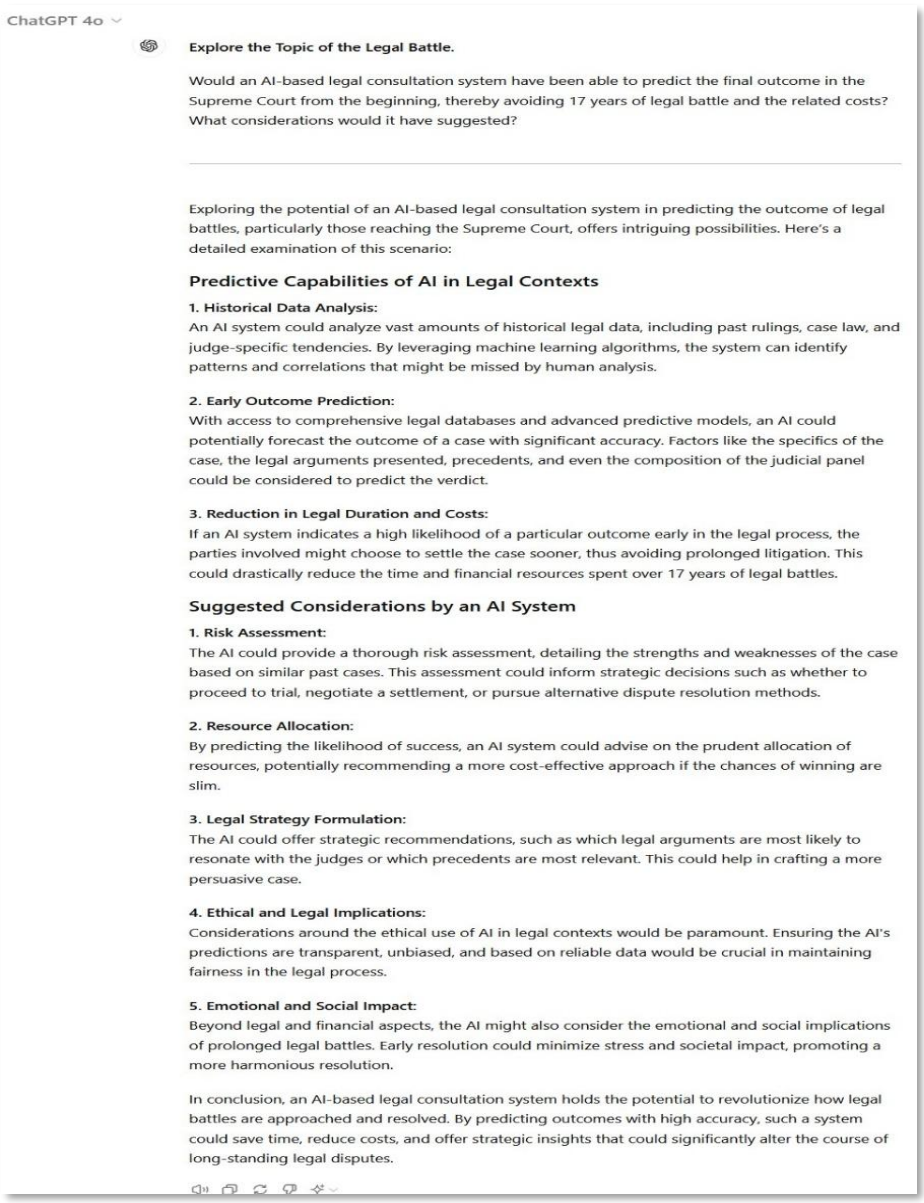


This expanded caption highlights the LLM's analytical approach and its capacity to apply NPM principles to the case study events, emphasizing the thoroughness and relevance of its analysis.

In Figures 3 and 4, an attempt was made to explore whether LLMs could have effectively advised the legal office and management of the ASL regarding the prolonged legal battle. This experiment was conducted using Claude 3.5 Sonnet and

ChatGPT-4 Omni by OpenAI (https://openai.com/chatgpt/). The aim was to assess how these advanced AI systems might approach complex legal and administrative scenarios, potentially offering insights that could have altered the course of the lengthy dispute.

Figure 4. *Screenshot of the Same Question in Figure 3 Posed this Time to Another LLM, ChatGPT4o (A significantly different approach from the other LLM is evident, demonstrating the diversity and competition in this sector. Particularly noteworthy is the final consideration on the effect of an AI-based consultation system that can accurately predict the likely outcomes of legal action. This response not only showcases the unique analytical approach of ChatGPT4o but also highlights the potential transformative impact of AI systems in legal strategy and decision-making processes)*


ChatGPT 4o

Explore the Topic of the Legal Battle.

Would an AI-based legal consultation system have been able to predict the final outcome in the Supreme Court from the beginning, thereby avoiding 17 years of legal battle and the related costs? What considerations would it have suggested?

Exploring the potential of an AI-based legal consultation system in predicting the outcome of legal battles, particularly those reaching the Supreme Court, offers intriguing possibilities. Here's a detailed examination of this scenario:

Predictive Capabilities of AI in Legal Contexts

1. Historical Data Analysis:
An AI system could analyze vast amounts of historical legal data, including past rulings, case law, and judge-specific tendencies. By leveraging machine learning algorithms, the system can identify patterns and correlations that might be missed by human analysis.

2. Early Outcome Prediction:
With access to comprehensive legal databases and advanced predictive models, an AI could potentially forecast the outcome of a case with significant accuracy. Factors like the specifics of the case, the legal arguments presented, precedents, and even the composition of the judicial panel could be considered to predict the verdict.

3. Reduction in Legal Duration and Costs:
If an AI system indicates a high likelihood of a particular outcome early in the legal process, the parties involved might choose to settle the case sooner, thus avoiding prolonged litigation. This could drastically reduce the time and financial resources spent over 17 years of legal battles.

Suggested Considerations by an AI System

1. Risk Assessment:
The AI could provide a thorough risk assessment, detailing the strengths and weaknesses of the case based on similar past cases. This assessment could inform strategic decisions such as whether to proceed to trial, negotiate a settlement, or pursue alternative dispute resolution methods.

2. Resource Allocation:
By predicting the likelihood of success, an AI system could advise on the prudent allocation of resources, potentially recommending a more cost-effective approach if the chances of winning are slim.

3. Legal Strategy Formulation:
The AI could offer strategic recommendations, such as which legal arguments are most likely to resonate with the judges or which precedents are most relevant. This could help in crafting a more persuasive case.

4. Ethical and Legal Implications:
Considerations around the ethical use of AI in legal contexts would be paramount. Ensuring the AI's predictions are transparent, unbiased, and based on reliable data would be crucial in maintaining fairness in the legal process.

5. Emotional and Social Impact:
Beyond legal and financial aspects, the AI might also consider the emotional and social implications of prolonged legal battles. Early resolution could minimize stress and societal impact, promoting a more harmonious resolution.

In conclusion, an AI-based legal consultation system holds the potential to revolutionize how legal battles are approached and resolved. By predicting outcomes with high accuracy, such a system could save time, reduce costs, and offer strategic insights that could significantly alter the course of long-standing legal disputes.

This expanded caption highlights the depth of the LLM's analysis, its potential role in legal and management advisory, and its consideration of human factors in organizational dynamics.

This caption emphasizes the diversity in AI approaches, the competitive nature of the LLM sector, and draws attention to the critical insight about AI's potential role in predicting legal outcomes, which could significantly impact legal strategy and risk assessment in organizations.

The responses provided by advanced Large Language Models (LLMs) like Claude 3.5 Sonnet and ChatGPT-4o, as shown in Figures 3 and 4, demonstrate the remarkable capability of AI to delve deep into specific legal issues while considering overarching theoretical principles. Rather than focusing on the validity of individual points or comparing the two systems, what stands out is their shared ability to navigate complex legal landscapes with nuanced understanding. Both LLMs showcase a sophisticated grasp of the intricate legal and administrative challenges presented in the case, offering insights that reflect both theoretical knowledge and practical implications. Their analyses go beyond surface-level observations, integrating principles like NPM into their legal reasoning and providing actionable recommendations. This depth of engagement illustrates the potential of AI systems to serve as valuable advisory tools in legal and administrative contexts. As Bushuyev et al. (2024) suggest, the increasing sophistication of such AI systems points towards a future where their integration into organizational processes becomes as commonplace and essential as using computers for routine tasks, fundamentally reshaping management landscapes in both public and private sectors.

The Reasoning AI Experiment

The emergence of "reasoning LLMs" marks a significant qualitative leap. These advanced models, exemplified by systems like Gemini 2.0 Flash Thinking, or ChatGPT o1, ChatGPT o3 and DeepSeek R1, are engineered to go beyond simple pattern matching. They exhibit an enhanced capacity for:

- **Deeper Contextual Understanding:** Reasoning LLMs demonstrate a more profound grasp of context, allowing them to interpret nuanced language, implicit assumptions, and the broader implications of information within complex situations.
- **Multi-Step Reasoning and Inference:** They are capable of performing more intricate chains of reasoning, drawing inferences across multiple pieces of information, and navigating complex logical pathways to arrive at conclusions.
- **Handling Ambiguity and Conflicting Information:** Reasoning LLMs show improved abilities to manage ambiguous or even contradictory information, weigh different perspectives, and formulate coherent responses in uncertain environments.

- **Strategic and Actionable Output:** Critically, reasoning LLMs are better equipped to generate strategic advice, propose actionable plans, and anticipate potential consequences – moving beyond simply providing information to offering more proactive and decision-oriented support.

Figure 5. *An LLM "Reasoning" in Action. Answer to the question: "Considering the objective of improving the quality of healthcare services and reducing costs through competition and innovation, as well as the necessity to operate within current regulations (Legislative Decree no. 502/1992, NPM, procurement code, etc.), how would you have managed the situation in the ASL case study, starting from the termination of FB's contract? Provide a detailed strategy, taking into account bureaucratic resistance, legal complexities, and the need to improve service quality." LLM used: Gemini 2.0 Flash Thinking Experimental, January 2025*

Subject: Strategic Response to ASL Case Study: Optimizing Healthcare Quality and Efficiency Post-Consultant Contract Termination

Preamble: This strategic response addresses the ASL case study, focusing on improving healthcare service quality and reducing costs through competition and innovation, while adhering to regulatory frameworks (Legislative Decree no. 502/1992, New Public Management principles, procurement code, etc.). The strategy specifically addresses the situation from the point of contract termination with Consultant FB, acknowledging bureaucratic resistance, legal complexities, and the paramount need for service quality enhancement.

Strategic Pillars:

1. **Phase 1: Immediate Impact Assessment and Mitigation (Post Contract Termination):**
   - **Data Preservation and Access:** Immediately secure all software developed by FB and ensure continued access to relevant data. This is crucial to prevent immediate operational disruption and to maintain the potential for future utilization. *Rationale: Minimizes service disruption and preserves potential assets (NPM principle: efficiency).*
   - **Independent Technical Audit (Compliance & Value):** Commission an *independent* technical audit of FB's software. This audit will:
     - Verify the software's functionality and validate previous expert reports. *Rationale: Evidence-based decision making (NPM).*
     - Assess its compliance with Legislative Decree 502/1992 and NPM principles (performance measurement, efficiency metrics). *Rationale: Regulatory Compliance and NPM alignment.*
     - Quantify the potential cost savings and service quality improvements documented in FB's reports. *Rationale: Cost-effectiveness analysis (NPM).*
     - Identify any potential legal or contractual vulnerabilities related to the termination. *Rationale: Proactive legal risk management.*
     - This audit must be transparent and its findings made accessible to relevant stakeholders. *Rationale: Transparency and Accountability (NPM).*
   - **Internal Stakeholder Consultation (Initial Resistance Mapping):** Conduct rapid internal consultations with clinical, administrative, and legal departments to:
     - Understand the reasons behind the contract termination from different perspectives. *Rationale: Holistic understanding of internal dynamics.*
     - Identify sources and nature of bureaucratic resistance to FB's software and NPM principles. *Rationale: Targeted resistance mitigation.*
     - Gauge the perceived impact on service quality and operational efficiency. *Rationale: Service Quality Focus.*
2. **Phase 2: Strategic Re-engagement and Stakeholder Alignment:**
   - **Transparent Communication of Audit Findings:** Publicly and internally communicate the findings of the independent audit, emphasizing both the validated benefits of FB's software and any identified legal or procedural issues related to the termination. *Rationale: Transparency, Accountability, and Evidence-Based Communication (NPM).*
   - **Stakeholder Workshops (Value Proposition and Co-creation):** Organize workshops involving clinical staff, administrative personnel, legal experts, and potentially external NPM and innovation consultants. These workshops should:
     - Present the validated benefits of FB's software in clear, data-driven terms, directly linking it to improved service quality and cost reduction. *Rationale: Evidence-Based Persuasion and Value Communication (NPM).*
     - Address concerns and resistance points identified in Phase 1. *Rationale: Proactive Resistance Management.*
     - Co-create a revised implementation plan for FB's software, incorporating feedback and addressing practical concerns from frontline staff. *Rationale: Inclusivity, Co-creation, and User-Centric Approach (NPM principles & service quality focus).*
     - Explore how FB's innovative approach aligns with broader strategic goals of quality improvement and cost efficiency within the regulatory framework. *Rationale: Strategic Alignment and Regulatory Contextualization.*
   - **Incentive Structure Review (Innovation & Efficiency):** Review and potentially revise internal incentive structures to reward innovation adoption, efficiency improvements, and data-driven decision-making. *Rationale: Incentive Alignment with NPM goals and Innovation promotion.* This could include performance-based metrics linked to software utilization and service outcomes. *Rationale: Performance Measurement and Management (NPM).*
3. **Phase 3: Legal Strategy and Proactive Dispute Resolution:**
   - **Early Legal Consultation (Proactive Strategy):** Engage specialized legal counsel experienced in administrative law, public procurement, and intellectual property rights. *Rationale: Legal Expertise and Proactive Risk Management.*
   - **Cost-Benefit Analysis of Litigation vs. Settlement:** Conduct a rigorous cost-benefit analysis comparing the projected costs and risks of prolonged litigation against the potential benefits of an amicable settlement with FB. *Rationale: Cost-effectiveness in Legal Strategy (NPM).* This analysis must consider not only direct financial costs but also reputational damage, opportunity costs, and the potential for ongoing disruption. *Rationale: Holistic Cost-Benefit Analysis and Reputational Risk Mitigation.*
   - **Exploration of Alternative Dispute Resolution (Mediation):** Actively explore alternative dispute resolution mechanisms, such as mediation, to seek a mutually acceptable settlement with FB. *Rationale: Efficiency and Collaborative Problem Solving (NPM).* A settlement could potentially involve:
     - Fair compensation for past work, as eventually mandated by the Cassazione. *Rationale: Justice and Legal Compliance.*
     - Re-engagement of FB in a modified consultancy role to oversee software implementation and knowledge transfer, if feasible and mutually agreeable. *Rationale: Value Maximization from Existing Investment and Expertise.*
   - **Transparent Legal Communication:** Maintain transparent communication regarding the legal process and strategic decisions, both internally and, where appropriate, externally, to maintain public trust and accountability. *Rationale: Transparency and Accountability (NPM).*
4. **Phase 4: Systemic Reform and Future Innovation Ecosystem:**
   - **Establish AI-Driven Performance Monitoring System:** Implement an AI-driven performance monitoring system that continuously tracks key performance indicators (KPIs) related to service quality, efficiency, and cost-effectiveness, including metrics directly linked to software utilization. *Rationale: Continuous Performance Monitoring and Data-Driven Management (NPM).* This system should provide real-time feedback and early warning signals for potential issues. *Rationale: Proactive Management and Early Intervention.*
   - **Review and Reform Procurement Processes (Innovation-Friendly):** Review and reform ASL procurement processes to be more innovation-friendly and less susceptible to bureaucratic inertia. *Rationale: Innovation Promotion and Streamlined Processes (NPM).* This includes:
     - Developing clear evaluation criteria that prioritize innovation and long-term value over purely cost-based considerations. *Rationale: Value-Based Procurement and Innovation Incentives.*
     - Establishing streamlined processes for evaluating and adopting innovative solutions from external providers. *Rationale: Efficiency and Openness to External Innovation.*
     - Ensuring compliance with the procurement code while fostering a culture of innovation. *Rationale: Regulatory Compliance and Innovation Integration.*
   - **Culture of Innovation and Data-Driven Decision Making:** Foster a broader organizational culture that values innovation, data-driven decision-making, and continuous improvement, aligned with NPM principles and the imperative for quality healthcare service. *Rationale: Long-Term Cultural Shift towards NPM principles and Innovation.* This includes training and skill development programs for staff in data analysis, digital tools, and innovation management. *Rationale: Capacity Building and Skill Enhancement.*

Expected Outcomes:

- **Improved Service Quality:** By leveraging FB's software and fostering a culture of innovation, service quality is expected to improve through enhanced efficiency, data-driven decision-making, and resource optimization.
- **Cost Reduction:** Through software utilization and streamlined processes, significant cost savings are anticipated, aligning with NPM's focus on cost-effectiveness.
- **Reduced Legal and Bureaucratic Costs:** Proactive legal strategy and dispute resolution, combined with systemic reforms, aim to minimize future legal and bureaucratic costs.
- **Enhanced Public Trust:** Transparent communication, accountability, and a demonstrable commitment to service quality and efficiency will contribute to enhanced public trust in the ASL.
- **Establishment of a Sustainable Innovation Ecosystem:** Systemic reforms will create a more innovation-friendly environment within the ASL, ensuring better adaptation to future challenges and opportunities.

Conclusion:

This multi-phase strategy provides a detailed roadmap for the ASL to navigate the complex situation following the termination of FB's contract. By prioritizing data-driven decision-making, stakeholder engagement, proactive legal management, and systemic reform, the ASL can move beyond bureaucratic inertia and effectively implement NPM principles to achieve sustainable improvements in healthcare quality and efficiency, while operating within the necessary regulatory frameworks. This strategic approach aims to transform the ASL into a more responsive, innovative, and accountable public service organization.

This advancement is vividly illustrated in **Figure 5**, which depicts an LLM "reasoning" in action. The figure captures the output of **Gemini 2.0 Flash Thinking Experimental (January 2025)** in response to a complex question. As evident in the detailed, multi-phase strategic response presented in Figure 5, this reasoning LLM is not simply regurgitating information or applying pre-programmed rules. Instead,

it demonstrates a capacity to synthesize complex constraints (regulatory frameworks, bureaucratic resistance, service quality imperatives), analyze the specific context of the ASL case study, and formulate a nuanced, strategic plan of action. This capability underscores the transformative potential of reasoning LLMs, moving AI from a potentially helpful tool to a genuinely disruptive force capable of fundamentally altering decision-making processes within public administration and beyond.

It's striking to observe the leap in sophistication achieved in just a six-month span (Figure 5 VS Figures 1, 2, 3 and 4). The conventional LLM's answer focuses on the narrower question of whether AI could have predicted a legal outcome and helped avoid a protracted battle. It offers sound but fairly standard recommendations (e.g., early compensation and alternative dispute resolution) without deeply integrating broader organizational or systemic changes.

By contrast, the reasoning LLM delivers a multi-phase strategy that tackles legal, operational, and managerial dimensions all at once. It seamlessly weaves together aspects such as stakeholder consultation, proactive communication, risk mitigation, and incentives for innovation—painting a more holistic picture of how to address complex challenges in public administration. This richer approach suggests that newer LLMs can act as strategic consultants, moving beyond question-and-answer or summarized insights to deliver multifaceted plans for real-world implementation.

Ubiquitous, Indispensable, Artificial Intelligence

Building upon the initial glimpses of AI's potential observed even with the Large Language Models discussed previously, the advent of **reasoning AI models just six months later** has made the transformative and indispensable nature of AI in public and private sector management **strikingly more evident and critically urgent**. While earlier LLMs hinted at the radical reshaping of management scenarios, these new reasoning systems solidify the understanding that AI is not merely an incremental improvement, but a fundamental shift. Just as the previous generation of LLMs suggested a future where cases like the prolonged ASL legal battle would become virtually impossible, reasoning AI now makes this future feel not just probable, but **inevitable**. Reverting to pre-AI methods will soon seem as unthinkable as returning to handwritten memos in today's digital offices. The capacity of reasoning AI to swiftly analyze complex data, consider multifaceted perspectives, and offer nuanced, principle-aligned advice—now demonstrably enhanced—will be **essential to prevent protracted conflicts and inefficiencies in a way that was only theorized just months ago**. As Bushuyev et al. (2024) rightly predicted, this integration precipitates a "skill shift," demanding new competencies in AI collaboration from managers, rather than simply eroding existing skillsets. In this rapidly evolving landscape, failing to leverage AI-assisted counsel is swiftly becoming akin to neglecting email today – a critical oversight that exposes organizations to unacceptable risks and inefficiencies. This AI-driven transformation is now undeniably poised to **exponentially reshape** management practices, legal processes, and organizational structures, revolutionizing institutional approaches to

complex challenges and decision-making as we rapidly advance towards the era of Artificial General Intelligence (AGI) and Artificial Superintelligence (ASI).

Referring specifically to the fast evolution of LLM models, if this trend of rapid evolution continues, we can expect even more powerful language models capable of diagnosing intricate problems, designing tailored solutions, and guiding organizations through nuanced decision-making processes. In the next wave of advancements, LLMs might be expected to further refine their capacity for contextual awareness and dynamic adaptation, becoming genuine partners in policymaking, strategic planning, and large-scale transformation projects. Where the conventional LLM offers a useful analytical perspective, the next generations of "reasoning" LLMs could become indispensable tools in orchestrating change across systems, shaping our approach to everything from legal disputes to organizational reform.

Questions and Answers

To succinctly encapsulate the documented reasoning presented throughout the paper, the following questions and answers distill its essential insights. This section summarizes key arguments regarding the capacity of public administration, the potential of AI systems, and the necessary conditions for their effective integration.

1. **Does public administration and its control systems have the capacity to effectively manage a case of technological and managerial innovation like the one described?**
   Answer: No. As detailed in the "Results" and "Discussion" sections, the public administration in the Italian healthcare system has consistently struggled to manage technological and managerial innovation effectively. The multiple actors involved—such as internal control mechanisms (e.g., the internal auditing body and the ASL legal office), judicial oversight through the prolonged legal process (illustrated by the series of court-ordered expert reports and the eventual ruling by the Italian Supreme Court), and even media scrutiny—have proven incapable of overcoming entrenched bureaucratic inertia. Despite the clear theoretical framework provided by New Public Management (NPM), these diverse actors, as elaborated in the "New Public Management: Theoretical Background and Key Principles" and "Materials and Methods" sections, have not succeeded in effectively managing the innovation.

2. **Would an AI system have been capable of offering a different interpretation?**
   Answer: Yes, particularly when considering reasoning-oriented AI systems. In the "The First AI Experiment" and "The Reasoning AI Experiment" sections, advanced AI models such as Claude 3.5 Sonnet and ChatGPT-4 Omni demonstrated their ability to analyze complex legal and managerial scenarios in a nuanced manner. Their capacity for deep reasoning suggests that an AI system could have provided a markedly different interpretation of the case, potentially offering innovative insights that traditional human analysis might overlook.

3. **Is the mere presence of an AI consultancy system that provides reasoned counseling sufficient?**
   Answer: No. As discussed in the "AI in Public Administration" and "Countermeasures and Automated Feedback Systems" sections, simply having an AI consultancy system that offers reasoned advice is not enough. Without an adequate regulatory framework, such counsel remains inapplicable. The paper draws a parallel with the banking credit scoring system—highlighted in these same sections—where the "counsel" provided by AI in credit decisions is effectively enforced by the high accountability imposed on bank officers. This example illustrates that while AI holds disruptive potential, its transformative impact can only be realized if it is granted a fundamental and integrated role within the decision-making framework, rather than operating merely as an isolated advisory tool.

4. **Why was it necessary to cite such a long and complex legal process to demonstrate points that might otherwise seem reasonable?**
   Answer: The inclusion of a prolonged legal process was crucial because, without a conclusively validated legal case, the entire discussion—including all the AI experiments, however interesting—would have remained purely theoretical. Only through a legal process that is ultimately validated and endowed with the weight of a "principle," as evidenced by the Supreme Court's ruling, can the evaluations achieve general validity. This is particularly significant regarding the possibility of self-correction during judicial proceedings—an event anticipated within the NPM framework—which, in this instance, did not occur.

Limitations and Critique of the Present Study

This study, while offering significant insights, has certain limitations that merit discussion.

First, the generalizability of the conclusions might be questioned, as the analysis is based on a single case study. However, it's crucial to emphasize that this specific case has a very rare characteristic: an extensive judicial validation that reaches the Court of Cassation. The essential significance of the case study lies in its ability to certify a systemic failure of public administration, including control bodies (healthcare administration, board of auditors, legal offices, judicial system, press, etc.). This failure demonstrates a disregard for all NPM principles, despite this contradiction being certified during the judicial process.

Secondly, it's important to note that AI is not the central focus of this paper, and consequently, all the ethical, legal, and technical issues of AI in public administration are not explored. AI is viewed as a potential disruptive solution to a system that, over the seventeen years of this judicial history, appears fundamentally unamendable and resistant to any theoretical principle of "good governance" or control system. However, the author's impression, as evidenced by the "AI Experiment" is that AI indeed has this disruptive potential, especially when systems will be "trained" on specific managerial, economic, and legal aspects. This points to

an important role for universities in developing and refining these AI applications for Public Administration.

These limitations do not diminish the value of the study but rather highlight areas for future research and development in the intersection of Public Administration, NPM principles, and emerging technologies like AI.

Conclusion

This case study, with its uniquely extensive judicial validation culminating at the Court of Cassation, serves as a stark testament to the systemic failure of all conventional control mechanisms – internal audits, legal offices, external judicial oversight, and even established theoretical frameworks like New Public Management – in effectively fostering efficiency and innovation within public administration. The fact that a Cassazione ruling affirming the consultant's work arrived nearly two decades after the initial events underscores not a triumph of justice, but rather the profoundly debilitating inertia that renders even ultimate legal victories practically meaningless, nullifying any positive impact and actively deterring future innovation. Uniquely, this case's protracted judicial journey—which served to so clearly illuminate this systematic and effective bureaucratic resistance—was only possible because the individual involved, FB, had the exceptional circumstance of securing alternative professional opportunities abroad. This financial independence allowed him to persist in the legal battle, fully relinquishing any prospect of future work within the ASL or as a public sector provider in Italy. In stark contrast, the vast majority of individuals facing similar situations either forego legal action entirely or abandon it prematurely due to the economic pressures of maintaining their livelihoods. This case, therefore, is not just a demonstration of systemic failure, but also a rare and amplified illustration precisely because the typical constraints that silence dissent and perpetuate inertia were, in this instance, uniquely overcome. In the face of such a demonstrably pessimistic reality, the potential of AI emerges not as another well-intentioned but ultimately ineffective theory like NPM. Instead, AI's disruptive potential lies in its fundamental inescapability. It is not presented as an optional tool to be adopted or ignored, but as a transformative force that will, by its nature, become indispensable and practically unavoidable. The rapid and compelling advancements witnessed in AI capabilities in the mere six months separating the experiments detailed above offer tangible evidence of this disruptive trajectory. This exponential evolution unequivocally signals that AI is not just an incremental improvement, but the only viable disruptive solution capable of transcending entrenched bureaucratic barriers and fundamentally reshaping public administration in ways that NPM and other conventional reforms could only aspire to, yet ultimately failed to achieve.

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