Xvaluator: A European game changer in Data Qualification allowing the Decision Making with consensus based on its newly discovered Qualificative AI (QuAI)

XVALUATOR : Une innovation générique, révolution européenne dans la qualification des données, permettant la prise de décision par consensus grâce à son IA qualificative (QuAI) nouvellement découverte

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RÉSUMÉ. Nous proposons dans cet article la présentation des solutions de la deep tech Xvaluator en France pour la co-construction de nouveaux outils et processus hautement collaboratifs de « qualification ouverte » démocratique [PAU 09, 12, 20]. En tenant compte de la diversité des parties prenantes et de leurs contextes spécifiques, des données d'opinion et d'impact dans des processus de qualification ouverte fortement collaboratifs, ainsi que des capacités renforcées par l'IA, l'innovation Xvaluator est en mesure d'intégrer *ex ante* les déterminants évolutifs de l'opinion sur les données d'impacts perçus concernant tous les sujets d'intérêt commun. Cela oriente nos travaux de recherche vers la découverte et la conceptualisation [PAU 23], en économie, en sciences sociales et cognitives, d'une troisième typologie d'IA (en complément des approches symboliques et connexionnistes-connectives) : l'**IA qualitative (QuAI)** [PAU 23]. Celle-ci permet d'intégrer, comme élément consubstantiel à la pertinence des processus de qualification et de prise de décision, la pensée critique humaine dans toute sa diversité, en tant que condition pour co-créer et accéder à des données pertinentes et fiables en tant que résultats. Ces nouveaux espaces et processus de confiance – l'outil QuAI **Xvaluator** – pourraient ainsi conduire à des choix optimaux et à une meilleure prise de décision fondée sur le consensus. Les processus hautement collaboratifs de création de pertinence et de confiance, notamment grâce aux nouvelles capacités dynamiques offertes par l'IA qualitative de Xvaluator, constituent des créateurs potentiels d'innovations de rupture en mobilisant les contributions des utilisateurs du numérique tout au long des usages de l'IA, vers de nouveaux modèles économiques numériques réduisant les flux de données falsifiées et biaisées, et par conséquent l'empreinte écologique de l'ensemble des usages de l'IA.Plusieurs fonctionnalités d'usage sont identifiées comme des contributions critiques de **Xvaluator** aux évolutions vers une économie de la fonctionnalité [VAI 20] et à la démocratisation de l'accès à des données d'impact fiables, en vue d'outils plus efficaces, plus éthiques, innovants et disruptifs, favorisant la résilience [SCH 22] face aux crises multiformes actuelles : économiques, climatiques et liées à la confiance [PAU 09, 12, 18], [ADA 18].

ABSTRACT. We propose in this article the presentation of the solutions of the Deep tech Xvaluator in France for the co-construction of new, highly collaborative tool and processes of democratic "open qualification" [PAU 09, 12, 20]. By considering the diversity of stakeholders and their specific contexts, opinion and impact data in highly collaboration open qualification processus and the capabilities enhanced by AI, Xvaluator innovation is able to integrate ex ante the evolving determinants of opinion on perceived impacts data on all subjects of common interest. This leads our research toward the discovery and conceptualization [PAU 23] in economics, social and cognitive science of a third typology of AI (in addition to symbolic and connectionist-connective types): the Qualitative AI (QuAI) [PAU 23]. This allows to integrate as consubstantial to the pertinence of the qualification and decision-making process the human critical thinking in all its diversity as condition to co-create and access pertinent reliable data as results. These new trusted spaces and process - QuAI tool Xvaluator - could thus lead to optimal choices, and better decision making with consensus. Highly collaborative process of creation of relevance and trust, particularly through the new dynamic capabilities empowered by the Xvaluator Qualificative AI are potential creators of disruptive innovations by embarking the digital users' contributions during all AI

usages towards new digital business models reducing the fake and biased data flux and thus reducing the ecological footprint of all AI usages. Several usage functionalities are identify d as critical contributions of Xvaluator to evolutions towards a functional economy [VAI 20] and the democratization of access to reliable impact data aimed at more efficient, more ethical, innovative, disruptive tools for resilience [SCH 22] facing the current multifaceted crises: economic, climate-related, and trust-related [PAU 09, 12, 18], [ADA 18].

MOTS-CLÉS. Donnée innovation ouverte, intelligence artificielle, IA Qualificative (QuAI), IA connective, IA symbolique, économie de la fonctionnalité, valorisation
KEYWORDS. data open innovation, artificial intelligence, Qualificative AI (QuAI), connective artificial intelligence, symbolic AI, functional economy, valorization

Introduction

This article presents the disruptive innovation of the Deeptech Xvaluator in France– the first customizable Qualificative AI (QuAI) tool designed to provide access to relevant and trustworthy data for all decision-making processes with consensus by integrating the alterity as condition for pertinence in qualification process and its results. It actively involves digital users in reducing the flow of fake and biased data, thereby lowering the ecological footprint associated with all AI usage by embarking the newly discovered Xvaluator Qualificative AI (QuAI) on all AI usages.

The article explores the theoretical foundations, practical applications, and potential impacts of the Xvaluator Qualificative AI - QuAI, particularly through the example of this *Xvaluator* tool, developed by the French Deeptech startup Xvaluator in the Paris and Occitanie regions. The introduction of QuAI as a third typology of AI is a novel and potentially transformative innovation, addressing key gaps in existing AI approaches by emphasizing the incorporation of human critical reasoning in all its diversity and contradictions to finish with the current polarization of opinion data.

The **first** part of the article presents the Xvaluator Qualificative AI, its théoretical and empirical observations, epistemological analyses of the disruptive innovation developed by the deeptech Xvaluator based in Issy-les-Moulineaux in Greater Paris Region in France and drawn from multidisciplinary research. These provide a new perspective on current digital and AI business models, highlighting their dangerous impacts in the proliferation of fake, biased, and potentially harmful data—data that contributes to the polarization of opinions and societies. We identify both the challenges and the pressing need for innovations related to the open qualification of opinion data and perceived impacts in the context of rapid AI and digital tool deployment with more than 60% of fake data in AI and digital tools.

The chosen **methodology** seeks to create meaningful connections across disciplines—including economics, social and cognitive sciences, and AI—demonstrating how the new AI typology, QuAI, bridges these fields thanks to the applications and use cases of its first tool Xvaluator. This interdisciplinary perspective is grounded in research on the intertwined evolution of economic, innovation, and qualification models. It is further supported by foundational theories such as Lupasco's *Tiers Inclus*, Odobleja's *Consonantist Psychology*, Condorcet's paradox, Arrow's impossibility theorem, Stiglitz's theory of informational asymmetry completed by Paun's multipple asymmetries in highly collaborative processus and tools for reducing or compensating asymmetries, and Amartya Sen's work on welfare economics. Together, these form a robust theoretical framework for advancing both theoretical understanding and innovative AI solutions to both understand the innovations of the deeptech Xvaluator and identify its impacts at micro, meso (évolution of the digital and AI business

model) and maro economic level (as tool and stratégy of valorisation in the functional economy model).

In the **second** part, we highlight this context and the stakes that demonstrate the importance and urgency of using Xvaluator. Xvaluator Qualificative AI thus emerges as an integrative solution for aggregating and collaboratively qualifying the diversity and complexity of human critical thinking as it evolves. It addresses key limitations identify d in Condorcet's Paradox [CON 85] and Arrow's Incompleteness Theorem [ARR 51], by enabling Open Qualification AI processes that can integrate diverse data—including weak signals, sentiments, multiple observers and multiple perceived impacts. This aligns with the "Tiers Inclus" concept [ODO 39], which goes beyond mediation to form a new dimension—a co-constructed, inclusive synthesis of opposing perspectives—enabled by this first tool Xvaluator.

The second part of the article defines, compares, and illustrates how it offers key solutions for sustainable reindustrialization, combining automation of production with the potential for ultimate personalization and individualization of products and services—enabled in part by the integration of QuAI.

The **third** part highlights the relevance and impact of *Xvaluator* and its customization across various functions, use cases and results. It supports the qualification of perceived economic impacts and decisions at macro-, meso-, and microeconomic levels. The article emphasizes the importance of employing QuAI in qualifying opinion and impact data across sectors and decision-making contexts—including in banking and investment. It presents current examples where extra-financial value serves as a multiplier of economic impact, particularly in innovation investment processes, and demonstrates how open qualification capacities can enable new value systems and possibly reward perceived extra-financial contributions.

This approach challenges the perception of "social capital" as mere externalities or extra-financial values in Fordist economic models [UZU 09], [LAP 12]. Instead, it promotes the ex-ante integration of diverse perceived opinions and impact data across cognitive levels through Qualification AI (QuAI) tools. This integration constitutes *Augmented Value* [VAI 20], central to new centers of value creation *"shared without dividing"* [VAI 12].

In conclusion, this article highlights how the breakthrough innovation of the deeptech **Xvaluator Qualitative AI** is transforming digital and AI business models, as well as the qualification and valorization of data. It positively impacts not only decision-making processes through consensus but also accelerates the transition toward new economic models, such as the functional economy, by prioritizing human diversity critical thinking (and not the current polarization) as a source of shared value creation. This paves the way for a better digital era that serves humanity, promotes efficiency, and fosters collaboration.

1. XVALUATOR BREAKTHROUGH INNOVATION BASED ON THE QUALIFICATIVE AI (QuAI)

In this first part, we introduce a selection of various theoretical and experimental analyses of the innovation Xvaluator revealing the emergence of a new perspective on the necessary evolution of critical thinking in the context of the use of AI data aiming for decision-making through consultation and consensus.

In this context of evolutions of valorisation strategies and tools the future of our industries serving humanity will be built on pertinent, trustworthy data, or they will cease to exist. That's why discussing industrial technological innovation is essentially about investing in access to pertinent data [PAU 11] and this is the objective and promises of the Xvaluator Deep tech.

1.1. *The need for new innovative Digital and AI tools*

Faced with these crises of confidence caused by violence and “fake data” in the digital and AI realms, as analyzed by researchers [MUN 16] on platforms and social networks, the issues surrounding the probability of a lack of trust in decisions made by a plurality of votes are considered today to be important and urgent for sovereignty, effciency and trust.

These issues have long been the subject of research, including the Condorcet Paradox [CON 85] (Condorcet, 1785, in *Essay on the Application of Analysis to the Probability of Decisions Rendered by a Plurality of Votes*), which summarizes it as the possible intransitivity of the majority. According to Condorcet, defining a position common to several voters encounters logical difficulties, particularly the non-compliance with the rule of transitivity, or Arrow's impossibility theorem [ARR 51], also called “Arrow's Paradox” (named after the American economist Kenneth Arrow). This is the mathematical confirmation, under certain specific conditions, of the paradox raised and described in 1785 by Nicolas de Condorcet [CON 85]. In fact, it was the mode of expression of preferences of each voter, in the form of relationships (e.g., A > B > C), which led to this paradoxical result. When the information processed is more complete and provides information on the intensity of preferences (e.g., A is only slightly preferred to B, but B is very strongly preferred to C), procedures can rationally classify candidates without paradox. Such procedures are, for example, used to evaluate responses to calls for tender: for each evaluation criterion, we establish not a ranking, but a rating.

Arrow [ARR 51] postulated that there is no collective decision procedure that can satisfy four reasonable conditions. However, Xvaluator Qualificative AI (QuAI) [PAU 23] enables us today to increase the capacity for integration into the open qualification process of all the diversities of data on preferences, their determinants, and the intensity of their precision. By offering a unique space for contextualization and highlighting weak signals, the diversity of criteria, temporalities, and sources, their democratically ponderation Xvaluator Qualificative AI allows to integrate and manage this

complexity of data intensity [ARR 51], enabling the practice of a highly collaborative and open qualification process.

The contributions of the Nobel Prize Amartya Sen [SEN 70] to welfare economics and, in particular, his work on collective choice and social well-being posed similar questions about whether the values that individual members of society attach to different alternatives can be aggregated into values for society as a whole in a way that is both fair and theoretically sound [SEN 70]. Originally published in 1970, Amartya Sen's work has been recognized for its revolutionary role in integrating economics and ethics and for its influence in opening new areas of research on social choices, including aggregative evaluation.

Xvaluator solutions provide spaces for analysing the combination of opinions, preferences, interests, ponderations or individual well-being to achieve optimal collective choices and decisions, integrating human critical thinking in its diversities and possible developments, also through a new Xvaluator ontological vocabulary specific to QuAI [XVA 18] via this generic and personalised innovation.

1.2. *The Critical Role of Feedback and Demand comprehention for the Evolution of Evaluation Models in the Digital and Ecological Transitions*

Recognizing the growing importance of “feedback” from all actors within the economic and innovation ecosystems has become essential for guiding the evolution of business models—particularly in integrating frugal innovation, ecological concerns, and shared value creation in the context of disintermediation of the client relations thanks to digital and AI solutions. This understanding draws from the foundational cognitive science research integrating Ștefan Odobleja, the European father of cybernetics, whose theory of Consonantist Psychology emphasized feedback as the basis for man-machine interaction.

Digital business models and tools inherited from the Fordist era emphasize quantity-based valorization—such as the number of “views”, “likes”, or “followers”—which leads to polarized opinions, manipulation of public perception and distortion of impact assessments. Notably, over 60% of digital and AI data is now estimated to be fake or biased, further compounding the problems.

To address these issues, we draw also on the “included third” (tiers-inclus) logic of Stefan Lupasu and Basarab Nicolescu. It supports the hypothesis of possible shift from the current digital and AI space of polarization and confrontation toward a Digital as “Tiers-Inclus Space”—a space capable of integrating diverse perspectives and perceived impacts.

The innovative open valorisation strategy introduced by Xvaluator and its Qualificative AI based on the consubstantiality of the integration of the “alterity” opinion data (understanding the “why?” inside this Opinon Data) and qualification contribution in the pertinence of the process and of the results. Thus encourages all digital users to take in considerantion different opinions data as source and effect (“recursive causality” for Edgar Morin) of a new type of reliable qualification process and efficient adoption, implementation of decision making with consensus.

Competitive Landscape

Criteria	Social Media	Polling Institutes	e-Reputation Tools	XValuator
Data Recovery	Not accessible to users	Limited access, not customizable	Not available to users	Accessible and valuable (GDPR compliant)
Opinion Weighting	Not weighted, often biased	Centralized weighting by experts	Fixed, not democratic	Democratic and participatory
Fake Review Detection	Absent, manipulation possible	Weak real-time detection	Limited and unreliable	Advanced semantic analysis
Customization	None	Restricted	Fixed criteria	Multi-source, adjustable criteria
Opinion Valorization	Exclusive to platforms	Not valued for individuals	Little valorization	Transformation of "likes" into tangible value

XValuator's unique position in the market stems from our comprehensive approach to data qualification and valorization. Unlike existing solutions that address only fragments of the challenge, our platform provides end-to-end capabilities for democratizing and monetizing qualified opinions while ensuring data integrity and user empowerment.

Table 1. Xvaluator Qualificative AI (QuAI) tool [PAU 23] Source: Presented at Lugano AI Festival in January 2025 by Dr. Florin Paun as invited guest speaker

This new paradigm of the Xvaluator innovations enable democratic, transparent and efficient decision-making through contextualization rather than exclusion of different or opposed opinion data. With a patented architecture, technical effect, algorithm, and fuzzy logic approach Xvaluator innovation offers a new foundation for collective qualification methods and shared understanding of complex data systems and interdependences.

1.3. *DEFINITION OF XVALUATOR QUALIFICATIVE AI – QuAI: THIS NEW AI TYPOLOGY AND AI ESTABLISHED THEORIES*

Neither symbolic AI—which applies predefined expert rules—nor connectionist AI—which mimics basic brain structures—has proven sufficient to ensure the visibility, reliability, and trustworthiness of opinion data and perceived impacts currently integrated into decision-making AI systems. This insufficiency is evident in the proliferation of fake news and the rising incidence of online platform violence. Therefore, building confidence in data and its relevance for informed consultation-based decision-making with consensus remained a critical pain and challenge—and a matter of digital sovereignty till the discovery in 2023 of the Qualificative AI (QuAI) [CUR 24].

Comparison Table: Connective AI vs. Symbolic AI vs. Qualificative AI (QuAI)

Dimension	Symbolic AI	Connective AI	Qualificative AI (QuAI)
Foundational Logic	Rule-based logic	Neural networks / learning patterns	Ontological contextualization + democratic weighting
Knowledge Source	Expert knowledge (pre-programmed rules)	Historical data, pattern recognition	Real-time, diverse, collective human inputs
Learning Mode	Deductive reasoning	Inductive/statistical learning	Open, recursive, collaborative qualification
Epistemology	Symbolic/cognitive	Connectionist/neural	Hybrid + transdisciplinary (“Included Third”)
Strengths	Transparent rules, traceable decisions	Pattern recognition, scalability, automation	Contextualization, relevance, trust, integration of human critical thinking
Limitations	Rigid, inflexible, lacks adaptation to complexity	Opaque, risk of bias, dependent on past data	Requires collective participation; complex to scale culturally
Main Tools/Technologies	Expert systems, decision trees	Deep learning, neural networks	Xvaluator (2019 patent), ontological vocabularies
Treatment of Data	Static input/output	Dynamic, data-driven	Perception-driven; qualified and weighted through human collaboration
Decision-Making Orientation	Deterministic, top-down	Predictive, bottom-up	Participative, iterative, relevance-oriented
Typical Applications	Rule engines, legal automation, diagnostics	Image/speech recognition, recommendation systems	Impact qualification, fake news detection, democratic digital governance
Feedback Integration	Limited, manual	Implicit via training loops	Explicit, continuous, cybernetic feedback loops
Human Critical Thinking	Excluded (predefined logic)	Modeled superficially (brain-like mimicry)	Embedded, structured via determinants and open qualification processes

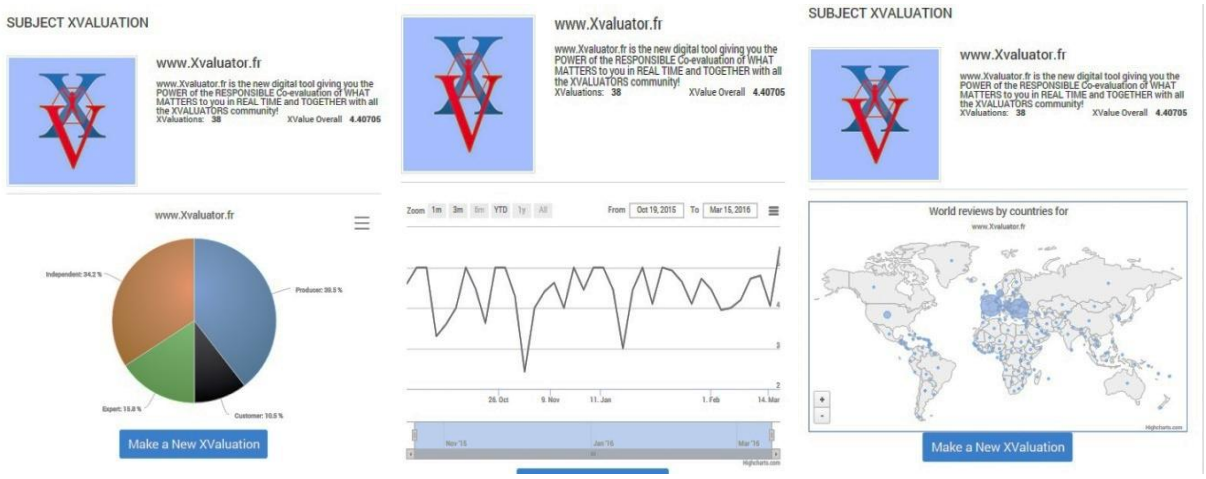
Table 2. Qualificative AI (QuAI) and the quanta cycles discovered and present in this article [PAU 23] Source: Presented at Lugano AI Festival in January 2025 by Dr. Florin Paun as invited guest speaker

This generic Qualificative AI (QuAI) [CUR 24] tool, also inspired by social choice theory, addresses the Condorcet Paradox (the non-transitivity of collective preferences) by using also Borda-style weighted aggregation methods. These methods consider not only the ranking but also the intensity of individual preferences [CUR 24]. In doing so, Xvaluator QuAI effectively introduces a “critical thinking” capability into the AI model, grounded in the principle of collective wisdom. The model then functions as a kind of collective expert. Among the many potential applications, one of the most prominent is the tracking and identification of fake news across social networks, platforms, and AI-driven tools—an essential function for maintaining a healthy digital environment [CUR 24].

Qualificative AI (QuAI)—discovered and conceptualized by Dr. Florin Paun in 2023 and grounded in a patent obtained in 2019 by Xvaluator—represents a transformative approach to integrating the diversity of determinants involved in open, participatory qualification of opinion data and perceived impacts in continuous and real-time. This innovation is embodied in the Xvaluator platform (patented in 2019), which allows the objectivisation collective integration and contextualization of opinion data across different temporalities and scopes, using a specific Xvaluator ontological vocabulary and highlly collaborative processes.

As generic technology the Xvaluator QuAI acts as an integrative solution by applying democratic weighting (XVA 19) to the diverse and evolving expressions of human critical thinking with the power to personalize the tools and results based on “included third” approaches [LUP 87], [PLO 18].

Figure 1: Exemples of Personalized results integrating the alterity on Xvaluator tools: “Xvaluator s Typologies”; “Meteo of the Perceived Value of a subject”, “Volunteer Localisation of Xvaluator s”



1.1.1. The Core of Xvaluator : Human Critical Thinking in Machine Reasoning

Xvaluator QuAI integrates human reasoning into artificial intelligence through the modeling of “determinants of critical thinking” using the Xvaluator ontological vocabulary [PAU 18b]. These determinants include criteria, sources, timeframes, categories, weightings, and context—all collaboratively constructed and continuously evolving [PAU 20–24], [VAI 12, 19].

The critical thinking embedded in Xvaluator is operationalized via the customizable, disruptive innovation tools of Xvaluator. These tools collaboratively contextualize all opinion data, reinforcing the idea that “we only understand something well by comparing it to something else” [DUM 48].

1.1.2. Xvaluator Qualificative AI and the Cybernetic Legacy

QuAI sustains and evolves the man-machine dialogue by preserving the diversity of human critical thought in line with cybernetic principles—echoing the foundational work of Ștefan Odobleja, father of cybernetics. In his 1939 book *Consonantist Psychology*, Odobleja introduced the feedback loop as central to understanding man-machine relationships [ODO 29]. This concept was further developed by Norbert Wiener in *Cybernetics: Or Control and Communication in the Animal and the Machine* (1948) [WIE 48]. Odobleja emphasized that human learning and decision-making rely on continuous feedback between actions and their consequences. QuAI uses this cybernetic feedback mechanism to evaluate and adjust its models over time—learning from its past actions, incorporating new data, and resolving contradictions (such as conflicting opinions or market signals) through a continuous synthesis process.

We hypothesize that machine learning involves nonlinear feedback, and while patterns and rhythms may change [WIE 48], no previous solution has adequately integrated the full diversity of human critical thinking into machine operations. QuAI [PAU 23] achieves this by supporting an open, highly collaborative qualification process—organizing the integration of non-determined but determinable critical thinking factors [PAU 12, 13]. This establishes human critical thinking as central and essential in qualifying and valuing data and shaping future AI and digital business models.

1.1.3. Xvaluator tool: As a New Valorization Paradigm

Some researchers may view Qualificative AI as an entirely new AI paradigm rather than just an approach. This is consistent with France's official legal definition of AI and aligns with the original 1955 definition of AI (CHA, XXX).

While we present QuAI as a third type of artificial intelligence—alongside symbolic and connectionist types—this does not reduce its value to artificial intelligence alone. QuAI may also manifest outside AI contexts. However, AI tools enable its fullest expression, particularly in digital environments characterized by big data.

As noted by economist Amartya Sen [SEN 79], the notion of "capabilities" goes beyond formal definitions or utilitarian frameworks. He argues that the capability is not a formula; it points towards a certain space... the space of capabilities is, in some way, a more relevant space than the utilitarian or commercial space. In this sense, QuAI opens new **capability spaces** by enabling contextualized, participatory, and democratic qualification processes that are essential for innovation in today's complex, rapidly evolving digital and ecological environments.

The Qualificative Intelligence (QuAI) [PAU 24] is perceived as a guarantor of democratic solutions for the collective creation and shared use (without dividing) of Qualified, contextualized, weighted Data which can neither be stored nor manipulated because they are subject to highly collaborative processes of contextualisation and Open Qualification (Xvaluator 2019 patent) [PAU 23] The consensual and predictive results are thus based not on data, models or past experiences (imprisoning data and AI users on "Path Dependencies") but open to possibilities by integrating differences.

1.1.4. The Highly inclusive third-party logic

One of the foundations of the relevance of Xvaluator Qualificative Artificial Intelligence (QuAI) lies in the logic of inclusiveness, embracing the diversity of opinions on perceived impacts. It highlights QuAI's capacity to contextualize and integrate all the determinants of a highly collaborative and democratic process: maximizing objectivity through contextualization, beyond the limitations identify d by Arrow [ARR 51] in the processes of evaluation, qualification, and completion of Arrow's theorem [PAU 09, 13, 18].

The logic of "tiers inclus" – the "Third Included" (contrary to the commonly accepted erroneous interpretation) – does not imply that one can assert contradictory statements simultaneously, which would negate any possibility of prediction and, therefore, any scientific approach to the world. Rather, it recognizes that, in a world of irreducible interconnections (as in the quantum world), reality is divided in a way that affects the very essence of that reality. A real entity can thus display "contradictory" aspects that may seem incomprehensible or even absurd from the perspective of a logic based on the postulate "either this or that." These contradictory aspects are no longer absurd in a logic grounded in the postulate "and this and that." The juxtaposition of both does not require synthesis. The concept of synthesis, as emphasized by Hegel, does not apply in Lupasco's framework [LUP 87].

At the beginning of his book "The Principle of Antagonism and the Logic of Energy," Stéphane Lupasco states the fundamental postulate of a different logic: Lupasco [LUP 87] links a phenomenon to its "logical anti-phenomenon" through negation. Here, we recognize the contradictory terms of Aristotelian logic. The dynamic logic of the contradictory is grounded in the principle of antagonism. The Logic of Contradictory: the negation of a term gives rise to the antagonistic term, such that when one is actualized, the other is potentiated. The phrase "At the same time" represents a thought process of "complexity" that transcends binary divisions. It means that no thought is free from contradiction,

and indeed, any true thought involves an internal dialogue that combines necessarily polemical arguments.

The expression “At the same time” does not imply a mere juxtaposition of contradictions. It is the contradiction that fuels its dynamism. It is not a synthesis or a result; it is nourished by the inclusion of the contradiction from which it draws its energy. It is non-binary, tripolar, and, as we discussed earlier, transfinite tripolar. According to Lupasco [LUP 87], any energy event has a ternary structure: actualization - potentiation - state T (of tiers inclus) or homogenization - heterogenization - state T (of tiers inclus). Consequently, actualization, with its continuous space-time, represents only one aspect—partial and approximate—of the simultaneous action of the three contradictory poles and their associated space-times [PAU 22, 23].

1.3.5. Contribution of the mesology to the XVALUATOR INNOVATIONS

Appearing under the influence of phenomenology in the works of Jakob von Uexküll [UEX 34] and Tetsurō Watsuji [BER 00], [WAT 11] the French mesologie is synonymous with the German Umweltlehre and the Japanese fûdogaku 風土学. The environment (Umwelt, fûdo) is not the objective environmental given (Umgebung, shizen kankyô 自然環境), but the terms in which it exists for a certain entity (as individual, society, species, etc.). It is the reality of the surrounding world specific to this entity, and not to others. The “milieu” (as specific perceived context) is therefore singular, while the environment is universal. Mesology is based on an ontological part of its own: the distinction between “milieu” and “environment”, with the concepts which result from it regarding the “milieu” (medianness, trajection, etc.), and which overcome the dualism of the classical modern paradigm.

The mesology (Umweltlehre) of Uexküll [BER 00] and the growth-together (cumcrescere) of living environments, particularly in the “ecumene” ([BER 00], [PLO 18]), which is all human environments, reign the concreteness of “ternarity” (S is P for I) that is to say a Subject is Perception for Interpreter, not the binarity of “logosic abstraction” (Subject is Perception). This is what the “trajection” formula expresses, r = S/P (which reads: Reality is Subject as Perception), where the oblique / represents the Interpreter I by which S is implemented (energeia) as P. In itself, S - subject is not P-perception: it only has the potential (dunamis) to become P-perception, through the energeia that the trajectio allows S-I-P.

So, through the tools of Xvaluator Qualification AI, the S—subject whose value is not determined but determinable in a continuous democratic process of open qualification can be predicated—as – and have all its potentialities revealed through these spaces of contextualization. Fundamentally, the qualification and valorization of data is the grasping of “something as something “—“etwas als etwas” – according to the expression used by Heidegger in his seminar of 1929-1930.

Scientists [BER 00], [PLO 18] draws attention to the importance of reducing, with the blinders of modern dualism, the second etwas (something)—i.e. the various realities of the ecumene—to “diverse points of view” on the same “objective reality”, which would be S (the object of the physicist: what is observed, which is none other than the subject of the logician: what is in question, S). Concretely, these are different realities (S/P, S/P', S/P'', etc.), each in a specific relationship with the being concerned and the contextualization of the very process of “trajection” by the participative qualification issues. The oblique “/” therefore indicates that the S/P ratio is not a binary point (S is P), but ternary (S-I-P, i.e. S is P for I.

For the same reason (the so-called ternarity, from Latin *ternarius*, meaning "consisting of three"), S, in itself, is only virtual, so non-determined but determinable [PAU 13, 14] Thanks to Qualification Intelligence S (subject) is elusive (therefore incalculable) as such, P-perception necessarily assuming the contingency that results from the operation concretely carried out by I. As Aristotle would have said, S – subject relates to the power-to-be, namely to the dunamis δύναμις before its Energia ἐνέργεια, i.e. its implementation work or its updating in S/P (depending on) before its completion. The structure of "as", the unifying advance perception (vorgängige einheitbildende Vernehmen) of something qua something (etwas als etwas), is the condition of possibility of the truth or falsity of the λόγος.

What exists for us – reality, truth – is therefore neither properly objective nor properly subjective, but 'trajective'. Effect of this trajection of S as P (i.e. S/P), reality through the processes and the space of confidence offered by Qualification AI is trajective. It is our world, our contextualizations that provide the understanding and relevance of everything that we perceive collectively as a representation of the world of values.

Xvaluator Qualificative AI therefore proves essential as a process of trajection confidence in the construction of the representation together of the world, of society, of our economies, of values created collectively, of pertinence of data because qualified collectively and highly inclusive, perceived as shared value. It is in this sense that every living being is the main agent, the "shutai", the scale of its own environment, of its own context which, in return, determines it in a certain sense as a "recursive causality" both cause and effect at Edgar Morin. In other words, being qualified is created by creating its environment, its context, from the raw data and the diversity of perceptions and observers. Integrating into our research even the apophthegm of Protagoras (-485/-411), πάντων χρημάτων μέτρον ἐστὶν ἄνθρωπος (Man is the measure of all things), in addition to the logics of mesology we can understand through logic and Xvaluator Qualificative AI tool the S-subject so that there can be any P-perceptions and therefore a trajectory between (S) to become (P) and construct the representation collectively and democratically so that all the observers counld recognize the pertinence of the result throught the pertinence of the open qualification process (patented in 2019) by Xvaluator.

In conclusion, this first part allows us to lay the epistemological bases based on several contributions for a theory of critical thinking essential to be integrated in future approaches of the digital business model and in particularly to AI to reduce flux of fake, reduce its ecological footprint and allow highly participative efficient and ethical qualification process and results.

2. Open Qualification Models of the innovative Xvaluator: its first use cases, clients and personalized fonctionnalites

In this second part, we draw upon research on the interdependent development of economic, innovation, and evaluation models to understand the context of the emergence of this new Xvaluator Qualificative-type AI approaches, its responses to urgent and critical needs and its use cases and clients.

Although financial markets still impose their methods of pure financial and accounting valuation, more scientists and practitioners are raising their voices to demonstrate the need for a shift toward new, more inclusive, effective, and collaborative methods and tools of qualification. These tools aim to create open qualification processes for all stakeholders, particularly in the quest to compensate for extra-financial value, often summarized today as impacts perceived as "externalities."

Our research, conducted over more than ten years, is based on scientific hypotheses within the framework of collaborative and functional economy work by [BOU 05], [MON 02], [TER 07, 08], and [VAI 10]; [VAI 12]; and the emergence of a new "paradigm for integrating increased and

territorialized extra-financial value" [VAI 10], which would enable access to the best quality for all [GUE 45] through fair valuation. This could be made possible by integrating positive externalities into lower prices that are accessible to all, while associating higher prices with products and services that account for negative externalities (such as contributions to pollution, diseases, etc.) and poor quality.

2.1. *Augmented Extra-Financial Open Value and Open Qualification with Xvaluator*

Given that production, innovation and even consumption no longer take place without a certain degree of collaboration and with stakeholders in new collaborative economic models like functional economy, the criticality and need for innovations customizable of open qualification tool inclusive of all the diversity of what exists in terms of indexes, rankings, criteria, etc. to co-construct the shared value through highly democratic processes of objectification of the process and of the result. Indeed, today valorization and evaluation actors dispute among themselves and their models, criteria of qualification and evaluation of companies while they are also payed by the companies to do it which does not inspire confidence in this current business model of valorization.

More criteria of Xvaluator open qualification and valorization tool based of Qualificative AI is distinguishing itself from other current tools from current experts, platforms or AI

Competitors	Xvaluator Qualificative AI	Market Studies Consultants	CRM (SalesForce)	Evaluation Platforms	Platforms and Social Networks
Criteria	All	Decided by experts	Decided by experts	Decided by platforms	Decided by Platforms
Sector	All	Sectorized	All	Sectorized	All
Temporality	real time and continuous	Limited	Limited	real time and continuous	real time and continuous
Value Typology	Detailed and useful	Detailed and useful	Detailed and useful	Binaries, subjective	Binaire, subjective
Observer/ Evaluator	Tous et identifiable	Experts	Clients - Partners	Non Identifiable	Non -Identifiable
Accessibility	High	Low	Medium	High	High
Price	Free	High	High	Free	Free
Transparency	Absolute	Opacity	Opacity	Absolute	Absolute

Source : Xvaluator, 2019

TABLE 3. Xvaluator competitive positioning and advantages. The comparative determinants of disruptive deep-tech innovation Xvaluator a customizable open qualification vector in all areas of decision-making with consultation and integration of perceived impacts

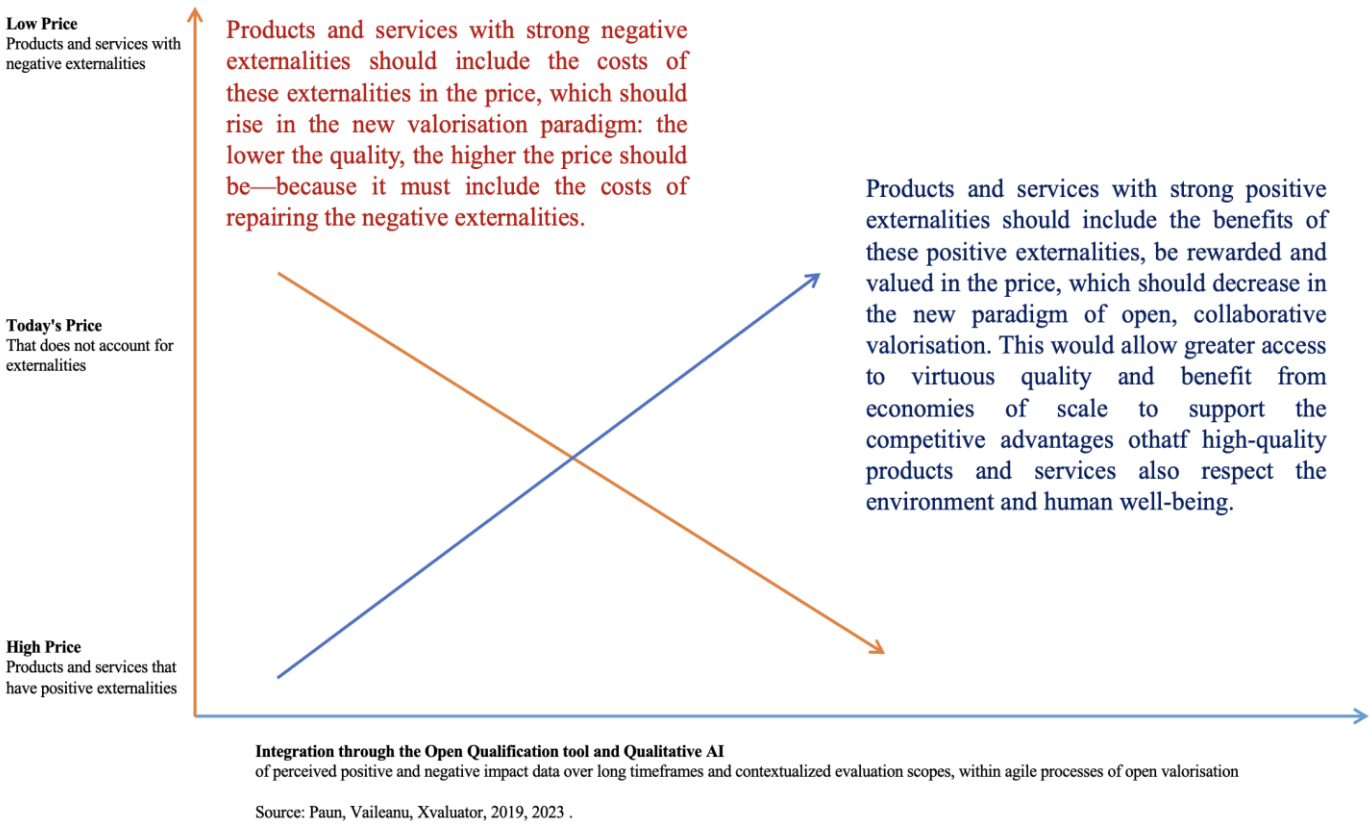


FIGURE 2: *Reversed paradigm of open data valorization through the integration of positive and negative, material and immaterial externalities thanks to anonymized and voluntary access to impact data received and the opinions of all stakeholders [VAI 22]*

A new "reverse paradigm of valuation" through relevant solutions for remuneration of extra-financial value is possible through the Qualificative AI of Xvaluator. Thus, virtuous growth based on the model of open qualification of impact data could create centers of value creation on new functionalities such as health prevention, by integrating ex ante and in a holistic manner natural immunity solutions in the field of health business model with the remuneration of positive outsourcing, the impacts perceived together by all stakeholders impacted.

2.2. *Value capture based on the Xvaluator Qualificative AI*

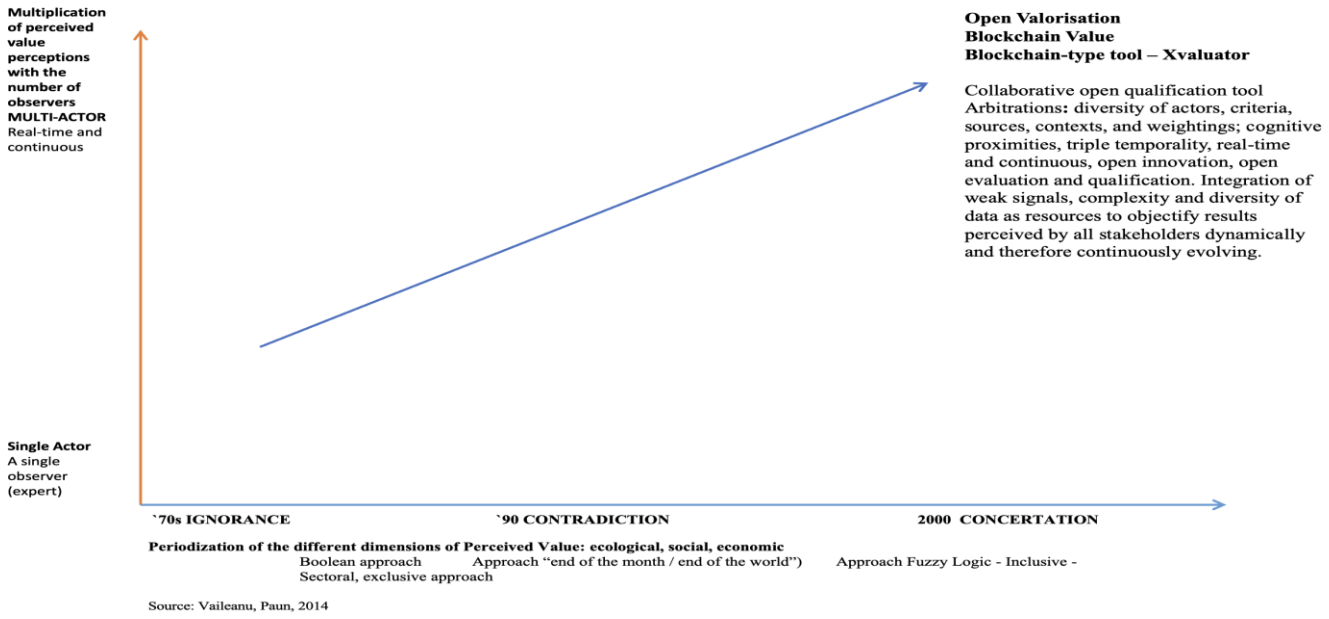


FIGURE 3: *Capture of Extra-financial Value for virtuous remuneration valuation [VAI 20]*

3. XVALUATOR BREAKTHROUGH INNOVATION BASED ON THE QUALIFICATIVE AI (QuAI)

3.1. *Xvaluator Qualificative AI (QuAI) Impacts at the Core of Virtuous Digital and Ecological Transitions and the Evolution of the Digital Business Model*

Comparison: Traditional (Fordist) vs. Tiers-Inclus Evaluation Paradigms

Aspect	Fordist/Transactional Model	Tiers-Inclus/Collaborative Model (QuAI/Xvaluator)
Core Basis	Expert-centered evaluation, specialization	Feedback-driven, inclusive of all stakeholders' critical thinking
Economic Model	Transactional economy, quantity-focused	Collaborative and functional economy, quality and relevance focused
Valuation Logic	Based on **quantity** (views, likes, followers)	Based on **contextualized relevance** and multi-perspective integration
Data Integrity	Vulnerable to manipulation, over 60% of data may be biased or fake	Designed to reduce bias and fake data through democratic qualification processes
Feedback Integration	Minimal; top-down flow from experts	Central; includes weak signals and demand dynamics
Evaluation Types	Fragmented: financial vs. extra-financial (social, ecological)	Integrated: cross-disciplinary and stakeholder-inclusive
Decision-Making	Hierarchical, specialized	Transparent, democratic, contextual, participatory
Conflict Handling	Polarization, binary logic (e.g., "end of the world" vs. "end of the month")	*Tiers-inclus*: embraces complexity, allows coexistence of diverse views
Tools & Technologies	Traditional KPIs and valuation models	Xvaluator architecture: patented algorithm, inclusive logic, deep contextualization
Innovation Model Support	Technology-push, expert-driven	Hybridized innovation (DRL + TRL), Open Innovation ecosystem-focused

TABLE 4: *Qualificative AI (QuAI) and the quanta cycles discovered and present in this article [PAU 23] Source: Presented at Lugano AI Festival in January 2025 by Dr. Florin Paun as invited guest speaker*

3.2. *Results and Impacts at the Micro and Meso-Economic Levels: Use Cases and Innovative Functionalities of the Qualificative AI Xvaluator*

Entrepreneurs, mayors, banking and investment leaders, and innovation mentors are increasingly recognizing that effective leadership begins with better listening—listening not only to clients but also to broader stakeholder ecosystems. In this context, digital solutions—especially customizable, generic Qualificative AI tools like *Xvaluator*—can be adapted to help decision-makers integrate ongoing, relevant feedback from clients, stakeholders, and interconnected ecosystems. This shift enables a movement from mere observation to the co-construction of shared value through personalized and participative experiences. The global market for Generative AI is projected to reach $188.62 billion by 2033, with estimates suggesting that at least 3% (approximately $5.64 billion) will be allocated to data qualification worldwide. Of this, only about 15% (roughly $3 billion) is expected to be invested in Europe—potentially boosted by regulatory frameworks such as GDPR and the AI Act (Source: *Le Monde Informatique*).

3.3. *Successful Experimentations with Qualificative AI Xvaluator in France: Pioneering Use Cases*

Local Government – Mayors and Municipalities

Issy-les-Moulineaux (92130), the first city to adopt *Xvaluator 's* Qualificative AI tool, has successfully reduced fake and biased data in AI usage. The tool has been instrumental in fostering objective consensus-building during stakeholder meetings, resulting in more effective and democratic decision-making. Known as a high-tech hub, Issy-les-Moulineaux is led by visionary mayor and former Deputy, André Santini, who previously attracted major headquarters like Microsoft, Orange, BFM, TF1, and France 2. IssyMedia, the city's innovation and communication agency, strongly supports *Xvaluator* as a means to improve the quality and reliability of generative AI applications. In particular, the tool addresses the growing issue of fake accounts and bots—problems increasingly impacting public institutions and local authorities. The city's leadership was further demonstrated by the launch of *IssyGPT* in November 2023, making it the first city in France to offer a generative AI tool directly to its residents. This initiative supports both innovation in civic services and the reduction of the ecological footprint of digital usage through a more energy-efficient generative AI model. Reinforcing the momentum of local success, the French Federation of Cities has signed a letter of interest to explore the future use of a personalized *Xvaluator* platform. The objective is to enable ethical, efficient, and ecological decision-making through stakeholder consultations on a dedicated platform.

Entrepreneurs and Their Innovation Ecosystems

The largest mentoring network in Europe, Twoo-Moovjee, co-founded by Dominique Restino (President of the Paris Chamber of Commerce and Industry) and Bénédicte Sanson, is pioneering the use of Xvaluator *in the entrepreneurial sector. The network aims to support young and small-scale entrepreneurs by providing reliable market insights and promoting predictable business evolution, while mitigating the risk of fake and biased data. By doing so, the network enables more informed decision-making focused on growth and shared value creation. Two unites over 1,000 mentors and 6,000 mentees, sharing the belief that mentoring is a powerful tool for unlocking personal potential and building careers aligned with individual ambitions.*

Banking, Insurance, and Investment Sectors

The Finance Innovation Cluster—an initiative within Paris Europlace, representing major banking, insurance, and investment players in France—has emerged as a leader in applying *Xvaluator* to enhance access to pertinent, trustworthy data. By integrating stakeholder feedback, emotional and contextual data, and weak signals, financial institutions aim to make more informed, adaptive, and socially/ecologically responsible investment decisions.

The collaboration between *Xvaluator* and Finance Innovation is particularly impactful, as it leverages the capabilities of *Xvaluator* to reduce the ecological footprint of generative AI, enable open participatory data qualification, and build trusted digital decision-making with consensus. Some key areas of experimentation identify d include the Customization of *Xvaluator* for the democratic qualification of expert speakers in events, training, and startup acceleration programs; the Integration of *Xvaluator* into innovation funding processes and evaluation of project impact, the utilization of dedicated budgets from digital and ecological transition programs to support R&D efforts in these domains. **The Market Potential** of Green Finance and Banking Market (2023) is of $4,180 billion with a Global Market for Investment and Qualification Tools of $83.6 billion and a European Share of 32%, or $26.7 billion.

Other use cases développed are in:

- **Marketing, and Advertising Agencies:** The estimations for the Global Digital Advertising Market (2023) was at $679.8 billion with a Global Market for Evaluating Advertising Relevance on Social Networks (2023) at about $9.96 billion and the European Share estimation at $1.49 billion (Source: France Numérique).
- **Defense and Cybersecurity:** At the AI Summit Paris 2025, Admiral Pierre Vandier, NATO's Supreme Allied Commander Transformation, emphasized the need for innovative solutions—particularly those rooted in multidisciplinary research such as cognitive science—to address critical challenges in the field, including the reduction of "data fog" in crisis or conflict zones and also decision making with consensus considering the diversity of cultures and contextes involved. The Global Cybersecurity Market (2024) is at $183.10 billion, the Digital Identity Security Market Share (10%) is at $18.31 billion and the estimated European Share is at $4.5 billion
  (Source: Xvaluator , ACN, EU).
- Human Resources: More Protection and Collaboration in the HR Strategies : The human factor is crucial to the future of digital business models and lies at the core of open, trustworthy, and pertinent data qualification. Several partnerships are currently being developed, including one led by Julie Arduin, former HR Director and founder of the French Deeptech startup "Mon Meilleur Avatar." This initiative merges neuroscience, nutrition,
- Healthcare: Evolving Towards Holistic, Preventive, and Personalized Medicine: Qualificative AI Xvaluator is actively collaborating with scientists and healthcare professionals to support the transformation of the medical business model—shifting from reactive treatment to a holistic, preventive, and personalized approach. Through its AI capabilities, Xvaluator enables the integration of patient feedback and insights from their interconnected support ecosystems directly into the evaluation of diagnostics and treatment protocols. Key collaborations include Prof. Dr. Goldberg, Dr. Assouline, and their international network of medical researchers and practitioners, who are helping accelerate the adoption of this new AI typology.

Further validating its technological edge, Xvaluator has been selected by E-DIH Paris-Saclay, in collaboration with CEA's world-renowned research labs, to help deploy Trusted AI solutions in the Île-de-France region. It has also been selected by the Occitanie Region for its patented innovation that empowers digital users to Retrieve their Qualified Opinion and Impact Data from platforms like GAFAM and social media via the Xvaluator Digital Data Wallet, to secure their digital identity using the patented Xvaluator "Like Fingerprint".

Conclusion

Faced with warnings from scientists about the dangers for democracy of fake data and the aggressive polarization of opinions on social networks because of the current valorisation on the digital and AI tools, also maintained by "cognitive biases" [VAL 24] and the current aggressive business models of platforms and their algorithms, the continuation of this research work can provide elements for necessary breakthrough innovations by the new Xvaluator Qualificative AI that gives a "Passport to the Qualified Data" by its collective contextualisation (patented innovation in 2019).

New research and innovation for Xvaluator in Quantum Valorization Research are starting and could respond to the need to integrate the complexity of different opinion and impact data in their divers' determinants and evolutive ponderations. This could continue to complete the Condorcet Paradox and Arrow Theoreme and confirm our hypothesis that the "week signals could make qualified data strong"

[VAL 24] with important consequences on the robustness of our industries and societies based on pertinent data.

The contribution to science of Xvaluator Qualificative AI is twofold: first, it opens new research perspectives for the evolution of digital and valorization business models and second through the shift in the paradigm of valorization, moving from quantitative metrics (such as 4.2 billion “Likes” per day on Instagram, 500 million tweets per day on X, and 3.5 billion Snaps on Snapchat) to qualitative metrics (qualified data). This shift could bring coherence and traceability to the digital valorization model, aligning it with the new economic model—functional economy—and innovation model—open innovation. Qualificative AI leverages technological advancements to change how we collectively construct access (rather than ownership) to shared pertinent data without division.

In conclusion, Xvaluator QuAI opens up new evolutions in the digital and AI business models based on open qualified and therefore relevant data through Qualificative AI embarked usages bringing new dynamic capabilities for effective decision-making with consensus. In plus the reduction of fake and aggressive data is reducing the Ecological footprint of all AI usages and thus accelerating the use of AI in shared value creation and its shared democratic valorisation compatible with the new functional economy model integrating the diversity of the perceived impacts and respectig thus the human critical thinking.

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