ZKAI

UNMETERED INTELLIGENCE

About this Paper

This white paper introduces and defines the term "Unmetered Intelligence" to better inform business leaders about the strategic implications of a world characterized by abundant access to intelligence. By analyzing intelligence through the lens of resource-abundance models, we explore how widespread cognitive availability will erode traditional competitive advantages built upon information asymmetry.

As intelligence becomes democratized and flows seamlessly throughout society, leaders must recalibrate their AI strategies to capitalize on unprecedented cognitive capabilities and mitigate risks associated with commoditized intelligence. The paper addresses both the transformative potential and practical consequences of Unmetered Intelligence, providing actionable insights to help leaders maneuver this fundamental shift.

Ultimately, distinctly human capabilities such as judgment, creativity, and taste will define competitive advantage. Organizations that strategically leverage Unmetered Intelligence will shape the competitive landscape.

I. Introduction

An unmetered resource is abundant and not depleted through use, enabling continuous and unlimited access without quantitative limitations. The internet, when functioning as an unmetered resource, exemplifies this concept by offering uninterrupted access to information and digital services without constraints such as data caps, usage-based fees, or bandwidth throttling. Such resources defy traditional economic constraints such as scarcity or competition.

Intelligence can be generally defined as the ability to process information for actionable purposes. The human brain intakes sensory information and processes it to support our survival and flourishing. In this context, intelligence is a resource that promotes several interconnected cognitive functions: the capacity to learn from experience, adapt to new situations, solve problems, and apply knowledge effectively to achieve goals.

Summed together, Unmetered Intelligence is defined as a paradigm of AI provisioned as a continuously available and infinitely scalable utility. Modeled after essential infrastructures such as electricity or the internet, Unmetered Intelligence flows ubiquitously, without per-use limitations or discrete provisioning. It enables AI to be embedded directly into systems, environments, and processes, oftentimes catalyzing a remodeling of industries and organizations. This framework departs from traditional models of constrained or isolated AI deployment, instead positioning intelligence as an integrated infrastructure layer.

Historical Precedent

The historical trajectory of transformative technologies suggests that AI will likely follow a predictable pattern of resource evolution from scarcity to abundance, mirroring the developmental arcs observed in electricity distribution and mobile communication devices. This transition typically occurs through several interconnected factors: technological maturation that reduces production costs, economies of scale that emerge as infrastructure expands, competitive market forces that drive down prices while improving accessibility, and standardization processes that enable widespread adoption.

The electrification of society exemplifies this pattern, as electrical power transformed from an expensive luxury available only to wealthy urban centers in the 1880s to a ubiquitous utility accessible across developed nations within decades. As AI capabilities continue to mature through algorithmic improvements, hardware acceleration, and cloud computing infrastructure, the same economic and technological forces are likely to render AI capabilities increasingly abundant and accessible, essentially adopting the descriptor of "Unmetered Intelligence" as it transforms from a specialized resource controlled by technology leaders into a pervasive utility integrated throughout society.
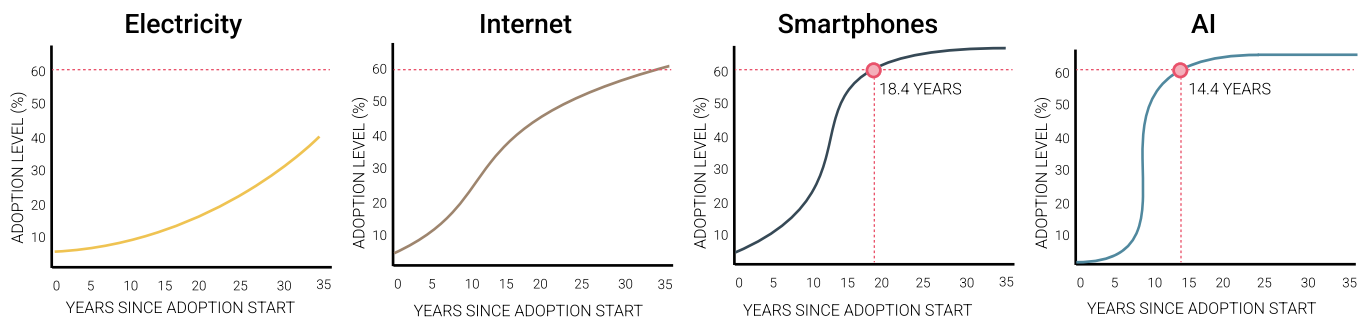

Figure 1. Comparison of adoption curves across innovations: electricity, internet, smartphones, AI

Figure 1 highlights Generative AI's unprecedented adoption speed compared to similarly transformative innovations such as electricity, the internet, and smartphones. This accelerated timeline underscores how digital technologies penetrate markets exponentially faster than their physical predecessors. Using a benchmark adoption rate of 60%—AI's current consumer penetration—the trajectory toward ubiquity becomes evident. We are witnessing previous technologies compress traditional diffusion cycles from decades into years or even months, signaling that widespread access to Unmetered Intelligence may arrive sooner than we imagine.

II. Conditions for Unmetered Intelligence

Achieving Unmetered Intelligence requires more than deploying a single powerful AI model; it demands simultaneous advances in technological innovation, cultural acceptance, and policy frameworks. No single benchmark fully captures this complex transformation, but our progress can be measured by three key indicators:

Machines Continue to Get Smarter

Diversified model architectures are rapidly surpassing benchmarks in problem-solving, accuracy, creativity, mathematics, and complexity of thought. In doing so, machines are replicating previously exclusive human notions of intelligence. OpenAI's GPT-4's performance on standardized tests is comparable or exceeding human capabilities. The model received a 298/400 on the Uniform Bar Examination, scoring in the upper 90% of test-takers. On the LSAT, it received a 163/180 (88th percentile) and a 169/170 on the Verbal section of the GRE (99th percentile). Respectively, GPT-3.5 placed at the 10th, 40th, and 63rd percentiles on the same tests. The stark contrast between the two models deployed 5 months apart suggests a trajectory where machine intelligence surpasses humans.

Compute Costs Asymptote Near Zero

The current economics of compute costs suggest a future where intelligence is widely inexpensive. Low costs increase accessibility, multiplying the number of possible AI integrations in business and personal life. Similar to other resources, the cost of intelligence is continuously sinking. In recent years, inference and API costs have significantly declined, from approximately $0.05 per 1k tokens in 2019 (before GPT-4's release) to as low as about $0.00075 per 1k tokens in 2025 for models like GPT-4o mini -- an almost hundredfold reduction. With time, users will spend less money on compute, driving a pervasive integration of intelligence.
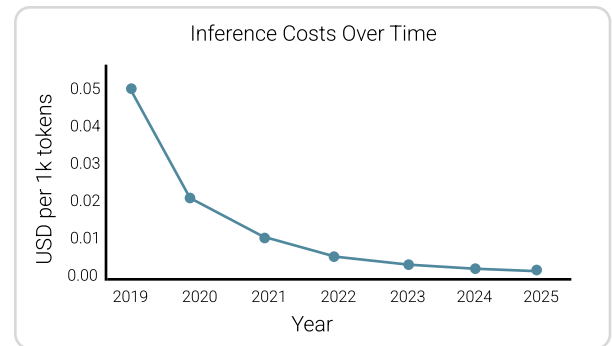

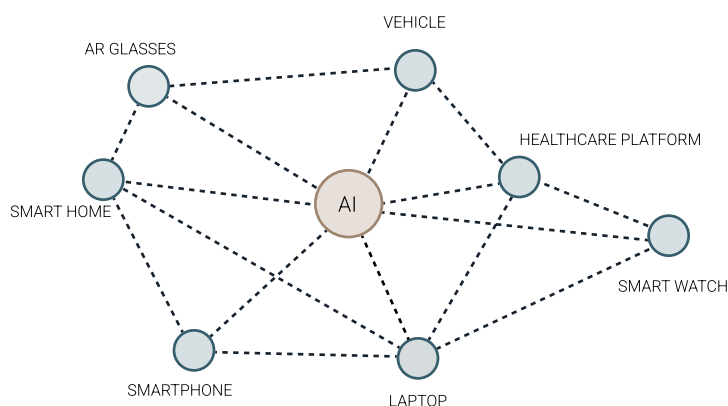*Figure 2. Diminishing inference costs by year since 2019*

Full Intelligence Integration

Interaction with Unmetered Intelligence will look different than current AI interfaces such as LLM websites and smartphone applications. The resource will flow between wearables devices and other pieces of hardware to emulate a pervasive computing experience. Off-screen interaction will allow for intelligence to enhance all aspects of life without digital distractions. This transition has already began -- the global wearable AI market is projected to grow from ~$21 billion in 2022 to $166 billion by 2030. The rising valuation is indicative of a hardware renaissance to support increasingly available intelligence.

Figure 3. Flowing network of intelligence across devices

Order of Operations

The activation of one condition triggers another. Advancements in the technical prowess of AI models results in reduced compute expenses due to improved model efficiency, optimized training algorithms, and more effective hardware utilization. Consequently, AI integration can only occur when the resource is affordable for a mainstream demographic. Integration is not possible unless pricing barriers are removed.

III. Implications

Intelligence functions as a multiplicative force rather than an additive one. Higher access to intelligence amplifies human outcomes, both beneficially and harmfully. Whereas human intelligence is biologically constrained by variable characteristics such as energy, biases, and emotional states, machine intelligence is uninhibited.

Whether an innovation becomes a weapon or tool depends on user behavior and intent. In the case of smartphones, appropriate usage leads to increased global communication with family and friends. Over usage can erode in-person community as users increasingly rely on online connection. Modern society is tasked with the tantamount responsibility to determine the boundary line for AI. To do so, we must be cognizant of the benefits of Unmetered Intelligence and prioritize the levers that increase the positive effects and minimize the negative.

Positive Implications

Deflation

Unmetered Intelligence has the potential to strengthen currency value and drive prices downward through a multitude of channels. Empirical evidence suggests that unlimited access to intelligence could increase productivity within a corporation by decreasing labor costs, optimizing supply chain logistics, and automating redundant workflows. AI-driven automation can decrease labor expenses by 20-30% significantly reducing operating costs (McKinsey, 2022). Amazon's adoption of intelligent supply chain management has led to fulfillment costs dropping by over 25% since 2019. Entire industries would be bolstered by more competitive companies, dropping the overall price of goods and services.

Novel Scientific Discoveries

Scientific fields rely on two core tenants to yield major breakthroughs: cognitive and financial capital. Restrained human cognition severely limits the level of analysis and pattern recognition needed for scientific discoveries. High R&D expenses equally stagnate scientific progress by placing insurmountable barriers to research. As Unmetered Intelligence alleviates both these bottlenecks across scientific domains, the compounded effect will be an accelerating innovation frontier.

Figure 4. Comparison of traditional vs. AI protein prediction

AI Systems Lead Structure Prediction

Protein structure generation provides an important measure of the speed and precision of scientific advancement. AlphaFold, developed by DeepMind, predicts protein structures directly from amino acid sequences using advanced deep learning techniques. It significantly outperforms traditional platforms, achieving over 90% accuracy in benchmark competitions like CASP, surpassing physics-based simulations and simpler algorithms. Unlike traditional models requiring extensive computational resources, AlphaFold delivers reliable 3D protein models within hours or minutes. Its groundbreaking success highlights how AI-driven accuracy and efficiency are accelerating scientific discovery, profoundly reshaping fields such as biotechnology, molecular biology, and drug discovery.

Heightened Attention on Creativity and Humanistic Attributes

Unmetered Intelligence reduces cognitive load by automating repetitive tasks. McKinsey estimates that by 2030, up to 30% of total working hours in the U.S. economy could be automated, significantly decreasing mental fatigue related to routine tasks such as scheduling and logistics. As AI increasingly manages standardized cognitive processes, distinctly human skills like empathy, humor, and creativity gain importance. A 2020 World Economic Forum report predicts that demand for emotional intelligence and creativity will rise sharply, projecting these skills as top competencies needed by 2025. Such trends suggest society could shift focus from pure productivity to fostering human-centric abilities and personal growth.
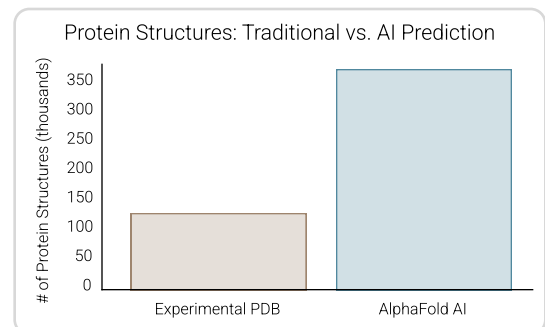
III. Implications

Negative Implications

Idiocracy: Unmetered Intelligence may allow for a future in which individuals no longer need critical thinking skills to survive, potentially leading to intellectual decline among the general population. As AI increasingly handles complex problem-solving tasks, society faces the challenge of preventing machine cognition from fully replacing human judgment and creativity.

> **Solution:** Advocate for personal responsibility and agency by fostering systems that reward critical thinking and genuine intellectual curiosity, and guard against passive consumption and the addiction economy. Ultimately, society must find new incentives for individuals to continually expand their boundaries, moving beyond comfort toward purposeful action, deliberate reflection, and sustained personal growth.

Empowered Bad Actors: Unmetered Intelligence stands to expand human potential dramatically. This development offers substantial benefits, as most individuals pursue positive outcomes; however, it also lowers barriers to sophisticated manipulation and criminal activities, making them accessible to more actors. Previously, orchestrating complex, large-scale deception or harm required substantial resources and expertise, limiting these actions mostly to well-funded or highly skilled groups. Now, as powerful AI capabilities become broadly available, the barrier to entry for committing sophisticated crimes is rapidly declining.

> **Solution:** Society must urgently recognize that AI significantly lowers barriers to criminal activity, enabling even low-resource actors to cause substantial harm. Policymakers globally should enact stringent laws, such as Tennessee's ELVIS Act, criminalizing malicious AI exploitation (particularly unauthorized deepfakes) and enforce them rigorously to keep the cost of undermining societal trust prohibitively high.

Dehumanization: Unmetered Intelligence will lead to the creation of an unimaginably appealing and frictionless virtual world that some individuals will prefer the physical one. The proliferation of advanced intelligent interfaces will further encourage online engagement in an addiction economy, distorting some users' perceptions of genuine connection and replacing authentic, real-world interactions with a manufactured digital experience devoid of human interaction.

> **Solution:** Minimize excess time spent on social media and digital devices. Utilize that time to actively build real-world communities -- with friends, classmates, colleagues, and family. Each additional happy friend an individual has is correlated with a happiness increase by 9%. Happiness and life satisfaction clusters in network effects (Framington Heart Study, 2008).

Identity Displacement: Unmetered Intelligence will trigger a profound automation of many cognitive tasks, imposing emotional costs that will significantly outweigh economic ones. As traditional career-based identities dissolve, individuals will need to detach their sense of purpose and self-worth from familiar professional anchors, fundamentally reshaping their perception of their capabilities and role in society. Though this shift promises long-term benefits—enabling people to align with deeper, more sustainable sources of meaning—it will likely come at the expense of considerable short-term discomfort.

> **Solution:** Establish clear pathways for individuals to shift from computational tasks toward distinctly human pursuits, facilitating the creation of new personal identities. Society must openly acknowledge the emotional tie between career and identity; and re-emphasize the importance of developing deeper sources of purpose in family, community, and personal growth.

Figure 5. Reallocation of traits apart from career role, following identity displacement

IV. Application

Societal implications represent one facet of transformation enabled by a surge in the amount of usable intelligence. Industries as a whole will experience similar effects as they obtain the adequate cognitive power to rethink previously avoided systemic issues. This entails an overhaul of traditionally successful business models.

Industry Case Study: Insurance

Unmetered Intelligence can play a major role in reinstilling trust back into one of the most widely disliked industries -- insurance. Empirical evidence highlights that 29% of consumers say they trust insurance providers which is 11% less than banks (Accenture, 2018). Their lack of trust can be attributed to two major faults of the industry model.

1. **Opaque Policies:** Insurance policies are notoriously difficult to read. Studies indicate that 79% of insurance communications are not readily understandable to the average customer (National Association of Insurance Commissioners). Complex jargon and fine print breed confusion and erode trust, as customers fear hidden loopholes that could void their coverage when they need it.

2. **Difficult Claims Processes:** When customers do file claims, the process can be slow and cumbersome. It often requires multiple weeks to wait for resolutions. 31% of those who filed claims were not satisfied with the overall experience with 60% of them stating settlement speed issues as the problem (Accenture, 2022).

Consumers have begrudgingly accepted these complaints as standard requirements to having insurance. Unmetered Intelligence allows customers and insurers alike to fundamentally reimagine the stagnate industry model.

- **Streamlined Claims:** AI bots can perform an evaluation of claim details, cross-checking the policy coverage, running fraud detection algorithms, and approving the payout. An insurance tech company Lemonade built their offerings around AI, producing legitimate end-to-end claims in a few seconds.
- **Personalized Products and CX:** AI systems can analyze an individual customer's assets, family, behaviors, and risk tolerance to suggest a customized coverage bundle. AI bots then explain the terms of coverage plans to customers in plan language, minimizing confusion.
- **Usage-Based Insurance:** With constant data streams and AI analysis, insurers can deploy models that adjust to claimants usage patterns. Automobile insurance companies are currently using early versions of the technology to track driving behavior and reflexively change rates.

Unmetered Intelligence's additions change insurance from a static process based on dense documentation to a dynamic conversation between claimants and providers, building trust between the two parties.

Takeaways

The outcomes driving change in the insurance industry will differ throughout domains. The insurance industry primarily needs to address pain points related to trust and transparency. Unique issues throughout different industries will require bespoke strategies, all of which are founded in Unmetered Intelligence.

Implementation of these strategies will firstly catalyze shifts in individual businesses, followed by larger industry effects. Major changes will follow a pyramid shape with granular use cases influencing broader strategies, eventually impacting industries at-large.

As a result, core themes from this potential transformation of the insurance industry can be extracted and magnified as a greater Unmetered Intelligence strategy. This differs from a sole AI strategy as the scale of intelligence integration alters the impact of the technology.

1. **Transparency and Simplicity Increase Trust:** Industries must prioritize transparent communication by eliminating complex jargon and simplifying interactions. Leveraging AI to translate technical language into clear, understandable terms helps build consumer confidence and reduces skepticism.

2. **Automation Enhances Customer Experience:** Integrating AI-driven automation can significantly streamline operational processes, transforming traditionally slow and frustrating customer interactions into swift and satisfying experiences. Rapid, accurate AI-driven solutions foster consumer satisfaction and loyalty.

3. **Personalization Drives Engagement:** Utilizing AI to deliver personalized products, services, or interactions tailored to individual needs and behaviors enables companies to shift away from rigid offerings. Dynamic personalization strengthens customer relationships, increases perceived value, and encourages sustainable customer retention.

Each strategic takeaway expands on aforementioned implications of Unmetered Intelligence. While AI in its current form already demonstrates remarkable capabilities in delivering highly personalized experiences, maintaining transparency, and enabling sophisticated automation across diverse domains, these individual benefits represent merely the foundation of a far more profound transformation.

The true revolutionary potential of Unmetered Intelligence becomes apparent when we consider its effects at enterprise scale. This scaling effect generates seismic shifts across multiple dimensions of business operations and competitive positioning, fundamentally restructuring how companies leverage intellectual capital rather than simply amplifying existing AI benefits.

V. Conclusion

Throughout history, human competition has predominantly centered upon intelligence as a biological resource, rewarding those individuals with superior cognitive capabilities. However, the rapid advancement and integration of computational systems have initiated a profound shift, redefining intelligence as a competitive currency measured increasingly on a computational basis. Today, humans find themselves competing against AI systems that decisively surpass biological capabilities in speed, accuracy, memory, and analytical proficiency.

To that end, both the positive and negative implications of Unmetered Intelligence are direct derivations of a world unconstrained by bottlenecks on intelligence access. The proportion of positive to negative outcomes depends fundamentally on how humanity handles the increasing presence of AI in our workflows and daily lives. Positive outcomes are maximized when society pivots strategically toward emphasizing distinctly humanistic qualities such as creativity, empathy, compassion, and agency. Negative outcomes occur when society fails to place effective safeguards on necessary human processes or safety measures.

Business leaders and individuals who engage thoughtfully with AI integration will ultimately shape how mutually beneficial this technology becomes, making their strategic choices the most critical factor in determining whether this transition enhances or diminishes human potential. Therefore, effective Unmetered Intelligence strategy recognizes that intelligence alone does not define organizational success or exceptional talent.

By consciously acknowledging and adapting to this fundamental transformation in competitive currency (from biological intelligence toward humanistic qualities) humanity can ensure mutually beneficial coexistence with exceptionally sophisticated AI systems.

Contributors

| **Zack Kass,** Global AI Advisor & former Head of GTM at OpenAI

| Montana Showalter

| Christina Kodsi

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