ATTENTIONAL SUSTAINABILITY

A brief manifesto on how we can save the internet

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INTRODUCTION

In the mid-20th century, Herbert A. Simon, a polymath whose work spanned economics, psychology, and computer science, introduced the concept of the "attention economy." He observed that, "a wealth of information creates a poverty of attention" (Simon, 1971). This insight has proven prescient in the information age, where the competition for human attention has intensified beyond what even Simon envisioned.

The advent of the internet and digital technologies has transformed the way we consume information. Platforms like social media, streaming services, and news outlets are designed to capture and retain our attention for as long as possible. This model monetizes user engagement, turning attention into a valuable commodity.

However, this relentless pursuit of attention has led to unintended consequences. The design of digital platforms often exploits psychological vulnerabilities, creating compulsive usage patterns. Features like infinite scrolling, autoplay, and personal-

ized algorithms are engineered to keep users engaged, often at the expense of their well-being, to say nothing of society's ability to function for the good of all.

For instance, studies have linked excessive digital consumption to increased levels of anxiety, depression, and loneliness (Center for Humane Technology, n.d.). The constant bombardment of information fragments our focus, making it difficult to engage in deep, meaningful tasks. Gloria Mark, a professor at the University of California, Irvine, found that it takes an average of 23 minutes to return to a task after an interruption (Mark, 2015). Of course, the attention economy's business model incentivizes digital profiteers to interrupt us every second of every day. As such, there is a pervasive feeling in the culture today that we are no longer able to concentrate, focus, or be still with just our own thoughts. Our attention spans are shrinking, our critical thinking abilities are failing, and our capacity for long, thorough discourse has been replaced by snarky insults made in 280 characters or less.

The spread of polarization and the erosion of public discourse can be attributed, in part, to platforms that prioritize engagement over accuracy or quality. The algorithms that drive these platforms often amplify sensational or divisive content, further exacerbating societal divisions. Compare the contents of modern political debate to, say, the elevated argumentation exchanged between Thomas Jefferson and John Adams about the role of government, and you would be forgiven for seeing the average person today as attentionally bankrupt, intellectually stupid, and hopelessly lacking empathy. While I don't believe that this is a fair assessment, the attention economy provides profit incentives for encouraging that low quality of consciousness, rather than fostering excellence. Like a casino gaming floor, the digital envi-

ronment has been engineered to keep us dumb, entertained, and spending. Of course, pillaging people's attentional resources like this can not indefinitely continue without consequences for everyone involved.

In response to these challenges, I propose the concept of **attentional sustainability**. Drawing parallels to environmental sustainability, attentional sustainability advocates for the ethical and responsible use of human attention. It emphasizes designing systems and practices that respect users' cognitive capacities and promote well-being.

Attentional sustainability is not about rejecting technology, but about reimagining our relationship with it. It calls for a shift from exploitative models to ones that prioritize user autonomy, mental health, and meaningful engagement. For instance, this approach aligns with principles from value-sensitive design, which integrates human values into technology design processes (Friedman & Hendry, 2019).

Attentional sustainability is the responsible management of customers' attention to meet business needs, without compromising the ability of those customers to maintain sovereignty over their own attention.

Beyond the ethical imperative, there is a compelling business case for attentional sustainability. Consumers are becoming increasingly aware of the impact of digital consumption on their well-being. Brands that prioritize user health and informational transparency can build trust and foster long-term loyalty. Moreover, regulatory landscapes are evolving. Governments and institutions are beginning to scrutinize the practices of technology companies, leading to potential policy changes. Companies that proactively adopt attentional sustainability principles may find themselves better positioned in this shifting environment.

In this short book, we'll explore practices to help businesses apply attentional sustainability to their interactions with customers. We'll also discuss how to market to audiences who hate marketing. Indeed, the historical hatred of advertising has found new profundity in the attention economy, where even news articles are actually ads in disguise. I'll walk you through the cognitive science of attention, relevance and meaning, and how we learn and problem solve. These are all crucial concepts to understand, if businesses are going to produce informational and marketing content that actually meets their customers' needs, rather than wasting their precious attention.

The attention economy has brought about unprecedented access to information and connectivity. However, it has also highlighted the need for a more sustainable approach to how we design and interact with digital technologies. Attentional sustainability offers a framework for addressing these challenges, promoting a digital environment that values human well-being alongside innovation and growth.

As we navigate the complexities of the digital age, it is imperative that businesses, designers, and policymakers collaborate to foster systems that respect and preserve the finite resource of human attention.

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SIMON SAYS: "WELCOME TO THE ATTENTION ECONOMY"

In 1971, Herbert A. Simon penned a prophetic line: "A wealth of information creates a poverty of attention" (Simon, 1971). What he could not have foreseen was how vividly this dynamic would manifest in the 21st century, where digital platforms, social media, and algorithmic recommendation engines vie aggressively and persistently for the limited cognitive bandwidth of every individual connected to the internet.

Let's begin by charting the structural and historical emergence of the attention economy, tracing how Simon's early insights evolved into the central business model of the digital world. We'll analyze how the commodification of attention became the engine of growth for tech giants, and what this means for businesses, consumers, and society at large.

Simon introduced the idea of an attention economy in the context of organizational design. His central argument was that, as information becomes more plentiful, the scarcest resource becomes the human capacity to process it (Simon, 1971). In the

industrial era, capital and labor were the primary constraints to growth. In the post-industrial, information-rich world, it is attention. This notion quietly simmered in academic circles for decades. But by the late 1990s, the infrastructure of the internet began to transform Simon's insight into a business imperative. Web 1.0, largely static and transactional, gave way to the dynamic interactivity of Web 2.0—blogs, forums, social media, and user-generated content. What changed was not just the medium, but the business model.

Suddenly, platforms were no longer selling content or services directly. They were selling user attention, which they aggregated, measured, and auctioned to advertisers in microseconds. As Tim Wu (2016) notes in *The Attention Merchants*, technology companies became adept at capturing users' time and repackaging it as a salable product. The more time a user spent on a platform, the more valuable they became to advertisers. Attention became currency. Worse, it became a commodity. The individuals themselves, unique human beings with phenomenal first-person subjectivity, interests, and stories, became completely interchangeable metrics on company marketing reports. All that mattered was acquiring as many views, clicks, unique visits, impressions, etc. as possible, no matter the social, psychological, or ethical costs. If those numbers went down, the goal was to raise it by any means necessary, including through spreading false information, inflaming conflict and polarization, and through psychological manipulation of the (often unconscious) drivers of our attention.

From a business perspective, capturing attention is not morally questionable by itself. After all, television, radio, and newspapers have all competed for attention. The practice is by no

means an invention of the information age. What *is* new in the digital era is the intensity of this competition.

Not to mention, the tools available to engage in it have become increasingly sophisticated. Platforms like Facebook, Instagram, YouTube, and TikTok don't just passively wait for attention. They optimize for it by gathering information on their users and by employing psychological engineers, who know our cognition better than we do. Machine learning algorithms curate what users see based on engagement history. Notifications, likes, streaks, and endless scroll mechanisms are designed to exploit the dopaminergic systems of the brain (Alter, 2017).

Tristan Harris, a former Google design ethicist, argues that many of these mechanisms create a "race to the bottom of the brainstem," a competition among platforms to elicit the most primal, compulsive behaviors from users (Harris, 2019). The result is an arms race in engagement optimization. Just as nations sacrifice the lives of their people as the cost of war, companies sacrifice their customers' attention and well-being as the cost of profit in the attention economy.

Why does this race exist? Because of a simple economic reality: in digital ecosystems, marginal costs of reproduction are near zero. Once created, a video, a post, or a meme can be infinitely shared and viewed at no extra cost. In such an environment, the primary constraint is not supply, but demand. Not information, but attention.

Indeed, the information available to us at any given moment is infinite, but attention is finite.

Advertising, which funds the bulk of the internet, is a market where prices are determined by attention metrics, such as impressions, clicks, and view time. Google and Meta, the two largest advertising companies in the world by revenue, thrive not by

making content, but by owning the infrastructure through which attention is distributed. More time on the site translates to more data collected. More data means more personalized ads. More relevant ads mean more clicks. More clicks mean more revenue. The loop is both self-reinforcing and profoundly efficient from a revenue perspective. But what is efficient economically is not always ethical, let alone sustainable from a social or business standpoint.

As this model matured, the negative externalities became more visible. Cognitive fatigue, fractured attention spans, reduced working memory capacity, and elevated levels of stress and anxiety are increasingly linked to digital overconsumption (Mark, 2015; Twenge et al., 2018). Moreover, the content that performs best in this economy is not necessarily the most accurate, nuanced, or meaningful. It is what is the most clickable. As a result, the information landscape has become saturated with sensationalism, falsity, and outrage (Tufekci, 2018).

The implications are serious. When attention is commodified without restraint, it becomes stripped from its context as a cognitive and moral faculty. It is no longer a form of care or engagement—it is prey. And users, in turn, become exhausted.

Simon's warning was not just descriptive, but also carried a normative undertone. If attention is scarce, it must be managed wisely.

Enter the need for attentional sustainability, a business philosophy that calls for the ethical design of systems that honor and protect user attention. As consumers become more aware of manipulative design, their trust in platforms erodes. Indeed, the digital trust gap is widening (Edelman Trust Barometer, 2023).

Of course, businesses that can reframe their offerings around attentional stewardship, or curating meaning rather than maxi-

mizing clicks, will increasingly stand out in a fatigued marketplace. These organizations won't measure success solely in engagement metrics, but in the quality of attention they facilitate. It is my prediction that the majority of companies will continue the same predatory practices of attention abuse that have created the attention economy. Therefore, the opportunity is open for a company that is willing to do the opposite to stand out among their competitors. The human beings behind the unique visitor metrics are ready to reward a business that practices attentional sustainability.

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WHATEVER HAPPENED TO THE GOLDEN YEARS OF THE INTERNET?

BEFORE THAT, it's instructive to understand just what we lost when the attention economy reshaped the digital landscape and our lives. In part, our resistance to the world as it is now stems from the frustration that it could have been so much more, if only our attention hadn't been commodified and stolen from us. It would be one thing if we had willingly relinquished the original vision for the internet. In some ways, perhaps we did. But it certainly feels as if we did not consciously agree to have our attention plundered as it has been.

There was a time when the internet was a hopeful place. It was a frontier of possibilities, unburdened by the heavy hand of surveillance capitalism or the cynicism of engagement metrics. Let's revisit that time, an era defined by user agency, decentralized publishing, curiosity-driven browsing, and the sincere belief that open access to information could make the world more intelligent, more connected, and more just.

To understand the significance of attentional sustainability,

we must understand what we lost. The early web was more than an infrastructure; it was a culture. One built not on monetizing attention but on sharing knowledge, self-expression, and collective experimentation. The internet's early adopters were not corporate strategists. They were hobbyists, academics, hackers, writers, and dreamers. Many were drawn to the web's democratic promise that anyone with a modem and a little technical skill could publish content and reach a global audience. As scholar and internet pioneer Howard Rheingold (1993) argued in *The Virtual Community*, the web promised the rebirth of participatory culture, one where individuals could find their tribe, share ideas, and collectively build knowledge in digital "third-spaces."

Personal blogs, homepages hosted on GeoCities or Angelfire, and hand-coded forums filled the landscape. People wrote about their favorite bands, their research interests, their travels, or their philosophies on life. These sites weren't optimized for conversion, but for connection. The value exchange wasn't monetary, but attentional in the most human sense: "I am interested in this, and I hope someone else is too." Sites like Slashdot, Metafilter, and the early Reddit were built around user curation and discussion, not algorithmic engagement. Links were upvoted based on interest, not outrage. The web was messy, personal, and often amateurish, but alive. Clay Shirky (2008) likened it to a cognitive surplus, a new form of shared public energy that could be channeled into remarkable cooperative projects.

The idealism of the early web was not confined to personal publishing. It extended to the very infrastructure of knowledge. The Open Source movement flourished. Creative Commons licenses emerged as a way to legally share creative work. Academic journals began to experiment with open-access publishing. Search engines like early Google were lauded not for monetiza-

tion, but for their ability to organize the world's information. Wikipedia launched in 2001 with the audacious goal of compiling the entirety of human knowledge collaboratively and freely. Despite skepticism, it thrived, proving that decentralized volunteer labor could produce high-quality, self-correcting knowledge repositories (Jemielniak, 2014). Similarly, platforms like the Internet Archive sought to preserve digital culture for future generations, recognizing early on that the web was not merely a tool, but a historical artifact in motion (Kahle, 2007).

This vision was not utopian in the naive sense. It had critics, and there were flaws. But the dominant ethic was clear: information should be free, and participation should be meaningful.

What distinguished the golden years was not just *what* people were doing online, but *how* they thought about it. Users were not primarily "consumers" or "users." They were participants. There were few metrics to optimize. There were no bottomless "news feeds" to scroll endlessly. Attention was not yet quantified, let alone sold. Importantly, discovery was intentional. You bookmarked a blog you liked. You followed a blogroll. You subscribed to an RSS feed. Serendipity played a major role in how content circulated. The experience was exploratory, rather than compulsive. There was no incentive for clickbait, outrage farming, or algorithmic manipulation. The incentives were social, creative, and intellectual. People shared because they wanted to share, not because they were chasing dopamine loops or revenue shares.

The shift began gradually. First came monetization pressures. Ad-based models, initially simple banners, gave way to behavioral targeting. Google introduced AdWords in 2000; Facebook Ads followed in 2007. The logic of the internet began to change. The value of a website was not in what it expressed, but in how

well it converted. Social media, which once promised new forms of public discourse, began optimizing for engagement. The News Feed replaced the chronological timeline. Algorithms replaced communities. What you saw was no longer what your friends shared, but what the system believed you'd engage with the longest (Lanier, 2018). Of course, so long as that engagement was profitable, it didn't matter if it was harmful to you or to society. Or to the product itself, for that matter. For example, a common sentiment of the attention economy is that platforms like Google and Facebook have "enshittified" themselves by putting profit over people and service. These sites no longer really perform the function that made them popular in the first place (Doctorow, 2024).

Viral metrics, such as click-through rates, shares, likes, and time-on-site, emerged as the new values. They were trackable, improvable, monetizable. Companies took over the landscape and replaced the qualitative meaning of the old internet with purely quantitative parameters. In this shift, the internet became a mirror, not of our aspirations, but of our impulses. As digital sociologist Zeynep Tufekci (2015) argued, we moved from an architecture of exploration to one of escalation. The value of the web was no longer qualitatively tied to actual human experience, progression, and positivity. Rather, the internet's value came to be exhaustively describable by means of abstract quantities.

The dream of the early internet did not vanish overnight, but it was increasingly displaced by commercial logic. Independent bloggers closed shop as traffic dried up. Open forums were inundated with spam, harassment, or they were bought-out and transformed. Platformization, the consolidation of digital activity into a handful of major companies, reshaped the entire ecosystem. Creative labor became precarious, while at the same time people

grew to financially depend on the new "gig economy" within the attention economy as a means of socioeconomic development. Content creators on YouTube or Substack became subject to algorithmic volatility. Artists and educators now chased followers and impressions as a matter of survival. The open, quirky web became harder to find. It still exists in corners and subcultures, but these are buried beneath the weight of algorithmic feeds and ad networks.

And for users? The shift came at the cost of autonomy. Our feeds are personalized, but not under our control. We are nudged, pinged, tracked, and profiled, not to serve our interests, but to capture our attention. The net effect, as Jaron Lanier (2018) argues, is a behavioral modification system disguised as entertainment.

The golden years of the internet represented a set of design and cultural values that are still relevant. Today, this history reminds us of what the internet can be when it prioritizes expression over extraction, curiosity over compulsion, and meaning over metrics.

These values are essential to the project of attentional sustainability. We cannot talk about preserving human attention without revisiting the systems that once honored it. Before the internet became a casino floor, it was a library of human possibility. Rebuilding that spirit won't mean going backward technologically. It will mean advancing ethically by evolving the quality of our consciousness, a topic we will address later on. It will mean remembering that attention is not a metric or a commodity. It is the essence of presence, of learning, of being.

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ATTENTIONAL SUSTAINABILITY PRACTICES FOR BUSINESSES

Information is now boundless, while attention remains finite. If attentional sustainability is the business imperative of our time, then Simon's logic must be our starting point. We must ask: How can businesses reduce the attentional burden they place on their customers? How can they structure experiences that are not merely frictionless, but purposeful, relevant, and respectful of attention as a finite cognitive resource?

Here, I propose a new ethic of digital engagement, one that sees attention not as a commodity to be extracted, but as a trust to be stewarded. In a world of algorithmic noise and infinite scroll, the most responsible organizations will be those that commit to attentional minimalism. To say only what must be said, gathering only what must be known, and offering only what adds value, in spite of what competitors in their respective industries might do.

Simon's work points to a paradox: more information is not always better. In fact, it is often worse. As the volume of acces-

sible content grows exponentially, the ability of individuals to process it does not. Our minds are bounded processors. Every piece of incoming information carries with it the hidden opportunity cost of attention that could have been placed elsewhere (Kahneman, 2011).

From a business perspective, this means that providing information, whether in marketing, customer service, user interfaces, or terms of service, is not neutral. It has a direct impact on the cognitive load of the customer. Poorly structured, excessive, or irrelevant information demands energy to parse and often leads to avoidance or mistrust. Organizations that practice attentional sustainability recognize this. They resist the temptation to overwhelm users with data, options, or notifications. They prioritize clarity over quantity, relevance over volume.

The second implication of Simon's point is subtler but no less profound: the ethical collection and use of customer information. In the attention economy, data is power, but indiscriminate data collection is a breach of attentional ethics. When companies hoard data without clear purpose, they violate a principle of mutual respect. They also contribute to the very overload they seek to solve.

Practicing attentional sustainability requires organizations to adopt the principle of data parsimony. Collect only what is necessary. Use it only to the extent it creates genuine benefit for the customer. Be transparent about its use. And, of course, return the favor by using the data to reduce the attentional burden on the user, not to increase it. For example, personalized experiences and user portals can be more effective ways of delivering important communications to customers than, say, an email campaign blasted out to a broad list without customization of any kind. It requires more resources to personalize, but the upside is an

increase in user engagement, trust, and loyalty. A company that knows a user's preferences should not inundate them with promotions or recommendations. It should use that knowledge to simplify their experience, eliminate redundant decisions, and surface only high-quality, contextually relevant information (Acquisti, Brandimarte, & Loewenstein, 2015).

One of the dominant models in modern digital design is the "stickiness" metric. How long can you keep a user engaged? But in an attentional economy gone awry, this model becomes exploitative. It rewards compulsivity over clarity, interruption over intention. Attentional sustainability demands a reversal. The goal is not maximum screen time, but maximum relevance. Just as energy-efficient appliances do more with less power, attentionally sustainable businesses help users do more with less cognitive effort.

The question is not "How long can we keep them?" but "How quickly and effectively can we help them?"

This principle is evident in frictionless design, interfaces that prioritize function, collapse unnecessary steps, and deliver value immediately. But it goes beyond usability. It's about content, context, and cognitive rhythm. The best digital experiences feel like well-organized libraries. You find what you need, when you need it, with minimal search.

One of the counterintuitive practices of attentional sustainability is withholding. Not in the deceptive sense, but in the curatorial one. In an age of abundance, good information is not just about what is shown, but what is not shown. Irrelevant options, redundant updates, or emotionally manipulative content dilute the attentional quality of a platform. Amazon, for example, could theoretically show every single product at once, but doing so would render the site unusable. The act of filtering, hiding, and

prioritizing is not censorship. It is design. And sustainable design means choosing content that is not just engaging, but enriching.

This principle applies broadly. A news platform practicing attentional sustainability should avoid breaking news alerts unless they are truly urgent. A productivity app might limit notifications to moments of clear value. A subscription service might default to opt-in, rather than opt-out, email campaigns.

For content writers in the attention economy, the 80/20 rule is a helpful tool. At least 80 percent of content should be highly relevant and tailored to the problem that the customer is trying to solve, and no more than 20 percent should be promotional. The vast majority of advertising and marketing content that we see every day is not relevant to us, especially when what we're searching for is a solution to a problem. Therefore, if a content writer wants to resonate with a customer landing on a page looking for answers, they should withhold much of the promotional content the company *could* surface. Indeed, they should focus on being of service to the customer, so that the human being on the other end of the informational transaction feels positively toward the brand and is more receptive to the small amount of promotion present.

In this way, the job of a content writer who practices attentional sustainability is to withhold information as much as it is to provide it. They are attentional protectors just as much as attentional consumers.

Doing so meets Simon's criteria for making the increased amount of information in the attention economy useful. In essence, the company provides the service of narrowing down the infinite information available to just the relevant details that the user needs, such that the customer does not need to go searching elsewhere. The result is that working with that

company becomes less attentionally expensive for that person than going to other sources, including competitors. Importantly, if the company in question is the only one in their industry that practices attentional sustainability, this creates an instant competitive advantage.

This is perhaps the most important function that businesses can serve in the information economy. They can help customers sort what matters from what doesn't. When done well, this is not only a service. It is a relief. In a saturated media environment, the company that can consistently deliver trustworthy, relevant, and digestible content earns loyalty not through persuasion, but through respect.

High signal-to-noise ratio is a hallmark of attentional sustainability. It is found in a help center that answers real questions without burying them in jargon. In a newsletter that teaches rather than sells. In a search engine that returns meaningful results, not sponsored misdirections. This quality of relevance is also dynamic. What matters to a customer today may not be what matters tomorrow. Sustainable businesses listen. They adapt without overwhelming. They personalize without becoming intrusive. They curate without patronizing. And in doing so, they allow customers to reorient their attention back to what matters most in their own lives.

Still another way to understand attentional sustainability is through the lens of shared resource management. Attention, like water or air, is a common good. It can be polluted, exploited, or overdrawn. Businesses that extract attention irresponsibly may generate short-term gains, but they inevitably degrade the long-term viability of the ecosystem. In this light, attentional sustainability becomes a matter of stewardship. What is the minimum viable attention needed to complete a transaction, communicate a

message, or build a relationship? How can businesses protect this shared resource, not just for their own customers, but for the cultural commons?

Herbert Simon's insight leads us to a stark realization. In an information-rich world, the central function of good design, good content, and good business is to *filter*. Not to distract, but to focus. Not to capture, but to serve. This is the ethical heart of attentional sustainability. It asks organizations to move beyond extractive models of engagement and toward collaborative models of value creation. To see their users not as attention wells to be tapped, but as partners in a shared journey.

The businesses that will lead the next era of the digital economy will not be those that shout the loudest. They will be those that listen best, and speak only when it counts.

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THE COGNITIVE SCIENCE OF ATTENTION, RELEVANCE, AND MEANING

To understand attentional sustainability, we must first understand what attention *is* and how it functions. Next, let's explore cognitive science, psychology, and philosophy to analyze attention as a biological function, a psychological filter, and a meaning-making mechanism.

Traditionally, attention has been described using metaphors like a spotlight or a bottleneck. These metaphors emphasize its selectivity. Attention excludes far more than it includes. In fact, it somehow ignores an infinite number of possible objects and combinations of objects, and we have yet to understand how it does so (Posner & Petersen, 1990).

But attention is not just about selection. It is about affordance. What we pay attention to shapes what we perceive. It is not unfounded, woo woo, or spiritual to say that our attention creates our reality, because we only ever experience our own internal interpretation of the world. How we attend to reality

shapes that reality for us. Of course, this raises the stakes in the attention economy, because exploitative companies and parties are actively creating our reality, as we experience it, by manipulating our attention.

They render us passive consumers of their digital landscape, which they've engineered to consume us, and the transaction is not proportional. A major aspect of attentional sustainability is returning us to the position of the creator of our reality, to the extent that we should have sovereign choice over where our attention goes.

For example, James J. Gibson' s ecological approach to perception (1979) challenged the notion of a passive visual system receiving and processing stimuli. Instead, Gibson argued that perception is active. We do not perceive a world of raw data, but of affordances. These are *possibilities for action*. A chair affords sitting, a path affords walking, a book affords reading. These affordances are not inherent in the object alone. They are relational. They exist between the environment and the perceiver.

From this perspective, attention is not about scanning a neutral world for stimuli. It is about participating in a meaningful environment, one shaped by the needs, intentions, and capabilities of the organism. For businesses, this suggests a profound shift. Rather than bombarding customers with information, they must understand the relevance structures customers bring to their environment.

The philosopher and cognitive scientist John Vervaeke has built on Gibson's work to develop a theory of "relevance realization," a dynamic process by which humans determine what matters in a given context (Vervaeke, 2019). According to Vervaeke, our cognitive systems are constantly engaged in three interrelated tasks:

- Salience landscaping: Determining what stands out in the environment.
- Sense-making: Organizing information into a coherent model.
- Problem framing: Deciding what kind of action or attention is appropriate.

This process is fluid and recursive. We do not calculate relevance by applying fixed rules. Rather, we realize relevance by tuning into affordances, associations, and changing goals. It is a form of intelligence that is deeply embodied, emotional, and context-sensitive. Relevance realization is also cognitively expensive. It requires mental energy to suppress distractions, resolve ambiguities, and maintain focus on what truly matters. When businesses flood users with irrelevant stimuli, they disrupt this delicate process. When they support it by curating information, reducing clutter, and providing clear guidance, they contribute to cognitive flourishing, making it more likely that customers will choose to work with that company again in the future.

Vervaeke's work is also concerned with meaning, which he sees as emerging from the interplay of relevance realization and personal transformation. Humans are not just algorithmic problem solvers. We seek coherence across experiences, alignment between inner and outer worlds, and a sense of significance that transcends utility.

Meaning is not given, but enacted. We make sense of our lives by how we attend, what we remember, what we value. Attention is the gateway to meaning. As William James famously said, "My experience is what I agree to attend to. Only those items which I notice shape my mind" (James, 1890).

Businesses that respect this process create conditions for meaningful interaction. They offer experiences that align with users' goals, identities, and values. They help users see what matters and shield them from bombardments of irrelevant nonsense. In doing so, they help customers live more coherent lives. Cognitive overload occurs when users are presented with too much information, too many choices, or too little structure (Sweller, 1988). When information is irrelevant or ambiguous, users must expend additional cognitive energy to sort, discard, or ignore it. This leads to fatigue, frustration, and disengagement. In the attention economy, those are seemingly permanent sensations with which we've all become all too familiar. In the language of cognitive science, attention is a limited-capacity system. Every click, scroll, or decision requires working memory and executive control—resources that are easily depleted (Baddeley, 1992). Businesses that fail to manage these demands create experiences that are not just inefficient, but harmful.

Consider the difference between a clean, well-organized interface and one that is cluttered with ads. The former aligns with the user's relevance realization process; the latter works against it. One sustains positively focused attention; the other exhausts attention by splitting it across many irrelevant assets.

Gibson's concept of affordances has had significant influence in design, especially through the work of Donald Norman (1988), who brought it into the field of human-computer interaction. Norman emphasized that good design makes affordances perceptible. A button should look clickable, a handle should suggest pulling. But in the digital realm, affordances are often hidden or metaphorical. A "like" button affords social affirmation, while a scroll feed affords continuous consumption. These affordances

can be engineered to exploit user psychology. For instance, infinite scroll, autoplay, and variable rewards hijack attention by exploiting our cognitive biases (Alter, 2017).

Attentional sustainability requires businesses to use affordances ethically. What does the interface afford the user, not just functionally, but psychologically and existentially? Does it support autonomy, learning, and meaning, as did the old internet in its golden years? Or does it promote compulsivity, distraction, and shallowness?

But let's not forget emotion's role in the attention economy. We are drawn to what is emotionally salient, what triggers hope, fear, joy, or curiosity. This is adaptive, because emotion helps prioritize information quickly (Pessoa, 2009). In a world where we have a combinatorially explosive number of possible things to which we could attend, emotions act as a shortcut to help us identify what the most important details are in a given situation. However, the attention economy often weaponizes emotion to capture and hold attention. Outrage, fear, and novelty are overrepresented in newsfeeds and timelines, not because they are important, but because they are clickable (Tufekci, 2015).

A sustainable approach recognizes emotional salience but does not exploit it. Instead, it aligns emotional cues with meaningful outcomes. For example, a wellness app might use calming colors and sounds to support mindfulness. An educational platform might use curiosity to foster deep learning. The goal is emotional alignment, not emotional manipulation.

Just as pollution damages physical environments, attentional overload damages cognitive health. It leads to decision fatigue, memory impairment, reduced creativity, and even symptoms of anxiety and depression (Rosen et al., 2013). The cumulative

effect of fragmented attention is a fragmented self. Businesses must recognize that they operate not just in markets, but in minds. Every notification, every clickbait headline, every dark pattern has a neurological impact. Attentional sustainability means minimizing these harms and designing for cognitive resilience.

Some companies are beginning to take this seriously. Apple's Screen Time, Google's Digital Wellbeing, and Mozilla's privacy tools are early examples. But these must move from fringe features to core principles. Respect for attention should be as fundamental as respect for privacy.

Finally, attention is also the foundation of agency, which is central to our sense of self as human beings. To pay attention is to choose, to resist distraction, to prioritize, to act. When attention is hijacked, agency is undermined. When attention is respected, agency is empowered. Of course, this has profound implications for democracy, education, and mental health, but it also shapes the ethics of commerce. Businesses that cultivate agency do not merely offer products. They offer choice architectures that support intentional living.

They ask: Can our customers think clearly? Can they find what they need without coercion? Can they say no, unsubscribe, opt out, or take a break? These questions are not peripheral. They are central to the moral responsibility of the digital age.

Cognitive science tells us that attention is not just a function, but a foundation. It is how we make sense of the world, how we experience relevance, and how we enact meaning. It is how we become who we are. Businesses that understand this will do more than reduce churn or increase satisfaction. They will help customers reclaim their attention, not for the business's gain alone, but for the customer's own flourishing. That will, in turn,

motivate the customer to support the company in a reciprocal connection that is far deeper than a momentary attention capture.

This is the heart of attentional sustainability, a commitment not just to customer experience, but to human experience. In a world saturated with noise, the rarest gift a company can offer is clarity.

[6]
HOW WE LEARN AND PROBLEM SOLVE

WHAT'S the most valuable thing a business can offer in an age of overstimulation and fragmented attention? It's not just a product or service. It's *help*.

Help in solving problems, making decisions, and living more meaningfully. To do this, companies must shift from interruptive messaging to educational support. The future of ethical marketing lies in "learning content." That is, communications structured around real customer problems, and based on cognitive scientific principles of how humans learn and solve those problems.

Let's return to Vervaeke's (2020) work on relevance realization, since identifying what a customer finds relevant is the key to helping them. He proposes that human intelligence operates across four interdependent modes of knowing:

- Propositional knowing: Knowing that something is

the case—factual, declarative knowledge. (e.g., "A bicycle has two wheels.")
- Procedural knowing: Knowing how to do something—skills, techniques, strategies. (e.g., how to ride a bicycle.)
- Perspectival knowing: Knowing what it's like to be in a particular situation or mindset—attunement, situational awareness. (e.g., the feeling of balance on a bike.)
- Participatory knowing: Knowing through being—identity, transformation, and embodied interaction with the world. (e.g., becoming a cyclist.)

These modes of knowing are not isolated silos, but rather inform and enrich one another. When someone learns to cook, they don't just memorize recipes (propositional). They practice cutting and seasoning (procedural) by following steps, learn to adapt to the kitchen's dynamics (perspectival), and may even come to see themselves differently once they know "what it is like" to cook (participatory).

Most marketing, however, is stuck at the propositional level. It tells customers about things. But customers want more than data. They want guidance, insight, and resonance. They want to feel understood, supported, and empowered. Businesses that offer layered, experiential content that is rooted in these four kinds of knowing provide the conditions for transformation, which is what the customer actually desires.

To serve customers effectively, businesses must also understand the nature of the problems their audiences face. In cognitive psychology, a key distinction exists between well-defined and ill-

defined problems (Simon, 1973). Well-defined problems have clear goals, solution paths, and criteria for success. Examples include solving a math equation or assembling furniture. Ill-defined problems, meanwhile, have ambiguous goals, incomplete information, and no single correct answer. Examples include deciding on a career change, improving mental health, or learning to parent. Most human challenges, including those addressed by business products, are ill-defined. A wellness app does not simply "solve stress." A financial advisor does not merely "fix money problems." Customers often do not know exactly what they need, how to get it, or even how to describe the problem.

This is where traditional marketing fails. It assumes linear needs and rational decisions. But human learning is iterative, emotional, and context-sensitive. A company practicing attentional sustainability must become a partner in the customer's problem-solving journey. Not a loud vendor, but a wise guide.

In a company that practices attentional sustainability, content marketing takes on a new role. No longer is it just a generation tactic for unique visitors measured in dispassionate, quantitative metrics sheets. Rather, it becomes a way to deliver layered forms of knowing, aligned with the real complexity of customer problems.

Propositional content, such as main web pages and "sell sheets" offer clear, accurate, and relevant information. They explain features and benefits, answer frequently asked questions, and provide comparisons. This is foundational, but entirely insufficient to meet users' needs.

How-to guides, tutorials, walkthroughs, and templates all offer procedural knowledge. They teach customers how to succeed with the product or service by following a replicable set of steps, which are each functionally the same as a proposition.

Of course, we're creatures who structure our lives based on personal narratives. Perspectival resources use storytelling, scenarios, testimonials, and case studies to help customers see themselves in the experience. What does it feel like to be someone who's solved this problem? What shifts in perception are possible? These materials create an imaginal experience, in which the customer contemplates what it would be like to work with the business. Remember, just because an experience takes place in the imagination, does not mean that it is fake. Rather, it is real *as an experience*, and in that sense is on the same epistemic level as our waking perception of the objective world. Do not underestimate the importance of a perspectival arm of the marketing mix.

Participatory resources foster engagement, community, and identity transformation. They create opportunities for reflection, co-creation, and feedback. They help customers internalize new roles: from "confused consumer" to "empowered learner," from "new user" to "confident practitioner." These can include demos, walkthroughs, and beta versions of products and services.

This model transforms marketing from noise into service, from attention extraction to attention enrichment.

Imagine a business that sells eco-friendly home cleaning products. Under the traditional model, the website might emphasize slogans ("Go Green Today!"), discounts ("20% Off!"), and attention-grabbing visuals. They may also run digital and social media ads that are narrowly targeted based on users' occupations, locations, favorite media, etc. Under this current attention economy paradigm, the goal is to place as much information in front of the user as possible, for as long as possible, whether or not the user wants it or finds it helpful.

But under the attentional sustainability model, the company restructures its communication around layered learning:

- Propositional: Articles on ingredients, safety, and environmental impact.
- Procedural: How-to videos on using products for different surfaces.
- Perspectival: Stories of families who have made the switch to green cleaning, including emotional and sensory descriptions.
- Participatory: A forum where users share tips, an in-store interactive demonstration of the product, and an online tool that allows users to select their floor materials and then match it to the best product for that surface.

This ecosystem supports not just a purchase, but a transformation. The customer is not merely acquiring products. They are *becoming* someone who knows what it is like to live the green cleaning lifestyle in an experientially relevant way that the former paradigm's deluge of irrelevant information never comes close to providing. Keep that distinction between *having* a product and *being* positively transformed in mind. We'll return to it shortly.

How does this work, and why is it mutually beneficial to the business and the customer? The cognitive science of problem solving tells us that people often solve new problems (especially ill-defined ones) by drawing analogies to familiar situations (Holyoak & Thagard, 1995). Marketing content can leverage this by offering relatable metaphors, comparisons, or case studies. We also manage complexity by recognizing patterns and orga-

nizing knowledge into meaningful "chunks" (Chase & Simon, 1973). Educational content can help users do the same, by breaking down complex topics into digestible modules or by utilizing content types that are suited to, respectively, propositional, procedural, perspectival, or participatory knowing. For instance, you wouldn't use an FAQ when participatory knowledge is required to meet a user's query.

Learning is also supported by external structures that gradually fade as competence increases (Vygotsky, 1978). Good content evolves with the customer, offering beginner, intermediate, and advanced tracks.

These tools align closely with Vervaeke's insight that *problem-solving is not just about knowing what to do. It's about becoming someone who knows how to act in the world.*

Businesses that support this transformation become more than brands. They become allies in personal development. However, the logic of the attention economy is fundamentally adversarial. Businesses compete to grab attention, implying that customers are scarce resources to be conquered and pillaged. The logic of attentional sustainability, by contrast, is relational. It treats customers as learners, autonomous beings on meaningful journeys. This shift demands humility. Not every customer will want what you offer. But for those who do, the ethical task is to help them understand the why and the how. Your role is not to sell a story, but to help them tell theirs.

This means asking: What kind of knowing is missing for this customer? What kind of problem are they facing? What do they need to see, feel, or do to move forward? Such questions produce better marketing, but more importantly, they produce better relationships. And in an era of fractured trust and information overload, relationship is the only brand advantage that lasts,

particularly when competitor companies are likely still applying the paradigm of the attention economy to their marketing.

In the 21st century, marketing must evolve from manipulation to mentorship. It must learn from cognitive science, educational psychology, and the philosophy of meaning. It must offer insight, guidance, and care over simple messaging. Indeed, those values *are* the best messaging, but they require action and not just lip service.

When companies embrace the full spectrum of knowing—propositional, procedural, perspectival, and participatory—they help customers become more competent, more confident, and more whole. When they structure communication around the real dynamics of problem-solving, they become catalysts for growth.

This is attentional sustainability in action. Not just conserving attention, but investing it wisely, ethically, and for mutual transformation.

[7]

HAVING VS. BEING: CHANGING WHAT WE VALUE

THE QUESTION of what it is to live meaningfully has been buried beneath our cultural obsessions with materialism (both economic and ontological), consumption, and control. This drive is not an accident. It is a core pillar of our social and economic structures, particularly in the West. Businesses are designed to grow, users are counted, attention is measured, and digital spaces are optimized for engagement at all costs. But there is a growing sense that something vital has been lost in this process. Indeed, we grant companies the legal independence enjoyed by citizens, but then accept when these same firms act in a manner that we would deem psychopathic in the case of a person.

In his seminal work *To Have or to Be?* (1976), Erich Fromm argues that Western society is dominated by what he calls the having mode, a way of relating to the world through possession, control, and consumption. In contrast, the being mode centers on presence, awareness, and authentic engagement with life. This distinction provides a powerful lens through which to examine

the attention economy, and to understand why attentional sustainability represents a necessary, ethical evolution in how businesses operate.

In the having mode, one's identity is defined by what one owns. To have knowledge, to have power, to have a product, a partner, a title—these are the hallmarks of success in the having-oriented society. As Fromm explains, this mode encourages a passive and objectifying relationship with the world. People become collectors of things, experiences, even relationships, all of which are treated as commodities. Sound familiar? Attention is just one more (vitally important) thing to collect and possess.

Of course, this mode is deeply embedded in modern capitalism. Economic growth relies on consumption, which in turn relies on the continual stimulation of desire. The internet, as it evolved into a platform for commerce and advertising, became a fertile ground for the having mode. The more time users spend online, the more products they might buy. The more data platforms collect, the more power they have. Attention itself became a kind of property, a thing to be captured, measured, and sold. In this framework, companies invest in psychological hooks, gamification, addictive design patterns, and personalization algorithms, all tools to ensure that attention is seized and retained, regardless of the user's deeper needs or well-being.

In contrast, the being mode is concerned not with possession but with process. To *be* means to engage fully in the moment, to relate to others authentically, and to grow through meaningful experience. Fromm saw the being mode as inherently active and generative. It is not about acquiring external things, but about cultivating internal qualities, such as curiosity, compassion, understanding, and presence.

In the being mode, knowledge is not something to own, but

something to live. Love is not a possession, but a shared experience. Success is not a number, but a state of harmony and contribution. He describes this as a radical shift in consciousness, one that our culture resists because it threatens the structures that keep the economic engine running. In short, change is scary, especially when we perceive it as a threat to our ability to *have* what we think we want.

But the tide may be turning. As people confront the psychological costs of digital life, such as burnout, distraction, anxiety, and disconnection, a hunger is emerging for more being in their digital experiences. Users are beginning to ask: Does this platform make me feel more whole? Does this company respect my attention? Am I learning, growing, becoming more myself, or just scrolling?

Attentional sustainability is a call for businesses to stop chasing the user's attention as a commodity to be hoarded. Instead, it is a challenge *to be worthy of attention*, to earn it through integrity, usefulness, and care. This is the heart of the shift from having to being. The question becomes not "How many users can we get?" but "How can we serve the users we have, meaningfully?" It is not "How long can we keep them on the page?" but "How well can we help them solve their problem, or feel supported, or discover something meaningful?"

Skeptics might argue that being-oriented marketing is noble but naïve. In a competitive economy, don't companies have to fight for attention? Doesn't everyone else's use of persuasive design create a race to the bottom? This is where long-term thinking is essential. While the having mode can produce short-term gains, it ultimately undermines trust, burns out users, and erodes brand equity. The being mode, though slower to scale, builds durable relationships, loyal communities, and reputa-

tional capital that, for example, can endure even economic turbulence.

Trust, not attention, is the real currency of the digital age. And trust is built through respect, service, and relevance. That is, through the being mode.

To practice attentional sustainability at scale, companies must do more than tweak their UX. They must revisit their values. Fromm's insight is that the having mode is not merely a personal flaw, but a systemic orientation. Changing it requires rethinking what success means, both for individuals and organizations. Is success defined by market dominance or by ethical leadership? Are teams rewarded for engagement metrics or for genuine user outcomes? Are company missions rooted in quarterly growth targets or in their purpose? The being mode invites organizations to ask deeper questions about what they are for, both in terms of their values and their value to society. Not just what they want to achieve, but how they want to operate in the world. Not just what they want to have, but who they want to be.

Fromm's work is a philosophy of life. And attentional sustainability is not just a business strategy, but an ethical stance. Practicing it requires the inner work to recognize how our own desire to possess and control can infect our professional decisions. Leaders who wish to build sustainable companies must cultivate sustainable selves. They must model attentional care in how they communicate, decide, and lead. They must move from the unconscious compulsion for having to the mindful love of becoming. They must make peace with being enough. And this mentality must be the culture of the company, such that every employee can interact with this philosophy in their own way.

This inner work is not separate from strategy. It *is* the strategy.

[8]

APPLYING OPEN SOURCE VALUES TO ATTENTIONAL SUSTAINABILITY

Are there any existing models that already embody attentional sustainability, that have already shown success with putting these values first? For that, we turn to open source. Emerging from the margins of software development and evolving into a broader social and ethical movement, open source represents not just a method of building software but a philosophy of digital life.

At its core, open source refers to software whose source code is made freely available for anyone to inspect, modify, and distribute. But the term now signifies more than access to code. It points to a set of practices and values that emphasize openness, collaboration, meritocracy, and shared purpose (Raymond, 2001). Open source communities, unlike closed commercial platforms, typically do not rely on attention-extraction models for growth. Instead of locking users into addictive experiences or harvesting their data, open source projects thrive by empowering users, respecting their autonomy, and encouraging mutual contribution.

Projects like the Linux operating system, the Firefox browser, WordPress, and thousands of libraries that power the modern web, including Python, Apache, and Node.js, have become essential digital infrastructure. Their success illustrates that high-impact, sustainable innovation is possible without resorting to manipulative design or hyper-commercialization.

Open source platforms do not treat users as captives or commodities. The right to fork a project (i.e., to take the source code and build an alternative version) is a powerful check against abuse. Developers must earn their users' continued engagement by being genuinely useful, ethical, and transparent (Kelty, 2008). This contrasts sharply with many proprietary platforms, where users are locked into ecosystems that exploit psychological vulnerabilities to retain attention. In the open source model, attention is not coerced, but earned.

Attentional sustainability also requires transparency. Users must know what a platform is doing with their data and attention. Open source projects are inherently transparent. Anyone can inspect the code, track changes, and understand the logic behind decisions. This fosters trust and aligns with the ethical commitment to treat users with respect. In proprietary systems, meanwhile, opacity is often a feature, not a bug. Algorithms operate in black boxes, interfaces change without notice, and data collection is buried in unreadable terms of service. Open source systems flip this model by foregrounding user rights and control.

Indeed, open source communities thrive on contribution. Users are not passive consumers of content, but active co-creators of value. This participatory dynamic stands in contrast to the passive scrolling and consumption that typify attention-extractive platforms. In the language of cognitive science, open source communities support participatory and perspectival devel-

opment (Vervaeke, 2019). Users learn by doing, and by engaging with others in a shared problem-solving context. This is not just ethically superior, but also cognitively enriching.

As discussed in previous chapters, attentional sustainability is closely tied to helping users solve real problems with high relevance. Open source tools excel in this domain. They are often built by users to meet specific, meaningful needs, whether it's a content management system, a data visualization library, or a privacy-focused operating system. Unlike commercial platforms that chase engagement for its own sake, open source projects are deeply pragmatic. They focus on utility and relevance, not addiction and distraction. This reflects a respect for users' limited attentional bandwidth.

Of course, open source is not a panacea, and it is unfair to treat it as such. It faces challenges of governance, sustainability, and inclusivity. Many projects are underfunded. Burnout is common. And the meritocratic ideal can mask inequalities of time, access, and expertise (Eghbal, 2016). Moreover, some open source tools are now being commodified and absorbed into commercial ecosystems, raising questions about long-term integrity. But these challenges do not negate the core values of the movement. Instead, they underscore the need to intentionally support and expand its ethical infrastructure.

Organizations that wish to integrate open source values must also address these issues internally, by fairly compensating contributors, diversifying participation, and building cultures of care. Some of the most exciting possibilities lie in hybrid models, where for-profit businesses integrate open source principles into their platforms. Companies like Red Hat have shown how commercial entities can operate ethically by prioritizing user freedom, transparency, and real utility. It is a better business

model, one that aligns long-term value creation with human flourishing.

Open source shows us what is possible when users are treated as collaborators rather than targets. It is a blueprint for attentional sustainability. Proven, scalable, and grounded in decades of practice. In an era where the human cost of attention extraction is becoming unbearable, open source values offer not just a critique, but a concrete alternative.

[9]
A NEW ETHIC FOR THE NEW INTERNET

We have traced the contours of a new concept: attentional sustainability. It is anchored in cognitive science, ethical philosophy, technological history, and business practice. What began as a critique of the attention economy has evolved into a constructive vision, a call for businesses, technologists, and creators to take responsibility for how they engage the most precious human resource. Attention.

In the spirit of Peter Drucker's belief that the purpose of business is to create and keep a customer, this book asserts that in a digital economy, the way to keep a customer is not through coercion, addiction, or manipulation, but through worthiness. A sustainable business is one that can *be* worthy of a person's attention, not one that simply *has* it.

The dominant model of internet business over the past two decades has been based on attention extraction. As Herbert Simon (1971) foresaw, an abundance of information creates a poverty of attention. Platforms have responded not by alleviating

that scarcity, but by monetizing it, building systems that manipulate users into giving up more time, more data, and more cognitive bandwidth than is healthy.

This model has reached its limits. The mental health crisis, digital fatigue, collapsing trust in platforms, and the increasing use of ad blockers and algorithmic avoidance are all symptoms of a failing system (Williams, 2018; Zuboff, 2019). Just as unsustainable environmental practices led to climate change, unsustainable attention practices have led to a crisis of mental and civic ecology.

The time has come for a new model, one based not on the plunder of attention, but on its cultivation. Not on hacking human psychology, but on honoring human needs. Attentional sustainability is more than a business tactic. It is a vision of human flourishing in a digital age. It affirms that our minds are not raw material to be mined, but sacred spaces to be cultivated. That our relationships with technology can be symbiotic, not parasitic. That growth can mean depth, not just scale.

The next generation of great companies will not be those that seize the most attention, but those that earn the most trust. This is especially true in the age of artificial intelligence, itself a morally neutral tool whose benefit or harm to humanity will entirely depend on the wisdom and ethics of the people (and companies) who use it. These businesses will be led not by growth hackers, but by digital stewards.

Let us, then, build platforms that deserve our attention. Let us build content that enriches, not distracts. Let us practice design that empowers, not exploits.

Let us choose to be worthy.

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