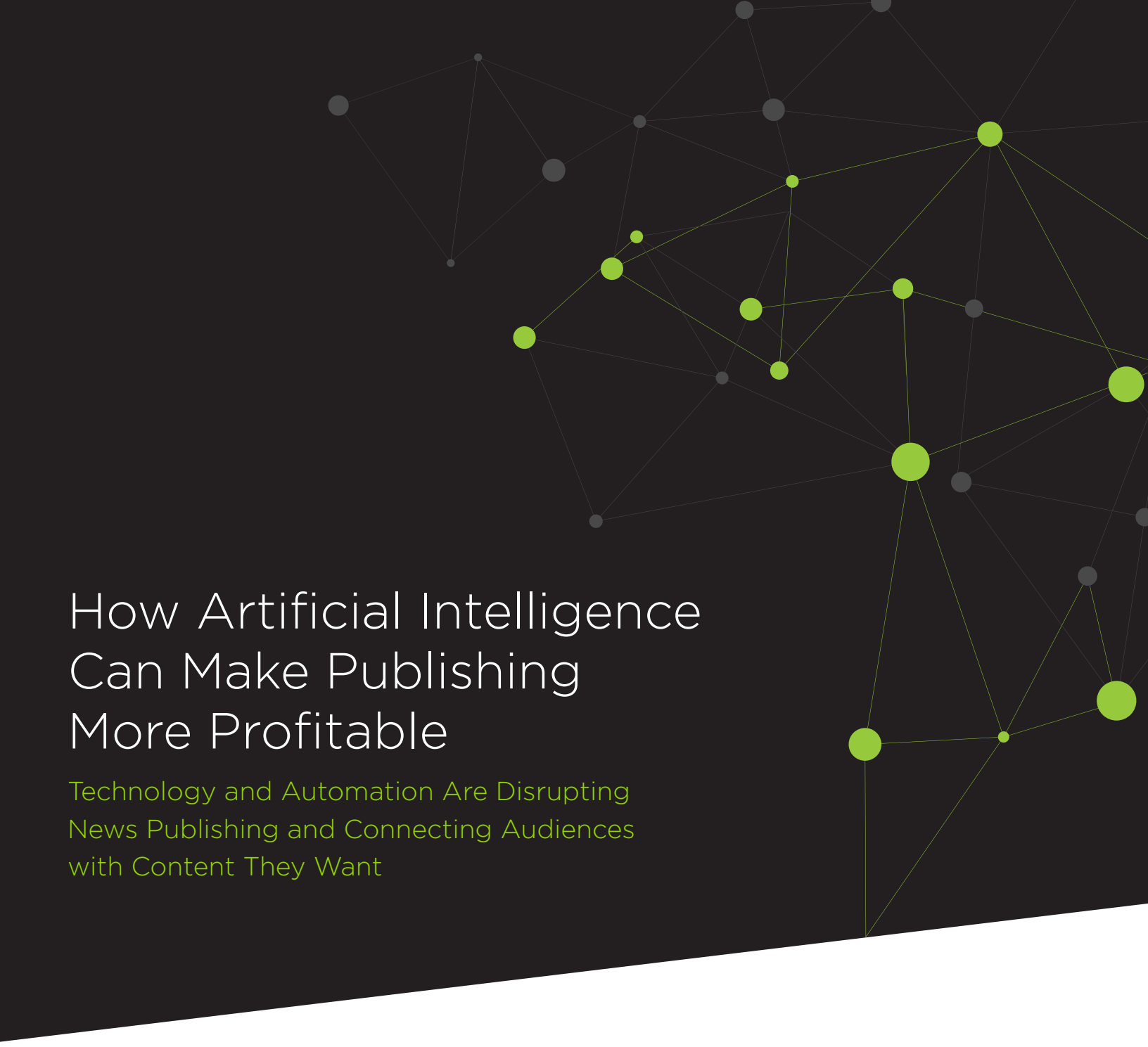


How Artificial Intelligence Can Make Publishing More Profitable

Technology and Automation Are Disrupting News Publishing and Connecting Audiences with Content They Want

TRUE ANTHEM

Contents

1

Technology Shifts Publishing Again

Concepts of artificial intelligence

Artificial intelligence is an umbrella term for a variety of approaches that aim to develop computer systems that can replicate tasks performed by human intelligence

- Image recognition
- Speech recognition
- Language translation
- Decision making
- Predictions

The major approaches to AI are:

Machine learning

Starting with very large amounts of data, learning algorithms parse the data, make predictions or decisions, and then check them for accuracy in a constantly improving system.

Neural networks

These computer software models link together processing units in layers, similar to the way the human brain's neurons are organized. They can be used to recognize text, speech and images.

Deep learning

A more complex form of neural network that may include many layers of graphical processors. This is the technology being used for natural language processing and facial recognition.

The media industry is one of the most established industries we have in the United States. The first continuously published newspaper, the Boston News-Letter, published its first issue on April 24, 1704, and so began the industry's mission of connecting audiences to content with the purpose of driving revenue.

Today, it's safe to say that more content than ever is being published, with media organizations expanding their offerings beyond text-based articles to include video, images, infographics and podcasts. But monetization has not always followed.

Publishers can earn significant and sustainable revenue by producing genuine, valuable content that engages their readers. The economics can work for publishers, but only if they rethink their content creation and distribution strategies.

Social media represents the biggest distribution and growth opportunity available to publishers today. Yet it's not easy to take advantage of this opportunity. The number of social networks is growing faster than ever, and the constantly increasing complexity of each platform makes each a moving target.

Meanwhile, distribution of content remains painfully manual, with social media teams often relying on gut instinct to choose which content to share and when. The result? An inability to post around the clock, seven days a week, and/or to maximize the ROI on editorial content.

There are many examples of how AI is improving productivity, performance and outcomes in other sectors. Here are just a few:

Healthcare

At the University of California at Los Angeles, researchers developed an AI-powered chatbot to provide radiology recommendations to clinicians. The chatbot can provide evidence-based answers to questions that can help the physician provide information to patients about radiology treatments. The result is that radiologists spend less time on the phone and more time caring for their patients, while patients get higher-quality care.[4]

Customer service

Cogito uses AI to analyze callers' voices and identify when they're angry or upset. It then prompts reps to use social signals, or change the tone or speed of their voice to help them be more sympathetic or efficient.[5]

Industry

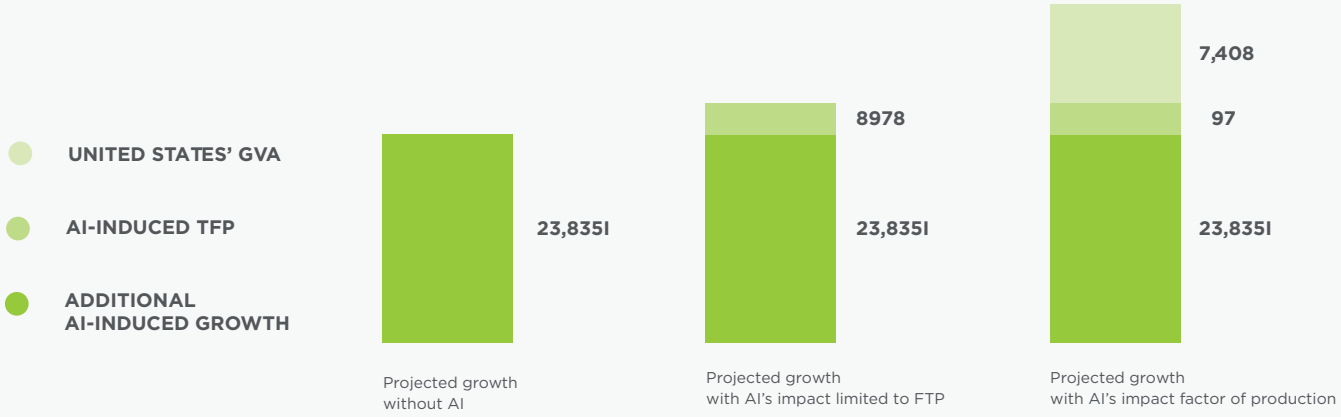
Google used its AI known as DeepMind to manage power usage in parts of its data centers, reducing energy consumption by 40 percent.[6]

There is a way forward: Artificial Intelligence can automate the content distribution process, freeing up editorial social media teams to focus on high-value and strategic initiatives.

Venture capital firm Menalto Advisors identifies artificial intelligence as a core differentiator among companies, adding that, in many cases, it can provide dramatic improvements over previous approaches or perform tasks that were not previously possible by computers.[1] Tomasz Tunguz, a partner at venture capital firm Redpoint, notes that software that improves productivity offers the most sustainable value over time. [2]

When Accenture analyzed 12 developed economies, including the United States, Europe and Japan, it found that AI has the potential to double their annual economic growth rates by 2035.[3] According to the report, AI can do more than increase the productivity of existing expenditures for capital and labor, a measure known as total factor productivity or TFP. It sees AI as an additional producer, along with capital and labor.

AI as a new factor of production can lead to significant growth opportunities for the United States' economy



United States' gross value added (GVA) in 2035 (US% billion)

source: Accenture and Frontier Economics

Much of this predicted growth will come not from replacing human workers, but from augmenting them. Accenture notes that AI can do some human tasks faster and at greater scale; at the same time, it can perform work activities that humans can't, such as classifying large numbers of documents.

Specifically, the report says, "AI can enable humans to focus on parts of their role that add the most value."

While publishing and content creation may seem to be endeavors that rely on the human brain's capacity for making connections, identifying patterns and creatively telling stories, artificial intelligence can have a large and positive impact on this sector.

> "AI can enable humans to focus on parts of their role that add the most value."

2
How AI Is Changing Work

We see three areas where artificial intelligence will make the biggest contributions.

Automation

According to a McKinsey Global Institute analysis of 750 occupations in the United States, there are two basic kinds of activities that are suited to automation: physical tasks in structured environments, like factories, and data collection and processing.[7] McKinsey calculates that these account for 51 percent of all activities in the U.S. economy—and for close to $2.7 trillion in wages. Manufacturing, foodservice, and retail trade are the categories with the most of this kind of activity. McKinsey notes that it's not only the lowest-paid and lowest-skilled jobs that can be automated. Almost every job has automation potential.[8]

Data-fueled decision-making

Data has long been used to inform business decision-making. Two things are driving the new era of data-driven decisions: the availability of more data and the use of machine learning to make sense of data sets larger than human comprehension. Combining these two can identify new opportunities, improve efficiency and provide unexpected insights.

Human/AI collaboration

As machines get smarter, humans will be able to work smarter in collaboration with AI. Edward Hess, author of "Humility is the New Smart: Rethinking Human Excellence in the Smart Machine Age," says that AI, along with robotics and virtual reality, will force us to up our game.[9] In an interview with Knowledge@Wharton, he says, "[What] we're going to have to do well are those things which are uniquely human, such as our ability to create, innovate and relate at the highest emotional levels with other humans."[10]

Will publishing jobs be replaced by AI?

Business consultant Shelley Palmer includes report writers, journalists and authors in his list of the five jobs likely to be taken over by robots. He's being facetious about authors, but he notes that machines can be taught to analyze almost any kind of material to create a highly readable precis.[11]

In the publishing world, it's unlikely that artificial intelligence will replace editorial staff. What is likely is that AI can offload some of the repetitive tasks that don't require creativity or high-level decision-making. By taking over these rote tasks, artificial intelligence can increase the capacity of editorial staff.

At the same time, AI can keep human brains from tiring as fast. Our ability to make decisions is like a muscle, according to Scientific American: Whenever we make decisions—even if they're not crucial decisions—the brain's capacity for this is depleted. Later, it can be harder to make other, more important decisions, or we may not be able to focus on tasks.[12]

3
Augmented Human Capacity: How AI Is Changing Publishing

We have begun to see the first evidence of the shift that is being created by AI in the publishing industry.

Automating story production

In 2015, the Associated Press began using AI to produce its recaps of public companies' quarterly earnings reports.[13] Such news items must be detailed and accurate, but no one expects them to be colorful—a perfect task for artificial intelligence. In 2016, the AP began development of a platform called Wordsmith that reports on Minor League Baseball games. In such articles, where the statistics and game highlights are central, machines are quite capable of doing acceptable journalism.[14]

Forbes, The New York Times, Los Angeles Times, and ProPublica are also experimenting with automating news content, according to the Columbia Journalism Review. CJR notes that algorithms can potentially generate stories faster and with less errors than journalists, but they're limited in their ability to make connections or explanations. Journalistic skills including interviewing sources, investigative reporting and providing analysis will take precedence over tasks like scheduling.[15]

Evaluating content

Machine learning can help editors move beyond gut feeling when making content decisions. Authors.me uses machine-learning software to analyze book manuscripts and compare them to the characteristics of bestsellers. Its "intelligent editorial analysis" can be used by authors, publishers and literary agents to identify the most marketable projects.[16]

Automating complex tasks

In fast-paced publishing environments, fact-checking, validating sources or checking for plagiarism can be difficult. AI may be able to take over these tasks. In the world of scientific publishing, AI systems are being used to check for errors in statistics and find plagiarized articles, according to PRI.[17]

Improving content distribution and monetization

Machine learning can help publishers reach the widest audience for their content. For example, True Anthem's system increases content consumption by determining precise distribution schedules and what content will resonate best at what time for a publisher's various social media audiences. Different algorithms and models can be applied for various kinds of media organizations. A news organization might prioritize trending stories for distribution, while a lifestyle publisher might want to identify and share evergreen stories at the time that's most optimal for audience engagement.[18]

4
The Future of AI in Publishing

There is still unique value in the fact-based content produced by media companies, and this will not change. Human editors, journalists and producers will remain essential to the creation process.

What will change is the way content is published and distributed. AI can play an important role in helping publishers drive operational efficiency, revenue and scale.

The fragmentation of social media and expansion of potential distribution channels for publishers will follow Moore's Law: In the next decade, there will be significantly more social networks and distribution channels that publishers will need to support.

As we've seen, AI already is increasingly handling tasks that are very complex and time-consuming. The next step is harnessing the power of AI to do more of that kind of work so that publishers can focus more strategically on emerging media, expanding social distribution and, most important, increased monetization.

With AI-powered distribution, publishers can leverage technology to determine the optimal distribution channel and time for every piece of content, meeting their strategic goals of reaching and engaging audience while driving increased monetization and ROI of that content.

Publishers that pursue the right technology to drive the business forward, optimizing content distribution to drive revenue while allowing their teams to scale in the right ways, will win.

5
How Smart Publishers are Preparing

In the new era of AI-powered publishing, successful publishers will take these steps.

Become social-first

This means focusing on how people will engage with content as part of their daily—and digital—lives. While AI can offload complex tasks, editors may need to learn some new skills in order to let artificial intelligence be more effective.

Content producers must learn to incorporate social copywriting into their editorial process the same way they've learned to adopt strategies for search engine optimization. Best practices are to write headlines, deks and ledes in their content management systems in a way that makes clear what an article or video is about and in the voice that will resonate with audiences across social media. Clean metadata for content is essential, not only for social media growth but also SEO.

Train human/machine collaboration

Humans now have the opportunity to collaborate with machines. By allowing machines to carry out complex and time-consuming work, humans can save cognitive cycles that can be used to focus on higher-value projects that add the the most value to their personal/career development and organizations. As an analogy, humans will be in the control center of the publishing process, instructing the machine to follow editorial and business rules. Machines will carry out the complex work of analyzing large amounts of data, making predictions and decisions based on that data in real time, and constantly optimizing for performance. This will make humans more successful and productive, leading to increased monetization and ROI.

Encourage a cultural shift

When the subject of automation comes up, people often worry that it means jobs will be lost. This is not necessarily so. Artificial intelligence can augment what people do.

An Accenture survey showed that **84 percent** of managers believe machines will make them more effective and their work more interesting.

When asked, "If intelligent systems could enable you to free up time at work, how would you spend it?" managers **aged 35 and younger** said they would adopt new responsibilities, experiment and collaborate.

Managers aged **36 to 50** said they would adopt new responsibilities, experiment, and coach and strengthen relationships with their direct reports. (Managers older than 51 seemed less motivated to adopt new work practices.)[19]

When implementing AI, it's important for executives and managers to highlight the positive benefits of the technology and how it can ease burdensome tasks and allow people to focus on higher-value work.

Upgrade business processes

To successfully leverage new technologies, publishers may need to upgrade business processes and workflow. For example, artificial intelligence systems can effectively and sustainably manage content distribution 24 hours a day, seven days a week, 365 days a year. That means the work of curating and scheduling content may be significantly reduced, offering publishers the opportunity to optimize business process and workflow. The process of writing social editorial copy can be conducted further upstream in the editorial process (at time of publish) and instead of scheduling content, social media teams can monitor content for editorial voice or approve content, creating dramatic workflow efficiencies.

6

Sustainable Revenue Growth is Possible

Despite the many reports to the contrary, the future is bright for publishing. It's time to shed the beleaguered publishing industry mantle and adopt technologies, such as artificial intelligence, that offer a clear path forward.

The example of Jeff Bezos' acquisition of the Washington Post (WaPo) is an example of the bright future publishing can achieve.

Bezos has used Amazon's technology expertise to revitalize the newspaper's website and mobile app while also providing more digital tools for newsrooms. Notably, WaPo developed the Arc Publishing platform that integrates content management, scheduling, workflow and analytics.[21]

WaPo reportedly has grown revenue from digital subscriptions and advertising, while exceeding ad sales targets. [122] Meanwhile, its newsroom has won multiple awards.

This is just one example of how technology can solve the distribution and monetization problems for media organizations. Publishing may be one of the oldest industries, but innovation has always been at its heart. From papyrus to the printing press; from radio to television; from the World Wide Web to Twitter and news apps, publishing has always evolved with the help of technology.

In the early twentieth century, radio and television allowed publishers to reach an audience at scale. By the end of the century, the internet provided a medium for distribution—but not a vehicle for that distribution.

In the twenty-first century, social media has extended that scalability, offering publishers global, real-time reach. Social media provides an amazing distribution vehicle, but publishers have been hard-pressed to take full advantage of it. What has been missing is the layer of sophistication and intelligence that can be provided by AI.

For one of the oldest industries, technology is offering a way forward toward sustainable monetization in an evolving digital world.

For more information and to request a demo,
please visit **www.trueanthem.com**

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