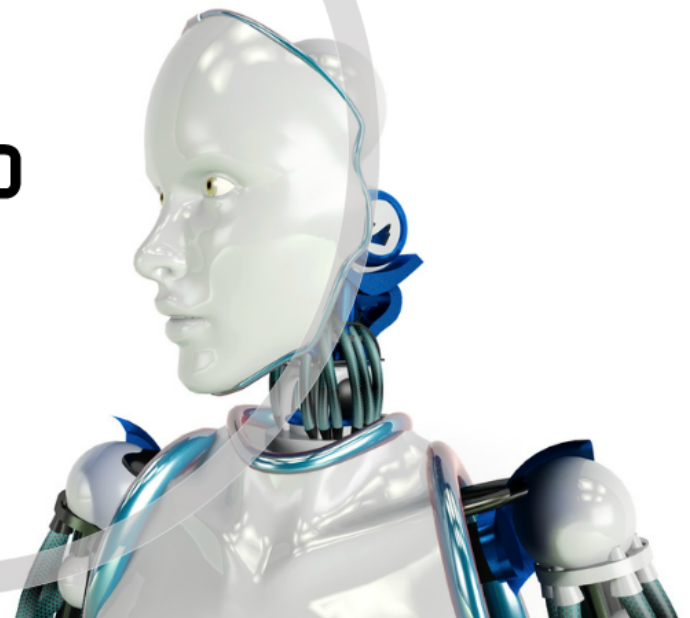




Will Robots Read Books?

*The Future of Texts
in the Age of Machines*

Niki V. Santo



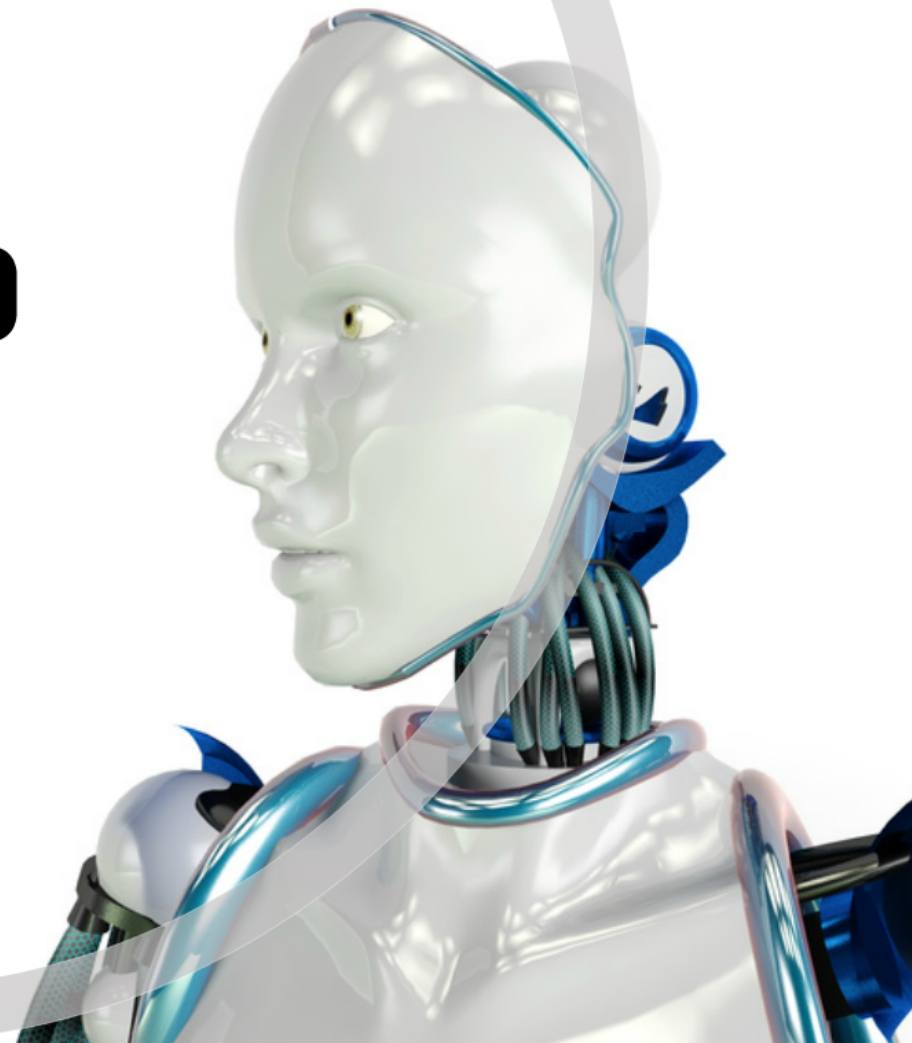


Will Robots Read Books?

*The Future of Texts
in the Age of Machines*

Niki V. Santo

santo@post.harvard.edu



Today we will cover:

- The global trends that will drive publishing and media for the next decade
- Trends in what people read, how people read, and how the next generation will consume information
- Advances in artificial intelligence and their effect on how digital content is generated and how it is monetized
- How these trends create new business models and how to capture more value from the content you produce

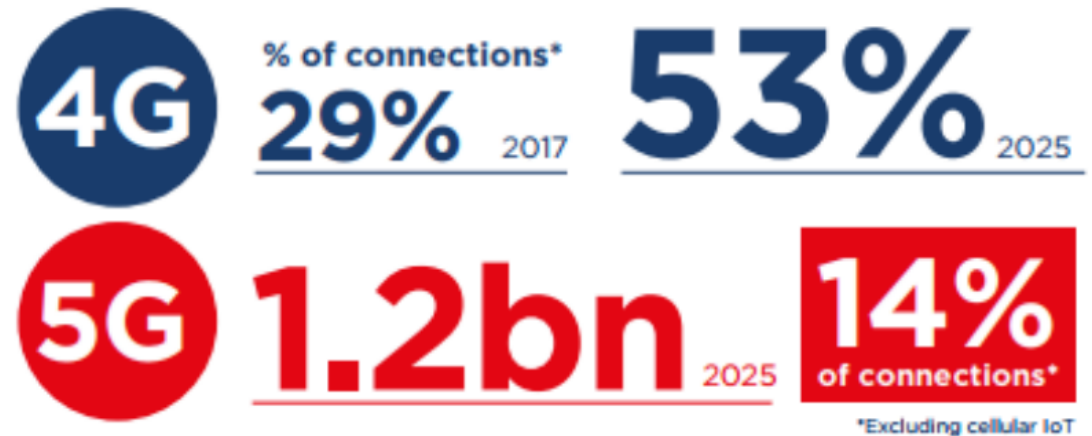
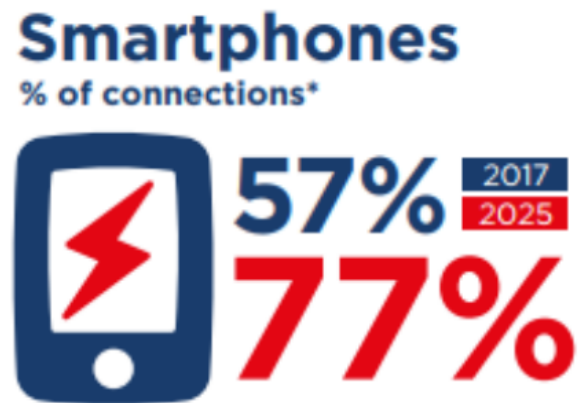


A discussion about the future of digital text and content has to begin with a look at the adoption of smartphones.

The iPhone was introduced in 2007, and in the following 10 years, the adoption of mobile technology has been the driver of all content related industries.

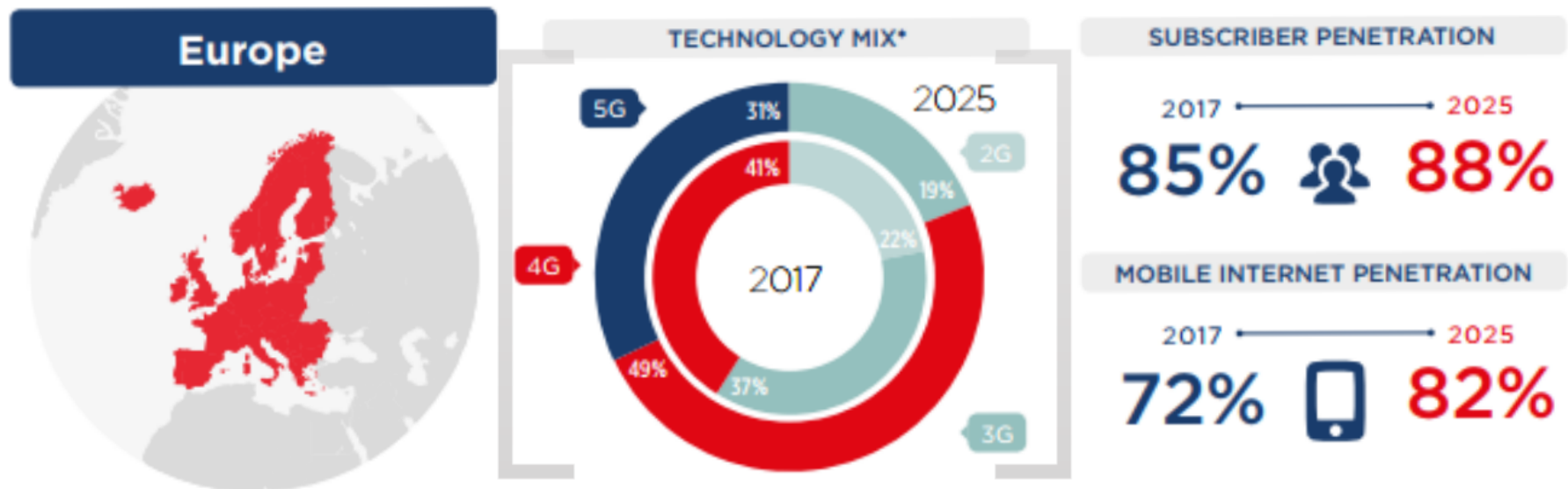
2007

By 2025, the vast majority of all connections to the Internet will be on smartphones.



The number of smartphones globally will reach 5 bn by 2025.

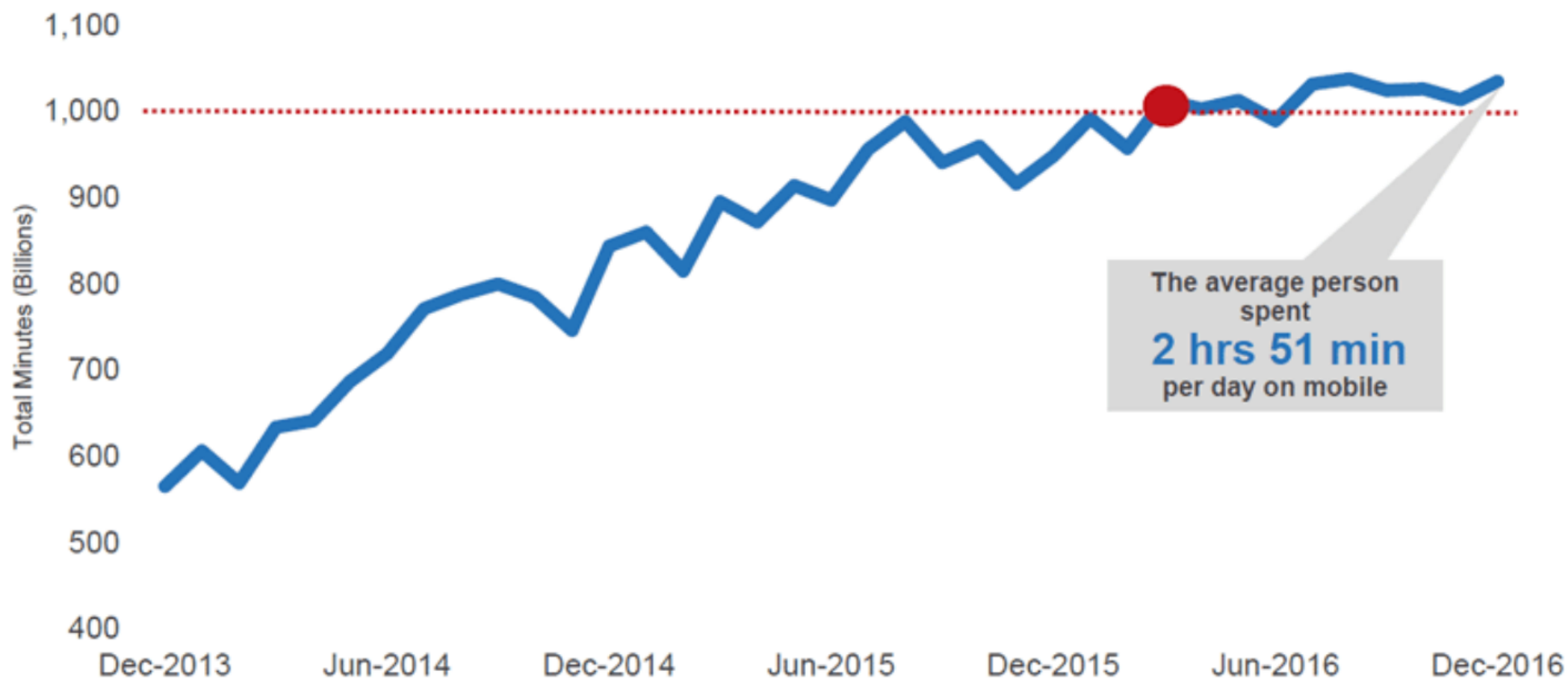




In Europe, over 70 percent of networks will be 4G or higher, enabling a new set of applications and services that can be delivered over mobile.

Total Minutes (Billions) Spent on Mobile

Source: comScore Mobile Metrix, U.S., Age 18+, Dec 2013 – Dec 2016

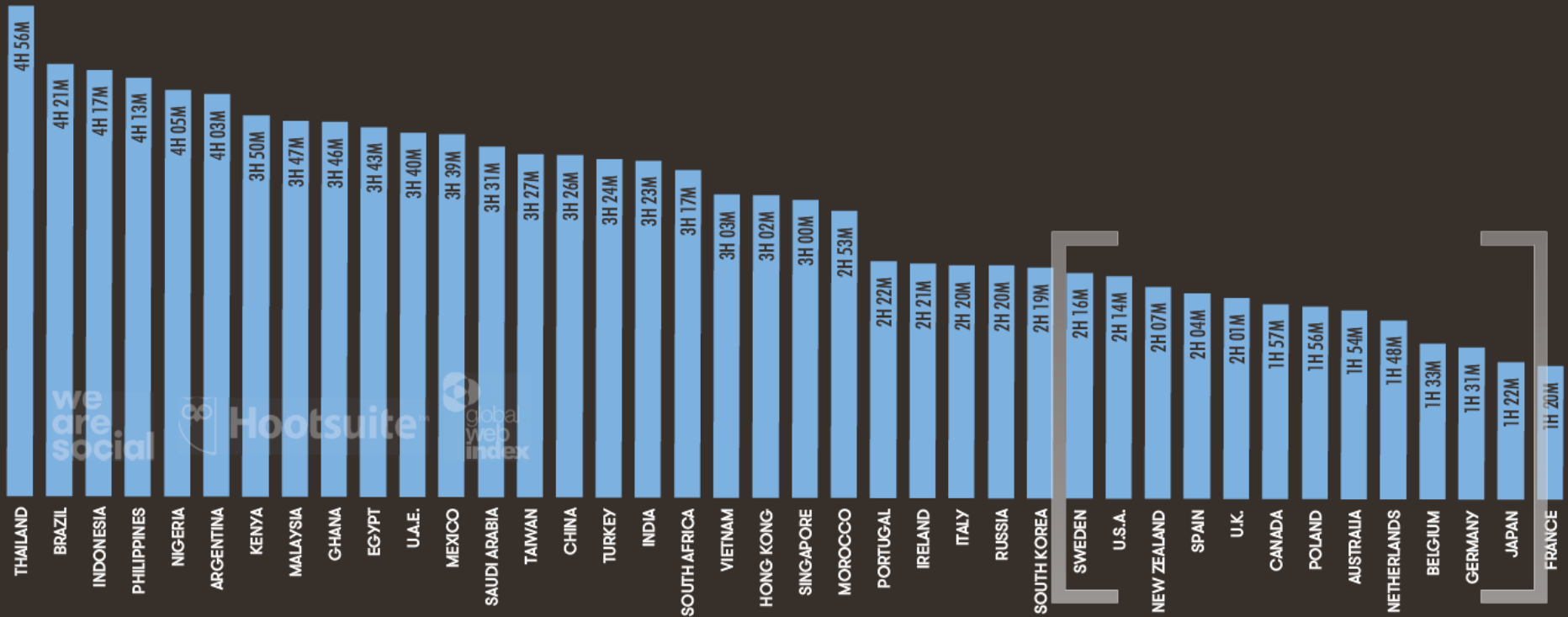


Additionally, we have seen a doubling of the amount of time consumers spend on their mobile devices in just a few years.

**JAN
2018**

TIME SPENT PER DAY USING MOBILE INTERNET

AVERAGE NUMBER OF HOURS PER DAY SPENT ACCESSING THE INTERNET VIA A MOBILE PHONE [SURVEY BASED]



As much time as Americans and Europeans spend on mobile Internet, they actually represent the low end of the spectrum in amount of time spent.

SWEDEN

2H 16M

U.S.A.

2H 14M

NEW ZEALAND

2H 07M

SPAIN

2H 04M

U.K.

2H 01M

CANADA

1H 57M

POLAND

1H 56M

AUSTRALIA

1H 54M

NETHERLANDS

1H 48M

BELGIUM

1H 33M

GERMANY

1H 31M

JAPAN

1H 22M

FRANCE

1H 00M

Connected Consumers



Digital Consumers

The overarching trend that publishers must consider is that connected consumers are becoming digital consumers. The use of mobile technologies will move beyond connecting people, i.e social media and social media content, to a number of robust services and transaction types they can accomplish throughout their day, making the smartphone more indispensable to daily life.

Ownership Economy to Access Economy



Spotify®

NETFLIX

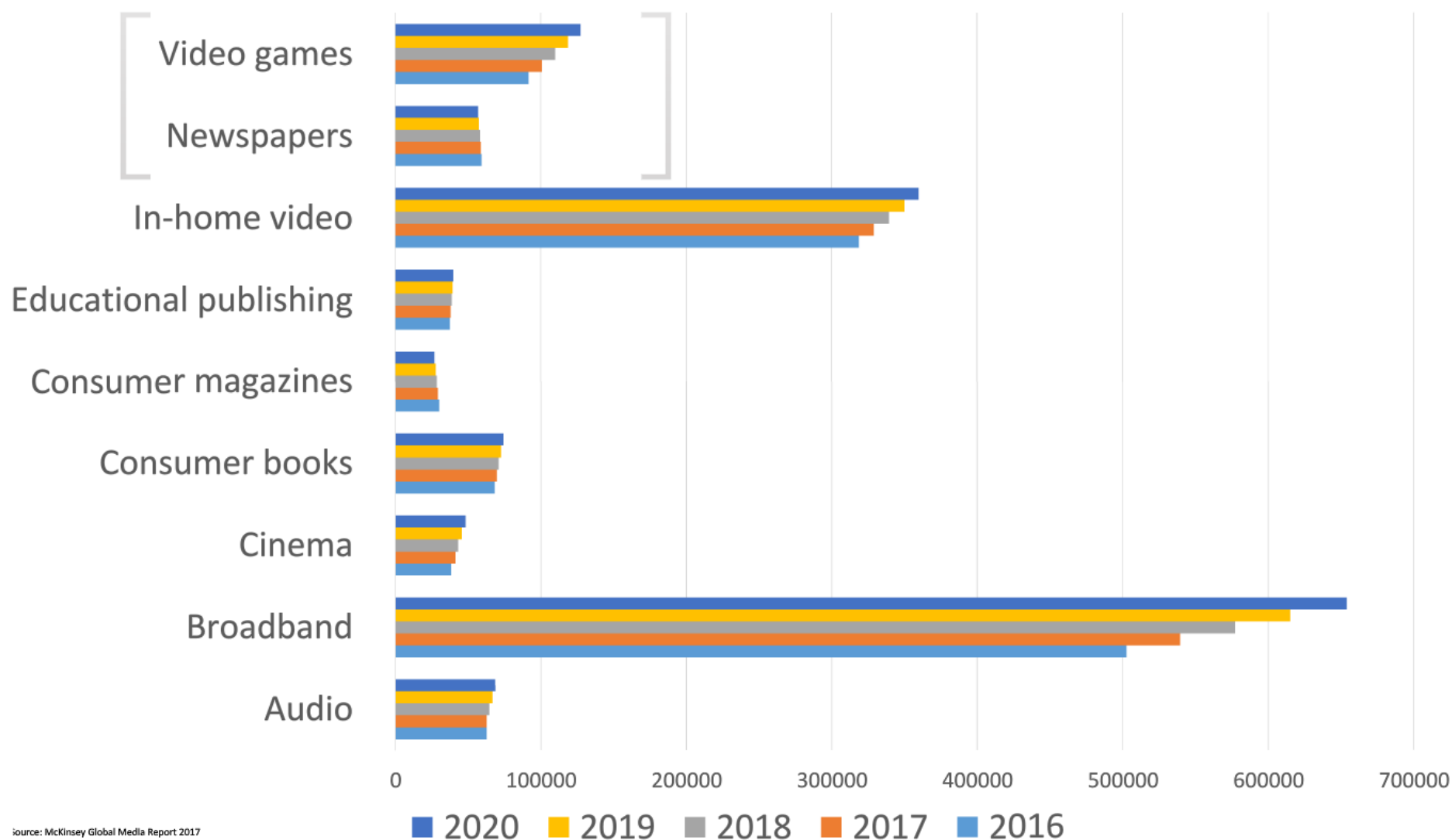


U B E R



Another major trend publishers have to consider is the shift to an access economy, where accessibility real and intangible products is what is sold rather than the product itself.

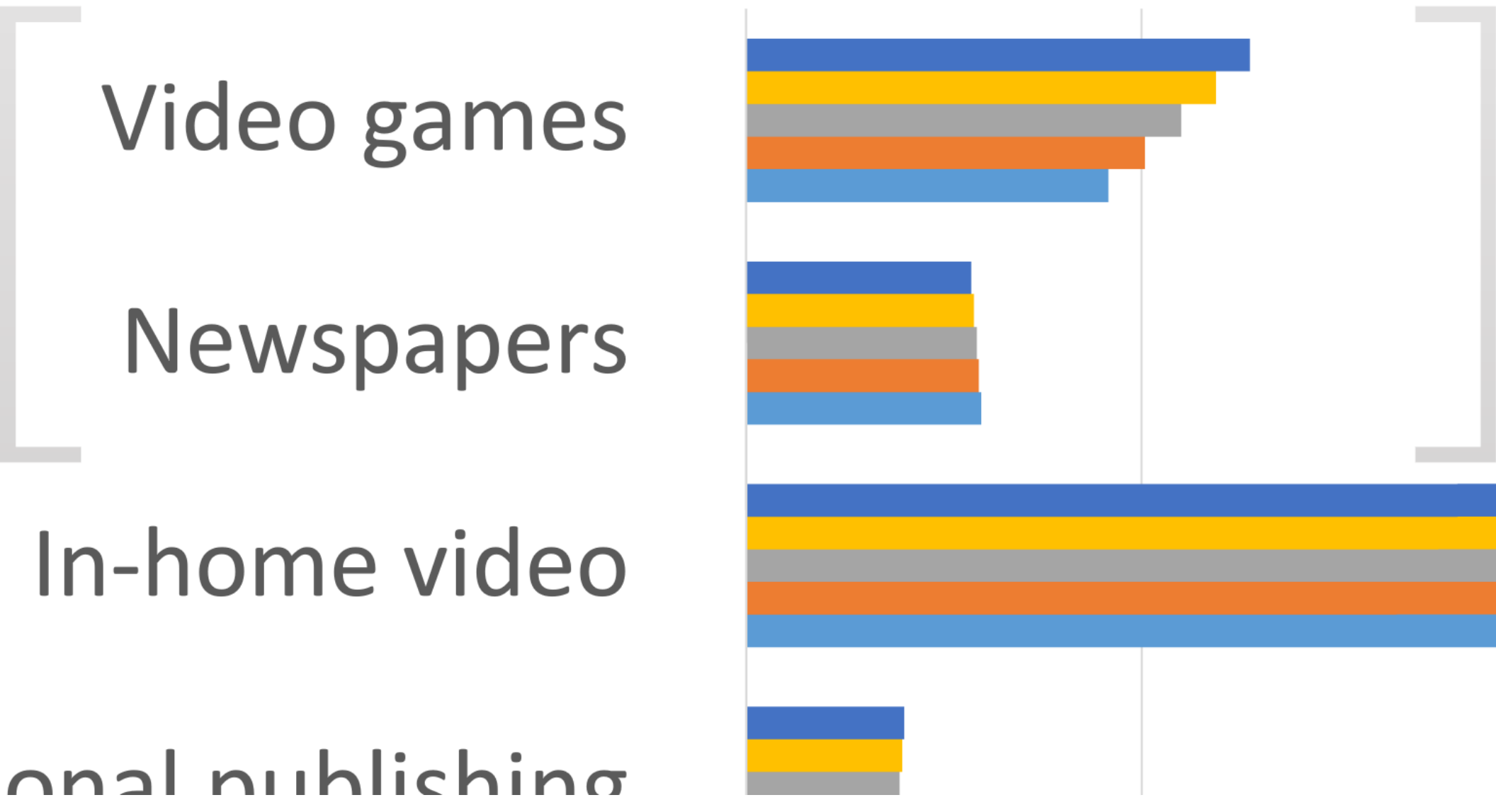
Global Consumer Spending by Category (US \$ Millions)

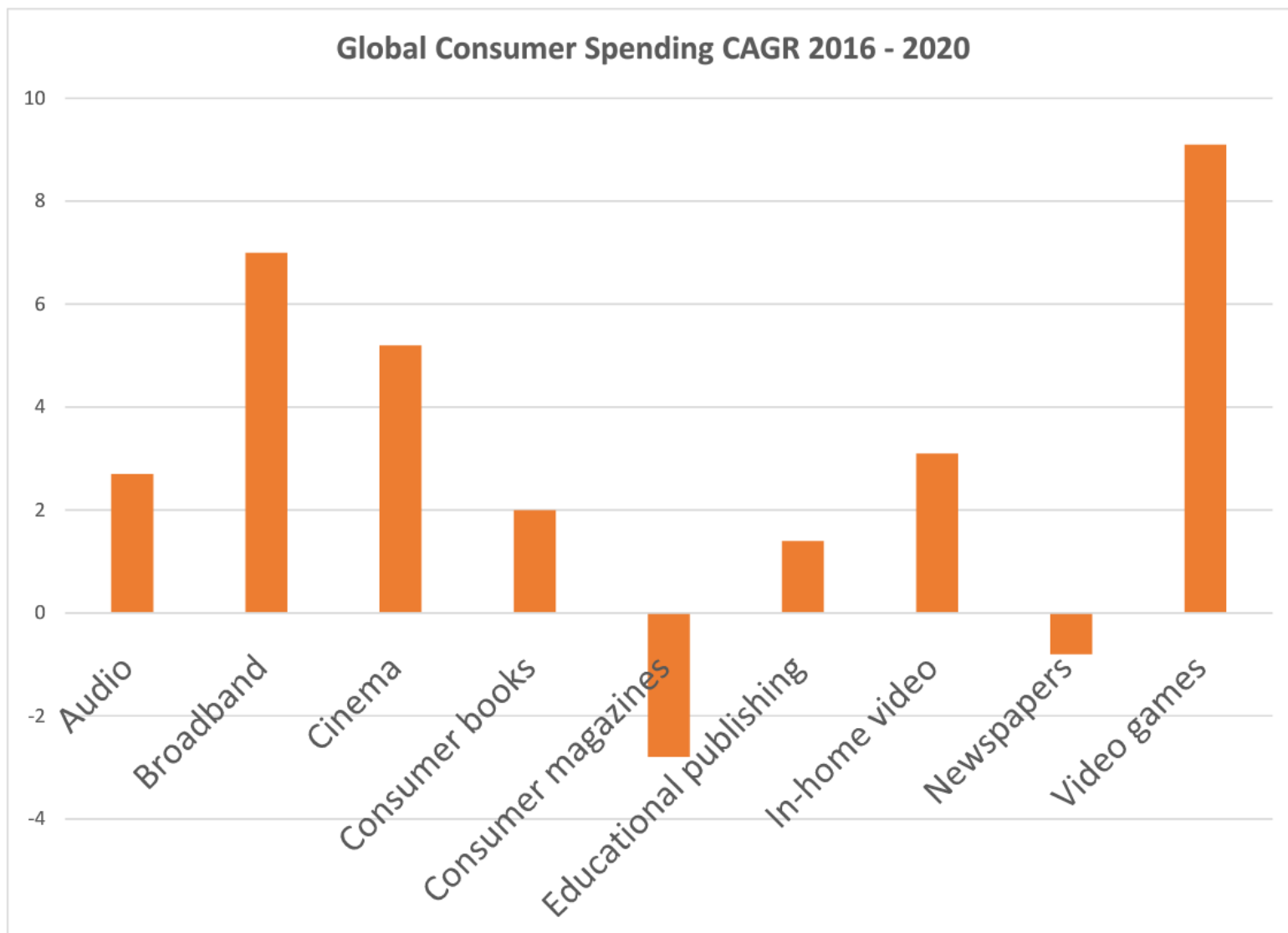


source: McKinsey Global Media Report 2017

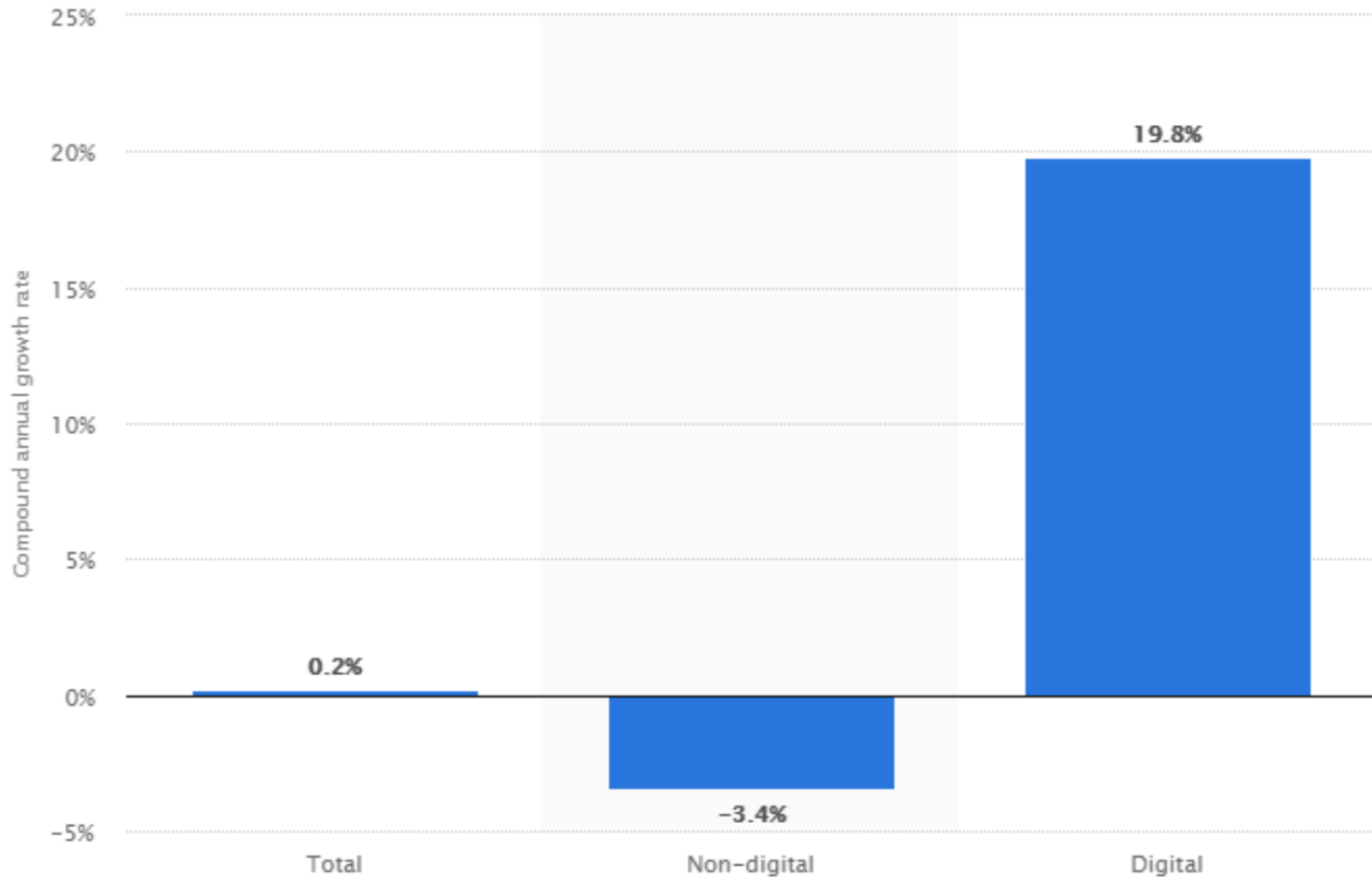
Just several years ago, the total relative consumer spending for these two categories were reversed. Newspaper sales globally continue to decline. Their decline is not unrelated to re rise in video game sales, as this presentation explores.

Global Consumer Spend





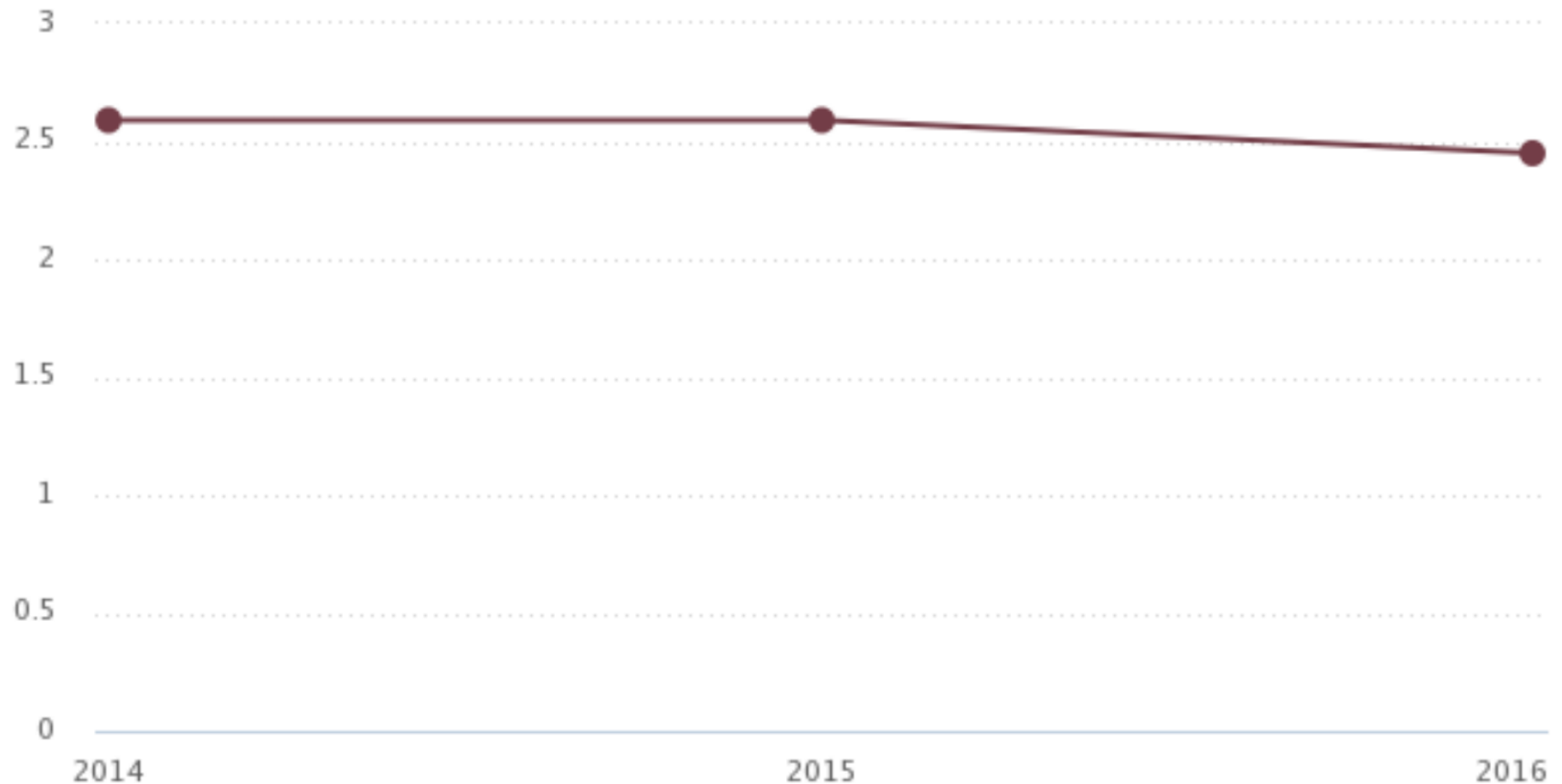
Global Magazine Sales 2013-2018



While the overall category has been stagnant in sales growth, the largest growth within the category has been in digital products.

Newspaper website minutes per visit

Average minutes per visit for top 50 U.S. newspapers by circulation



Source: Pew Research Center Newspaper Fact sheet: <http://www.journalism.org/fact-sheet/newspapers/>

Even on newspaper sites, an insight to note is that the average user only spends 2.5 minutes per visit. The consumption patterns of digital news is very different from print news.

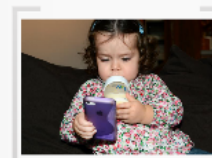


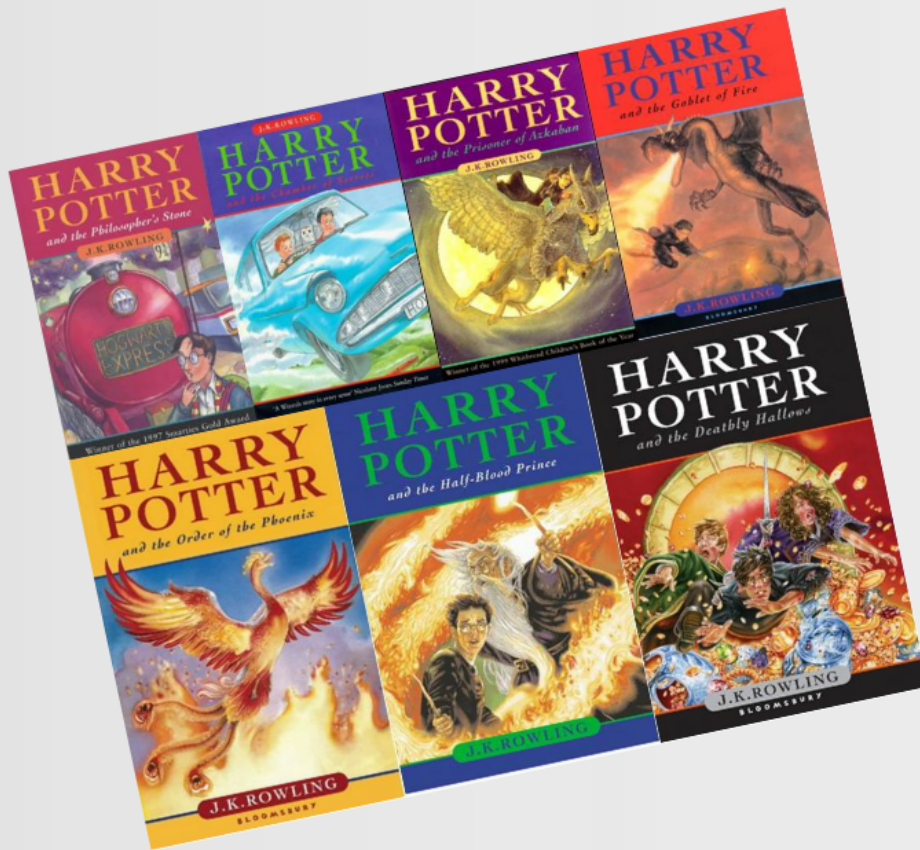
500 Million Copies Sold (1997-2010)



125 Million Copies Sold
(2011-2015)

WHAT ABOUT BOOKS





500 Million Copies Sold (1997-2018)

Book publishing has been driven by 'blockbusters' titles that become cultural phenomena in their own right. The emergence of these titles and their popularity is not so predictable.



125 Million Copies Sold
(2011-2015)

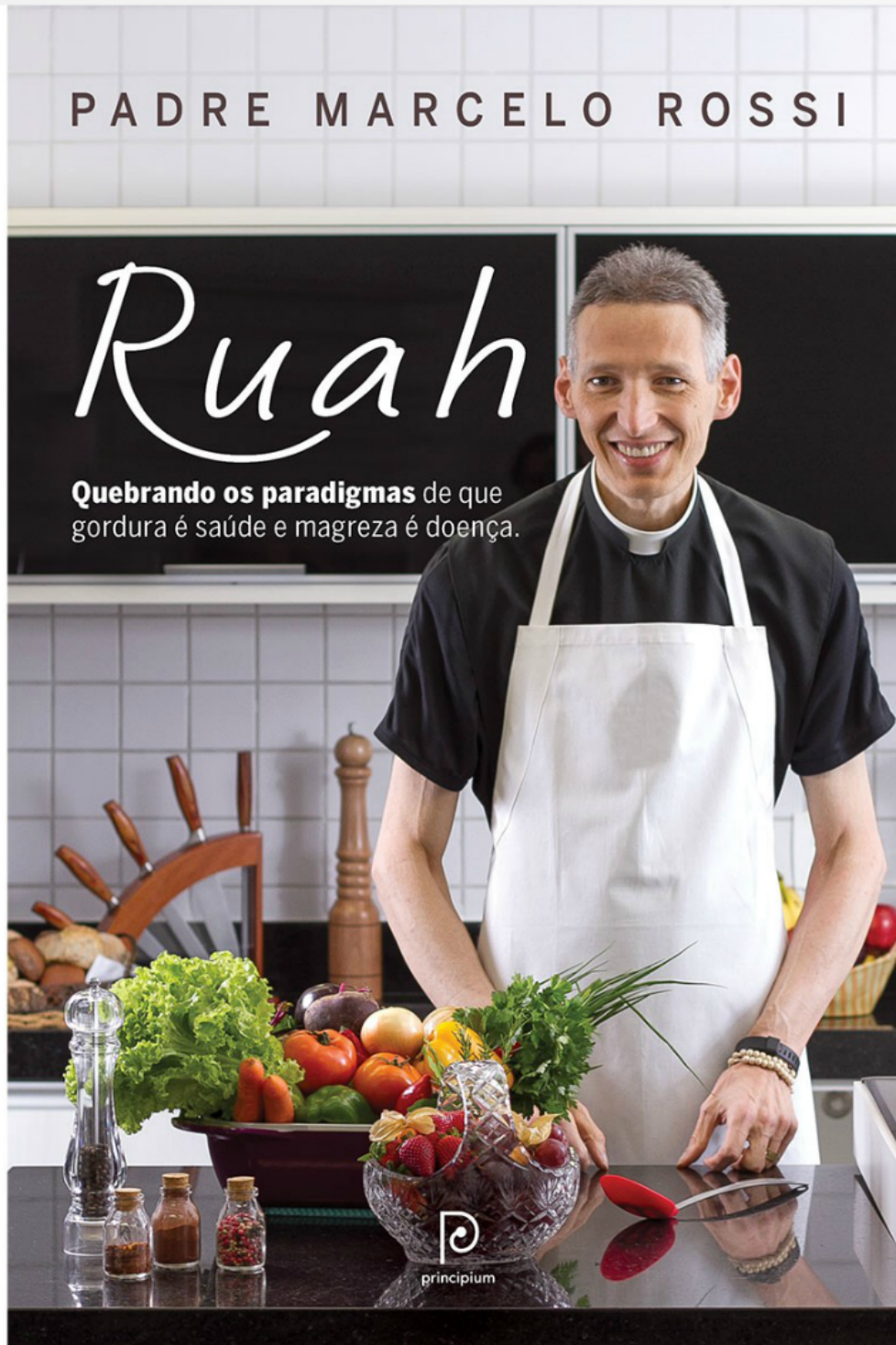
PADRE MARCELO ROSSI

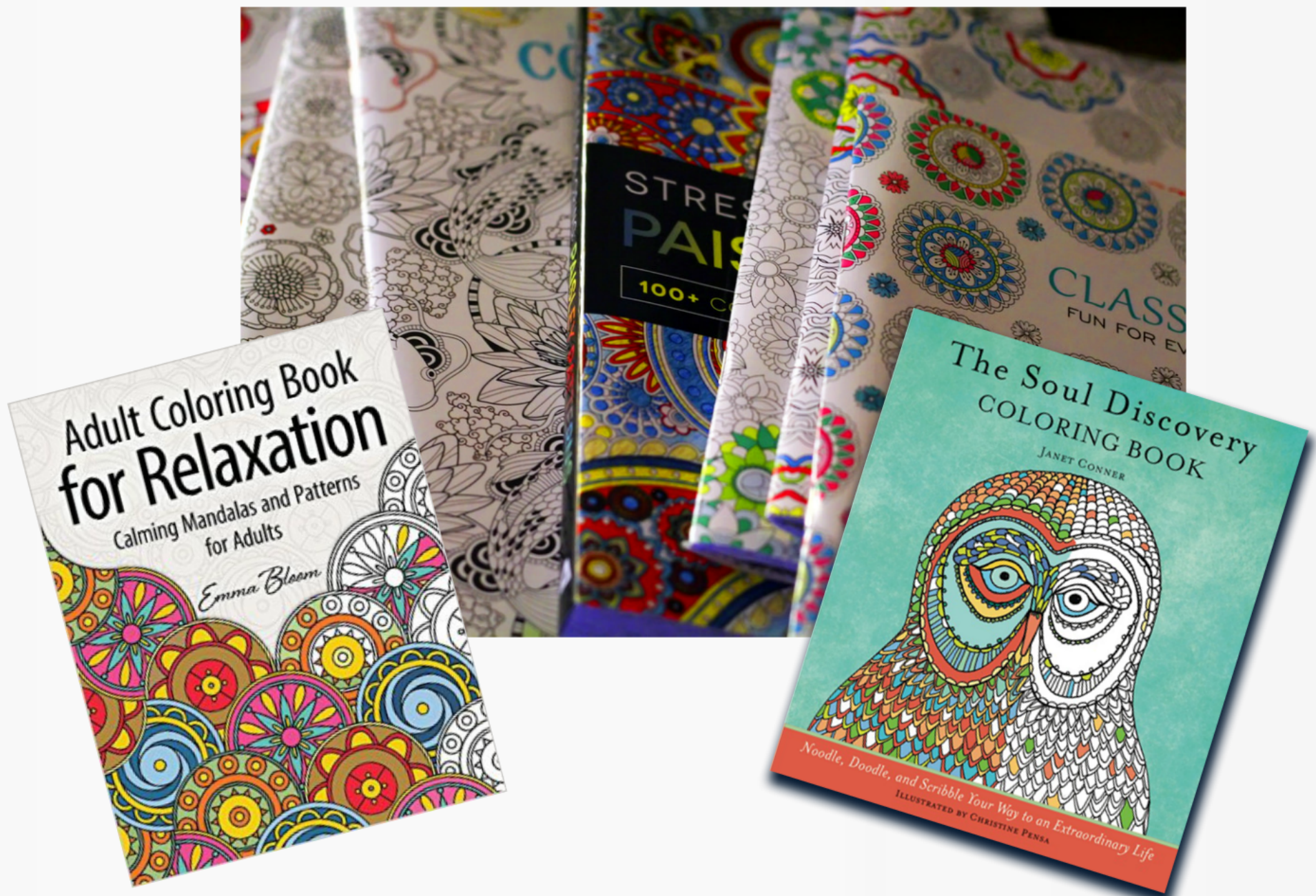
Ruah

Quebrando os paradigmas de que
gordura é saúde e magreza é doença.

For example, this cookbook accounted for the doubling of print book sales in Brazil in 2014 over the prior year.

Padre Rossi is a priest who is also a chef. He dispenses spiritual and life advice across popular Brazilian media.



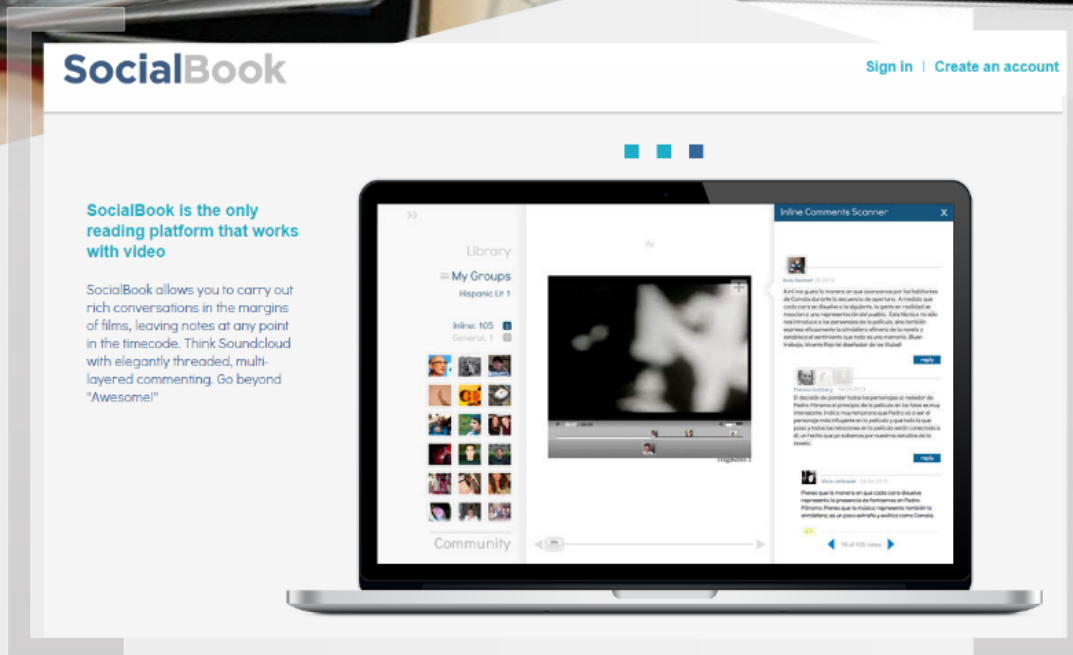


In the US and the UK, print books have seen a slight increase relative over the past couple of years due to the popularity of adult coloring books, sold as a kind of relaxation therapy for stressed professionals.



Children's books continue to remain popular as print titles. Families purchase these items as gifts as well as mementos and symbols of childhood.

Print Remains Dominant . . . For Now



source: BBC Future

However, we must remember that the reading habits and training of younger people has shifted dramatically. There are predictions that print will not be dominant in 30 years and that books will be seen as artistic artifacts.

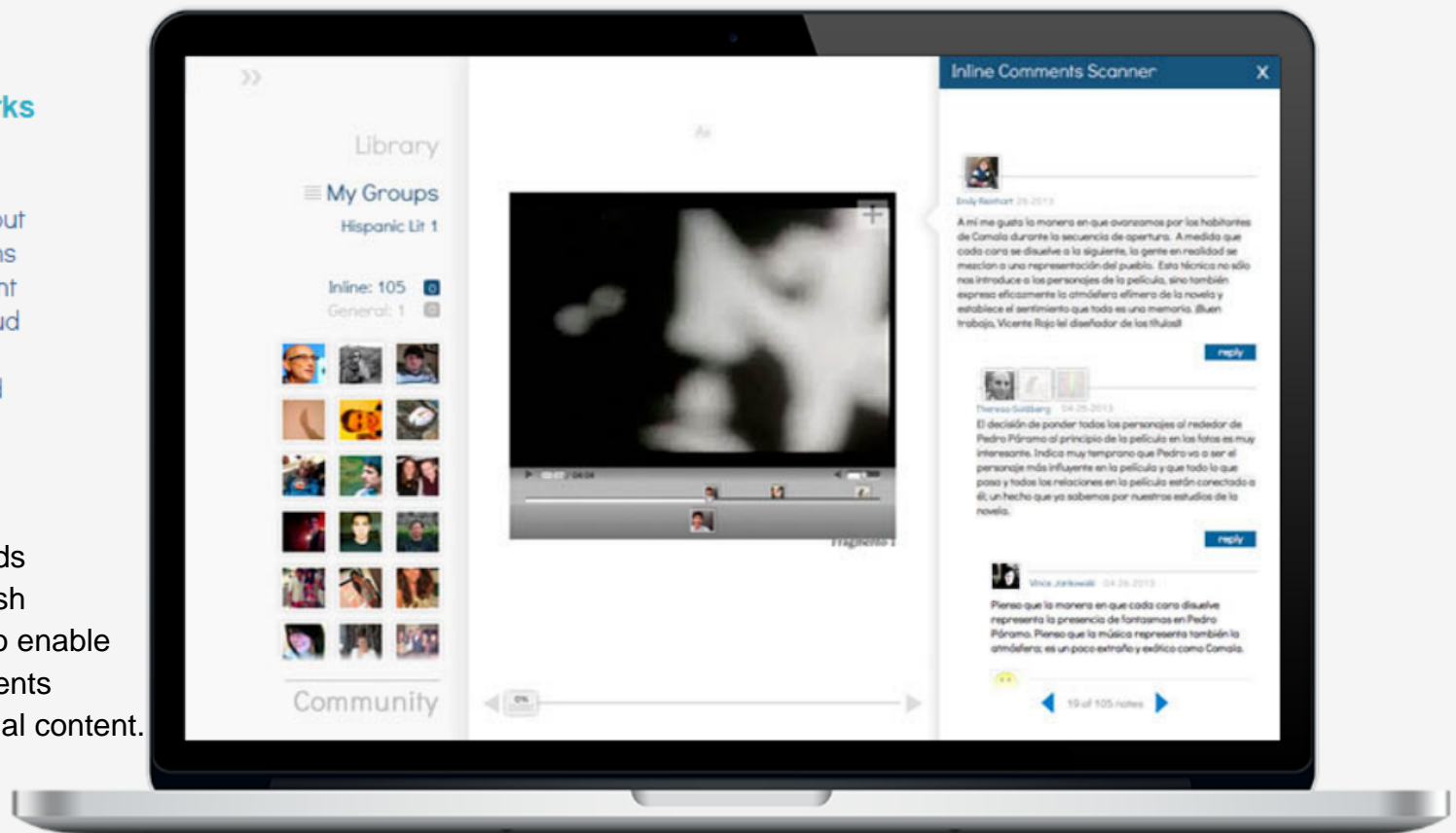
SocialBook

[Sign in](#) | [Create an account](#)

SocialBook is the only reading platform that works with video

SocialBook allows you to carry out rich conversations in the margins of films, leaving notes at any point in the timecode. Think Soundcloud with elegantly threaded, multi-layered commenting. Go beyond "Awesome!"

Social book is one of hundreds of education startups that push reading on digital platforms to enable a number of interactive elements to educational and recreational content.





40 percent of children under the age of two have used a mobile devices for media. Additionally, the amount of time children spend on mobile devices grows exponentially.



For those growing up as mobile digital natives, the richness and expansiveness of the visual and narrative content they are exposed to has become more realistic, as this demo video from Unity.ai demonstrates.

When we speak of the 'robots' part of the presentation, I used the word metaphorically to refer to the bundle of emergent technologies that are driven by machine learning, or 'artificial intelligence'

[Robots] Read



Artificial Intelligence

Machine Learning

YouTube



These technologies will drive the creation of 'fake content'. Publishers will need to adapt the technologies to be able to detect fraudulent and false content.

ai AUTOMATED
INSIGHTS

AP
**Associated
Press**

The Associated Press partnered with technology company automated insights to automatically generate its corporate earnings stories and some sports stories. There are now over 4000 such stories generated each quarter using these tools.

AP News

McCormick beats Street 3Q forecasts

October 02, 2014



SPARKS, Md. (AP) — McCormick & Co. (MKC) on Thursday reported profit of \$122.9 million in its fiscal third quarter.

The Sparks, Maryland-based company said it had profit of 94 cents per share. Earnings, adjusted for non-recurring costs, came to 95 cents per share.

The results topped Wall Street expectations. The average estimate of analysts surveyed by Zacks Investment Research was for earnings of 81 cents per share.

VIDEO: Adobe 3Q Sales Miss Estimates Amid Shift to Cloud

The spices and seasonings company posted revenue of \$1.04 billion in the period, which also topped Street forecasts. Analysts expected \$1.03 billion, according to Zacks.

McCormick expects full-year earnings in the range of \$3.30 to \$3.37 per share.

McCormick shares have declined nearly 5 percent since the beginning of the year, while the Standard & Poor's 500 index has increased slightly more than 5 percent. The stock has increased 1 percent in the last 12 months.

VIDEO: H&M 3Q Gross Margin 58.3%; Est. 58.4%

This story was generated automatically by Automated Insights (<http://automatedinsights.com/ap>) using data from Zacks Investment Research. Full MKC report: <http://www.zacks.com/ap/MKC>

Newswhip uses AI methods to surface trending topics from across all media to its clients. Publishers and content creators compete to find the topics on the 'edge of virality' and then move to publish stories around these topics, generating waves of trends.



"It's a one-stop spot to see what's trending all over the place."

BuzzFeed

fireflies.ai

Example of more sophisticated content production using AI: fireflies.ai 'listens' to meetings and instead of merely transcribing them, processes the information into notes, summaries, and action items, learning from the way a company prefers to document its meetings. This is no trivial task. The technology represents a major step forward in AI driven applications to generate sophisticated content without the intervention of human editors.

The screenshot displays the fireflies.ai web application interface. The top navigation bar includes the fireflies.ai logo, the text "Auto meeting notes", and a sidebar with links for "Overview", "Meetings", and "Logout". The main content area is divided into two columns. The left column lists recent meetings: "Krish + Sam <-> Mike 1:1" (8/07 at 12:00 pm) and "Lauren (InfluxDB) <-> Sam (Fireflies.ai)" (8/07 at 10:00 am). The right column displays the details for the "Krish Alec FB LiveStream Notes" meeting, including the creator (Krish Ramineni), date (8/16/17 at 5:36 pm), and duration (30 minutes). Below the meeting details, a "Context:" section lists key discussion points, and an "Action Items:" section lists tasks to be completed. A video player at the bottom shows a recording of a meeting between two men.

https://sandbox.fireflies.ai/meetings

fireflies.ai

Auto meeting notes

Overview

Meetings

Logout

Krish + Sam <-> Mike 1:1
Sam Udotong
8/07 at 12:00 pm + Fred

Lauren (InfluxDB) <-> Sam (Fireflies.ai)
lauren.partin@influxdb.com
8/07 at 10:00 am + Fred

Krish Alec FB LiveStream Notes

Meeting creator: Krish Ramineni
Date: 8/16/17 at 5:36 pm
Duration: 30 minutes

Context:

- The bot will pick up the important action items
- The bot will pick up the important action items and notes
- We had users give tremendous feedback on it
- Where are you guys going next with this?
- We were talking about what we were doing with Slack and email
- How did you bridge the gap between how people use you?
- The next frontier beyond bots is definitely voice.
- Can we connect the conversations on email, messaging and call data?
- How would I think about organizing that?

Action Items:

- It will send you notes afterwards
- You have to start the conversation with Siri
- I'd be writing notes and they'd be disorganized somewhere else

DIGITAL

AdWeek

Hearst Is Launching a 10-Person Team Tasked With Building Voice-Activated Experiences

Includes big bets on AI and AR

By Lauren Johnson | December 2, 2016



Native and Emerging Technologies (NET group)

Hearst's NET group represents a major investment in AI in publishing. The group has played a dominant position in delivering voice content to Amazon for its Alexa products.

'Computational Journalist'

<https://insights.ap.org/industry-trends/report-how-artificial-intelligence-will-impact-journalism>

Previously, the term computational journalist meant someone who could investigate large data sets from industry or government to discover stories based on hidden patterns or anomalies within the data. Now the term has expanded to mean a role within a news organization whose function it is to understand and implement the tools of computation to not only generate stories, but to manage the organization itself. Thus even for pure journalism, the integration of more advanced understanding digital technologies and in particular AI, will be important to the future of the craft.

“It is estimated that media companies and user-generated content creates over
2 billion digital images and over
1 billion hours of video watch time **every day**”

Justin Pang, Global Partnerships,
Google

Overwhelmingly the amount of content created today has shifted to the visual rather than textual.

Business Model Implications

Hypervisual

Content for Passive Computing Environments

Curation and Discovery and Integration



Move from Advertising to . . . Seamless Commerce

 MAGPIE



New Products

Rapid low cost products

Analysis and research products

Educational bundles

Platforms for Self Publishing

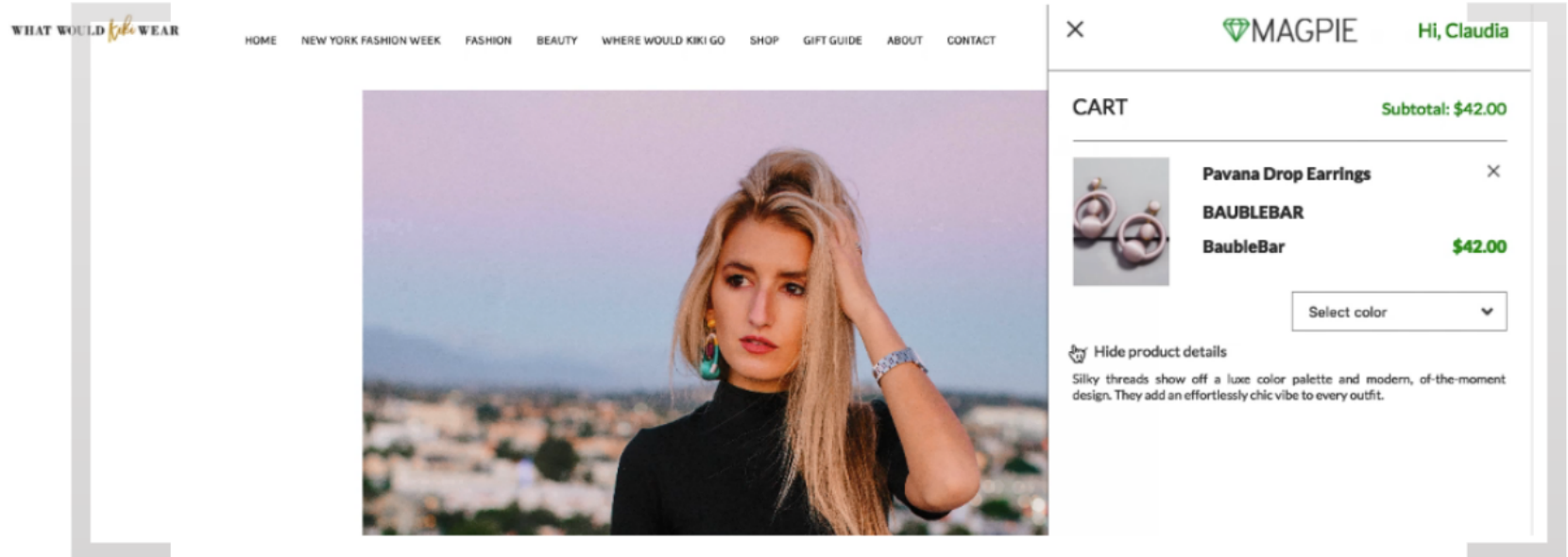
Hypervisual

We are now in a hypervisual content regime. Publishers must take into account what a hypervisual consumer will want or need from their products, entertainment, content for learning and recreation.

Content for Passive Computing Environments

Additionally, in an effort to get out from behind screens, computing is moving into the environment. Consumers are now consuming digital content as voice feeds that they can listen to while in the car or walking around their homes doing other tasks.

Move from Advertising to . . . Seamless Commerce



The next wave of revenue generation will come from direct selling of products and services from within the content rather than just advertisements.

Publishers have discovered a profitable position in curating and hosting events that use their expertise to bring together the best creators of goods and ideas to target audiences.

*Advertisers who might be hesitant about advertising in print see more and different value in sponsoring events.
“There’s money in this business.”*

Ken Doctor, media analyst



Example: Vogue India hosts an exclusive wedding event each year bringing together top brands and ultra consumers together in an invitation only event. The coffee table book they publish each year after the event about the event is a best seller on the mass market.

The Atlantic

The Atlantic publishing group derives nearly 30% of its revenue from being the organizer of events such as the Aspen Ideas Festival.



New Products

The new tools that allow publishers to go back into their catalogs and archives of text, images, and videos opens up the possibility to develop new products.

Rapid low cost products

Recombining content quickly from a back catalog allows low cost production of new products sold at lower price points.

Analysis and research products

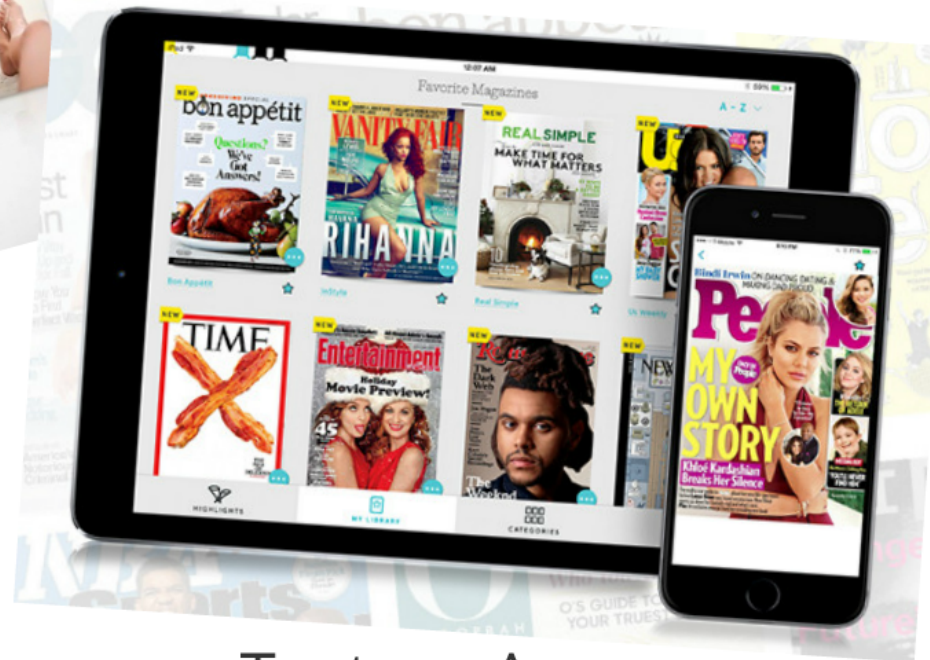
Bundles of content specifically developed for industry, government, or other specialized subscribers.

Educational bundles

Content can be recombined and published quickly for the educational market, combining first person content, videos, images as either subscription products or textbooks.

Platforms for Self Publishing

With the proliferation of individual content creators, there is an opportunity to create platforms for self publishing across a number of categories.



Texture App



“From text to images to video to audio, media is now completely machine readable”

Justin Hendrix, NYC Media Lab



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For any questions about these topics, please contact me, Niki Santo
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