

VISION & VALUE



**BEYOND THE AMAZON EFFECT - THE
ECONOMICS OF TRAVELLING BOOKS INTO THE
PLATFORM ECONOMY –**

THE FUTURE OF THE OLDEST INDUSTRY

MAY 2023



The publishing industry embodies a unique intersection of contrasting elements. It is indeed both:

1. On one hand, it is **the first industry to face the monumental disruption of e-commerce**. In 1995 Jeffrey Preston Bezos left a well-paid job at D.E. Shaw, a Wall Street investment bank to establish Amazon in a Seattle's garage, with the mission to revolutionise the publishing sector by building a unique competitive advantage.
2. Yet, it is **one of the oldest industrialized businesses**, tracing its mechanization back to Gutenberg's invention in 1455. As a matter of fact, there is a profound analogy between Internet (the technology that Bezos identified as the enabler of the great disruption) and the printing press: they both facilitated the widespread dissemination of information, reshaping power dynamics. It's noteworthy that two of the most impactful inventions in history are centered around books, as a mean to reproduce knowledge.

Today, the book industry can be described as **"glocalized"**, embodying both global value chain phases and language specific audiences/ products/ markets.

The industry is mainly dominated by a **few, large publishing houses** per national market although micro-publishers, independent presses and self-publishing are becoming more and more common.

At the same time, authors are increasingly tempted by the self-publishing option.

Some of the largest publishing companies also cover the distribution phase (for instance, Penguin Random House), while specialized book distributors, such as MESSAGERIE in Italy, act as intermediaries between publishers and retailers.

The book industry has experienced frequent **mergers and acquisitions**, with the first ones dating back to the 1960s and culminating in the formation of **big publishing conglomerates**. The merger between Penguin and Random House in 2012 marked a significant milestone, creating the largest trade publisher in the world, in **industry** which has become, according to some experts, almost an **oligopoly**¹ with a limited number of conglomerates dominating both the national and international market. Despite this consolidation, the industry remains "glocal", with most of the authors and clients still bound to their country by language and semantics.

Conglomerates leverage **media convergence** and **synergy effects**², exploiting different kinds of publishing synergies: content adaptation from the publishing industry to other media formats (games, movies...); tie-in products (such as movies based on books as their script as many of the Hollywood blockbusters); and finally, there is merchandise related to a book (here the most famous example is probably the Harry Potter saga). According to some analysts, books have gradually become **"hybrid"**³ **products**, as on one hand they are part of the media industry at large and, on the other, they require tailored print and digital strategies.

¹ Squires C., (2007). Marketing literature: the making of contemporary writing in Britain. Houndsmill: Palgrave Macmillan.

² Steiner, A., (2018). The Global Book: Micropublishing, Conglomerate Production, and Digital Market Structures, Publishing Research Quarterly, 34, 118–132.

³ Van der Weel A., (2014). From and ownership to an access economy of publishing. Logos, 25(2), 39–46.

Finally, books exhibit **elements of both private and common goods**. First of all a book is the of an industrial activity aiming at producing a private good and maximizing.

However, books possess a social and cultural value and can function as non rivalrous in consumption - it can be read and reread by multiple people – as well as non-excludable – especially when accessible in a public library.

Understanding this complex background is crucial for grasping the transformative nature of business models like **Amazon's** and for devising strategies for peculiar firms as **Messaggerie** that turn change into opportunities for the entire Italian industry.

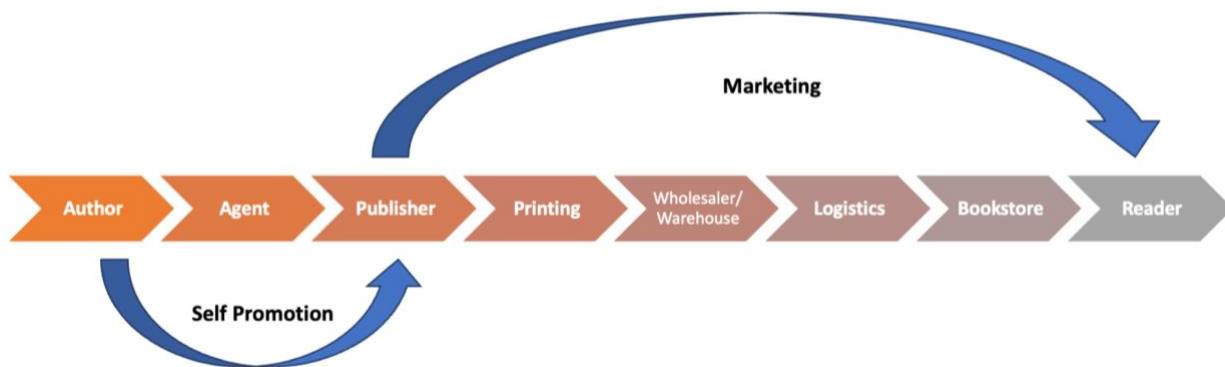
The study is structured as follows:

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1. THE GREAT DISCONTINUITY AND DISINTERMEDIATION ALONG THE VALUE CHAIN

For years, the book industry has followed a rather stable value chain which can be exemplified by the following chart:

FIGURE 1 - THE PRE-AMAZON BOOK INDUSTRY VALUE CHAIN



The whole chain is composed of **different but interconnected steps** – creation, production, dissemination, and consumption – that collectively constitute an integrated chain of economic activity⁴. Each stage contributes to enhancing the value of books:

- **Author:** the initial stage involves transforming ideas into material expression. In the traditional book industry value chain, authors could either use the services of an agent or choose to directly self-promote themselves to publishers.
- **Publishers:** publishers add value to books by leveraging resources and distribution channels to ensure a successful publication through editors, designers, illustrators, indexers, to package them for public consumption⁵.
- **Printers** (together with paper suppliers, and manufacturers) produce the final product in the form of a bound book.
- **Wholesaler/warehouse:** wholesalers stock books from publishers, and manage inventories largely made of unsold books, which can potentially lead to unsustainable losses for publishers.
- **Logistics:** this stage involves delivering the product to bookstores.
- **Bookstores:** physical bookshops enhance value by making the finished book easily accessible and available to **Readers**, who used to be a rather passive endpoint of the supply-driven value chain

Since the 2000s, **several challenges** have characterized the whole **book market**.

Digitization is the main one, as it has provoked changes both in book as a product and in the publishing chain, introducing new ways of publishing/selling and new key players. New technologies fostered the rise of big tech companies. **Amazon** – which originally started as a global online bookstore and then evolved towards selling all kinds of products⁶ – is currently a leader in the book sector and has completely revolutionized the whole industry.

⁴ https://www.wipo.int/edocs/mdocs/mdocs/en/wipo_ip_wk_del_07/wipo_ip_wk_del_07_www_215582.pdf

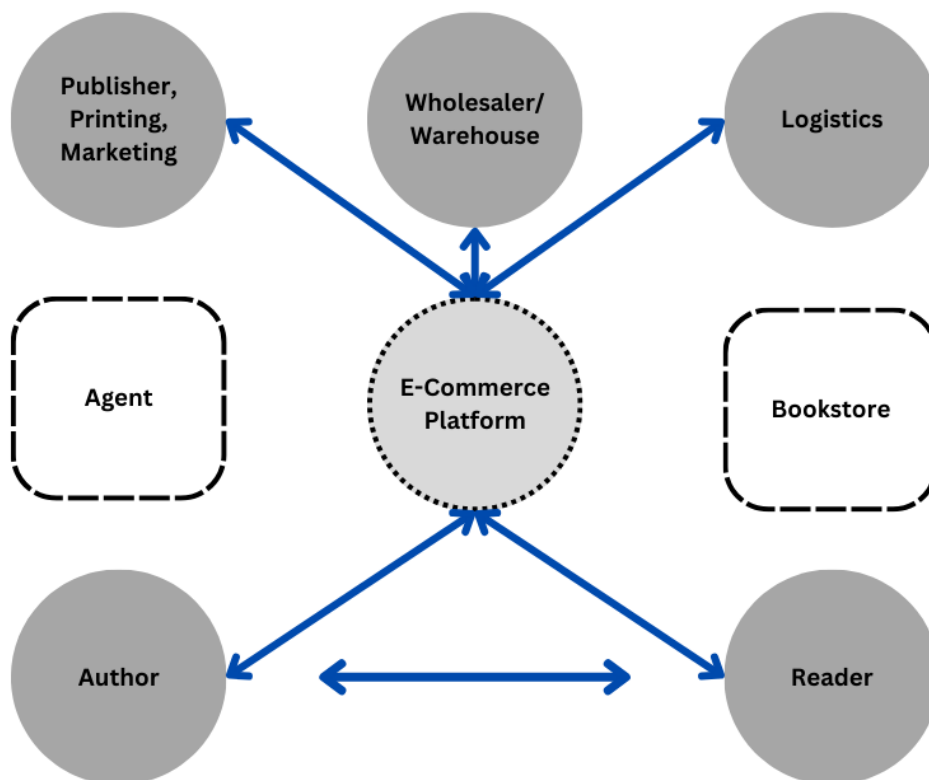
⁵ https://www.wipo.int/edocs/mdocs/mdocs/en/wipo_ip_wk_del_07/wipo_ip_wk_del_07_www_215582.pdf

⁶ Today, book sales only represent less than 10% of Amazon's revenue which, considering its annual income, is still a significant amount of money (around \$28 billion).

In addition to such pressures from above coming from the big tech companies, the publishing industry had to respond to pressures coming from below too – e.g., from small tech startups and individual initiatives – and had to move towards innovation.

The figure below shows how digitization and Amazon’s emergence have dramatically reshaped the value chain. In a nutshell, the traditional, linear relationship linking the author to the reader, was reshaped into a circular chain. The new value chain allowed both for the disintermediation of each of its phases and facilitates continuous feedback amongst all its actors.

FIGURE 2 – THE GREAT DISINTERMEDIATION



However, the disruptive changes introduced by Amazon and by new technologies did not “destroy” but rather strongly innovated the sector in three main ways:

- a) **Overturning relationships: the relationship between publisher and reader, as well as between authors and readers, has become bidirectional.** Previously, the sector aimed at pushing supply to create demand. Now readers ask for a specific product, and the suppliers must adapt to satisfy the request in the shortest time, possibly at a better price, and cater the shelf to individual preferences. The relationship between author and reader has become bi-directional too: self-publishing services allow authors to directly reach readers. Readers, on the other hand, can influence authors via relevant data on their customers’ behaviour.
- b) **Improved Delivery and Availability: centralisation of warehouses, home deliveries, and printing on demand** have significantly improved delivery times, product availability and potentially prices;

- c) **Use of Data: prominent use of data** allows for bidirectional relationships providing useful insights into customers' behaviour and enabling a more efficient use of resources at all stages of the value chain.

Some other elements have had a relevant impact on the book industry in the past decades:

The **advent of the eBook**⁷ revolutionized further the whole book industry, leading to an increasing dematerialization of physical books. E-readers have been around for many decades. In the seventies the DYNABOOK was engineered at the Palo Alto Research Centre (PARC) and in the eighties the US Department for Defence developed the Portable Electronic Aid for Maintenance (PEAM), a portable electronic manual for the army. Kindle (from Amazon), in particular, made eBooks⁸ a worldwide phenomenon. Currently, the USA and China are the two major markets, which together made up roughly 38% of the global market as of 2017⁹. Amazon dominates the eBook market in the USA and Europe and yet KOBO, NOOK and the German Tolino are growing. In China QQ Reading, owned by China Literature (CHN), is the leader. E-books and related technologies (e.g., eBook platforms, E-readers...) have made access to customers' data easier for authors and publishers. One of the main consequences of the rise of eBooks has been the crisis of physical bookstores and the decline of the booksellers' market.

The eBook has also fostered the emerging **phenomenon of "self-publishing"**, where books are promoted bypassing the traditional steps of the process and arriving directly to consumers. Self-publishers are thus gradually replacing publishers in their main competencies, as, together with independent authors, are increasingly involved in the stages of designing, publishing, promoting, and distribution. Amazon is a pioneer in the self-publishing industry, having created **Kindle Direct Publishing** (formerly known as CreateSpace). In 2019, 1.7 million books were self-published¹⁰ – almost half of the total amount of published books which was 4 million. By making e-books popular and creating Amazon Publishing services, Amazon made self-publishing faster and easier: E-books represent a low-risk format for authors who want to self-publish their work, as they present low fixed costs, and zero inventory costs and they can be easily replicated on demand. Many authors immediately seized the opportunity of self-publishing: already in 2013, half of the best-selling e-books were self-published¹¹. However, it must be noted that **self-publishing could never substitute** the services offered by major **publishing companies** (e.g. editing, quality control, promotion, access to bookstores), which is a reassurance to some of the publishing industry's worries.

The self-publishing phenomenon is also boosted by the **print-on-demand** business model. In the digital society, large financial investments are no longer required to publish a book. With the print-on-demand business model, self-publishing is even easier and cheaper: this service prints individual

⁷ The eBook is a book available in a digital format, free or paid, that can be read by electronic devices, tablets, phones.

⁸ More specifically, since the 1971 volunteer project called Project Gutenberg, aimed at creating a digital public library.

⁹ <https://asia.ub-speeda.com/en/ebooks-reading-lines/>

¹⁰ Voyles, B., (2021, 13 January). Amazon's impact on publishing transforms the book industry, Tech Target, available at: <https://www.techtargget.com/searchaws/feature/Amazons-impact-on-publishing-transforms-the-book-industry>

¹¹ Greenfield, 2013

copies of a book as orders come in, and then ships it directly to customers. In this way, accumulating heaps of unsold copies, and renting warehouses where to keep books, waiting papers, and materials are prevented.

With print-on-demand, you can monetize your existing audience and sell books directly to readers online, without the need for a publisher to print and promote your book. Outsourcing printing and fulfillment means you can focus on the business side of things instead of dealing with publishers and logistics.

A further consequence of these transformations has been a partial or complete **transformation of the actors** involved in the publishing value chain, making it more complex and challenging the traditional models.

Internet giants worldwide - such as Google and Amazon – dominate as online content providers gradually threatening the role of the main publishers.

Another interesting effect of the value chain disintermediation is the rise of a whole new range of **possibilities to advertise books**. This is a direct consequence of the transformations induced by new technologies in the field of marketing and advertisement. Social media and web analytics opened new channels of promotion and paved the way for new “advertisers”, namely influencers. **Book-influencers**, by sharing book reviews and suggesting titles to their followers (on platforms like Facebook, Instagram, YouTube, and even Spotify), have been playing a crucial role in the advertisement of books, stepping into the value chain in parallel with traditional advertisement.

Moreover, **intermediaries have reduced importance** in the distribution phases: transportation providers, storage services, and physical retail stores have been replaced by eBook hardware devices and by the print-on-demand strategy.

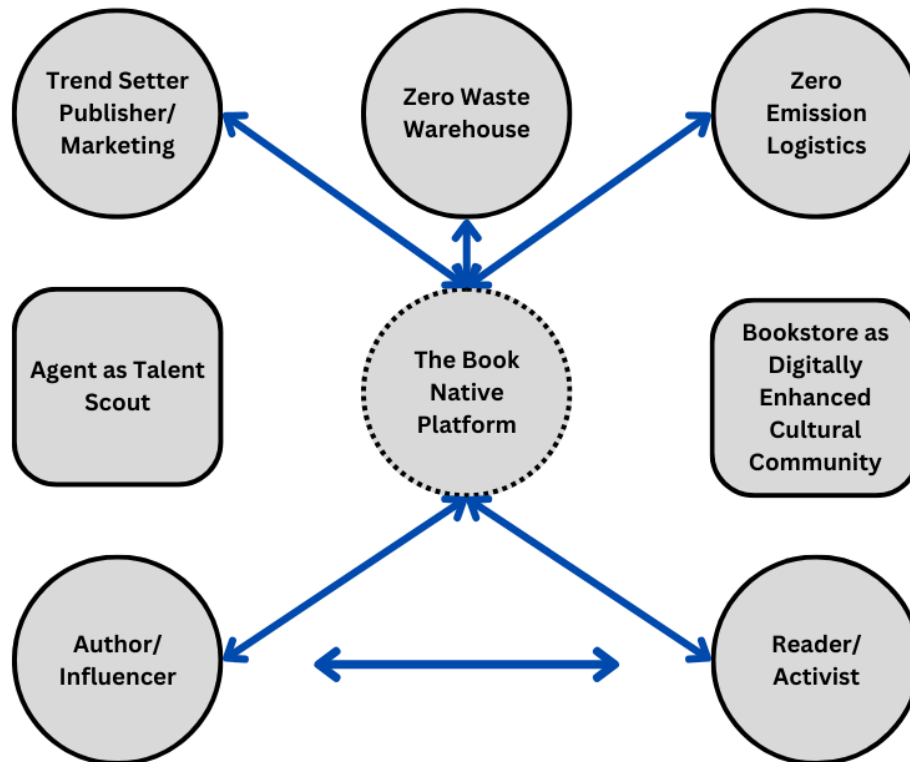
Despite these shifts, the book industry is still unstable.

As a matter of fact,

- a) Platforms retain an enormous technological lead.
- b) Traditional publishers still possess industry-specific knowledge.

As result, we see a new model rising combining the best of the two worlds:

FIGURE 3 - A NEW MODEL?



Where the value chain used to be linear and mono-directional, there will be a circular (or rather “radial”) value chain with the following features:

- **Authors** will also be able to act as influencers leveraging new technologies;
- **Agents** will act as talent scouts;
- **Publishers**, with marketing services and activities, will be able to act as trend setters;
- A diffused and growing interest in environmental issues, will drive towards **zero-waste warehouses and zero-waste logistics operations**;
- **Bookstores**, through the possibilities offered by virtual reality and digital instruments, will offer increasingly interconnected experiences and will transform into **digitally enhanced cultural communities**; moreover, bookstores can move from the role of “**sellers of texts**” to that of “**producers of knowledge**”, therefore in a dimension more focused on the “**knowledge of the author**” or the “**creation of cultural experiences**”;
- **Readers**, whose actions have traditionally been influenced by what they read, will be able to act as activists even more, due to the pervasiveness of the content conveyed through new technologies.

This shift to online retail not only changed the distribution landscape but also initiated a wave of digital transformation, forcing publishers and distributors to rethink their strategies in response to an evolving market.

In the realm of **Digital Content Curation and Discovery Platforms**, Goodreads and Storytel have proven the impact of algorithm-based suggestions on reader engagement through their repeated successes in this field. Goodreads with its 150 million members as of 2023 utilise user data for reading suggestions akin to Netflix's content curation. This not only democratizes access to literary works but also provides valuable data for publishers to analyze reader preferences and target audiences effectively.

On the other hand, **Social Media and Influencer Marketing** have become crucial for book promotion. The surge in book popularity on platforms like TikTok, evidenced by a 1,500% increase in tagged videos under #BookTok in 2021, has propelled many books to bestseller status, underscoring the significant role of social media in today's literary market. Influencers, boasting vast follower counts, are now integral to book marketing, with their endorsements often resulting in substantial sales spikes. For instance, a single recommendation from a prominent BookTok influencer can cause sales of featured books to skyrocket by up to 300%, highlighting the immense influence of these digital platforms on book consumption

2. THE BEST OF TWO WORLDS: CENTRALIZED LOGISTICS AND HYPER GRANULAR DEMAND MANAGEMENT

The fundamental difference between Amazon's publishing model and the traditional one lies in its **data-centric approach**, instead of the intuition-driven methods that usually guide a publishing company. Amazon's innovation stems from its **direct access to useful data from readers/consumers**, while these are not readily available to publishing companies. As a matter of fact, Kindle Unlimited (which is Kindle's subscription library and has reached 3 million subscribers) is specifically designed to show not only the readers' preferences on books but also which books they stick with from the beginning to the end. This gives Amazon access to an immense pool of data that is extremely useful to make data-driven decisions on what to propose to readers. This is both much more effective and much less costly because it completely bypasses traditional gatekeepers – such as agents, reviewers and editors.

It is interesting to note that a similar technique (the use of a data-centric approach to publishing) is already being experimented in China¹², where successful writers are being discovered through online platforms if they manage to attract a significant number of followers.

Publishers have significantly worried¹³ that the advent of Amazon and e-books might erode printed book prices, threaten traditional book distribution and undermine their oligopolistic power. In 2014, Amazon already held a 40% market share of all trade book sales (both in printed and digital format); the absence of alternatives that were able to substitute **Amazon** as a book retailer and its enormous share of book sales gave it a **monopsony power** as both e-books and printed books buyer. By 2022, Amazon increased its share, accounting for almost half of the sales of the five bigger publishing

¹² Emergent writers post their novels on specific websites (e.g. Qidian or Jinjiang) where they can gain followers and readers and, if they become popular there, movie companies may reach out to them.

¹³ Gilbert, R.J, (2015). E-books: a Tale of Digital Disruption, *Journal of Economic Perspectives*, 29(3),165-184

companies in the world¹⁴ and for 80% of book distribution in the US. Amazon's innovative business model has gained a competitive advantage by combining centralized logistics and direct access to consumers' data, in what can be defined as a **"hyper-granular demand management" model**.

Big publishers began to fear that Amazon could **"disintermediate" the supply chain**, substituting traditional publishers as sources and distributors of books¹⁵: the entrance of Amazon and other e-retailers (e.g. Apple with iBooks) into the book retailing business is an example of **backward vertical integration of the (book) supply chain**, as they directly act as agents for authors, who can use their platform to self-publish their books. To realise that **self-publishing could never perfectly substitute** the services offered by major **publishing companies** (e.g. editing, quality control, promotion, access to bookstores...) has provided a reassurance to some of the publishers. However, the advent of Amazon and other big tech companies forced the **book industry to adapt and innovate to keep a competitive position**, prompting experimentation of **different strategies** to respond to Amazon's competition on the market, which led **new innovations and business models**¹⁶.

Disparate business models have been tested, from tools to break down barriers between publishers and consumers to new distribution methods or new means of communication between authors and publishers.

Barnes & Noble – the largest brick-and-mortar bookseller in the US, not only launched its own e-commerce platform (Penguin Random House, one of the largest publishers and distributors in the world, did the same) but also introduced new services such as free in-store pick-ups for online orders and a membership program that includes free shipping and other advantages to the company's customers.

Ingram, which is the world's largest book wholesaler, introduced a series of services to booksellers and publishers, including print-on-demand services or digital distribution services allowing publishers to get their books into e-book platforms.

Some companies have tried to offer services that are additional to those provided by Amazon, as an **added value of their products** – e.g., Book-Baby, a self-publishing platform that also offers book editing, design and distribution services, while authors retain all rights and royalties to their work.

In an attempt to fight back Amazon's competition in the book industry, some traditional publishers have tried to **bring e-books to a smaller market niche**, but this strategy failed. For instance, some of the main publishing companies tried to delay the release of their e-books in order to prevent readers from buying the e-book only and to push them towards the printed book that was released first. This strategy was followed by several companies such as Macmillan, Simon & Schuster, Hachette, HarperCollins¹⁷. However, these companies abandoned this strategy as soon as it became

¹⁴ McLoughlin, D., (2022, 9 November). Amazon Book Sales Statistic, Worldsrated, available at <https://wordsrated.com/amazon-book-sales-statistics/>

¹⁵ Gilbert, R.J, (2015). E-books: a Tale of Digital Disruption, *Journal of Economic Perspectives*, 29(3),165-184

¹⁶ Faherty A., (2013). Curiouser and curiouser: novelty-centred business models and value creation in established publishing firms. *Int J Book*, 11(1), 39–57.

¹⁷ Gilbert, R.J, (2015). E-books: a Tale of Digital Disruption, *Journal of Economic Perspectives*, 29(3), 165-184

obvious that it was not working the way they hoped – plus, the “windowing” effect created a void that was filled by piracy, encouraging to diffuse illegal and unofficial versions of those e-books.

The strategy of inducing higher prices for e-books by **increasing the price of printed books failed too**, since Amazon had enough power as a buyer to simply refuse to buy titles from publishers with high prices. Moreover, such a strategy is destined to fail if adopted by only one publisher that would immediately be cut out of the market.

Publishers tried new strategies to compete with Amazon by **partnering with libraries and educational institutions**, expanding their reach in educational settings. They offered digital and physical books, adapting to the digital age by providing resources for interactive learning. However, these initiatives faced challenges like restrictive e-book lending policies and limited digital infrastructure in schools, which hindered widespread adoption.

Companies like BookBaby expanded their **services to authors by offering a comprehensive range of assistance**, including editing, design, and marketing support. These moves empowered authors by giving them more control over the publishing process. However, despite these advantages, these platforms faced difficulties in reaching as wide an audience as Amazon. Amazon's vast reach, extensive customer base, and dominance in the online book market posed significant challenges for competing platforms. Despite offering valuable services to authors, these kinds of companies struggled to match the visibility and accessibility that Amazon provides to both authors and readers. As a result, while authors may benefit from the personalized services offered by platforms like BookBaby, they may find it challenging to achieve the same level of sales as they would on Amazon.

An alternative for publishing companies involved implementing **“agency prices”**, setting fixed prices for books and e-books sold to Amazon and other e-retailers. The agency pricing model is the opposite of the wholesale one – which has been traditionally used in the book industry. In the first case, Amazon and the other retailers would act as “agents” of the publisher, sticking to the price set by the publishing company and retaining a pre-established commission for the services they offer. In the traditional wholesale pricing model, on the contrary, publishers sell books to retailers at a wholesale price and the retailers are free to set the price they want.

3. THE MAIN INNOVATION TRENDS: BUSINESS INTELLIGENCE, PRINT ON DEMAND AND ZERO WASTE AUTOMATED WAREHOUSES/ TRANSPORTATION

The rise of new technologies and the pressure generated by big techs entering the book sector pushed the whole book industry to evolve in order to maintain competitiveness. As mentioned above, one of the most innovative features of big tech companies was their brand-new data-centric business model, leveraging a huge amount of useful data to make better-informed business decisions.

This shift has spurred traditional players to embrace **business intelligence solutions** such as **data analytics, inventory management, pricing analytics, customer analytics and sales forecasting** to gain useful insights into users' behaviors and preferences.

3.1 BUSINESS INTELLIGENCE: DATA AND CUSTOMER ANALYTICS TOOLS

Many publishing companies and/or distributors have bolstered their data and analytics capabilities¹⁸, employing tools that allow them to collect and analyze large amounts of data to identify trends or patterns¹⁹.

For instance, **Penguin Random House** began using some data analytics services offered by Microsoft (Microsoft Power BI, Microsoft Azure, Azure Cognitive Search). Thereby, PRH can easily gain a better view of consumer data across different countries, reducing the amount of time needed to transform a huge volume of information into meaningful business decisions. The use of these services allows employees to save time (for instance, analysts can spend more time evaluating data rather than gathering it). Moreover, they allow the company to foresee trends as soon as they emerge and better navigate through their consumers' preferences.

Within the spectrum of Business Intelligence, number of publishers and distributors have enhanced their data analytics capabilities, adopting sophisticated tools to interpret vast datasets and trends. **Macmillan Publishers**, for instance, employs advanced analytics to analyze reader behaviors and preferences across digital platforms, identifying the most effective advertising channels and formats. This approach not only boosts the impact of their marketing efforts but also promotes the visibility of their titles in the digital realm.

On the supply chain front, **Scholastic** has integrated Business Intelligence tools to refine their distribution strategies. By leveraging **real-time sales data**, they balance book demand with supply, mitigating surplus stock and ensuring the availability of popular titles in regions with high demand. This strategic application of BI tools streamlines operations, reduces costs, and contributes to a more sustainable publishing model.

Furthermore, through sophisticated data analysis, Bloomsbury Publishing delves into reader engagement metrics, such as repeat purchase rates and time spent reading. Insights from this data inform tailored engagement strategies, ranging from personalized book recommendations to interactive author events, deepening the reader-publisher connection. These data-centric initiatives foster reader loyalty and solidify Bloomsbury's competitive edge in the market.

New companies were founded with the specific purpose of collecting data for publishers: **Jellybooks** is one of them, offering free eBooks to readers in exchange for the possibility of collecting their data

¹⁸ Yi, F. (2020). Application of Big Data in Publishing Industry. In: Xu, Z., Parizi, R., Hammoudeh, M., Loyola-González, O. (eds) *Cyber Security Intelligence and Analytics*. CSIA 2020. *Advances in Intelligent Systems and Computing*, vol 1146. Springer, Cham. https://doi.org/10.1007/978-3-030-43306-2_91

¹⁹ Karan, P.: The evolving media, publishing and entertainment landscape: challenges and opportunities. *Siliconindia*, 35–36 (2017)

and giving it to publishers. Readers are not asked to read on the company's platform – they can read the eBook on whatever platform they use. Each eBook comes with software that can record all the useful data coming from the readers' behavior. For instance, what genres or titles they like the most, how long it takes them to read it, at what time of the day they usually read, and so on.

Other companies provide machine learning services to publishers and authors aimed at making sure their titles reach a vast audience through effective keywords. **Kadaxis**, for example, is one of these companies: it uses **machine learning** to understand which are the most used keywords by readers to search new books online and helps businesses to increase their online visibility.

By employing Kadaxis' search and recommendation APIs (Application Programming Interfaces), publishers can create customized feeds for their clients on their online catalogs or easily determine the right category to assign to a specific book – so that it can be found by those who browse through that category). Whereas it might be time-consuming for a publisher to understand the right BISAC (Book Industry Standards and Communications, a worldwide homogenous system for categorizing books) category for a book, Kadaxis can quickly extract and compare keywords from a book and determine the right category right away.

Companies have also resorted to **pricing analytics tools** – which help them setting prices that are competitive compared to Amazon's prices. This implies real-time monitoring of the market and competitors' prices – as well as sales forecasting tools to predict future sales based on market trends or historic sales data.

Some²⁰ have also been suggesting to **use of the new technologies** that frame the so-called Industry 4.0 **to make the publishing industry more decentralized** and restore value and power in the hands of authors, publishers and service providers. For instance, this would entail using blockchain technologies to allow metadata repository, to share and monetize customers' behavioral data, to better manage rights in the publishing industry, to distribute eBooks, to shift identifier issuance from a centralized system (focused on Bowker) to a low cost and decentralized system. Artificial intelligence (AI) and machine learning (ML) techniques are used not only to create content, summarize and edit texts, but also to analyse sales and customer behavior.

3.2 PRINT-ON-DEMAND

One of the main innovations²¹ allowed by business intelligence solutions and pioneered by Amazon is certainly represented by Print-on-Demand (POD) solutions²². With print-on-demand, books are produced individually or in small batches, to respond to specific orders. So, unlike traditional printing (which requires large print runs), POD services allow for books to be printed only when needed and in the quantity needed. As previously mentioned, the rise of POD services was fostered by Amazon, together with the phenomenon of self-publishing.

²⁰ Beştaş M, Taş R, Akin E, Ozkan-Okay M, Aslan Ö, Aktug SS. (2023). A Novel Blockchain-Based Scientific Publishing System, *Sustainability*, 15(4), 3354. <https://doi.org/10.3390/su15043354>; Sim, C., (2022, 22 June) A Decentralized Publishing Ecosystem, Kadaxis Blog, available at www.kadaxis.com.

²¹ Rosnan, S. M., Zakaria, S. F., & Masod, M. Y. (2015). The Implications of E-Book on Print-Book Industry: Will Printers Survive?. In *Proceedings of the International Symposium on Research of Arts, Design and Humanities (ISRADH 2014)* (pp. 187-192). Springer Singapore.

²² Wilson-Higgins, S. (2011). Could Print on Demand actually be the new "interlibrary loan"?, *Interlending & Document Supply*, Vol.39, No 1., pp-5-8.

Kindle Direct Publishing (Amazon's self-publishing service) is the most famous e-commerce platform in the world, accounting for 50% of all online book sales. Amazon authors receive royalties between 35% and 70% on each copy sold, percentages that depend on the book price, territories where it is distributed, and whether it will be published exclusively with KDP. The prices listed also exclude delivery costs and VAT, which for eBooks in Italy is 4%. KDP has some important limitations: the accepted eBook format is only for Kindle e-readers, which could limit the spread of your work to other digital readers. Additionally, if you want to take advantage of Kindle Direct Publishing's promotion services, you must give exclusive rights to this platform, which means limiting the distribution of your eBook through other sites (including your personal blog).

Print-on-Demand services have revolutionized²³ the entire book industry²⁴ in terms of:

a) Cost-efficiency for small publishers and self-publishers: before POD, new authors had to face significant barriers to entry into the book industry. Printing and distributing books in large quantities was financially challenging for those players. **E.L. James and *Fifty Shades of Grey***²⁵ is an example that not only illustrates the power of POD to reduce entry barriers for new authors but also shows how it can lead to unprecedented success in the literary world.

b) Customization and personalization: POD services allow authors (especially self-publishers) to customize their work more easily than they would when working with big publishing houses. Lisa Genova used print-on-demand to customize her debut novel ***Still Alice***²⁶, effectively targeting her audience and transitioning from self-published author to bestseller.

c) Reduced environmental impact: traditional publishing often causes significant waste due to unsold copies and excess inventory. Print-on-demand, on the other hand, minimizes waste by allowing to print books only where necessary. Moreover, emissions related to the transportation of large quantities of books are also reduced. Moreover, emissions related to the transportation of large quantities of books are also reduced. **Pearson's** zero-waste practices in its distribution operations, advancing sustainability. Through supply chain enhancements and efficient logistics, Pearson significantly reduces its environmental impact, aligns with sustainability goals, and boosts operational efficiency.

d) Reduced inventory and overproduction: POD allowed for smarter warehouse management. Traditional printing entails producing larger quantities of books, which leads to the production of excess inventory. With POD, inventory and associated costs are reduced.

The shift in the global publishing industries²⁷ has been particularly pronounced during the COVID-19 pandemic, leading to an increased demand for personalized and unique products. The global

²³ Wilson-Higgins, S. (2018). The Impact of Print on Demand on Academic Books, Glyn Jones.

²⁴ Hyatt, S. (2002). *Judging a book by its cover: e-books, digitization and print on demand*. Facet.

²⁵ Julie Bosman, 2012. Retrieved from; <https://www.nytimes.com/2012/05/22/books/fifty-shades-of-grey-by-e-l-james-in-demand-at-libraries.html>

²⁶ David Meerman, Scott, 2015. Retrieved from; <https://www.davidmeermanscott.com/blog/from-rejected-to-a-blog-to-a-nyt-best-selling-author-to-walking-the-red-carpet-at-the-oscars>

²⁷ Straitsresearch, 2023, Retrieved from: <https://straitresearch.com/report/print-on-demand-market>

print-on-demand market, valued at approximately \$6.3 billion in 2022, is projected to reach about \$45.6 billion by 2031, with a compound annual growth rate (CAGR) of approximately 25.3%. This growth highlights the rising preference for personalized products and the accelerated shift towards e-commerce catalyzed by the pandemic.

Regionally²⁸, **North America** currently stands as the largest market for POD, with significant contributions from the United States in 2022. However, the Asia Pacific region witnessed the most substantial growth in the coming years, with a projected CAGR of 27.5%, according to Grand View Research. This growth is attributed to the rising demand for custom and unique products, particularly among the younger generation, and the rapid penetration of online retail in the fashion space.

As digital technologies reshape the publishing industry, companies like Blurb and Lulu exemplify the successful application of self-publishing and print-on-demand (POD) models. Both companies provide robust platforms that empower authors and creators to independently publish their works with minimal upfront costs.

Blurb offers a user-friendly interface where individuals can create, publish, and distribute photo books, trade books, and magazines. Their service includes professional tools for design and layout. Blurb lets you print on-demand and distribute copies through Amazon and over 39,000 stores²⁹, significantly reducing the need for large inventory and decreasing the financial risks associated with traditional publishing.

Lulu operates on a similar model, focusing on providing authors with the tools to publish books and calendars in both print and digital formats. Since its start, Lulu³⁰ has helped publish over two million titles. The platform is renowned for its extensive distribution network, which includes major retailers like Amazon, Barnes & Noble, and Apple's iBookstore. Authors benefit significantly, retaining up to 80% of the profits from sales, emphasizing Lulu's commitment to supporting authors' financial and creative independence.

Overall, POD services³¹ have on the one hand democratized the book industry, making it more accessible to smaller players, more environmentally friendly and more cost-effective. On the other hand, they have also contributed to significant changes in the value chain of the industry (**see Figure 2**). In fact, POD and self-publishing have disrupted the existing publishing model, in terms of **content creation** (authors can bypass traditional gatekeepers such as literary agents and publishers and can now choose their content without depending on publishing contracts); **distribution** (through e-

²⁸ Grand view research, 2023. Retrieved from: <https://www.grandviewresearch.com/industry-analysis/print-on-demand-market-report>

²⁹ Blurb, 2024, Retrieved from: <https://www.blurb.com>

³⁰ Scott Allan, 2020, Retrieved from: <https://selfpublishing.com/lulu-publishing-press/#:~:text=This%20self%2Dpublishing%20company%20prints,Hat%20co%2Dfounder%20Bob%20Young.>

³¹ Gallagher, K. Print-on-Demand: New Models and Value Creation. *Pub Res Q* **30**, 244–248 (2014). <https://doi.org/10.1007/s12109-014-9367-2>

commerce platforms or their own websites authors can directly sell their products bypassing intermediaries) and **marketing** (through self-promotion via social media, author websites, targeted advertising through non-conventional channels). Moreover, self-publishers also have more control over pricing and royalties, which often allows them to gain higher percentages from sales compared to traditional publishing contracts.

3.3 ZERO-WASTE WAREHOUSES

Another instrument that many companies integrate into their business model is represented by **inventory management softwares**³² enabling the automation of the whole process and providing several benefits such as:

- 1) Tracking and managing companies' inventory in a centralized database;
- 2) Inventory planning and order forecasting thanks to the analysis of data trends;
- 3) Automation of the bookkeeping process with goods receipt and fulfillment;
- 4) Improvement of companies' fulfillment process by avoiding stockouts;
- 5) Managing stock levels through multiple warehouses and stores.

Many publishing companies and book distributors adopted these technologies, such as **Penguin Random House** (with a software called Vistaar), Barnes & Noble (that developed its Integrated Inventory Management System to ensure consistent stock availability), the leading publisher of children's books **Scholastic** (which uses a system called Scholastic Analytics). The distributing company **Ingram** uses its iPage system, providing real-time information on inventory and pricing, enabling customers to place orders, and offering several reporting and analytics tools³³.

Those business intelligence tools allowed companies in the book industry to achieve a more sustainable, waste-reduction-oriented management of their warehouses and logistics operations. Several elements fostered this evolution:

a) The diffusion of digital publishing and e-Books, including POD solutions: the Cleantech Group's³⁴ study on the Amazon Kindle highlights its potential to significantly reduce the carbon footprint associated with traditional book publishing. By replacing the purchase of 22.5 physical books annually, a Kindle can offset the carbon emissions from its entire lifecycle after just one year of use, potentially preventing approximately 1,074 kilograms of CO₂ emissions if used to substitute three printed books per month over four years.

b) Data Analytics and Demand Forecasting: Amazon uses data analytics to precisely forecast book demand, optimizing stock levels to prevent overstocking and shortages, thereby minimizing waste and improving efficiency in the publishing sector.

c) Digital Asset Management Systems: Digital Asset Management (DAM) systems organize and store digital content, including book files, cover designs, and other assets. These systems streamline content retrieval and version control, reducing the need for physical copies and minimizing waste associated with outdated or redundant materials. Hachette Book Group optimizes their publishing

³² Sumit Maheshwari, Prerna Gautam & Chandra K. Jaggi (2021) Role of Big Data Analytics in supply chain management: current trends and future perspectives, *International Journal of Production Research*, 59:6, 1875-1900, DOI: 10.1080/00207543.2020.1793011

³³ Ingram Content Group, iPage Education Hub, www.ip.ingramcontent.com

³⁴ JOE HUTSKO, 2009. Retrieved from: <https://archive.nytimes.com/green.blogs.nytimes.com/2009/08/31/are-e-readers-greener-than-books/>

process using Digital Asset Management (DAM) systems to manage digital content like book files and marketing materials efficiently. This reduces their need for physical copies, cutting down on paper waste and enhancing sustainability.

d) Reverse Logistics Solutions: Reverse logistics technologies enable efficient management of book returns and remanufacturing processes. By streamlining the return and refurbishment of unsold or damaged books, these technologies minimize waste and promote the reuse or recycling of materials. **Amazon**³⁵ exemplifies effective reverse logistics in the book industry by refurbishing and reselling returned books, minimizing waste and promoting reuse or recycling. This approach reduces environmental impact and lowers waste management costs.

inventory management software helps

4. THE IMPACT ON THE PRODUCT: NEW AUTHORS; NEW SEGMENTS OF READERS

As previously mentioned, the rise of big tech companies in the book industry (especially Amazon) and the use of new technologies not only led to the transformation of the whole value chain in this industry but also triggered the **transformation of the product itself** – meaning the book.

Amazon's **Kindle** led to a true digital reading revolution: in fact, even though electronic books have existed since the 1970s – more specifically, since the 1971 volunteer project called Project Gutenberg, aimed at creating a digital public library – they were a niche product in the industry and it was only with Amazon's Kindle that they became truly popular and comfortable to read.

Besides **disrupting the traditional publishing model** – as described in paragraph 1 of this paper – eBooks changed the whole concept of book as a product, making it **more accessible** to readers (in terms of costs and physical accessibility), **more environmental-friendly** (reducing the consumption of paper), ensuring an **enhanced reading experience** for readers. Moreover, eBooks **opened new possibilities for authors** by fostering the phenomenon of self-publishing (as mentioned above), eliminating barriers to entry for niche genres and specialized non-fiction, and making it easier for small and independent authors to publish their work. As already mentioned, the use of eBooks and data analytics allowed companies to gather large amounts of data on readers/consumers and to develop data-oriented business models.

The negative consequences of the rise of eBooks in terms of **revenue pressures** (eBooks, being cheaper than printed books, have contributed to declining revenues for traditional publishing houses), **costs related to the format transition** (from printed books to eBooks, which requires investing in technologies and expertise) and changes in the role of traditional publishers have raised several concerns in the publishing industry. However, **traditional printed books continue to be preferred** by the majority of readers worldwide: a survey among book readers of all ages in Europe (including the UK) and the US, conducted by Stora Enso in 2022, proved that 65% of respondents preferred physical books whereas 21% preferred eBooks and only 14% audiobooks.

³⁵ <https://shipscience.com/exploring-amazons-reverse-logistics-strategies/>

Audiobooks are another innovation fostered by the advent of Amazon and made possible by new technologies. Although they can be considered as a completely different product from books and eBooks, audiobooks contributed to transform the key product of the publishing industry and the concept of books itself.

By buying **Audible** (a startup allowing users to listen to recorded books) in 2008, Amazon could also leverage on the popularity of audiobooks – to the extent that, today, 20% of people in the US claim to have listened to an audiobook in the past year³⁶.

Digitization has boosted the rise of audiobooks, whose development and fruitions has recently enormously increased. Audiobooks changed the concept of “books” by making them **more inclusive and accessible** (particularly to individuals with visual impairments or reading difficulties), by allowing an **enhanced and multisensory reading experience**, by allowing content fruition for readers in contexts where they would not be able to read (e.g. while driving), besides expanding publishing opportunities and enabling celebrity narration and/or author involvement in audiobooks. Audiobooks have their share in the revolution of products for the book industry, although they do not represent a significant part of the market: in 2022, audiobook revenue accounted for 3.8% of the whole publishing industry worldwide³⁷. However, they are widely diffused: in the US, among 2020 and 2023 the percentage of adults who reported having listened to an audiobook was always around 50% (and surpassed 50% in 2023)³⁸.

These transformations had a significant impact on the players involved in the whole supply chain of the book industry, with the downsizing of the role of some actors and the emergence of new actors. First of all, publishers and authors now have to consider new categories of readers, such as:

a) Digital natives: today, entire generations of readers are digital natives – so, individuals who have grown up in the digital age and are completely accustomed to using technology in their daily life. These readers will be more likely to consume digital products, digital advertisement in terms of promotion of books, online purchases to buy books.

b) Non-traditional book consumers: digital technologies and new products (e.g. audiobooks) made book consumption wider and more inclusive. This means that authors and publishers also have to consider these new categories of non-traditional readers that could not have access to their products before.

c) Gamers and Interactive Content Consumers: Interactive books, gamified reading experiences and immersive storytelling have attracted readers who enjoy interactive content and gaming. These readers might appreciate books incorporating multimedia elements, augmented reality (AR), virtual reality (VR), or interactive features, providing a more dynamic and engaging reading experience.

Besides new categories of readers, the digital revolution has also led to the emergence of new categories of **authors**:

³⁶ Faverio, M., Perrin, A., (2022, 6 January). Three-in-ten Americans now read e-books, Pew Research Center, available at <https://www.pewresearch.org/fact-tank/2022/01/06/three-in-ten-americans-now-read-e-books/>

³⁷ Source: WordsRated, June 7, 2023

³⁸ Source: Statista, June 12, 2023

a) Independent and Self-Published authors: Thanks to digital platforms and self-publishing services, authors can now bypass traditional publishers and independently release their own works. Independent authors can also connect with readers directly, through online platforms, social-media and e-commerce websites. Hugh Howey's story as documented in his book of *Wool* and discussed in major publications like *The Guardian* and *Wired* exemplifies the success independent authors can achieve through self-publishing platforms and digital marketing.

b) Bloggers and Online Writers: The rise of blogging and online content creation has made it possible for new authors to gain followers by posting their written work on platforms and websites. This opened new ways for new, independent authors to access the publishing industry, starting to post their work online, building an audience and then transitioning to publishing books on the basis of their blog content or new projects. In this way, their established online presence and readership provide a ready market for their books. The career of Joanna Penn provides a compelling example of how blogging can serve as a foundation for a successful writing career. Starting as a blogger on her site "The Creative Penn," Joanna used her platform to share writing advice, which she later expanded into a series of self-help books for writers.

c) Fan Fiction Writers: this category of authors emerged with the rise of new technologies and a new genre (fan fiction novels/stories). Fan Fiction writers write stories based on existing fictional universes, often popular books, movies, TV shows, or video games. This phenomenon was mainly fostered by the rise of online platforms and communities dedicated to these fictional universes. Some fan fiction authors were then able to transition into professional writing careers, either adapting their fan fiction into original works or by gaining the attention of bigger publishers.

d) Serial Fiction Writers: digital platforms have also promoted a "digital" revival of the concept of serial fictions. Authors can release their stories in several episodes that are posted online and actively engage with their readers, receiving feedback and modifying their work accordingly. Andy Weir's use of his personal website to serialize "The Martian" before achieving mainstream success demonstrates the renewed interest and viability of serial publications in the digital age.

e) Transmedia and Cross-platform Authors: the close links between different online media platforms have allowed authors to experiment with transmedia storytelling, telling their stories across multiple media platforms. In this way, authors can create narratives that go beyond physical books and can involve and engage readers through websites, social media profiles, podcasts, online games, and more. J.K. Rowling's expansion of the "Harry Potter" universe across multiple media platforms exemplifies successful transmedia storytelling. Starting with a series of books, Rowling extended the storyline through movies, a website (Pottermore), and various digital games, creating a comprehensive narrative experience that engages fans in multiple formats.

The digital revolution has also fostered the emergence of a product, *manga comics* (the Japanese comic style)³⁹, that is widely diffused in the 21st century Western culture. Manga comics, with their distinctive storytelling techniques, diverse genres, and particular narrative style has significantly influenced the whole comic industry. Digital technologies have helped this wide diffusion in several ways:

³⁹ Suzuki S., Stewart R. (2022), *Manga. A critical guide*, Bloomsbury Publishing

1) Digital distribution and content creation: digital platforms and online reading apps have made manga easily accessible to readers worldwide. If before the digital revolution readers from all over the world could not always have direct access to printed manga comics, now they can easily access them. Moreover, artists can use digital technologies to draw and produce digital comics. VIZ Media's "Shonen Jump" digital platform revolutionized how manga is distributed worldwide. By offering a subscription-based service, readers can access a vast library of manga titles online, which are updated with new chapters the same day they release in Japan. This strategy not only made manga more accessible but also allowed fans to read titles legally and affordably, supporting the creators directly.

2) Scanlations and fan communities: digital technologies have allowed the phenomenon of the so-called "scanlations"⁴⁰, unauthorized translations of manga comics made by fans via online communities. In this way, manga comics are made available also in languages they were not officially translated into, enabling their wider diffusion. MangaDex is a notable example of an online community where "scanlations" are widely shared. This platform allows fans to upload manga translations in multiple languages, often before official translations are available. While controversial, MangaDex shows how digital fan communities contribute to the global spread of manga by breaking language barriers.

3) Simultaneous release: thanks to digital platforms, manga chapters or entire volumes can be simultaneously released in different regions. Before this was possible, manga had significant delays in international releases leading to readers' frustration. Crunchyroll Manga offers simultaneous releases of manga chapters in various languages as soon as they are published in Japan. This approach addresses the delay issue previously faced by international manga fans and supports legal consumption, reducing the reliance on unauthorized scanlations.

4) Cross-media adaptations: The digital era has facilitated the adaptation of manga into other media formats, such as anime, live-action films, and video games, thus fostering the global diffusion and success of this product. "Attack on Titan" by Hajime Isayama is an excellent example of manga adapted into multiple formats due to digital technologies. Starting from a manga series, it has been successfully adapted into an anime series, several video games, and even live-action films. These adaptations have been crucial in popularizing the manga outside Japan, showcasing the potential of digital technologies to enhance the visibility and reach of manga across different media.

In summary, the book industry is characterized by being both one of the oldest and one that has pioneered a digital revolution that changed its nature. We believe that "old", formerly incumbent publishers can become a case of pre-Internet champions that transform themselves and create competitive advantage by leveraging on their tradition. A tradition is the familiarity with a product – the book capable of creating communities by sharing knowledge, emotions and values – that artificially intelligent robots cannot reproduce.

⁴⁰ Fabbretti, M. (2015). The Translation Practices of Manga Scanlators, on International Journal of Comic Art

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