The background of the entire page is a dark blue, textured pattern composed of numerous overlapping, three-dimensional geometric shapes, primarily cubes and rectangular prisms, creating a complex, maze-like or crystalline appearance. The lighting on these shapes gives them a sense of depth and volume.

# A PUBLISHER'S GUIDE TO SMART CONTENT

EDIA

# A PUBLISHER'S GUIDE TO SMART CONTENT

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# Letter From Founders

We live today in a world where everything is personalized. People are no longer interested in the products and services where one solution fits all. It's 2019 and education publishers are struggling to keep up with the market demands to produce personalized content on a mass scale. They must exponentiate publishing volumes in order to educate the next generation of learners that demand personalized and adaptive learning methods.

At the beginning of this year, we approached professionals in the educational industry to share their feedback on working with educational content. Over 50% of our survey respondents believe that costs and lack of knowledge prevent their organisations from the adoption of artificial intelligence. But thinking of artificial intelligence as a long-term profit-boosting investment rather than a cost-saving short-term solution is crucial to successful adoption. AI can enable publishers to create new products like subscription models, content banks, pay-per-item and others.

EDIA created this report using a variety of primary and secondary resources. To conduct primary research, we distributed a survey to content professionals in the publishing industry including Head of Content Executives, Digital Managers, Publishing Managers, and Heads of Product. For secondary research, we have analyzed consulting reports, press releases and news articles to support how publishers can maximize artificial intelligence for creating new business models. You can find those sources at the end of this report in our references.

The benefits of AI have been enormous for giant content owners such as Netflix and Spotify, where these companies are now better equipped to continue adopting AI solutions since their infrastructures are already in place. This means that they will more easily adapt to technology changes in the future<sup>1</sup>.

Remaining static can be costly and delaying AI implementation should no longer be an option. Educational publishers have to start now to modernize their content to be able to keep up with their primary competitors but also other players on the market including Coursera, Lumen Learning and others.

We hope you use this report as a guide for your innovations in publishing and turn to artificial intelligence as a means to unlock revenue-generating opportunities.

Best Wishes,

👉 Roland Groen & Jaeques Koeman 👈

Founders of EDIA

*How do you continue growing as a publishing business in times of continuous disruption?*

*By adopting smart content today - content that unlocks personalized and individual learning experiences.*



<sup>1</sup> McKinsey Global Institute. (2017, June). Artificial Intelligence: The Next Digital Frontier? Retrieved September 2019, from McKinsey Official [Website](#)

# Insights from Survey

Early 2019 EDIA conducted a survey where we asked participants (see page 32 for demographics) about new business opportunities and challenges in educational publishing. Furthermore, we asked them about the relevance of metadata in relation to these opportunities and challenges and the role they think AI can play in the automation of this metadata.

## New Business Models

**70%** Of participants find reduction of costs, improving the reuse of content and increasing quality a high priority. **77%** Believe that the publication of printed learning materials will decline in favour of new business models.

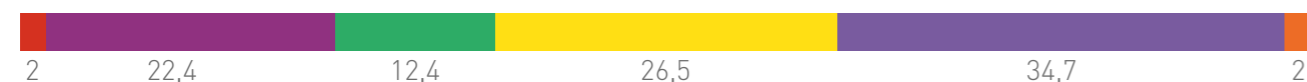
### Q How would you rate the relevance of the following business models for your organisation?

Not important Slightly important Important Fairly important Very important No opinion

#### Adaptive or personalized learning applications for learners



#### Content recommendation for teachers



#### Enriching our content with curated public (from the web) content

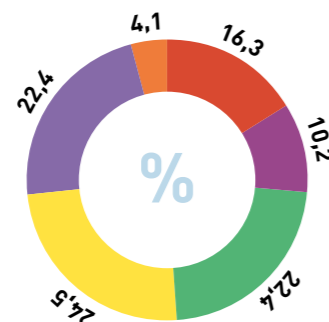


#### Different purchasing models (e.g. content subscription model)



### Q How much revenue (as % of total revenue) do you expect to generate from these new business models within 5 years?

No revenue within 5 years  
Up to 5%  
Between 5 - 10%  
Between 10 - 25%  
Between 25 - 50%  
More than 50%



**24,5%** Expect that 10-25% of revenues will come from new business models in the next five years. But only **+ 4%** think revenue will be more than 50%. **+ 16%** Of people think no revenue at all will increase from new business models in the next 5 years.

## Challenges

### Q How would you rate following common challenges?

Very low priority Low priority Medium priority High priority Very high priority

#### Improving speed of content publishing (time-to-market)



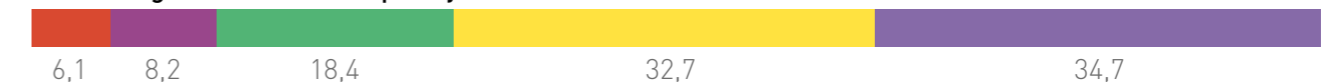
#### Reducing cost of publishing content



#### Improving reuse of existing content



#### Increasing overall content quality



#### Developing new business models that leverage existing content



#### Discovering relevant and high quality content

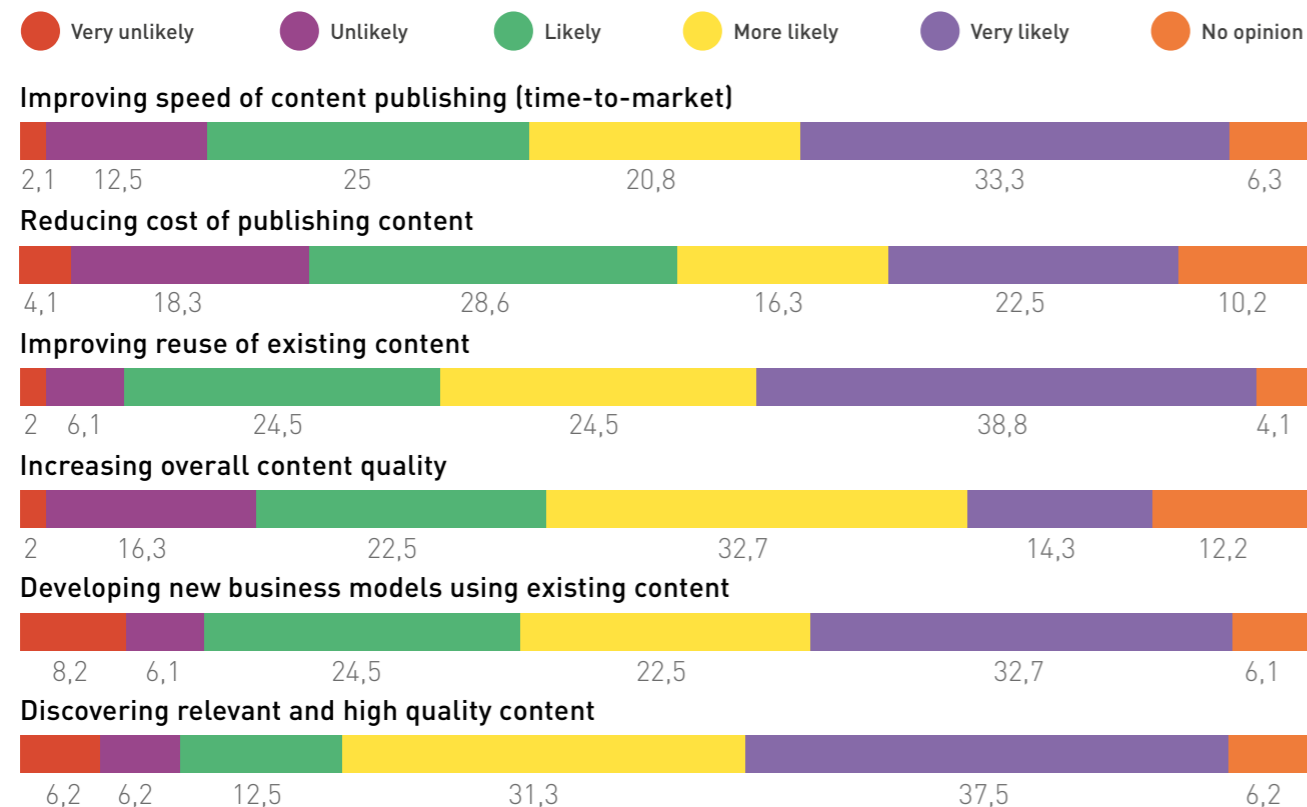


### Q Rate how metadata will contribute to solving your business challenges

- |   |  |   |   |
|---|--|---|---|
| 1 | Developing new business models using existing content. | 4 | Improving speed of content creation (time to market). |
| 2 | Discovering relevant and high quality content.         | 5 | Increasing overall content quality.                   |
| 3 | Improving reuse of existing content.                   | 6 | Reducing cost of content production.                  |

## Metadata in relation to business challenges

**Q** How likely will metadata contribute to solving specific business challenges?



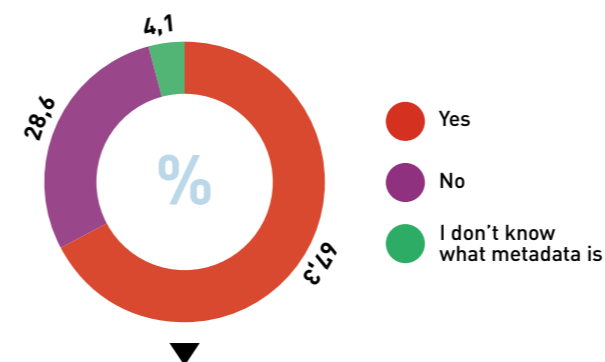
*Rating of content related challenges that participants believe they will be able to resolve with the help of metadata:*

1. Content Quality.
2. Discovering relevant and high quality content.
3. Cost reduction of publishing content.
4. Reuse of existing content.
5. Developing new business models that leverage existing content.
6. Discovering relevant and high quality content.

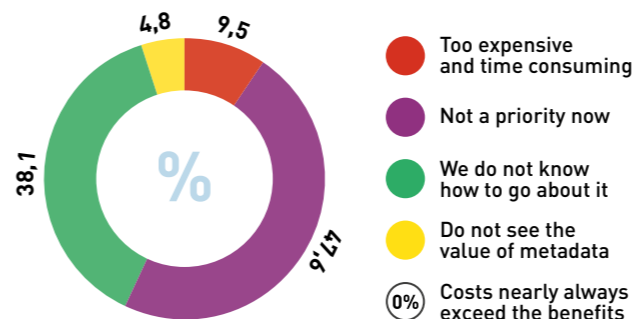
Over all perception is that metadata will primarily help improve search and reuse of content and unlock new business models

## Metadata

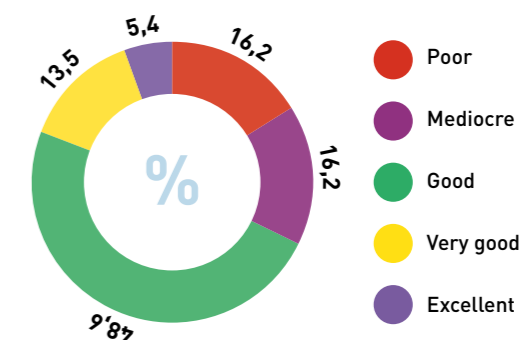
**Q** Do you currently use metadata connected to your content?



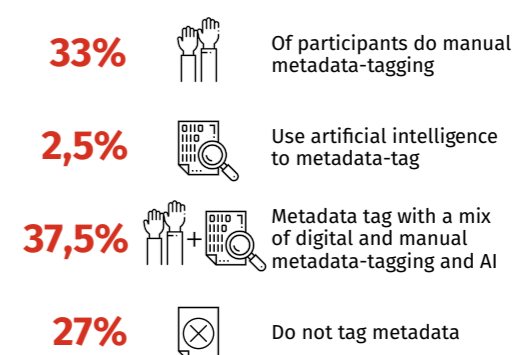
**If NO, Why don't you use metadata for your content?**



**If YES, How would you rate the quality of your existing metadata?**

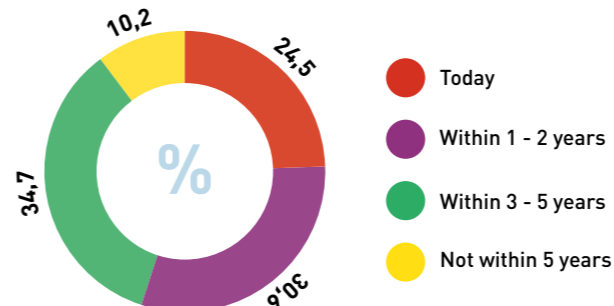


**Q** In which way do you do your metadata-tagging?



## Artificial Intelligence

**Q** When will artificial intelligence be relevant to your business for managing content?



**AI benefits:**

Almost **90%** believe in recommendation of relevant content. **77%** Believe in automated classification of content. **72%** believes in the benefits of automated metadata tagging. **57%** Believe in automated content generation. **26%** Believes in improving quality

To date a small majority (51%) believe Artificial Intelligence will be important for creating and managing educational content

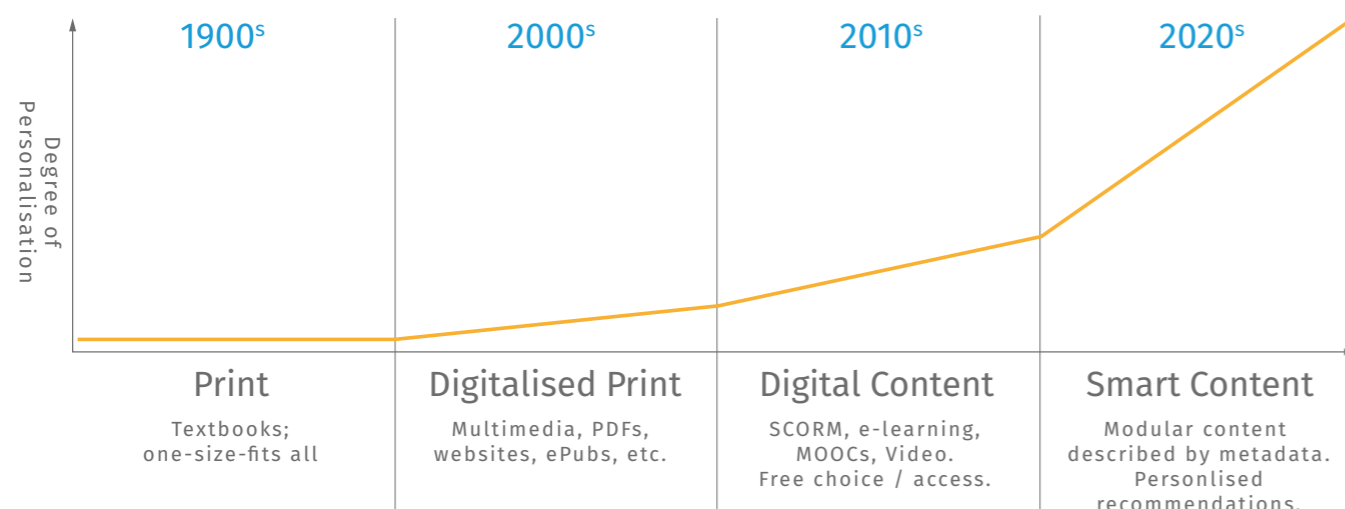
# WHAT THE PUBLISHING INDUSTRY LACKS IS SMART CONTENT

# Challenges and opportunities in educational publishing

Educational publishers currently face a lot of challenges: Large unstructured backlists of content, the increasing demand for personalisation, siloed or scattered content created with traditional tools like Word and Excel. Many publishers are still in the digital transition of physical books and files<sup>2</sup>. Some publishers have made concessions to technology, however progress is slow.

*Publishers are not taking advantage of digital innovations that could save them time, cut their costs and increase their revenues.*

New business models based on digital innovations are disrupting the industry both in terms of supply and demand. Innovative publishers will need to consider moving away from outdated business models which rely on print based products and begin to embrace a digital future<sup>3</sup>. Bite-size and personalized learning is becoming the biggest buzzword in education and is spreading rapidly across all education markets. Many innovative EdTech companies such as Coursera and Udemy who create personalized learning platforms attempt to generate their own content. On the other hand, educational publishers have a competitive edge over newer, disruptive businesses. This is because Educational publishers possess larger quantities of educational content, the knowledge and skills of how to produce a scientifically sound learning method and the network with the best authors in the market gathered over decades<sup>4</sup>.



However, the barrier that educational publishers face is the requirement for digital content used in personalized learning. Content for personalized learning cannot remain trapped in traditional formats like books. Content needs to be divisible into smaller learning 'chunks' and needs to be metatagged to ensure it can be effectively used in personalized learning platforms<sup>5</sup>.

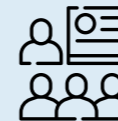
## The Future of Education is Personal

N

Digital content, available on any device which adapts to our needs and preferences has become the standard learners expect



In a globalised world the demand for relevant bite-size and high quality education is increasing exponentially



Shortage of teachers combined with the need to tailor to individual learner needs, drives new teaching methods and tooling that optimise teaching efficiency



Abundance of available online learning resources and rapid entrance of new digital content providers



Declining revenues from traditional textbook sales drives cost savings and better reuse of existing content

*As these trends evolve, current ways of creating and managing content will be insufficient and a limiting factor towards personalisation at scale.*

<sup>2</sup> Banerjee, P., & Merchant, R. G. (2016). 2016 Digital Education Survey. After the bell rings: expanding the classroom. Retrieved September 2019, from Deloitte Official [Website](#)

<sup>3</sup> Bailey, A., Davis, P., Henry, T., & Loureiro, K. (2014, January 30). The Digital Disruption of Education Publishing. Retrieved August 2019, from BCG Official [Website](#)

<sup>4</sup> Grochola, K. (2018, February 26). The Future Of Educational Publishers. Retrieved from [eLearning Industry](#)

<sup>5</sup> Education Elements. (2018). The Core Four of Personalized Learning: The Elements You Need to Succeed. Houston: Education Elements. Accessed August 14, 2019

# UNDERSTANDING THE ESSENCE OF SMART CONTENT

# Smart content

Digitally tagged and organized content is referred to as 'Smart Content'. Such content is 'context-free', meaning it is no longer a unique part of a broader context such as a book. This makes content more flexible for different uses. Smart Content is also bite-sized, targeted and goal-orientated, making it helpful in all stages of the value chain.

Smart Content relies on metadata tags for its organization and classification - however these tags go beyond simple age groups or subject classifications. Smart Content can be tagged according to any number of criteria, from readability level to curriculum mapping.

Smart Content is a vital foundation for personalized learning. Smart Content gives publishers a better overview of their content. Having an accurate overview of current content allows publishers to identify gaps in their provision or to determine areas where there is duplicated content<sup>6</sup>. Furthermore, Smart Content provides insights in the content's alignment with didactical design principles (e.g. coverage of Bloom's taxonomy).

*72% of participants of our survey believe in the benefits of auto-mated metadata tagging by AI. 36% agree they didn't experience all the advantages of that yet due to lack of systematic approach and prioritisation from the business side.*

## Smart Content allows publishers to make data-driven strategic decisions about their content libraries

The data smart content provides, allows educational publishers to consider new business models and innovative ways of creating value for their clients. Properly tagged and organized content also gives publishers a strategic overview of their content, allowing them to make data-driven decisions strongly backed by data and therefore more confidently. Smart Content makes innovation just a little easier. In fact, Smart Content has the capacity to change every aspect of the publishing value chain, from content production to management to distribution. The next section will consider each of the content related activities that a publisher performs, and demonstrate how Smart Content has the capacity to streamline and improve them all.

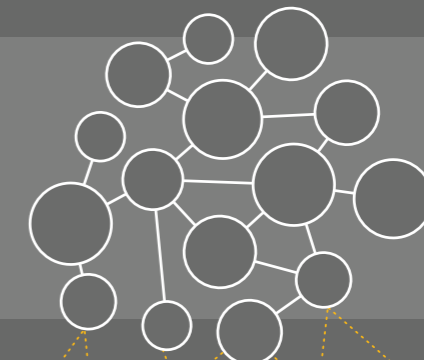
*40% participants of our survey believe that metadata will contribute to solving their business challenges and 23% believe that it's unlikely.*

<sup>6</sup> Richardson, C. (2017, October 31). How is edtech enhancing and disrupting publishing? Retrieved from Oxford [Education Blog](#)

## What is Smart Content?

Smart content is comprised of three layers: Layer 1 contains the content itself, which is structured in a bite-size and context free (i.e. non-linear) manner. Layer 2 adds the metadata which describes the technical and educational properties of the content. Finally, layer 3 links the content to a network of learning objectives (i.e. curriculum).

### LAYER 3 LEARNING OBJECTIVES NETWORK

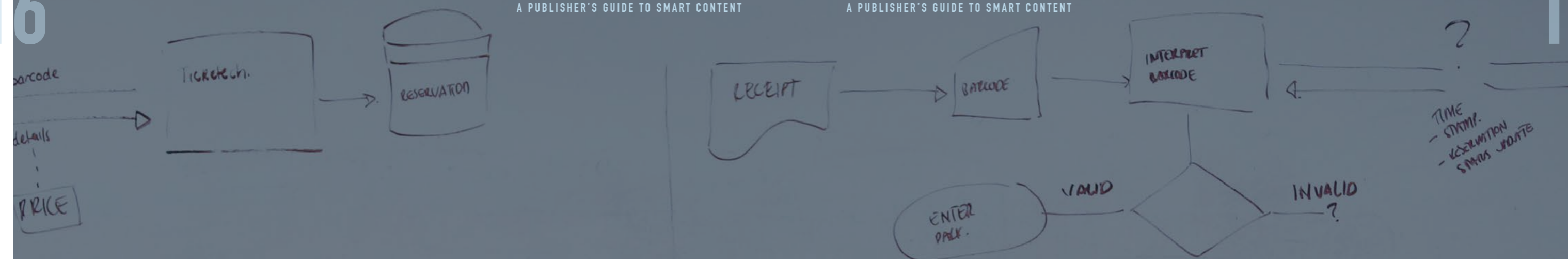


### LAYER 2 METADATA



### LAYER 1 GRANULAR, CONTEXT FREE CONTENT





# REINVENTING THE PUBLISHING VALUE CHAIN USING META TAGGING

# Smart content benefits

All publishers are focused on increasing their profitability throughout the value chain. In practical terms, this means improving efficiency, reducing costs and increasing revenue of content creation, management and distribution. Smart Content impacts each of these activities and thus provides benefits for the entire publishing value chain.

## The Publishing Value Chain



### a. Content Creation

The introduction of Smart Content improves the content creation part of the publishing value chain, leading to lower overall costs. Almost **70%** of publishers say that reducing costs is a key priority of theirs, while **64%** also prioritize reusing content. Furthermore, our research<sup>8</sup> shows that lowering costs is key for most educational publishers to make their work more profitable and enable more investments into digital solutions. As many as **70%** of publishers are also interested in increasing the quality of their content. Smart content can assist with this, making the entire publishing value chain more efficient and cost-effective.

#### Better content reuse

Due to poor coverage and quality of metadata publishers frequently lose track of the content they have. Existing content cannot easily be found, which means publishers waste valuable time and money re-creating content they already have. A CMS<sup>7</sup> filled with Smart Content sidesteps this problem. Content is clearly organized and easily searchable, so it's virtually impossible for anything

<sup>7</sup> Content Management System

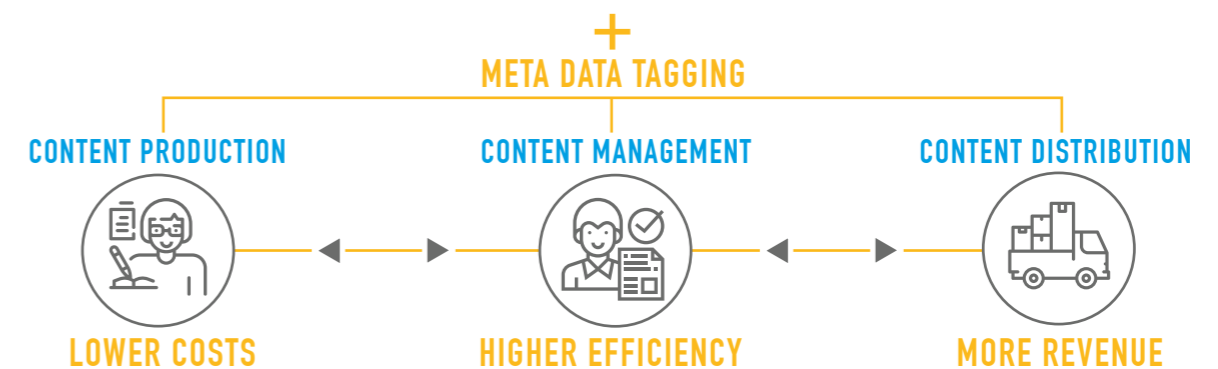
to get lost in the system. Publishers can easily lower their costs by reusing content they already possess. This allows them to adapt content more efficiently to (local) market needs.

#### Automate content approval process

When new content does need to be created, Smart Content can speed up the process. Through new keyword technologies and language level assessment tools, much of the content approval process can be automated. When authors create new content, instead of it being laboriously checked by publishers using unclear or subjective assessment criteria, the same process that creates Smart Content can be applied to new content.

The automated process digitally assesses language level of content, considers appropriate keywords and can even make suggestions for authors to improve their word choices.

*77% of our survey participants believe that AI can help them with automated classification of content.*



New content does not need to go through extensive iterations to improve quality and consistency, meaning that content can move faster into the market. This speed lowers costs for publishers, allowing them greater opportunities for revenue within a shorter length of time.

### b. Content Management

Effective content management needs to be efficient above all else. Smart Content integrated into a publisher's CMS gives a variety of additional options to help improve efficiency.

#### Evaluate content performance

A CMS filled with Smart Content allows publishers to evaluate content performance - to see which content is regularly used, which is often discarded - allowing the possibility of strategically improving content. Smart Content helps to generate data which publishers can use to make truly objective and accurate decisions.

#### Strategic insights into library

Smart Content allows publishers to gain strategic insight into their libraries of content.

<sup>8</sup> Borbotko, Anna, and Frangos, Katherine, EDIA Market Research. April 15, 2019

Many educational publishers manage a huge amount of content, so large that they are often unaware of its breadth and depth. It is easy for publishers to skip over content, with the result that content is often duplicated (at additional cost) despite it already existing in the CMS. To gain insights that are accurate, up-to-date and comprehensible, some form of digital system is required, but to truly ensure accuracy that system must be filled with Smart Content rather than traditional style content.

### Increase content searchability

Smart Content dramatically increases content searchability. Not only are Smart Content items clearly and meticulously organized, they are searchable according to a variety of criteria. Publishers searching for content may wish to restrict their search by age range or language level or keywords. As Smart Content is context-free and classified according to multiple variables it is flexible, to allow publishers effectively rearrange content into differentiated product offerings.



Three well-known providers of content management systems (CMS) which EDIA's metadata tagger is fully integrable with.

Smart Content also allows for the use of tools such as recommendations of similar content. As content is metadata tagged, a CMS can easily link to similar content, according to criteria of language level, learning objective or keywords. Publishers can interact with their content horizontally as well as vertically, increasing its usefulness<sup>9</sup>.

*All these factors dramatically increase efficiency for educational publishers who deal with large and unwieldy content libraries. Strategic oversight and transparent data allow publishers to make effective decisions and improved content searchability means interacting with content is easier for anyone using the CMS.*

## c. Content Distribution

Content distribution is a part of the publishing value chain that has already undergone significant changes. Digital provision of services has allowed educational publishers to contemplate business models that were previously impossible. In addition, the rise of personalized learning platforms as a viable educational tool has meant that publishers are increasingly asked to step outside their traditional distribution models<sup>10</sup>. Smart Content is key to increasing revenues for publishers and improving processes of distribution.

*90% of our survey participants believe that AI can help them with recommendations of relevant content.*

### Adaptive content delivery

In order for learning to be personalized, content needs to be targeted to an individual's learning goals. Smart Content is organized in bite-sized pieces, defined by goal-oriented tasks organized

around learning objectives or activities. Smart Content is also metadata tagged, making it easy to plug into a digital system such as an online adaptive learning platform.

Being able to collaborate with innovative educational companies allows publishers an additional revenue stream, outside of traditional ones. Many EdTech companies do not have the capacity to create their own content<sup>11</sup>, and increasingly rely on publishers to provide this. However such content needs to be Smart Content to allow integration into different digital systems in an easier and faster way. Using Smart Content publishers can collaborate with companies using new technologies and be part of the development of innovative educational tools.

*50% of our survey participants find it priority developing new business models. 25% of the participants expect that revenue will increase between 10-25% in the next 5 years by applying new business models.*

### New business models and products

Smart Content allows educational publishers to consider new business models and products that were not previously possible. New revenue models such as subscriptions, collaborations with external parties or pay-per-item models are becoming popular as new ways to deliver content. To make these more flexible business models possible, Smart Content is a requirement.

*New business models and products give publishers the opportunity to create additional revenue streams, consider new collaborations and to interact with innovation in education. Personalized learning is a trend which seems set to remain, meaning Smart Content will become increasingly useful.*

60% {  
 1 : Subscription Model  
 2 : Collaboration and Partnerships  
 3 : Hybrid Model of Digital and Print  
 4 : Upselling Models similar to Spotify (free+premium)

*Of the survey participants consider the above purchasing models as important*

<sup>9</sup> Tricon Infotech . (2018, November 15). Digitization Opportunities in Publishing Today. Retrieved September 2019, from [Tricon Infotech](#)

<sup>10</sup> Ross, M. (2017, May 24). Benefiting from Disruption in the Publishing Industry. Retrieved September 2019, from Advisory Cloud Official [Website](#)

<sup>11</sup> Lynch, M. (2018, March 21). What EdTech Companies Can Learn From Netflix. Retrieved September 2019, from [The Tech Edvocate](#)

# TRANSFORMATION PATHWAY TO SMART CONTENT

## For many publishers, the prospect of transforming their business model as well as their entire library of content to Smart Content is overwhelming

Many are convinced of the benefits of digitally-streamlined content or the potential for new business models using new versions of technology. But overall the concern is that such a transition would be expensive, time consuming and not worthwhile on the short term.

However there is an easier path to achieving this, opening up multiple paths of innovation. The use of Artificial Intelligence (AI) has long been heralded as a significant change in all areas of modern life. For the most part, changes have not been overwhelming or visible. However AI, and more specifically machine learning, is opening avenues previously impossible.

*Over 50% of our survey participants believe that main hurdle related to the adoption of AI in the organisation is associated with its costs; 48% believe that's due to lack of knowledge and 15% admit that they have other priorities.*

AI techniques such as machine learning can automate the process of metadata tagging and other content related tasks. Algorithms can sort through huge backlogs of content and transform it into a body of well-organized, easily searchable digital content, perfect for integration into digital personalized learning platforms.

At EDIA we use a variety of AI techniques to assist educational publishers with content management, creation and distribution. We support the transition to smart content with automated metadata tagging, which is faster and more accurate than manual tagging. **33%** Of publishers still use manual metadata tagging and **27%** do no metadata tagging at all. Only **2.5%** of publishers currently use AI technology to perform this function.

Our tool finds all available content and tags it at a fraction of the time and cost it would take a human to do so. Using algorithms, content is searched for, organized and accurately labelled, transforming it into valuable Smart Content ready for use in personalized learning and CMS systems.

### How does EDIA's solution work?

To create metadata tagging capability, EDIA uses two techniques of machine learning - supervised and unsupervised - to build and train an algorithm which consequently is able to classify content. To use supervised learning techniques, the classification models must first be trained on a sample set of data. This allows an algorithm to 'learn' what is being requested of it. As an example, EDIA's

CEFR tagger is trained by taking texts from a variety of sources and reading levels, where each text was previously evaluated by multiple language experts.

In some cases, there may not be enough data to be able to train an algorithm effectively. In this case, supervised and unsupervised learning can be combined to create an effective and accurate learning algorithm<sup>12</sup>. Instead of experts, the algorithm relies on external data sources (e.g. Wikipedia) as guidance.

EDIA's metadata tagging capabilities can be accessed through an API which can be instantly activated in the following content management systems (CMS) and editors: Microsoft Word, Google Docs, Alfresco, PublishOne, FontoXML, EDIA Papyrus and others. All you need to get started is a valid license key. Once an API is active, the EDIA models will start looking at each text in the content database. Once a broad outline of the content has been established, the models are used to classify and metadata tag content, transforming it into Smart Content.

*EDIA has performed several Proofs of Concept and projects with top educational publishers, achieving accuracy rates of 90%+ in tagging metadata using machine learning. (Read more about EDIA case studies at [edia.nl/resources](https://edia.nl/resources)).*

Technically, publishers don't need to do anything other than decide the volume of content that they want to classify by an algorithm and whether it is required to organize an existing or new content library. Content can be organized according to common classification system such as Bloom's taxonomy or according to CEFR language levels.

#### Supervised machine learning

Supervised learning is used for detailed or specific actions. An algorithm must first be 'trained' using a sample set of data, allowing the algorithm to learn how data should be organized before completing the same process with larger datasets. Supervised learning is often used for classifying data, with highly accurate outcomes.

#### Unsupervised machine learning

This type of machine learning asks an algorithm to consider a set of data and draw conclusions from it. This technique is useful for finding broad patterns within data, but not for specific or detailed insights. It is often used as a first stage in analyzing an unknown dataset.

At EDIA we believe that AI technology can be of significant benefit to educational publishers by helping them to convert their libraries into Smart Content Libraries. Although AI may seem complicated to non-experts, the results of it are easy to see. Automating processes of metadata tagging means content is found, organized and classified at greater speeds and with higher accuracy than any manual or digital alternative.

<sup>12</sup> Corsini, P., Lazzarini, B. & Marcelloni, F. Neural Comput & Applic (2006) 15: 289. Accessed August 14, 2019. <https://doi.org/10.1007/s00521-006-0030-5>

## What is AI?

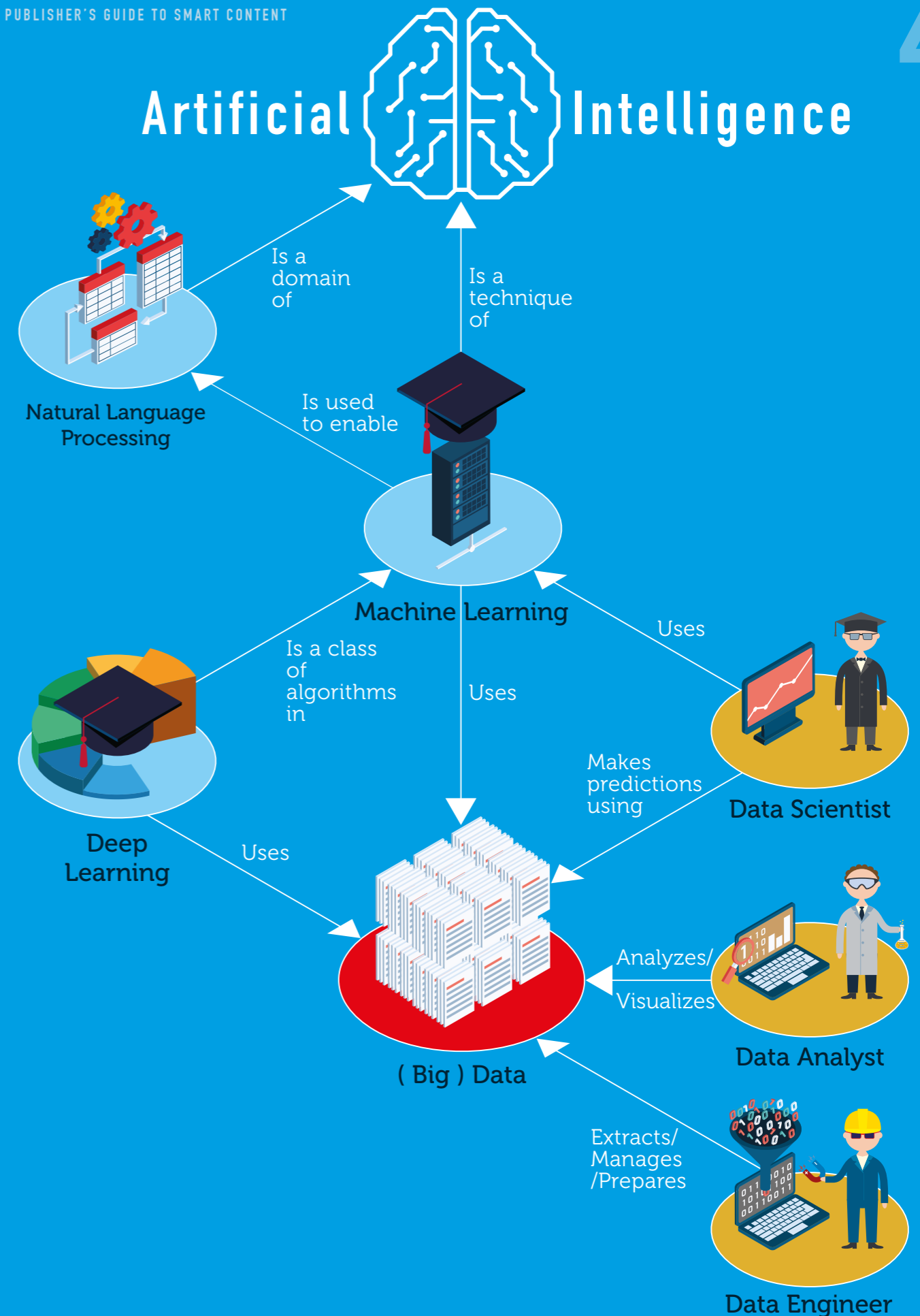
Artificial Intelligence is the study and practice of using computers and algorithms to mimic human cognitive processes such as thinking, learning and problem solving. AI is based on the idea that many human processes can be qualified and then duplicated by computers. The most famous example of this is the self-driving car, which involves algorithms perceiving threats, considering choices and making decisions without requiring specific and detailed instructions from humans.

## What is machine learning?

Machine learning is an AI technique that allows computers to mimic the human process of learning. This includes adapting to new information, learning from past experiences, self-correction and synthesizing new hypotheses. Rather than giving a computer detailed, step-by-step instructions in order to complete a task, machine learning gives initial data and instructions for how to learn to a computer algorithm, allowing the computer to perform the task itself.

## Top 5 of hurdles publishers see related to the adoption of Artificial Intelligence in their organization:

- 1 Costs
- 2 Limited knowledge/understanding of the technology and it's applications
- 3 Other (higher priority) projects
- 4 Legal or ethical
- 5 Fear of job displacement



# COMPLETING THE PICTURE



## Smart Content is a crucial step for educational publishers in innovating for the digital era

Without Smart Content, the whole publishing process remains slow, inaccurate and ultimately, expensive.

**72%** of publishers believe in the importance of metadata tagging, yet up to **33%** do not do it. **46%** still spend valuable time, energy and money tagging manually.

While transforming content into Smart Content can be a laborious and time-consuming task, it doesn't need to be. Technological innovations like AI dramatically speed up and automate processes. This leaves publishers the space to consider their content strategically, to develop new business models and partnerships and improve their content overall<sup>13</sup>.

Many educational publishers believe that AI will not become important for content management for 1-5 years (over 60% of our Adaptive Survey 2019 participants). Yet Smart Content is already becoming crucial to educational innovation. Publishers who are ahead of the game can take advantage of what AI and Smart Content can provide - increased revenue, lower costs and improved efficiency.

AI tools such as those offered by EDIA are fast, efficient and accurate. They allow publishers to avoid laborious manual input work such as a manual keyword tagging, and outsource the job to an algorithm. The publishing value chain works more smoothly and less expensively, making it more of an asset to publishers.

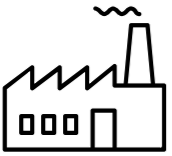
The tools that EDIA use involve easy set up and integration. Each is designed to be user-friendly and easy to operate. They are specifically designed for use by educational publishers, not tech wizards or those with a deep understanding of AI and machine learning. That means that little time or training is needed in order to get AI tools up and running across publishing companies. Existing or new employees can quickly grasp the uses and benefits of the tool and integrate it into their daily working life.

Smart Content is the way of the future for educational publishing. AI and machine learning tools provide an easy way to access that future, without extensive expense, time or hiring new and specialist employees.

<sup>13</sup> Arabian, V. (2018, June 2). Ep 14- The State of Higher Education Publishing with David Harris (Openstax). Retrieved August 2019, from [website](#)

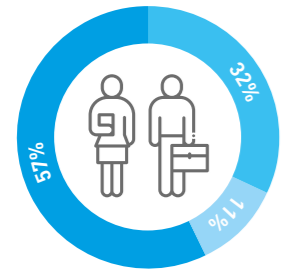
# APPENDIX

# Survey Demographics

11 

## Industries

EdTech, Educational Institutions, Educational Publishers, General Publishers, E Mental Health, IT, Consulting, Banking, Military, Gaming, Telecommunications.



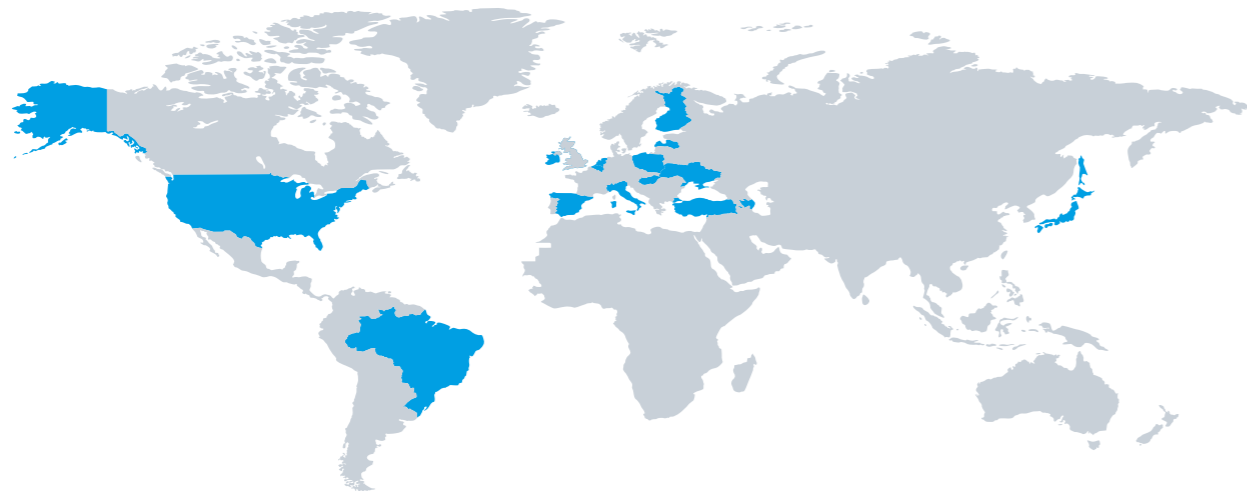
## Roles

57% Management Level, 32% C & Director level, 11% Senior management level. Including CEO, CTO, Director of School, Director of University, Content Manager, Researcher, Product Lead, Project Manager, Digital Manager, Curriculum leader, Technical Lead, Engineers, Consultant etc.

15 

## Countries (responded location)

USA, Brazil, United Kingdom, Spain, Netherlands, Belgium, Finland, Latvia, Italy, Poland, Hungary, Turkey, Azerbaijan, Ukraine, Japan.



# Research Methodology

Starting from 2018, EDIA produces a report to pinpoint the emerging AI and technology developments that have the greatest impact on companies in educational publishing industry today. EDIA created this report using a variety of primary and secondary resources. To conduct primary research, we distributed a survey to content professionals in the publishing industry including Head of Content executives, Digital Managers, Publishing Managers, and Head of Product. For secondary research, we have analyzed consulting reports, press releases and news articles to support how publishers can maximize artificial intelligence for creating new business models. You can find those sources at the end of this report in our references chapter.

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# ABOUT EDIA

EDIA education technology was founded in 2004 and based in Amsterdam, the Netherlands. In 2006 EDIA launched its first AI in education product, which used machine learning and natural language processing to curate online text sources for vocabulary training. The product won several (international) awards and is still widely used today. The founders of EDIA envisioned that smart automation would play a significant role in the content creation and publishing industry. As modern web technologies rapidly enabled personalized learning at scale, this also revealed an urgent need for truly adaptive content. By implementing EDIA's AI products and tools, data-entry and administrative tasks are relieved during the publication process. As a result, publishers can shorten time-to-market for adaptive content at lower costs.

For 15 years, having provided a wealth of experience with AI in education, EDIA now finds itself in a unique position to be able to share those experiences, lessons learned and the insights about AI with a broader audience.

*If you're interested in how AI can help your company with Smart Content, you can schedule an appointment with one of our specialists at [edia.nl/contact](https://edia.nl/contact)*

EDIA

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THE FUTURE OF EDUCATION  
IS PERSONAL!  
FLIP THIS PAGE AND I WILL  
TELL YOU WHY...



HI, MY NAME IS ERIC.  
I WORK AS A CONTENT  
MANAGER AT AN  
EDUCATIONAL PUBLISHER.

I'VE BEEN MAKING  
BOOKS AND STUDY  
METHODS FOR 15 YEARS  
FOR PRIMARY AND  
HIGHER EDUCATION.

BUT I'M SEEING THE  
DEMAND IN THE MARKET  
CHANGE RAPIDLY...

Digital instead of paper

More tailormade  
materials for  
individual students

Growth market:  
custom materials  
for business courses

CONTENT MUST  
INCREASINGLY BE  
CREATED, DISTRIBUTED  
AND REUSED IN A MORE  
FRAGMENTED FASHION...



I'M UNDER A LOT OF PRESSURE :  
TIME. QUALITY. BUDGET. COMPETITION...

HOW AM I EVER GOING TO  
DISTIL THE RIGHT CONTENT  
OUT OF A WHOLE OCEAN OF  
CONTENT WITHOUT MAKING  
CONCESSIONS ON QUALITY!?!?

AN IMPOSSIBLE TASK TO DO MANUALLY:  
TOO TIME-CONSUMING, TOO EXPENSIVE  
AND THE FINAL RESULT WILL BE  
OF POOR QUALITY!

THAT'S NOW A THING OF THE PAST!

USING NEW ARTIFICIAL INTELLIGENCE  
SOFTWARE BY EDIA, WE'RE NOW ABLE  
TO ANALYZE, CATEGORIZE AND LABEL  
ALL OUR NEW AND EXISTING CONTENT  
AT LIGHTNING SPEED AND MANY TIMES  
MORE ACCURATELY! WHETHER IT'S FOR  
USE WITHIN NEW LEARNING MATERIALS  
OR NOT!

NOT ONLY NOW AM I SAVING  
COSTS, BUT I'M ALSO ABLE  
TO RESPOND QUICKLY TO  
THE MARKET AND CAN DELIVER  
TAILOR-MADE SOLUTIONS  
WITHOUT HAVING TO  
COMPROMISE ON QUALITY.

MANAGEMENT  
IS HAPPY!

COLLEAGUES  
ARE HAPPY!

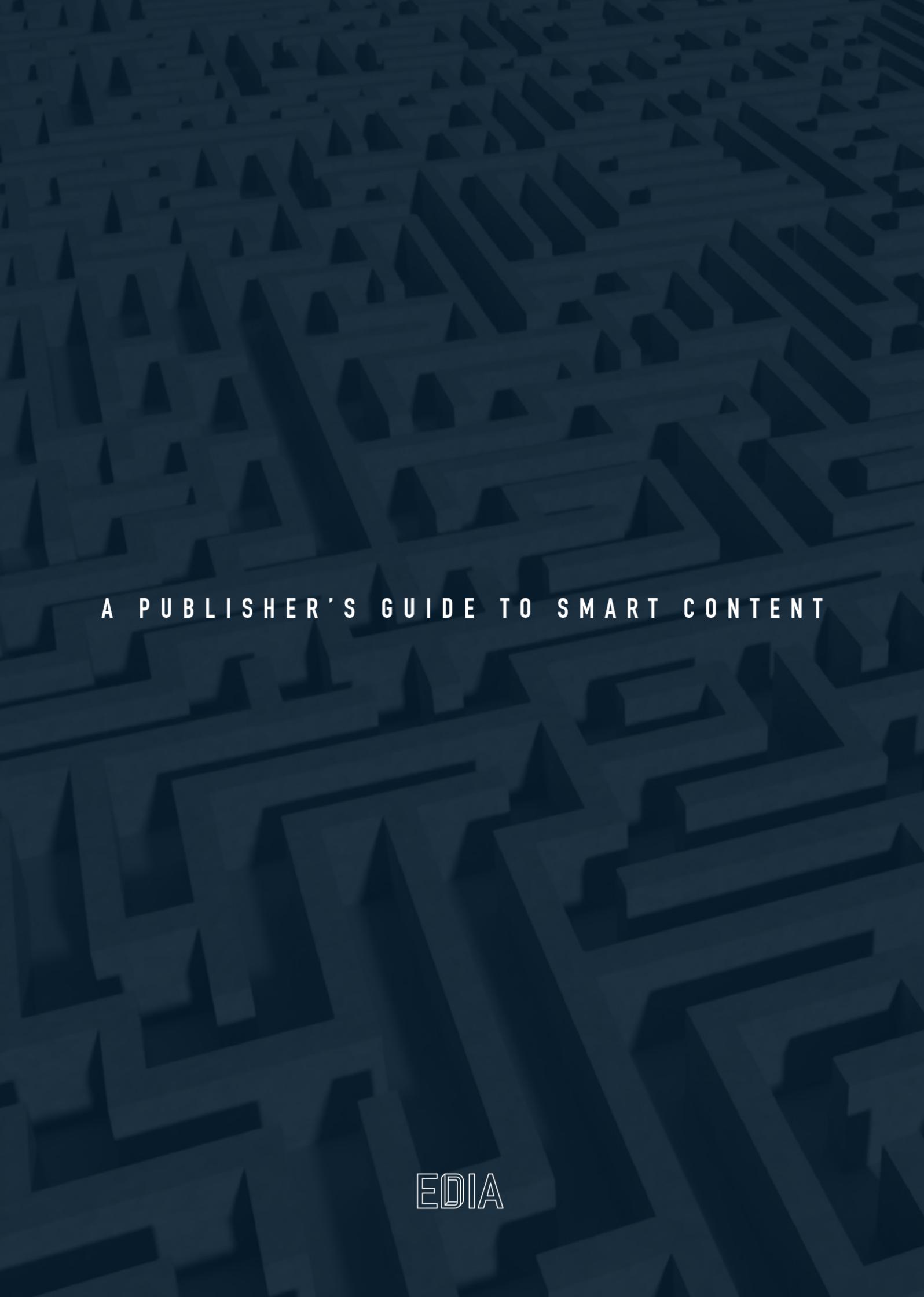
AUTHORS  
ARE HAPPY!

CLIENTS  
ARE HAPPY!

STUDENTS  
ARE HAPPY!

EDIA METADATA TAGGER





A PUBLISHER'S GUIDE TO SMART CONTENT

EDIA