GENERATIVE AI (ARTIFICIAL INTELLIGENCE) – A PROMISE OF THE FUTURE FOR INFORMATION SERVICES AND PUBLISHING INDUSTRY

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Background

In the ever-growing digital ecosystem of Information Services and Publishing (IS&P) industry, one of the disruptive transformations which is taking place is in the field of artificial intelligence with advent of generative AI.

Generative AI is an extremely powerful technology that has the power to impact the IS and P industry seismically. It can potentially drive a creative revolution and may fundamentally alter the content value chain and the associated business model. With its ability to empower authors, publishers, and consumers alike, it has the potential to unlock uncharted realms of content creation and consumption, where power of human creativity can coalesce seamlessly with computational power of AI to transcend confines of traditional publishing norms.

In this point of view, we will discuss how the IS&P industry has been preparing itself for the challenges and opportunities this new technology presents

Gen AI – Impact on IS&P industry.

The publishing industry is undergoing a paradigm shift as the print sales decline and rise of new age digital platforms. One of leading analyst Gartner says – "More than 80% of Enterprises Will Have Used Generative AI APIs or Deployed Generative AI-Enabled Applications by 2026". Generative AI can have a deep and log lasting impact on IS&P industry, notably in areas of content generation and drive critical business outcomes:

- Hyper-personalization - Meet ever increasing customer expectations towards need of greater personalization on how they are consuming the content

- To stay ahead of competition and create differentiated experience for the readers

Publishers are looking for ways on how this technology can contribute towards driving transformation in core value chain functions.

Content Creation

Generative Artificial Intelligence offers a wide array of applications for content creation in the publishing industry. Content creators can enhance their creativity by exploring and innovating new ways of storytelling, whether it is **automated writing assistance** in form of suggestions, or prompts, to the other extreme of **generating an entire story**.

Additional opportunities are in the area of **content personalization** where with the ability of generative AI to analyze user data (demographic and psychographic) and preferences, publishers can spin off diverse storylines tailored to readers style and knowledge depth.

Some of interesting newsroom experiments seen are using generative AI to **curate information** about a topic by automatically sifting through multitudes of sources and generating **concise summaries** for the author to draft the article **not limited to text but including audio-visual** content, graphics, and illustrations.

Content Editing and Enrichment function is the backbone of any publication enterprise. AI will in all likelihood play a very important role in the future of Editing and Enrichment.

- **Content Editing** –Generative AI offers a range of tools that can enhance, optimize, and improve the entire content editing process around 3 principal areas - *quality, accuracy, and uniqueness.*

To ensure **quality and uniqueness**, generative AI models can assist in simpler tasks of fixing grammatical issues, style errors to the other extreme of providing suggestions to improve style, tonality, choice of words, sentence structure tailored to target audience preferences.

To ensure **accuracy**, generative AI can be leveraged to detect plagiarism with the ability to compare content with vast databases of existing text and additionally can be used as an assisting tool for fact check and validation.

- **Content Enrichment** is another area where generative AI has profound applicability. Some examples are.

  o Content summarization (from standard English summaries to very nuanced domain intensive summaries like legal summarization)

  o Language Translation to cater to multi-geo audience and linguistic nuances

  o For delivering the valued and tailored content experience, Content Tagging / Taxonomy generation is another critical enrichment function where generative AI comes to rescue

    - Automated tagging based on themes, context, and keywords

    - Automated taxonomy generation reading corpus of content available

    - Tag recommendations including multi-lingual scenarios

Content Distribution and Marketing

Publishing industry is already weathering the storm of declining print revenues and need of increased digital footprint, exacerbated by ever-increasing demands and variability in expectations of new-age audiences (especially the Gen-Zs and the Millennials). In this backdropContent personalization and recommendation driven through generative AI offers scores of opportunities to continue to engage with the heterogeneous audience and platforms. Whether it is about social media posts, Instagram reels, traditional newsletters or mobile apps, each platform necessitates the need to optimize and tailor audience experience towards hyper-personalized content.

In conclusion, generative AI can revolutionize the publishing industry by improving the speed, efficiency, and accessibility of content creation, curation, and distribution/consumption.
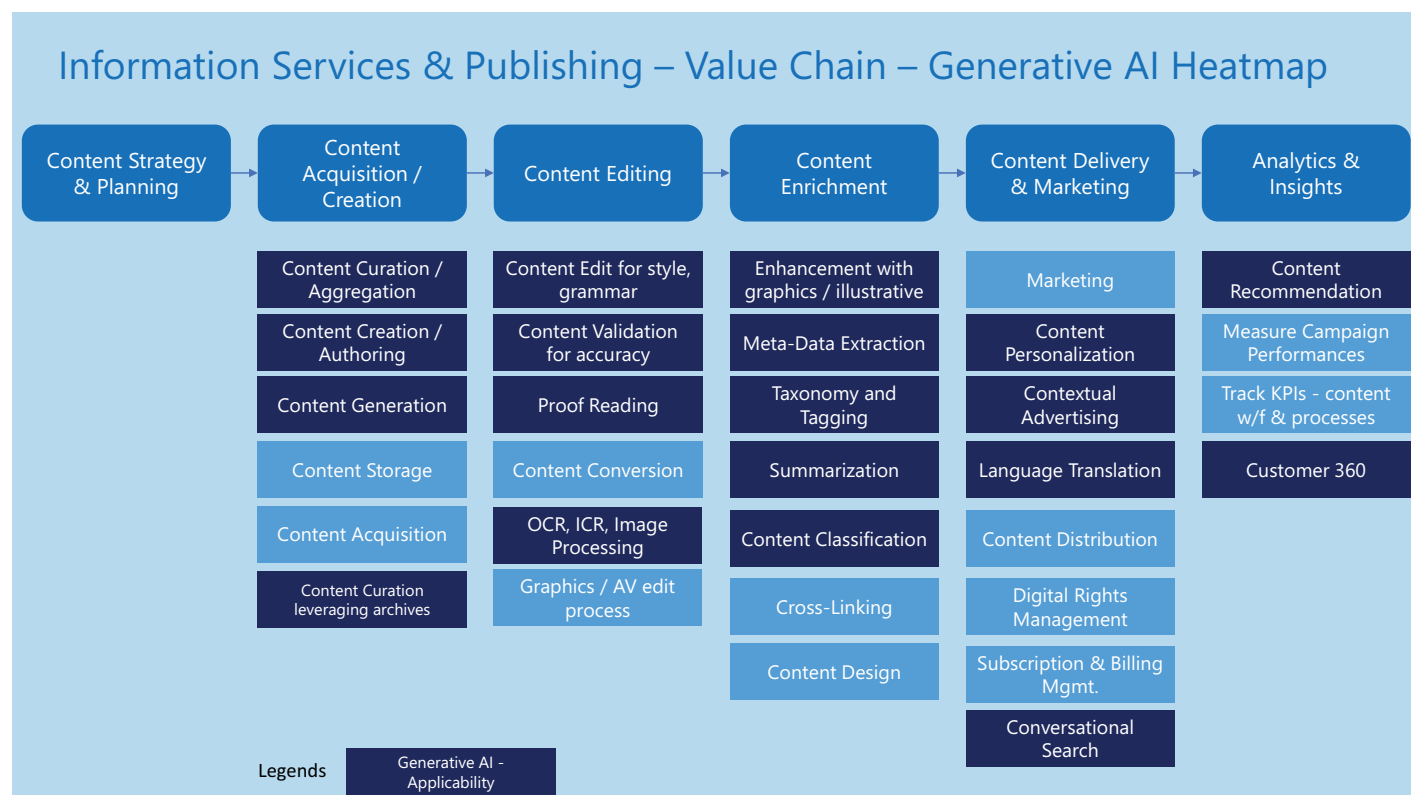
Opportunities

Generative AI can play a transformative role across each function of the entire publishing value chain, enhancing various functions and driving efficiency, personalization, and innovation.

Below illustrative highlights potential opportunity in core publishing areas for generative AI across distinct functions.

Generative AI in Publishing - Common Use Cases

Generative AI finds its applicability in lot of core and foundational publishing functions

Text Generation	Q & A	Text Summarization	Text Extraction	Content Tagging	Language Translation
Proofread	Adopting content for multiple channels	Image Generation	Audio Generation	Video Generation	Content Classification/Taxonomy

In context of the core publishing value chain functions, highlighted are the opportunity areas where generative AI finds itself playing a significant role in driving transformations.

Information Services & Publishing – Value Chain – Generative AI Heatmap

Content Strategy & Planning	Content Acquisition / Creation	Content Editing	Content Enrichment	Content Delivery & Marketing	Analytics & Insights
	Content Curation / Aggregation	Content Edit for style, grammar	Enhancement with graphics / illustrative	Marketing	Content Recommendation
	Content Creation / Authoring	Content Validation for accuracy	Meta-Data Extraction	Content Personalization	Measure Campaign Performances
	Content Generation	Proof Reading	Taxonomy and Tagging	Contextual Advertising	Track KPIs - content w/f & processes
	Content Storage	Content Conversion	Summarization	Language Translation	Customer 360
	Content Acquisition	OCR, ICR, Image Processing	Content Classification	Content Distribution	
	Content Curation leveraging archives	Graphics / AV edit process	Cross-Linking	Digital Rights Management	
			Content Design	Subscription & Billing Mgmt.	
				Conversational Search	

Legends — Generative AI - Applicability

Generative AI can be a powerful tool in the publishing industry to generate content, engage readers and increase revenue. Some revenue generation ideas are…

Revenue Generating Ideas

Content Curation
- Content Curation from archived content. Leverage existing archives to serve more personalized content to readers.
- Publishing content in multiple formats like audio, video, quizzes, etc. to drive consumption and reach.

Content Generation
Improve reach with readers by generating content, stories based on topics of interest. E.g.
- Generate articles on restaurant reviews from a local city, area.
- Generate articles on real estate property reviews.

Content Recommendation
- AI-driven content recommendation to increase reader engagement and drive revenue by suggesting content based on reading behavior and preferences.
- Personalized advertisement recommendation based on users' interest and show ads relevant to the context they are displayed in.

Content Translation
Leveraging power of AI to translate news articles into multiple languages, broadening the readership.

With the widespread footprint of its potential use across distinct functions and processes, generative AI presents itself robust set of opportunities for change.

Impacts / Fear of the unknown

While there is no denying that generative AI has a great potential to improve efficiency and optimization in the newsroom and publishing industry in general, it also faces its share of challenges and risks. Those are in the form of **copyright issues with respect to content where information is being harvested** by AI engines for training **and further traffic to websites being impacted** with generative AI providing information directly in the hands of reader. It is important that generative AI technology is compliant by design and respects copyright and ownership of information.

Recently **WAN-IFRA and SCHICKLER** conducted a study and survey of 100 plus newsroom executives to gain their insights on **how they are utilizing this emerging technology** - All respondents overwhelmingly chose inaccuracies (85 percent) and plagiarism (67%) as their top concerns followed by data protection and privacy issues.

The Dark Side

Trust Deficit – Content can be factually incorrect

Can be prone to bias

Threat to Ad Revenue and Hits

Legal and Privacy Implications

- **Trust Deficit** - Information generated from unidentified sources without fact checking can have disastrous consequences.

- **Risk of bias** - Prone to bias reflected in responses. It can be as unbiased as the data it was trained on.

- **Threats** - Impact on website traffic and advertisement revenue by preventing users from clicking links with ads.

- **Legal / Privacy implications** - Implications for privacy for the fear of use of personal data (non-consented) for training.

- Creating/Generating content without permission of the source leading to **copyright** and **IP (Intellectual Property) violations.**

It is essential to prioritize responsible AI development and deployment including transparency in AI generated content, ethical guidelines on usage and potential regulations for continuous monitoring and accountability.

What lies ahead?

With Information services and Publishing industry is poised to embrace the transformative potential of this technology for driving a future of boundless creativity and innovation, it is equally important to consider the potential risks and challenges associated with its use including the risk of homogenization, bias, and manipulation. Additionally, it is important to address some of the critical questions around the need to combat misinformation, maintain accuracy and data privacy and possible even regulation to ensure intellectual property rights of content owners are protected.

In one of our interesting conversations, we had with an industry leader, an important aspect came up. With most of the enterprises wanting to protect/wall their data, it means LLMs (Large language models) will continue to be trained on publicly available data which is highly likely to be of inaccurate/biased =. This trend will ultimately make the quality of information available to large swath of mankind, become poorer in quality

There are two ways this important question can be addressed - There is tremendous focus and experimentation in developing customized versions of the fundamental models which are domain aware and trained on proprietary, huge, and clean data piles available with publishers. One of the biggest advantages in this approach is the ability to address unique needs of their end customers and business while not compromising on quality and intellectual property. Another way is over time we develop methods for detecting and further develop ability to correct bias in LLMs.

The real answer lies in a balanced approach between retaining the originality and nuance of humans/human intuitions combined with power of AI and promote responsible AI.

How is Infosys geared up?

Journey of AI is at an inflection point, from the age of machine learning to deep learning, and now large language models with generative AI. At Infosys we are poised to help our customers evolve in this journey of continuous innovation and yet driving responsible usage.

Infosys Topaz is an AI-first set of services, solutions and platforms using generative AI technologies. It helps amplify the potential of humans, enterprises, and communities to create value from unprecedented innovations, pervasive efficiencies, and connected ecosystems.

How are we assisting our Publishing customers?

As a company, we have been actively collaborating with several customers from the Information Services and Publishing industry to address significant industry challenges using generative AI technology. One area of focus has been automating story generation, which has proven invaluable in driving editorial efficiency and content reach. By incorporating language translation capabilities, we have enabled wider content accessibility and reach. By using techniques like keyword extraction and content summarization, that efficiently generates content headlines and allows for content tagging, we have been helping our customer streamline their content creation process and enhance editorial efficiency.

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