

Artificial intelligence & Medical Writing – Embracing the new era of improved accuracy & efficiencies

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Executive summary



Global medical writing market size is expanding rapidly

- Current market size is \$3.5B expected to grow to ~\$6B in the next 5 years at a CAGR of 10.5%
- Growth is driven by global rise in R&D and increasing data transparency requirements



Lack of resources and inefficiencies remain a challenge

- Industry-wide scarcity of skilled medical writers
- Tedious and inefficient writing processes



Artificial Intelligence – faster and more efficient solution

- AI can process and manipulate large amounts of data
- Recent advancements have led to NLP/NLG solutions for data retrieval, structuring and authoring
- AI solutions save up to 80% of the writer's time and tackle human errors



Industry is steadily adopting the technology

- Handful of companies are developing platform technologies for QC, data structuring, analysis and generating documents
- Industry partnerships have yielded positive POC results
- Few medical writing companies have also built internal AI capabilities



Taking the first steps to improve your efficiencies

- A step-wise approach is prudent in identifying the key verticals to integrate technology, identifying the right technology and implementing it.

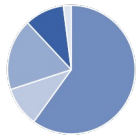
MP Group with >30 years of industry experience and thorough understanding of medical writing and AI can help catalyze your journey to better efficiencies.

Global upswing in R&D is accelerating medical writing market growth



Medical writing market size

- Current market size is \$3.5B, expected to grow to **~\$6B in the next 5 years**
- Growth is driven by **~35% rise in global pharma R&D spend** and 20% rise in clinical trials in last 5 years



Market share by type

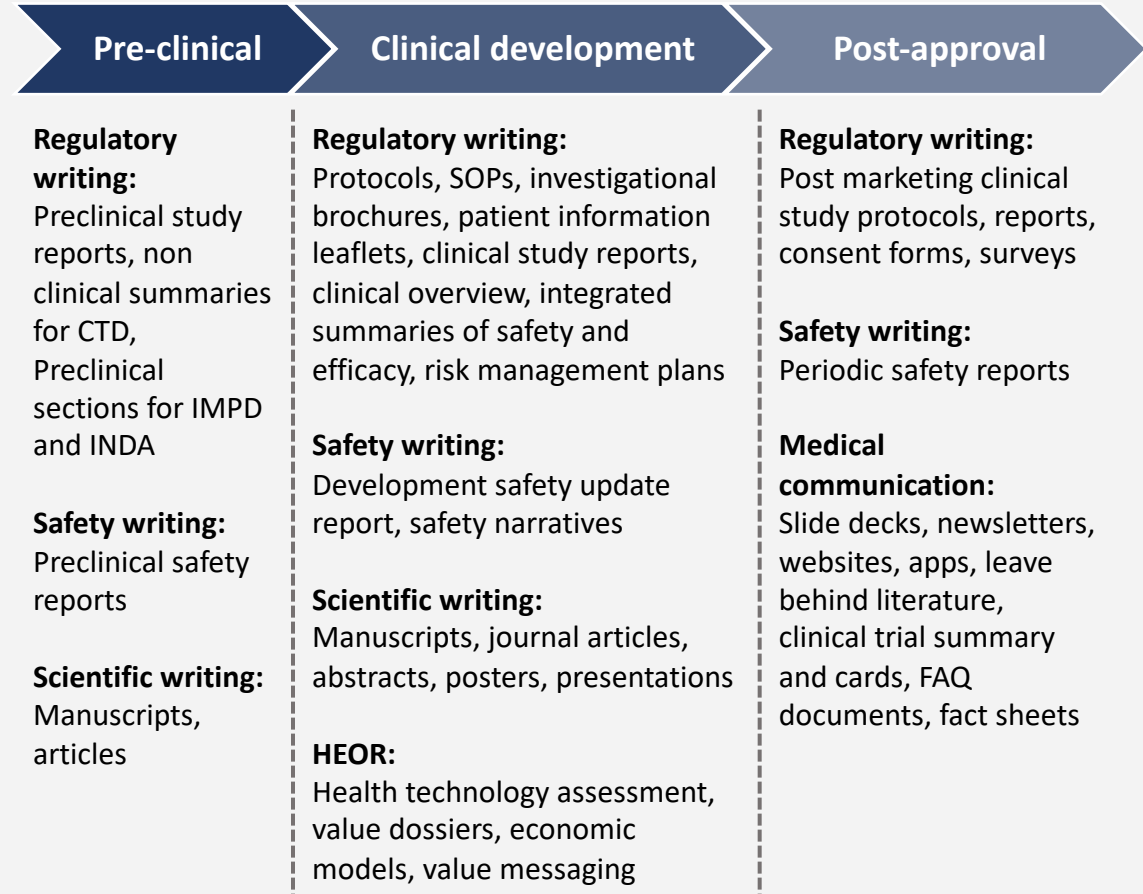
- **Regulatory writing holds 60%** market share and safety writing, publications, communications and HEOR contribute to the rest
- **Increasing clinical trials and regulatory guidelines mandating data transparency** will retain majority



Medical writing companies' segmentation

- **200+ companies** in key regions like **US, EU and India**
- Key categories of companies are full scope CROs, IT service providers and boutique medical writing agencies.

Medical writing segmentation



Source: MP Analysis, secondary research

Medical writing processes are subject to inefficiency and limited resources



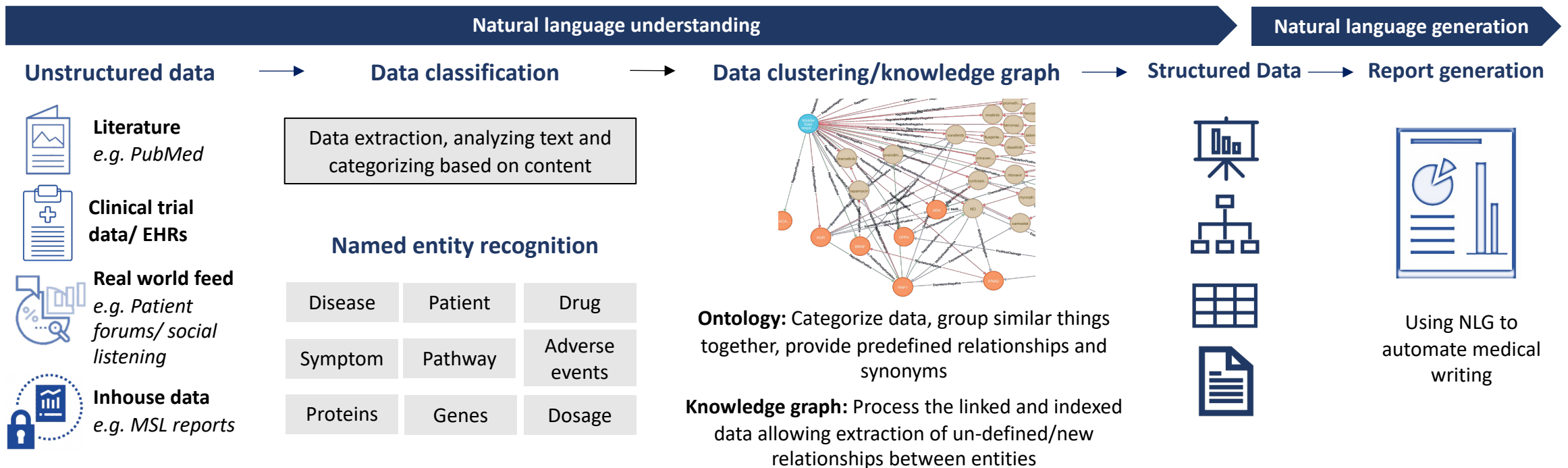
Scarcity of resources	Uniform & compliance proof authoring	Low productivity
<ul style="list-style-type: none">• Universal scarcity of skilled medical writers• High attrition rate with employees, on average, spending 2-3 years in one company• Employing freelancers has impacted quality of work	<ul style="list-style-type: none">• Difficult to maintain uniformity considering high attrition rate and host of M&A activities• Changing regulatory documentation guidelines for each country• Essential to have error-free processes with the emergence of strict data redaction and anonymization guidelines like EMA Policy 70	<ul style="list-style-type: none">• Several redundancies from writing the first protocol to CSR to final dossier• Considerable amount of time is spent in correcting the tense, grammar and review of the documents• With increasing demand of medical writing, it is essential to increase productivity

Using technology to augment medical writing efficiencies

Several companies are now employing Artificial Intelligence solutions like NLP to automate conventional writing processes which are time consuming and tedious.

Natural language processing (NLP) can help auto-create, QC review/proofread or update large numbers of medical documents across R&D, clinical, safety, regulatory, medical, and commercial area.

NLP drives data extraction and data population into structured fields from unstructured/semi-structured sources for data management, QC, data analysis and uses natural language generation for automated report creation.



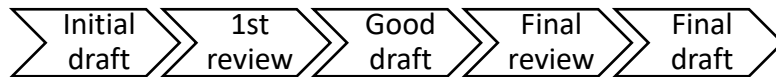
AI can save up to 80% of writer's time while facilitating error-free processes



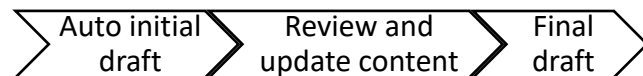
Increase medical writer's efficiency

AI processes large amounts of data and manipulates valuable information **reducing time and cost of medical writing**.

Traditional approach for CSR writing takes several weeks to generate CSR draft.



AI/NLP solutions can reduce 50-80% time on CSR writing.



Ensure Uniform & compliant authoring

AI applies necessary style and formatting conventions.

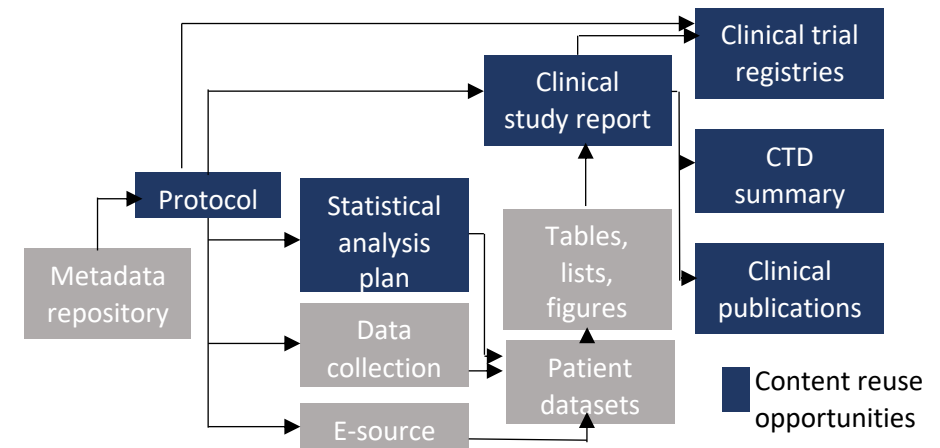
Keeps a track of changing regulatory writing guidelines.

Saves >30% of time in quality processes of documents.



Increase productivity

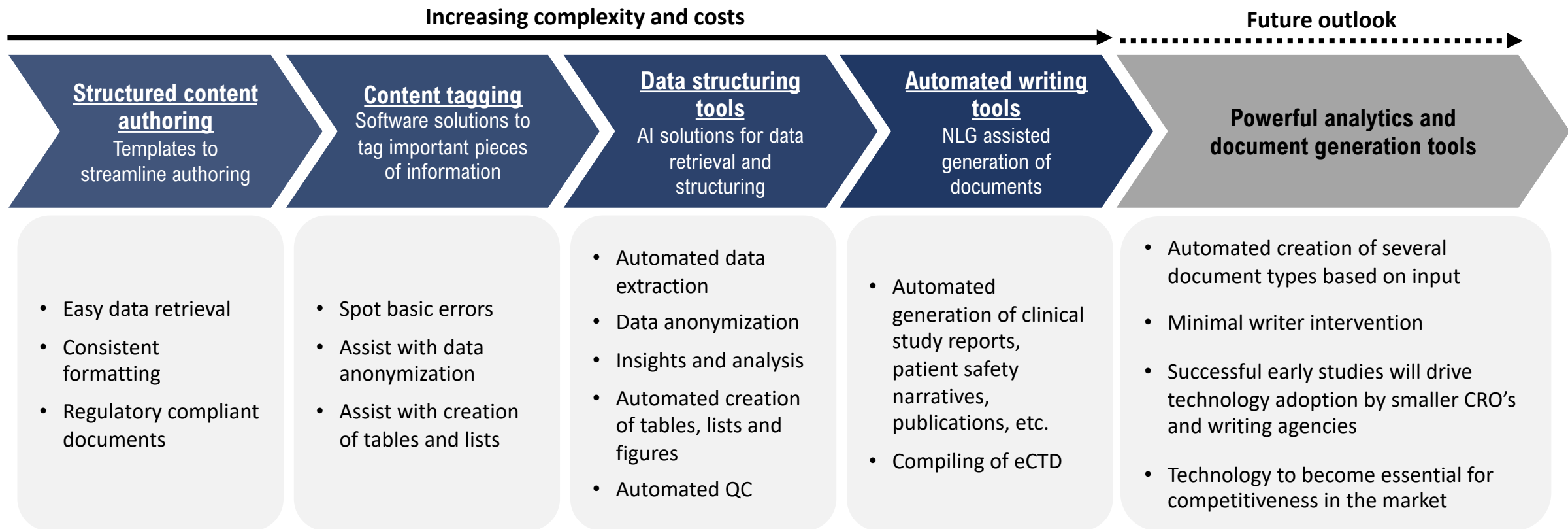
AI **automates creation of several repetitive clinical documents** enabling the writers to focus on more valuable scientific analysis.



Source: Trilogy writing & consulting, secondary research

Advancement of technology – From QC & formatting to automated writing

Templated writing and content tagging tools have been around for several years. However, medical writing industry is now employing more complex solutions for automated extraction, structuring and authoring documents.



Pilot studies with automation tools have shown reduction in time and cost

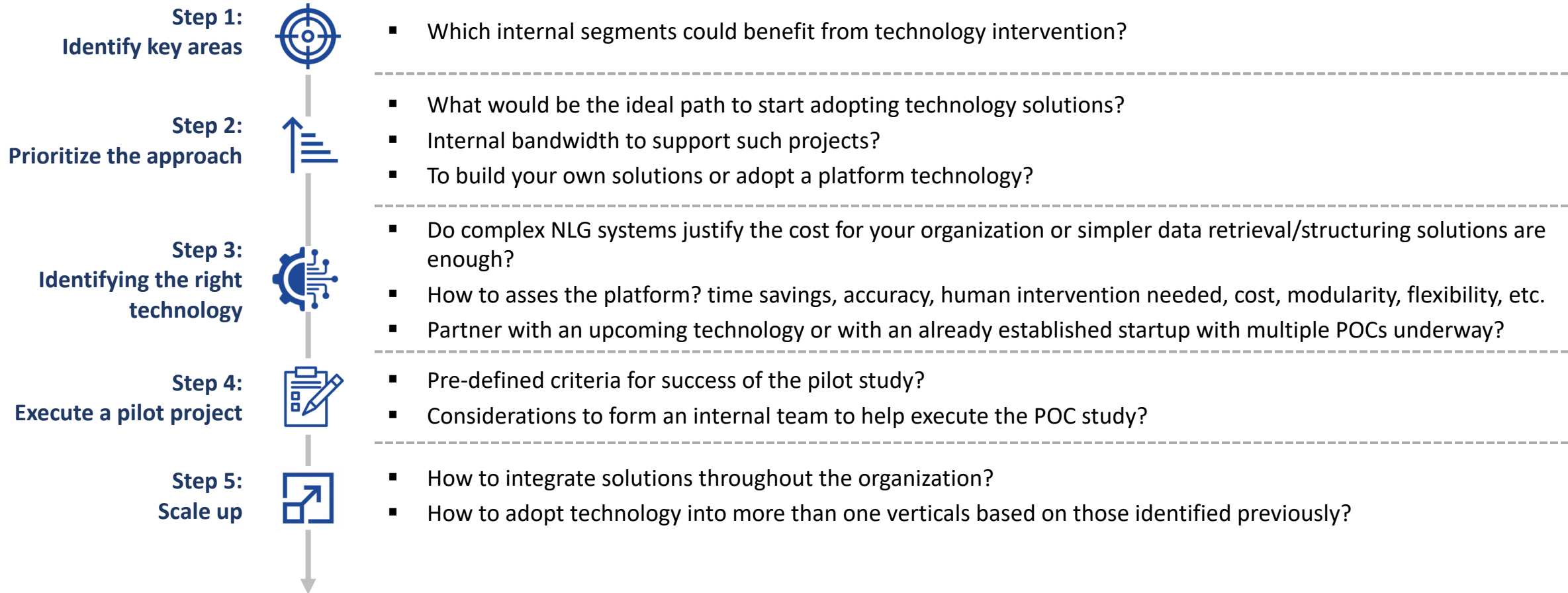
Pharma companies, CRO's and medical writing agencies are taking a 2-pronged approach – developing internal automation capabilities and partnering with companies that have automation platforms. Successful pilot studies are driving adoption of such technologies.

	Companies building internal capabilities	Platform technologies	Partnering activity
 QC & formatting		 	 <p>Partnered with <i>Yseop</i> to automate CSR generation leading to 30% reduction in writing time.</p>
 Data structuring	 	 	 <small>A CERTARA COMPANY</small> <p>Acquired <i>Clingenuity</i> for their AI assisted writing and redaction tools.</p>
 Automated writing		  	 <p>Collaborated with <i>Indegene</i> for their AI and NLP tools for structured content authoring.</p>  <p>Acquired <i>Mind the Graph</i> for their AI tools to create illustrations for posters, infographics, graphical abstracts and slide presentations.</p>

Source: Company websites, secondary research

A step-wise approach for adopting medical writing tools

Identifying the right technology is prudent while keeping the end goal in mind. Smaller projects like automating QC/formatting or redaction would serve as a low energy barrier to gain a first-hand experience.



How can MP Group help catalyze your AI journey?

- NLP has already revolutionized industries like travel, marketing etc., and is at the tipping point to transform pharma/life-sciences
- Reinforcement learning, NLU and NLG, that allow intelligent data extraction, data analysis and content generation are driving advancements rapidly
- It is prudent to take a step wise approach in adopting AI for medical writing based on your internal requirements
- MP team with it's >30 years of global experience and deep understanding of the medical writing and AI space can help catalyze your journey to better efficiencies
- MP group can help with –
 - Internal assessment of areas where technology can be implemented
 - Identifying the right technology and prioritizing your approach
 - Strategizing a POC study with definitive criteria to assess the results in a robust manner
 - Strategizing the implementation and scale up across the organization

THANK YOU.

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