Discussion Guide to Assess the Value of AI with Respect to Efficiency, Quality, and Cost

As with any innovation, there are many elements to consider when assessing the value of artificial intelligence (AI). Initially, it may take time to master prompting, work with a new platform, or integrate AI into a workflow. In the longer term, AI may yield greater efficiency and better outcomes when used in an AI-human augmented model. In all cases, discussion is required between interested parties.

This discussion guide was developed under the auspices of the ISMPP AI Task Force. It details some important considerations with regard to efficiency, quality, and cost when considering the implementation of AI—both within your company, or in collaboration with business partner companies. It is hoped that this will be a useful resource to those building the future of scientific communications and medical publications.

Staffing:
How will AI impact the time taken to perform a task?
- AI might reduce the time to develop content, but it will increase the time to review and check – particularly as we become more familiar with the level at which generative AI (GenAI) outputs can be trusted
- Consider the human factor and how AI may change job roles and requirements, and the time taken to perform them

Scope and scale:
What is the scale of the business affected by the innovation?
- Use of AI is not an all-or-nothing decision. You can identify the elements in your workflow that are most helped with AI and gain experience with applying them. Start small
- Consider the impact of AI on your immediate team. Evaluate whether there could be broader implications for the organization

Skills:
Are there skills gaps in your organization? If so, what are the costs in terms of time and resources for training and/or hiring new personnel?
- Consider the availability of the necessary skills and expertise within your organization to manage, maintain, and use AI systems
- Also keep in mind the ongoing employability of your personnel. In the future, they will be at a disadvantage if they do not have AI experience. Developing their skills in AI use should be seen as an investment in their career as well. In doing so, this may help to manage concerns about the security of their jobs

Cost of development and implementation:
Development costs for an AI innovation may be substantial and require recouping of costs in a way that reflects the value of the innovation. To what extent can such an investment be realized?
- For users of an AI solution, also consider that usage fees are likely to be payable to the innovator/solution provider

Regulatory / Compliance:
What are the regulatory implications associated with deploying an AI solution?
- Consider such factors as data accuracy, AI-training bias, data privacy, security, copyright, and intellectual property; local laws regarding data storage and processing; monitoring/auditing needs; and human oversight/accountability

Tech compatibility:
How compatible is the AI innovation with existing tech systems and infrastructure?
- Consider that the tech integration process can be costly and disruptive to business

Sustainability:
How soon and how regularly should your organization invest in AI solutions?
- AI is a rapidly evolving field, and solutions may need to be updated or replaced as newer technologies emerge. Therefore, you should expect disruption regularly, and you should consider that the AI solutions of today are unlikely to be the same in 2 years' time. Regular updates and changes to AI systems may be costly to implement, so an assessment will be needed to judge the investment required to maintain an appropriate level of functionality in line with advancing technologies

If your business has sustainability targets, how does the adoption of AI systems contribute to this assessment?
- There is a growing discussion around the energy consumption of AI systems, their carbon footprint, and cooling of data storage centers that can rely heavily on water. Consider monitoring and reporting mechanisms, employee and stakeholder engagement, and activities, such as investing in carbon offset programs, to mitigate the carbon footprint of AI activities
- If your business does not have sustainability targets, consider establishing them

Ethics:
What is the impact of AI on employment and/or redeployment of human resources?
- Caring for your workforce is an ethical responsibility. Ensure they have the right skills to function effectively within the context of evolving AI technologies and/or redeploy them to play to their strengths, while still helping them to be fit for the future

KPIs and Metrics:
What are the key performance indicators (KPIs) that can be established to understand what success looks like when assessing the value of AI with respect to cost, quality, and efficiency? And how should we measure that value given the above considerations?

There is active research and investigation into determining the areas/domains to evaluate GenAI solutions. Within this context, consider establishing clear KPIs and metrics to measure the performance and effectiveness of AI solutions to facilitate decisions concerning the cost vs value of AI innovations, including (but not limited to):

- Speed
    - Earlier release of peer-reviewed information into the public domain
    - Earlier activation of science in clinical practice
    - Greater value to patients, healthcare professionals, and your organization
- Quality
    - Accuracy – in automated transcription, while limiting/controlling for any AI-induced 'hallucinations'
    - Completeness of information derived from a broader pool of knowledge
    - Clarity in communicating scientific concepts
    - Readability to ensure terminology is not overly complex
    - Accessibility of content to a broader audience
- Scale
    - AI may facilitate outputs on a scale far greater than if done manually; quantifying this would provide further context to the speed, quality, and cost achieved. For example: faster, less time-intensive projects (facilitated by AI) may allow more of those projects to be delivered
- People
    - Employee work satisfaction – with AI being used for more mundane tasks, employees can enjoy the elements of their roles that are more intellectually rewarding. Staff may feel motivated and proud that the company they work for is investing in the future by adopting AI solutions and actively training them in AI
    - Staff retention – advancing people's skills and careers by developing and adopting new technologies can foster loyalty, motivation, and a desire to remain part of a forward-thinking company
- Cost
    - Consider the net cost in terms of financial and human resources to develop and implement the AI solution vs the current situation