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## Open Research Data and Open Science

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#### **What does open science need?**

It took the 'open access' movement, supported by tens of thousands of academics world-wide 21 years to make 24% of the scholarly literature accessible without charge to the reader. In comparison, it took Alexandra Elbakyan alone only 4 years to make 48% of the literature accessible at Sci-Hub. Legal details aside, this comparison shows the power of technology and the effectiveness of working solutions over slow grassroots efforts. In hindsight, it was the mistake of the OA movement to focus on a small aspect of our scholarly infrastructure, i.e., access, instead of developing technological solutions to the many other shortcomings, e.g., lack of digital functionalities, no solutions for data or scientific source code, no quality assessment, etc. In the last 21 years since Stevan Harnad suggested harnessing the power of internet technology for scholarly publishing in his subversive proposal, the lack of such modern IT infrastructure in the sciences has become a much more pressing issue than accessing the literature and yet, solutions are further away than ever before. I will present examples for the kind of technologies that are required for any modern laboratory and will argue that by using subscription funds to pay for these technologies, open science will be established as a side effect of providing scholars with the infrastructure they need.