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ATG Interviews Moshe Pritsker

CEO, Co-Founder, Journal of Visualized Experiments – JoVE

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ATG: Moshe, tell us about JoVE, the Journal of Visualized Experiments. We understand that it is a video journal for biological research.

MP: JoVE has created a new video-based concept of scholarly publishing. In this concept, a scientific journal article has two principle components, video and text. The video provides a step-by-step demonstration of research procedures and methods employed. Since “a picture is worth a thousand words,” such video-articles enable more efficient knowledge transfer than traditional text-only articles, allowing much faster learning for end users, scientists, and students.

Despite its innovative format, JoVE acts as a rigorous scientific journal, having a prestigious Editorial Board, employing review processes, and being indexed in PubMed and MEDLINE. To summarize, JoVE is the first-in-the-world video journal for biological and biomedical sciences.

In the end, JoVE aims to make a revolution in science and STM publishing industry to convert publication into a productivity tool that can be used to rapidly transfer new knowledge and technologies. This will save a lot of time and money for scientists, educators, and their institutions.

ATG: What led you to create this format? What sort of acceptance/take up have you been experiencing? What is the current subscription price for a year?

MP: I came to this idea because of my personal experience as a research student in biology, during my Ph.D. studies at Princeton. For laboratory scientists, it is very, very difficult to learn new experimental methods and technologies based on their description in traditional text-based science journals. This is because the text format cannot provide an adequate description of numerous details important for accomplishing a particular experiment. So scientists spend a lot of their time (months) and grant money “reinventing the wheel,” when they have to re-learn experiments already done and described by others. The practical solution to this problem typically employed in labs is to find another scientist who is familiar with specific methods employed and who can show how to apply them. But often such a help is not available, and scientists are forced to repeat the experiment again and again until it begins to work. This is a well known “bottleneck” problem of productivity in biological sciences, and every practicing biological researcher is aware of it.

Doing my Ph.D. thesis research and suffering from this problem, I asked myself a question: “What will be a systematic solution for this problem?” I realized that an ideal solution would be to mimic the “show me” solution and produce videos demonstrating every possible biological experiment. I also realized this solution should be presented as a journal, and not just a database or Website, to provide scientists with an incentive to participate in this project. This is because academic scientists care mostly about two things, grant money and their publications in scientific journals — “publish or perish,” as we know this academic phenomenon. If so, video would become a science article of a new type. So the idea of JoVE was born.

I co-founded JoVE with my two partners, Nikita Bernstein and Klaus Korak. Nikita is the company CTO, and he did all the Web development to build the JoVE Website. Klaus was the first investor and he recruited further investments to finance the company operations. I should mention other people, JoVE employees, who strongly contributed to the company growth at first stages: Aaron Kolski-Andreaco, Vandita Singh, Mark Shalinsky, and others.

ATG: Tell us more about the current production of the journal.

MP: The video-production presented a significant challenge we had to overcome. As JoVE was started, we realized it is very difficult to make a video on biological experiment. It requires special equipment, software, skills for filming and editing that scientists typically do not have. Therefore scientists cannot produce good videos on their own experiments. This means that JoVE has to produce these videos for them in their labs. For this purpose, we established an international network of filming professionals, selected and trained to film videos in laboratories at scientific institutions around the world. This network now covers 12 countries including USA, Canada, UK, Germany, Sweden, Switzerland, Israel, and Australia. To maintain the current publication rate, we produce 40 videos per month. We worked hard to make this process manageable and cost-effective, yet it should be noted that the production costs per article are much higher for JoVE than for traditional text-only publishers since we have to pay the fees for video filming and editing.

ATG: What sort of acceptance have you been experiencing? What is your subscription price?

MP: Since its foundation in the end of 2006, JoVE has published over 750 video-articles describing research methodologies in different areas of biological sciences such as neuroscience, developmental biology, microbiology, immunology, stem cells, bioengineering, and others. Most of these articles are produced at leading academic institutions in the USA and Europe such as Harvard, MIT, Yale, Stanford, Yale, NIH, Berkeley, Oxford (UK), Cambridge (UK), Max Planck Institute (Germany), Weizmann Institute (Israel), and others.

With respect to the subscription pricing structure, we divide institutions to three tiers: Ph.D. level (first tier), M.Sc. level (second tier), and B.Sc. level (third tier). The Ph.D. level institutions include universities granting Ph.D. degrees and research institutes. Colleges are typically included in the B.Sc. level tier. In 2009-2010, the subscription price for Ph.D. level institutions was $2,400 per year.

This year, receiving numerous requests from scientists and students, we have increased our publication rate and established two new sections, JoVE Neuroscience and JoVE Immunology & Infection. We offer these new sections for subscription in 2011, so for Ph.D. level institutions the total price for the three-section package is $7,200, if subscribed before January 1, 2011. The price will be higher after this date, as we try to attract early adopters to subscribe as soon as possible so we can use the funds to further increase our publication rate.
Our prices are significantly lower for M.Sc. and B.Sc. level institutions. Currently, nearly 200 institutions are subscribed to JoVE, including such world leaders in research and education as Harvard, MIT, NIH, Stanford, Yale, UC Berkeley, Princeton, and others. Overall, the list of subscribers includes research universities, colleges, and pharma companies.

**ATG:** Do you have peer reviewers? How does the peer-reviewing process work with a video journal?

**MP:** The JoVE peer review is very similar to the peer-review process in traditional text journals. A video article is sent to three anonymous reviewers who then provide their comments on the video and text part of each article. For example, they can say “I have a problem with this specific procedure at 3 minute 5 second from the beginning of the video.”

**ATG:** How is this financed? Did you obtain a grant? How will JoVE be supported in the future?

**MP:** After its foundation in the end of 2006, JoVE was financed through an “angel” investment received from a group of private investors in Switzerland, Germany, and Austria. As its operations grew, JoVE has implemented a business model, which is very similar to the models employed by other STM publishers. The revenues come from author fees, institutional subscriptions, and sponsorships from companies. JoVE became profitable at the end of 2009, and continues to grow.

The main difference between JoVE and other STM publishers is the high cost of video production which makes JoVE articles much more expensive to produce. We have to carefully walk the thin line between keeping our operations sustainable and keeping our subscription fees acceptable to institutions, especially in these difficult library budget times.

**ATG:** We notice that you have “sponsored articles.” What does that mean? Are these peer reviewed?

**MP:** Sponsored articles means articles where video-production fees are sponsored by biotech companies, producers of research tools. They are peer reviewed too, of course. A disclaimer on sponsorship is included for such articles.

**ATG:** How is JoVE indexed or made available in the wider Internet community? Is it indexed by ISI or will it be considered for indexing there?

**MP:** JoVE is indexed in MEDLINE/PubMed and Chemical Abstracts/SciFinder. We are considering an application to ISI.

**ATG:** This is an innovative and “next generation” publication. What other similar types of endeavors are you aware of?

**MP:** I do not want to sound arrogant but I did not hear about any other significant recent developments with respect to the format of scientific articles. In general, with respect to the principal format, the STM publishing did not change much since the publication of the first scientific articles in the 17th century. Yes, science literature content was transferred to the Internet, but the nature of the articles remains the same — these are poorly structured text descriptions that are full of technical terms, understandable only to specialists in specific narrow fields, and difficult to use even for these specialists. At this moment, we see some first attempts by STM publishers to experiment with changes in the traditional text-based format. For example, the journal Cell (published by Elsevier) works on the project called “Article of the Future” to integrate more visual information in its articles. But such attempts are still very rare.

So far, the important changes happened in the way we organize and use the scientific literature. Creation of PubMed by the National Library of Medicine (NLM) was a true revolution, in my opinion. NLM continues to lead integrating PubMed with Genbank and other resources changing usage patterns and creating totally new experiences for scientists and students. Linking and cross-referencing was very helpful, too. The “author-pay” business model promoted by the Open Access movement was an interesting development. However, again, these
In the end, video will become an important component of the STM market, serves as a pioneer and a catalyst of change for the entire industry. Organizational changes on their part. From this point of view, JoVE initiatives will be adopted by the scientific community.

From my experience, to be adopted, any new offering in science communication has to align with current professional incentives of scientists and students: getting grants, publishing in scientific journals, finding the next job, or receiving better grades. Otherwise, it will not work.

ATG: Please speculate on the future for the journal.

MP: I am optimistic since the JoVE receives more and more acceptance among scientists, students, and librarians. We will expand by increasing the scope and rate of the video publication. Specifically, we plan to establish new JoVE sections for major areas of biomedical research such as Oncology and Bioengineering, in addition to Neuroscience and Immunology that are being built now. We should consider expanding to other areas such as Psychology.

I think that sooner or later, following the JoVE growth, big STM publishers will try to massively integrate online video into their products, although it will require significant technology developments and organizational changes on their part. From this point of view, JoVE serves as a pioneer and a catalyst of change for the entire industry. In the end, video will become an important component of the STM publishing.