CoSA Lives

The story of the company behind After Effects.

Many assume that companies make software. Not true: a handful of real, live, breathing, unique people do. We've had the pleasure of knowing a very special group of people – those who brought After Effects into this world – from the first day the tiny Company of Science and Art showed a promising animated graphics program named "Egg" to the public. This program has changed our lives, and those who created it have become our friends. Therefore, we asked one of the original creators of After Effects – David Simons – to recount what it was like in those early years, and what in the world they were thinking when they started down this path.

Afterword by David Simons

After Effects was originally created at a small start-up company in Providence, Rhode Island. We ended up with a focused application, but the path we took was far from planned.

It all started officially in June of 1990, when Greg Deocampo, David "DaveF" Foster, David "DaveH" Herbstman, and I ("DaveS") sat down with our new lawyers to incorporate The Company of Science & Art. We had high hopes. We knew the odds were against us, but the idealism of four recent college graduates trumped the 90% failure rate we were warned about. Providence's Brown University was our common connection. Greg had graduated in 1988, and we three Daves had just graduated that spring.

Greg had a plan, and we all wanted to help make it reality. The Company of Science & Art – "CoSA" for short – would become a world-class content provider for the new electronic age. Greg predicted a time when all computers would be connected and electronic information publishing would become much more important than paper-based methods. He also saw CD-ROM, a new technology at the time, as the first enabling medium for mass distribution of cross-linked multimedia information: *hypermedia*. According to the business plan, CoSA would become an electronic publishing conglomerate in five years.

But first we needed an office, because all the preliminary meetings so far had been held in my apartment, which I shared at the time with my girlfriend and two housemates. It was nice to wake up to Greg bringing over doughnuts every morning, but my girlfriend made it clear that CoSA needed its own office.

After searching all around Providence, DaveF found a great space near downtown in the recently refurbished Imperial Knife Building. A great open space with huge factory windows and sandblasted brick and wooden support beams, it seemed perfect. DaveH negotiated the rent down to $1,000 a month, and we were in business. With the help of some friends, we postered the Brown campus looking for furniture. It was a buyer's market, since most of the graduating seniors had little need for their

desks ($15), chairs ($10), and bookcases ($5) anymore. Greg's couches from home rounded out the comfortable décor.
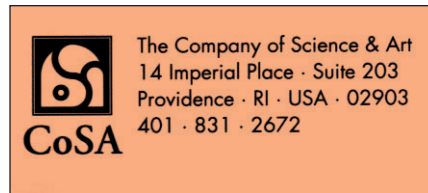
The four CoSA founders clearly needed help to carry out the master plan, so we immediately started hiring others. The only capital we had was Greg's $30,000 investment, so the main thing we were offering was the fun of working at a start-up where the next big thing would be born. This was a hard sell, but Greg is a very convincing person.

Greg had saved a lot of time by picking a name for the company before anyone joined. However, CoSA didn't yet have a logo. The majority of our first few weeks (months?) were occupied with making pencil sketches and holding meetings, trying to decide on a logo. In case it's not obvious, the CoSA logo we picked is composed of a stylized C, o, S, and A. The response from most people is "Oh – I thought it was a parrot's head."

The basic premise of CoSA's business plan was to have artists and programmers working side by side to produce multimedia content. CD-ROM production was our first task. Macintosh computers were the most advanced multimedia platform at the time, so we planned out a system for authoring electronic magazines using HyperCard and custom plug-ins. Microsoft Word RTF documents with hyper-link information were "flowed" into a multipage multicolumn layout, with space for in-line advertisements.

MacWorld Expo Boston was coming in August, and it was a big marketing opportunity. We decided that we needed to prime the pump by giving away a free, compelling CD-ROM to show off what we could do. This was before America Online™ diluted the value of CD-ROMs by flooding the country with junk mail CDs.

Our first hypermedia publication was called *Connections: The CoSA Journal*. Designed to show off the new medium, it was a varied collection including an art gallery, virtual steel drum, and articles on the history of music and Canyon de Chelly. We tried selling advertising pages on the CD-ROM, but we couldn't find anyone willing to pay. We dropped the price to $0 and still had very little interest.

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CoSA

When we got the CDs back from the mastering plant, we were crushed to find out that our images and animations were *painfully* slow when they played back from the CD. Back then, the one thing we couldn't really test before mastering was the performance of the CD-ROM itself, and none of our testing had prepared us for the end result.

We had already rented out part of a MacWorld booth from a chip merchant, and couldn't let the opportunity slip by. But *Connections* was not going to impress anyone. So instead of giving out a free CD, we gave the *promise* of a free CD. In our tiny booth, we put a big "FREE CD-ROM" sign over our heads and collected the names of a lot of interested people. The hundreds of fruitless *Connections* discs were later used around the office for art projects, as Frisbees, and as microwave-oven fodder.

We later discovered that *Connections'* abysmal performance was mainly caused by a certain extremely slow brand of CD-ROM drive we happened to own. But it turned out to be a blessing in disguise, as the slowness of the animations was the impetus for us to write

Promises, promises – but every electronic publishing conglomerate has to start somewhere…

PACo, the PICS Animation Compiler. PACo allowed platform-independent, low-bandwidth streaming animation playback with synched sound.

Work on PACo continued through the fall of 1990, and we even were able to generate some income by building custom animation-playback HyperCard plug-ins for trade show displays and museum kiosks.

It became increasingly clear that PACo was more likely to produce real income than hypermedia publishing. We simplified our custom animation tools into a coherent product, and in May 1991 PACo 1.0 shipped. Bill O'Farrell, who had been hired on as president earlier in the year, worked a deal with Paracomp to sell PACo, under the name QuickPICS, that was bundled with Paracomp's 3D program ModelShop. PACo and QuickPICS sales provided enough income to allow CoSA to limp along, paying very low wages to the non-founders (typically $1,000 a month). Founders didn't get any salary. We each had our ways of surviving – mine was the generosity of my parents.

> **Excerpt from the CoSA business plan, circa early 1991:**
>
> The potential of hypermedia is only now becoming clear…. In the long run hypermedia may be as significant an invention as the television. It will allow the computer to act as the television, telephone, newspaper, shopping mall and library, all in one. Users will be able to tune into television programs, make phone calls, select articles from magazines, buy clothing, research a topic of interest and much more.

The office rent was usually paid on time, but the heating bill that winter was getting out of hand. Suite 203 in the Imperial Knife building was a cavernous space, and to get the lower 6 feet warmed up we had to heat the 15 feet above as well. To save money, we kept the heat way down. It was a surreal sight to walk into the CoSA office and find half a dozen jacketed people, each in front of a glowing Macintosh screen, with a task-lamp positioned – not to light their work – but rather a few inches over their hands to keep them warm. I also liked to use cutoff-finger gloves for added comfort while programming.

When we started work on PACo, we didn't know that Apple Computer was secretly working on a new technology called QuickTime. We had a hint that something was up when we had an opportunity to demo PACo to Apple CEO John Sculley during his visit to Brown University's computer science department. He was *very* interested when we showed him a single digital video file that was playing back with synched sound on a Mac, PC, and Sun Sparcstation.
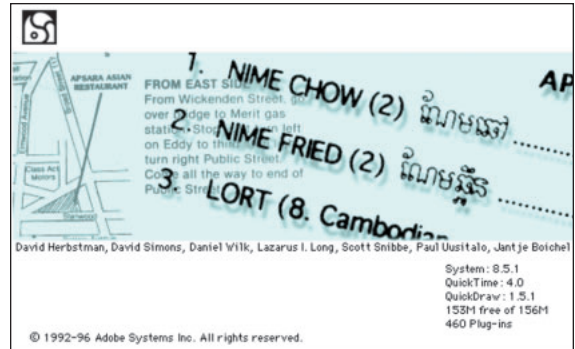

CoSA circa 1991. *Left to right:* David "DaveH" Herbstman, David "DaveS" Simons, David "DaveF" Foster, Greg Deocampo, Ben The Dog, Sarah Lindsley, and Josh Hendrix.

When Apple announced QuickTime in June 1991, we decided it was time to change our plan. CoSA was in no position to compete with Apple, and we didn't want to be, as DaveH is fond of saying, an "ant running in front of the steamroller."

PACo Producer 2.0 would eventually ship on February 29, 1992. But in the fall of 1991, we had already started planning for the "next big thing." We gathered everyone in the company together to discuss future products. No idea was turned down for discussion. We even considered turning the "meal plan" in our shared house (where by then DaveH, David "DaveT" Tecson, Greg, and I all lived) into a commercial endeavor. The front-running ideas were a full-media-indexer – like full-text indexing and retrieval but extended for images, sounds, and movies – and some type of animated effects program.

In the end, the animated effects idea looked like it had the most promise, and seemed like the most fun. Greg had used Photoshop to repeatedly apply filters like Twirl, saving out each frame individually and running the frames through PACo to produce distortion animations. Josh Hendrix, our friendly blond-ponytailed tech supporter had been known to stay up late at night repeatedly applying random permutations of Photoshop filters just for the reward of the resulting eye candy. And those of us with cable television had watched countless hours of MTV to inspire our effects imagination.

Since we knew nothing about the effects market, we had to find some experts for advice. *MacWeek* happened to run a special article on people using Macs for digital video work. DaveH threw some darts and picked a few people to call. Lucky for us, Harry Marks was one of the names. Without knowing anything about us, Harry offered to meet in his Hollywood office to discuss our plans for a new digital video product. It wasn't until months later that we found out about Harry's legendary status in the motion graphics field. We scraped together a few other industry connections, then DaveH and I took off for a week of research in San Francisco and Los Angeles. The information we gathered from Harry and others was used to plan our new product, code-named *Lort* after a favorite entrée at Apsara, a nearby Cambodian-Vietnamese

David Herbstman, David Simons, Daniel Wilk, Lazarus I. Long, Scott Snibbe, Paul Uusitalo, Jantje Boichel

System : 8.5.1
QuickTime : 4.0
QuickDraw : 1.5.1
153M free of 156M
460 Plug-ins

restaurant. Subsequent code names were also pulled from the same menu (see the secret "About" dialog in After Effects 3.1).

We gathered lots of ideas from our trip. After PACo shipped in February, fellow engineer Sarah Lindsley (now Sarah Allen) and I started planning Lort's architecture. After weeks of design work, we had created a monster architecture. Lort would be able to process any type of media in any way. Anything from MIDI musical data to a word processing document, all of it time-based. The only problem was, CoSA would surely go out of business before we were half finished.

I slapped together a very simple mock-up of the user interface to show to potential investors. Bill pitched our idea to various companies, including Aldus Corporation and Adobe Systems, but no one was interested in paying us to develop such a beast.

PACo was selling well enough to support us for a while, but we really needed to ship something new in six months or it would all be over. We gutted the Lort plan, leaving only the most crucial elements. The next item on Apsara's menu was Egg Roll, so we called our new project *Egg*.

We started coding for Egg in earnest during the spring of 1992. CoSA had turned into a software company instead of a media company. By this time DaveF had moved onto other pursuits, and Greg had stepped back from day-to-day operations to be more of a hands-off CEO. We never did give away a free CD as promised – software development became our focus.

We hired two engineers as summer interns to help out: David "DaveC" Cotter for user interface work and Dan "Filter-Boy" Wilk to write effect plug-ins.

DaveC also helped bring our Dave count back up. Both ended up joining us full time and are still on the team today.

At a point when half of CoSA's employees were named Dave, DaveT produced a T-shirt with the CoSA logo on the front and "There's a 50% chance my name is Dave" across the back. That T-shirt is often remembered as our most successful product. Besides the T-shirt, DaveT was also responsible for the After Effects packaging and documentation.

> # There's a 50% chance my name is Dave.

Our first press demos were held in a private suite at MacWorld Boston in August. We had varied responses – most reviewers were impressed or at least interested, some were confused and a bit hostile. We were excited and proud to see a headline in *MacWeek* soon after (naturally with a pun about hatching an egg).

Egg was demonstrated to the public for the first time at a multimedia show in Santa Clara, California, in September. Bill and DaveH were on hand to give a demo to Chris and Trish Meyer, who asked to be beta testers on the spot. Needless to say, taking them on worked out well!

Our schedule started to slip, but by cutting some features it looked like we could finish in time for MacWorld San Francisco in January 1993. As popular as the name Egg had become, we needed a real name. Every meal and social gathering was spent suggesting and ruling out possible names. My favorites were Video Banana and MovieTwist, but the top vote-getter was Effecstacy.

Most of us were about 24 at the time, and fairly liberal-minded. At 30 years, our president Bill was the old-timer of the group, and therefore the voice of reason. Bill wouldn't stand for the drug-related implication of the name Effecstacy. His veto was honored, and after further debate we all agreed on After Effects. In memory of the naming crisis, After Effects' four-character operating system identifier is still FXTC.

As evidenced by our naming choices, we saw Egg as an *effects* program. In hindsight, it is now obvious that Egg was a compositing application with effects as just one of its tools. At the time, we didn't know that compositing in and of itself was an avenue we could explore. We were lucky that the layering architecture we started with was a great base upon which to build a compositing application.

With the name chosen, we still had many features to finish and bugs to fix. We had a small group of dedicated beta testers to help us find bugs, since our QA department was only one person. As MacWorld approached, it became clear that a few of our beta testers were really hard core. Chris and Trish Meyer were particularly productive. Late one night I was talking to Trish on the phone about a bug, and we realized that DaveH was talking to Chris on another line, while Trish faxed in a bug report at the same time on a third line!!

The 1.0 release of After Effects was declared ready for shipping just a day before we had to leave for MacWorld SF. A few plug-ins weren't quite ready yet – Basic Text in particular was being worked on right up until the flight out. We had a little party in the

The CoSA Timeline	
June 1990	CoSA incorporates
September 1990	PACo starts
May 1991	PACo 1.0 & QuickPICS 1.0 ship
February 1992	PACo Producer 2.0 ships
April 1992	*Lort* starts
June 1992	*Egg* starts
January 1993	After Effects 1.0 ships
May 1993	After Effects 1.1 ships
July 1993	Aldus buys CoSA (fifteen employees)
January 1994	After Effects 2.0 (*Teriyaki*) ships
April–June 1994	Ten CoSA employees move to Seattle
October 1995	After Effects 3.0 (*Nimchow*) ships
April 1996	After Effects 3.1 ships
May 1997	After Effects 3.1 Windows ships
January 1999	After Effects 4.0 (*ebeer*) ships
September 1999	After Effects 4.1 (*Batnip*) ships
April 2001	After Effects 5.0 (*Melmet*) ships
January 2002	After Effects 5.5 (*Fauxfu*) ships

The After Effects Team, 2003 – *standing in back, left to right*: Jim Acquavella, James Landy, Michael Natkin, John Nelson, Eric Anderson, David Cotter, Keiko Yamada, Dan O'Donnell, Pam Treece; *sitting on wall*: John Carscadden, Steve Kilisky, Steve Balo, Erica Schisler, Meredith Yeary, Val Hemmen, Jessica Papkoff, Jenny Suter, Steve Tiborcz; *sitting in front*: Jennifer Domeier, Devon Westerholm, David Simons, Dan Wilk, Will Lockwood, Jason Bartell; *not shown*: Bruce Bullis, Teri Carilli, Michael Coleman, Yukiko Eron, Lincoln Lopez, Miwa Mueller, Vladimir Potap'yev, Chris Prosser, Jonathan Shekter, Paul Uusitalo, and many others from Adobe groups across the world.

foyer of the office, and hand-built the first few dozen boxes for sale on the show floor.

Showing After Effects 1.0 to the public for the first time was an exhilarating experience. We had a tiny booth, and people were packed ten-deep at times trying to get a glimpse of DaveH's exuberant demo. Looking back on it now, version 1.0 seems incredibly simple: no Timeline window, one effect per layer, no transfer modes, no motion blur, one mask per layer (no Beziers). But sales were good, people were starting to pay attention, and we were motivated to add more features.

Potential customers weren't the only ones paying attention. Now that we had a shipping application and companies like Apple promoting the digital video field, larger software companies were interested in CoSA. Six months after MacWorld, we agreed to be acquired by Aldus Corporation. It was both scary and relieving – scary to give up control, relieving to have a steady paycheck.

A year after the acquisition we moved to Seattle just as Aldus merged into Adobe Systems. Through all the corporate changes, the After Effects team stayed together, and even today many of the same people are working on the product including Dan Wilk and myself as engineering managers. Unfortunately, I don't have the space here to mention all of the other teammates over the years who have been vital to our success.

We currently have over twenty dedicated employees working on After Effects in Adobe's Seattle office. It's a fun program to work on and a great team of people. After Effects' success has been a pleasant surprise for all of us who have worked on it. The ultimate reward is seeing the amazing things our users produce – you continue to challenge and inspire us.

We decide what to do based on your feedback. Email with suggestions for new features can be sent to **aftereffects@adobe.com** – please help us design the next version!

David P. Simons
Seattle, December 1999 / updated April 2003