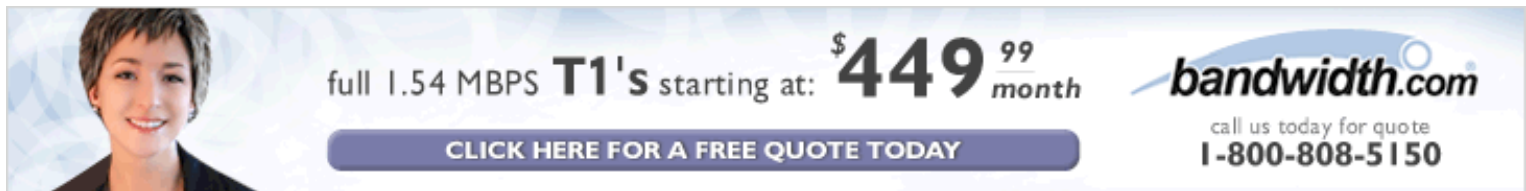


NewsForge

The Online Newspaper for Linux and Open Source

<http://business.newsforge.com/>



full 1.54 MBPS **T1's** starting at: **\$449⁹⁹** / month

bandwidth.com

call us today for quote
1-800-808-5150

[CLICK HERE FOR A FREE QUOTE TODAY](#)

Title Leaders see symbiotic growth for open source and biotech

Date 2005.03.18 10:00

Author Jay Lyman

Topic

<http://business.newsforge.com/article.pl?sid=05/03/15/168201>

As they peer deeper into potentially life-saving and enriching research on stem cells, genes, agriculture, and more, biotech researchers are calling more and more on the software and ideas of the open source community. Biotech leaders are building collaborative biotech systems, sites, and programs that are based on open source code and ethos. The movement is also trying to turn patents upside down so they serve as tools that force collaboration.

Apache developer and [CollabNet](#) founder and CTO Brian Behlendorf told NewsForge in an interview that he was approached by Richard Jefferson, the influential founder of the nonprofit [Cambia](#) institute, about a new gene patterning patent that was "fundamentally different," and the two talked about how the patent could serve as a mechanism that promotes, rather than discourages, sharing of information.

"As an academic, he was disgusted by the amount of patenting in biotech," Behlendorf said. "We thought, how could we use this kernel for building an open source community on top?"

Behlendorf said the project --which turned into the [BIOS Initiative](#) and [BioForge](#) site and community -- was also an opportunity for CollabNet to find out if it was building the right collaboration tools and whether the pieces could be put together rapidly.

"It was a chance to see if those [tools] applied to an industry right next door to software," he said. "It's still an experiment. We won't know about the success of it until a year from now."

Behlendorf indicated that despite clear differences between the two industries, the similarities of open source software and biotech may present an opportunity to share information on sharing information.

"Right now, [open source] is a far cry from where biotech as an industry is today," he said. "[Biotech] has been more aggressive in patents and protecting investments in intellectual property. And in research and development, and in universities, there's more money spent on biotech than on software engineers. The fruits of that work only trickles down to the companies that are able to turn it into commercial products."

In an effort to spread the biotech wealth of knowledge, Cambia and the BIOS Initiative are proposing new business models that promote transparency and innovation through what is often a dirty word in open source: patents.

Behlendorf acknowledged the idea creates confusion and some degree of angst among the open source software community, but he stressed that the plan -- aimed at utilizing open source pooling principles on the

planet's most significant biotech issues, has not yet fully taken shape.

"At the end of the day, I don't think Cambia has decided what the final license scheme will be," he said. "The idea is how to use a license on a patent to compel future patents to be available. We're still trying to figure out how it will work and having the conversation of what is the right license and intellectual property on BioForge. To a large degree, it's like the planting of a flag on the Moon. We'll see what happens next."

In an email for NewsForge, Cambia's Jefferson described the licensing scheme more as an ongoing *exercise* rather than experiment.

"It is a dynamic, evolving exercise," he said. "We are doing, not dabbling. We do have a published [license](#) which is fairly well developed and it is already under construction by several major and minor companies. We have been working on the legal and practical sides for a long time. I expect we'll have licensees within [a] month."

Jefferson elaborated by saying although the Bioforge.net site is in its early stages and will likely be improved significantly, the Bios license, while also still evolving, is more mature.

"With patents, as distinct from copyright, the complexity of subject matter and its fields of use can be so great that there will have to be the ability to tailor licenses to certain circumstances," he said. "Thus a certification scheme is being developed. We want to learn from the [OSI](#) challenges of certifying 'too many' licenses and having to oversee them, but we also need to have more flexibility entering into the world of patents and the world of life sciences."

Open source seeding

The basis of the BIOS initiative now is what Jefferson describes as a "kernel" of the world's first open source biotech toolkit, an analogy to the community development that has blossomed around the Linux operating system kernel. In the biotech case, the kernel consists of new technologies such as TransBacter, a new method for transferring genes to plants, and GUSPlus, a new way of visualizing where such genes are and how they function.

"Our software that is cutting edge is developed in house, except of course for the Collabnet framework on Bioforge, and constitutes a lot of value in the Patent Lens," Jefferson said. "We have pretty remarkable IT guys who have crafted full-text searching and parsing of very large datasets of patents: a program [in C] called Dekko. It's already at Version 3.0 and is the largest patent searching tool around and it's going to get much better soon."

Jefferson also discussed another "work product," related to parsing and presenting patent data and landscapes, that may bolster the effort.

"We anticipate taking Bioforge in many new places with the science project management and communications tools that will make it a very friendly site for many users, not just biotech and certainly not just agriculture," Jefferson said. "Rather, we want to include public health, natural resource management, environment, you name it."

Jefferson -- who has sought counsel on the effort from open source leaders including Behlendorf, open source legal expert Eben Moglen, Mitch Kapor, and publisher Tim O'Reilly -- said the stakes for success are billions of human lives that would benefit from a sharing process based on patents.

"What we're trying to do is take the open source idea that more eyes means less bugs and say all problems are solvable in the collective," Jefferson told NewsForge in an interview. "There are four to five billion people whose livelihoods are not well served by patented innovation."

Jefferson, whose group published its new licensing plan for sharing in last month's issue of the journal *Nature*, said the hope was to leverage the Internet and the collaboration possibilities it provides to spread knowledge and information on plant breeding, medicine, and other biotech applications without raising intellectual property issues.

"We've spent 15 years developing the concept and exploring license agreements," he said. "Open source concepts have allowed the idea of patents not to restrict but to enforce improvement and a community of users."

While he discussed taking open source software development ideas to the biotech industry, Jefferson also indicated biotech might be able to give back by providing a patent model that could work for software.

"Biotech can help in our ability to parse patents," he said. "We're looking to find synergies to help render the world of patents utterly transparent. The ultimate beneficiaries are the billions who have no voice in the market."

Jefferson indicated Cambia will likely collaborate with Moglen, [Open Source Development Labs](#) (OSDL), and others in open source to extend the search and parsing and visualization tools into software patents as well as life sciences.

"So I expect our integration with the IT community will increase dramatically," he said. "Biotech is facing and has been facing for years the patent nightmares that the IT community is waking up from with a shriek. Our tools will all be open sourced when we're happy that the documentation allows it to be productively shared and worked."

Jefferson said while his biotech research and interest in turning around the purpose of patents -- which he maintains were originally established to allow changes, workarounds, and advances on original ideas -- occurred over the last 18 years, his awareness of and research on the open source software movement prompted the idea of marrying the industry ideologies.

"Now, we've flowered at roughly the same time as the open source community," he said. "The synergies and similarities are profound."

Developing model builds industry

Projects such as the [Open Source Stem Cell Research and Development Platform](#) and an [intellectual property search engine](#) from California-based U.S. BioDefense highlight how both open source software and ideology are being put to work in biotech. Bill Weinberg, the Open Source Develop Labs' open source architecture specialist and evangelist, and follower of the emerging biotech/open source fusion, said some analogies between the two industries are obvious.

"There are synergies, in that biotech as an industry makes use of Linux as a host for a lot of sequencing software," Weinberg told NewsForge. "Linux is used in lab machines, and, because of its scalability, to build grids and do high performance computing, particularly in biotech."

Weinberg, who said the benefits of parallel scaling through Linux have already borne fruit in biotech, added there are also obvious differences between open source software and biotech, since, despite some industry patent efforts, no person or company created genes. The similarities, however, stand out and could provide mutual benefit to both industries, Weinberg said.

"Openness in science, historically, helped to drive science, and it has also led to discovery and the rapid advancement of open source software."

Just as some, including Linux creator Linus Torvalds, have complained of the negative impact of patents in software, so too have researchers such as Jefferson complained of the loss of innovation from patented techniques and processes in biotech.

"Some in biotech have decried locking down sequences, saying it runs against how science advances," Weinberg said. "There's a direct analogy to that in open source -- statements like Linus made, that software patenting of what are in some cases trivial sequences definitely has a dampening effect on innovation."

Weinberg indicated that both the biotech and open source software industries could learn from each other in a number of areas, particularly where biotech and pharmaceutical companies face the challenge of developing nations in need.

Weinberg pointed to Cuba as an example of a developing country that has successfully combined open source software and biotech to [build an industry](#).

"They're using readily available open source software to build their industry up from scratch," he said. "Just as the reign of proprietary software is being overcome, some of the barriers are being broken through in biotech. The irony is, countries are using open source as a lever to develop [a biotech industry]. Both industries have the rallying cry of openness and continuing openness as a means of accelerating innovation."

Links

1. "CollabNet" - <http://www.collab.net/>
2. "Cambia" - <http://www.cambia.org/>
3. "BIOS Initiative" - <http://www.bios.net/daisy/bios/15>
4. "BioForge" - <https://www.bioforge.net/>
5. "license" - <http://www.bios.net/daisy/license/210>
6. "OSI" - <http://www.opensource.org/>
7. "Open Source Development Labs " - <http://www.osdl.org/>
8. "Open Source Stem Cell Research and Development Platform" - <http://www.linuxmednews.com/linuxmednews/1106324091>
9. "intellectual property search engine" - http://www.t2x.us/frame_index.php
10. "build an industry" - http://www.wired.com/wired/archive/12.12/cuba.html?tw=wn_tophead_8



© Copyright 2005 - NewsForge, All Rights Reserved

printed from [NewsForge](#), [Leaders see symbiotic growth for open source and biotech](#) on 2005-03-21 22:48:02