

## **Eco-Friendly Algae Process Solution for the Nutraceutical Market**



**Brad Bartilson**  
CEO

**CEOCFO: *Mr. Bartilson, what is the concept behind Photon8?***

**Mr. Bartilson:** Photon8 was brought forward to address the need for a new source of biofuels back in 2007 and algae, being the source of our fossil fuels millions of years ago, is a natural candidate. However, the ventures that got put forward went in the wrong direction and did not pay attention to the financial cost of their technology path and could not be profitable in fuels. Therefore, those concepts could never be produced in large scale. I was asked to look at a way to do that, developed techno-economic models and then invented a pathway to achieve profitability in fuels with algae. Along our pathway we found that the algae that we used and then forward mutated actually developed and contained a high Omega3s in the oil fraction. Therefore, as that discovery happened we turned our focus, of course, towards making a higher profitability product. Now we are focused on going to the nutraceutical market with a product that is high in Omega3s, but also other vitamins and minerals. An all-in-one supplement is our first focus.

**CEOCFO: *What is the product today? Do people care that it came out of algae?***

**Mr. Bartilson:** They will care in that the Omega3s that are generated today have been coming from fish oil. Fish accumulate a number of toxins, dioxins and importantly, mercury. Mercury levels have increased 30% over the last 20 years in our ocean fisheries. Mercury can be removed through molecular distillation down to safe levels; however, there is always a concern. Therefore, to have a product that comes from a pure source without contamination is important. It is the other piece that we are adding to the food chain process. We are at a point of peak fish. We are having a food issues. More and more, the world is turning to aqua culture for its food, so we are pressuring our world fish system. Thirdly, as we want a higher concentration of Omega3s it means putting more fish in the front end, placing more pressure on fish. Therefore, it is both a socio-economic issue and our future. Ours is a veggie source as opposed to an animal source, so that certainly appeals to a good segment of our population as well.

**CEOCFO: *Where are you in the process?***

**Mr. Bartilson:** We are ready to go to market with our product. We have got some pieces to bring together; final product presentation. However, we are now in the process of securing the funding to take that step. We have been producing outdoors for four years. Just briefly, our process is complete- from sunlight to finished product. We have a number of processes that comprise intellectual property. .

**CEOCFO: *What were the challenges in the technology or in creating the system? What have you figured out that others were unable to identify?***

**Mr. Bartilson:** I started out from a techno economic model, driving the cost down. The challenge was cost and efficiency trade-offs. People initially focused on closed systems, as they offered control over the environment, contamination, winds and all of the elements of nature, and higher productivity. However, this was very expensive, and thus could never be scaled. Then they switched to open pond systems, with somewhat lower cost, yet lower productivity. However, the cost was still far from being low enough to make sense for fuels. Therefore, what I brought together was a solution that was a closed system, yet much lower in cost than even an open pond. It essentially captures the top layer of a pond, with a solution that avoids the cost of system depth, yet capturing and converting all the sunlight energy into growth. I call this the farm of the future. We harvest every day, as opposed to a couple times a year. It is twenty to two hundred times the productivity of terrestrial crops. Long range, we can make everything from breads and cookies to high protein based products. There is an endless limit of things coming down the road. The algae and the oil extraction processes were also

critical to success. Competitors spent millions of dollars attempting to create a 'super algae' using genetic modification, transecting DNA from other sources. GMOs however, present potential health and environment issues whose production could be pre-empted by the FDA and EPA. Thus we chose a forward, natural mutation approach to increase lipid (fat, oil) productivity. We got lucky in that approach a real breakthrough. The last part that was critical was how to get the oils out and separate the ingredients without drying the algae, as drying algae is very expensive, due to the high water content. Therefore, we found a way, with a partner, to remove the oils from the biomass without drying and doing that in a non chemical approach. That is significant, differentiates us from other products and solutions in that all the way from front end to back end, we do not touch the algae with chemicals.

**CEOCFO: *What surprised you as you were developing this system?***

**Mr. Bartilson:** I have led high challenge projects in my past. Typically, complex projects stay complex and sometimes get more complex. It is what we call "feature creep". Typically as you move towards final productization more pieces get added. In our process development, the system actually became simpler. We were able to eliminate parts of the system as we learned and invented, driving the cost even lower and improving their liability with less system elements. That certainly assisted us in moving forward in a more elegant approach, lower cost to employ and a more competitive system. Therefore, that has been unique in development. Discovering twenty seven percent EPA content oil was also a surprise. EPA stands for Eicosapentanoic Acid an-a very important omega 3.

**"Our farm of the future, and its products will be a basis for societal advancement...as exciting as the industrial revolution!" - Brad Bartilson**

**CEOCFO: *Have people been actively looking for a better omega 3?***

**Mr. Bartilson:** 6-10% of the population is very-health focused and very aware of the benefits of omega 3s. That interest has spawned Omega3 supplementing of products across our food spectrum; breads, cookies and cooking oils. Nearly all the infant formula is supplemented with DHA (Docosahexaenoic Acid, another important Omega3 that is important for healthy brains). We have very positive initial market responses from industry leaders on our veggie-based and clean processed Omega3 product. Our next step is product launch-market entry.

**CEOCFO: *What is the plan?***

**Mr. Bartilson:** Our commercialization plan is a series of stages. In the eight to ten month range, we will produce enough material to go forward into the first stores and complete market launch. In parallel with that activity, we will be expanding our operating incrementally as we design and build our first large production plant on five acres. This 'scalable unit' will be the unit of replication that forms the basis for very large plants.

**CEOCFO: *So many products claim to do so much and really do not. How do you break through the noise and the skepticism?***

**Mr. Bartilson:** To ensure our success, we chose an experienced partner, the Viero Group, that has been down this path before. They used to operate the largest omega 3 processing plant in the world and are connected into thirty thousand stores in the United States. We are using them and other resources to ensure that we get the right positioning and messaging. We will work with the stores themselves to develop unique advertising to sell best in their stores. Our messaging will focus on product purity emphasizing free from any contact with contaminants that are found in fish oil-mercury, PCBs, dioxin and other toxins. People that care about their health generally care about the environment as well, and our products and processes address reduced pressure on natural fisheries, and carbon footprint. On carbon footprint, we use several carbon sources, the largest of which is CO<sub>2</sub>, which is the green house gas. Unlike other products which consume carbon from fossil sources in their creation, our process is carbon neutral. We will also emphasize quality. A recent study on supplements and vitamins that was commissioned by the Attorney General of the State of New York exposed that in some cases the vitamins were not even there. Our message will be strong on validation of our product quality.

**CEOCFO: *How do you maintain quality control?***

**Mr. Bartilson:** Our closed systems ensure that contaminants have no chance to contact our product, and certainly no chance to accumulate as they do in fish. Our closed system avoids airborne contaminants coming into the system. With open ponds, you can have bird feces and other algae transferred on the birds and algae is also in the air. Our water is filtered and sterilized to provide a highly controlled process. We have genetic control of the algae we use to start the systems, control of the nutrients and the water, making for a tightly controlled process.

**CEOCFO: *Are you looking for partnerships or funding?***

**Mr. Bartilson:** What I can say right now is that we are happily engaged with investors bringing forth this funding for the scalable unit plant in the near future- closing within the next several months.

**CEOCFO: *You mentioned other things that can be grown with your system. What is on the backburner?***

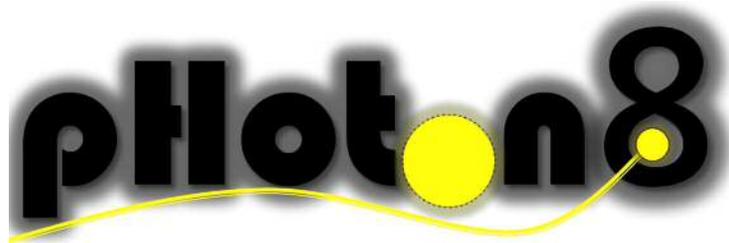
**Mr. Bartilson:** There is just a wealth of products, but we are going to focus on the highest value products first and use the financial profitability of the company on those to help grow the company and attack those of lesser value. In the future, we have some technology that increases the bio availability of the oils (increased transfer from product into the bloodstream). I think that is exciting and it fits with the theme of Photon8 bringing forth that higher purity product. We have isolated an algae that produces a toxin which is a cancer curing agent and that is terribly exciting. This will have to go through the FDA approval process, which is long and big money.

**CEOCFO: *Why pay attention to Photon8, Inc today?***

**Mr. Bartilson:** I believe we present the most exciting set of technology, philanthropic interest, and health, along with a fantastic investment return. We have developed the 'farm of the future', which will prove out to be the most efficient way to make the basic ingredients for food- protein, carbohydrates, vitamins and minerals. Higher efficiency and quality have been the basis of societal advancement, thus this will be as exciting as the industrial revolution!

Interview conducted by: Lynn Fosse, Senior Editor, CEOCFO Magazine

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