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PLANETARY
SYSTEMS
CORPORATION

Low-Shock, Test-Verified Space Separation Systems Manufacturing

About Planetary Systems Corporation

Planetary Systems Corporation (PSC) was founded in 1998 with the goal of manufacturing low-shock, test-verified space separation systems by Mr. Walter Holemans. Today, PSC has over 40 separations on-orbit with a 100% success rate. PSC's products range from small Canisterized Satellite Dispensers (CSD) for 10-20 lb satellites all the way to 2500 lb satellites which use the Motorized Lightband (MLB)

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

CEOCFO: Mr. Whalen, would you give us an introduction to Planetary Systems?

Mr. Whalen: Planetary Systems is a small, mechanical engineering firm and we do very specific space based mechanisms. We make the Motorized Light Band, which is a separation system. All we concentrate on is on-orbit separations for space based vehicles.

CEOCFO: What is it used for and whom do you sell to?

Mr. Whalen: It is used to deploy satellites into space. When a rocket launches a satellite into space and as it gets on orbit, all the burns are done, so to speak, and the last thing it has to do is separate from that final stage, that final motor. We make the mechanism that does that. Our chief engineer likes to say that we make a big trunk latch in space and when you push your trunk latch button, your trunk opens, well it is the same paradigm. It gets a signal from the vehicle and we separate the satellite into its orbit.

CEOCFO: How big is the market for this? What was it years ago, how has it transformed and where do you fit in?

Mr. Whalen: The space market in general, a rough approximation is the number of launches per year. There are roughly about 120 to 150 launches worldwide. Half of those are the US. There is usually anywhere from 3-5 satellites per launch that are put into orbit. If you are doing the numbers there, that is somewhere between 180 and 375 separations per year, just in the US. They can be very small ones to very large ones. A common perception is that with the shuttle and the things that happen with the shuttle as a human space based flight program, is that our space industry has not funded well or is declining and that is just the opposite. As the human-rated space launches have gone to lower levels in terms of spending, we have ramped up more in smaller satellites that require no human based interaction in space. The space market is thriving pretty well right now and there is a ton of innovation happening.

CEOCFO: What is the competition and what sets you apart?

Mr. Whalen: We actually sell to our competition. We sell to the larger space based companies such as Lockheed Martin and Boeing; the large satellite makers. Really the competition for our product is a homegrown or a one off solution that those companies would come up with for that particular satellite. What is appealing for them when they find out about us and our reliability and how long we have been in the business, is that we generally are much lower cost than a one off project to fund and develop a separation system for that one satellite. Many times the build versus buy decision comes down in our favor and they will buy our system rather than build their own.

CEOCFO: Regarding your products, is there a customization that is involved or is it one size fits all?

Mr. Whalen: We have about half of our sales are custom and half are off the shelf. We are on the GSA schedule and if someone needs to launch quickly, they buy that, and we can get it to them in a matter of a few months. We are very reactive in that regard. There are times, especially with the AF's Office of Responsive Space, which is an endeavor by the Air Force to get things into space quickly for operational need and that means all the vendors have to react quickly. We are one of those vendors that can do that.

CEOCFO: What does R&D look like for you? Are you constantly redeveloping your products or adding new components? What are we looking at two or three years down the line for you as far as products?

Mr. Whalen: We strive to have a broad product line. We have all different sizes of the Motorized Light Band. Now we have developed with electronics going the way they are in terms in of getting smaller and smaller and the battery technology also getting smaller and more powerful. Satellites are getting smaller, so small that they can now be launched in a box, the box door opens and four or five little four inch cube satellites deploy. We are developing a box deployment

system called the Canisterized Satellite Dispenser, for those very small systems. We are really broadening our product line to do all kinds of deployables in space. We have a hinge that will deploy in space and we are really to concentrate on space deployables. That is what we do.

CEOCFO: *Where will future growth come from for you?*

Mr. Whalen: We believe that with the miniaturization, Moore's Law where transistors get smaller and then they double in density every eighteen, that is still true and will continue to be true. That factor is driving our industry, satellites are getting smaller and so most of our revenue is going to come from smaller and smaller systems. Because very smart people are getting innovative, they are putting up constellations of systems rather than one large satellite and many small satellites are doing the job of one large satellite. Our growth is going to come from the smaller end. The growth is also coming from innovative companies like Space X, who are the US based launcher and are driving costs down for everyone. As costs for launch go down, more launches will probably happen and that means more satellites will need to be deployed into space.

CEOCFO: *As CEO, what is your main focus?*

Mr. Whalen: From a marketing perspective, our focus is squarely on two of the Ps, our product and our placement; how we are getting our products in front of people and letting them know about us. We have been around for 14 years but there are still quite a few people that have never heard of us and think that we have only just started up. Getting the word out and marketing placement are some of your main focuses right now.

CEOCFO: *Is there a particular way you reach your customers?*

Mr. Whalen: Our three prong strategy is getting folks out there in front of everyone and trade shows is a big focus for us because they are getting more and more of what is popularity of space based systems. Social media and those things are a good way to get the word out to many people.

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CEOCFO: *Is it pretty much your own sales force or do you do partnering or disturbing agreements with people?*

Mr. Whalen: It is mostly our own team. Our market universe or the total addressable market is actually fairly small. There are not that many launch providers and there are not that many satellite makers. We are lucky enough that we are able to know who all of them are. Most commonly, those are very large companies, so just getting in front of them repeatedly, we can do that with a smaller force, so we are mostly home grown.

CEOCFO: *When you are speaking with a prospective customer, what would you say is that aha moment that gets them to think this is really interesting and they should go in this direction?*

Mr. Whalen: As you can imagine, in the space business, when you talk about reliability and how important it is that these things works, they are fairly conservative business from an engineering standpoint, and therefore reliability is one the major overarching drivers for the industry. When they find out that we have about fifty deployments in space with zero failures, that is the “aha” moment; their take is “Oh! You are for real!” That is a huge moment for when people realize that we are not just a new startup. It takes a long time to cultivate that kind of record.

CEOCFO: *Final thoughts?*

Mr. Whalen: To the readers that are probably of the same ilk as I am, I think we would be happy to get in touch with anyone that wants more information. Planetary Systems is a pretty dynamic company and anyone who would like to come and talk with us, we are very happy to do that. We are in the DC area, we are pretty open on what we do and we love what we do. Therefore, we are happy to show it off to anyone who would want to see or visit at any time.

BIO: Mr. Whalen has over 20 years engineering management experience. Before coming to Planetary Systems, he worked in Silicon Valley for Intel and various start-ups as a program manager. He is also a combat veteran, having served as a Naval Aviator. He is a family man who enjoys hiking, biking, camping, chess and reading.

Planetary Systems Corporation
2303 Kansas Ave
Silver Spring MD 20910
301-495-0737
www.planetarysystemscorp.com