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October 16, 2008

Bob Graybill Starts National Clearinghouse Firm for HPC Services

Bob Graybill, whose high-profile roles have included heading the DARPA High Productivity Computing Systems (HPCS) program and working with USC-ISI, the Council on Competitiveness and half a dozen big defense contractors, is now CEO and president of a start-up. Nimbis Services aims to expand HPC use in manufacturing by brokering cycles, storage and expertise.

HPCwire: What was the rationale for founding Nimbis Services?

Bob Graybill: The company's direction is based on more research data and market experience than most new companies have at their disposal. That includes three years of comprehensive studies, IDC surveys and conferences funded in part by DARPA, DOE, NNSA, and NSF that were led by the Council on Competitiveness and University of Southern California Information Sciences Institute. The research included in-depth discussions with the Council's HPC Advisory Committee comprised of senior industry, academic, laboratories and government representatives.

HPCwire: What was the gist of the findings?

Graybill: There's a huge benefit from using HPC to do modeling and simulation, or what we call digital analysis computing, in order to accelerate competitiveness. Larger companies have been benefiting from this for years, but there's a huge gap between the P&W and Procter & Gambles of this world, and their supply chains. The studies identified major barriers preventing smaller firms and business units from moving beyond their desktop computers to exploit HPC. The barriers include the cost of acquiring HPC systems and ISV software, as well a lack of expertise in how to use HPC resources. The studies also showed that in larger companies it's not unusual for users to go outside of their divisions to get HPC resources because the resources within the division are often fully utilized.

HPCwire: What happens when HPC isn't available?

Graybill: In companies of any size, when people don't have access to HPC they typically do one of three things, none of them ideal. They might just ignore the problem, or they might downsize the problem so it can run in a reasonable period of time on a desktop computer. That allows you to run a lot more jobs, but it could limit the quality of the product because you're not modeling fully. Sometimes people also revert to more physical experimentation if they can't model the problem on the desktop. But building multiple physical prototypes is significantly more expensive from an engineering, manufacturing and time-to-market perspective. It's also much more labor intensive, so it disadvantages countries like the U.S. that have higher labor rates.

HPCwire: Did the company name come from Harry Potter's turbo-broomstick?

Graybill: Both names come from the Latin *nimbus*, meaning "cloud." Ours is the plural form,

nimbus. We wanted to find a unique, memorable name. I hope we succeeded.

HPCwire: You've been in HPC leadership positions in government and academia. Why did you decide to pursue the goal of helping to boost industrial competitiveness though a private company?

Graybill: Our first approach was to try a non-profit model like MOSIS, which USC-ISI has run over the past 25 years to aggregate multiple semiconductor chip designs onto a single wafer run, but we got strong feedback from this target industry segment that they wanted to deal with an organization that has a real stake in the game. This suggested a for-profit approach. The business model Nimbus Systems adopted is based on discussions with major OEMs, their suppliers, and ISVs.

HPCwire: Which part of your background was most helpful for your role with Nimbus Services?

Graybill: I'm not sure if there was any single one. It was a combination. There was my Lockheed-Martin experience managing large engineering organizations and the challenge of consolidating and reorganizing groups for business reasons. Probably the most relevant experiences were DARPA and the Council on Competitiveness. As a DARPA program manager, you were expected to come up with new programs and present them like a VC pitch, and you'd come away with either a check or no check. At DARPA I worked with a very diverse community of academic researchers, industry thought leaders and senior government representatives. It was a fantastic experience. The Council also gave me an opportunity to work with senior folks in academia, industry and the labs but from a slightly different perspective: competitiveness and ROI instead of R&D. I got a good feel for what drives their decisions and the factors that might make them interested in a potential product or service.

HPCwire: What is the business model for Nimbus?

Graybill: To be a business-to-business brokerage or clearinghouse. The idea is to provide pre-negotiated access to cycles, software and expertise on an on-demand, pay-as-you-go basis. We won't own any equipment or do consulting ourselves. We're simply a clearinghouse that builds a menu of quality services and then brings the buyers and the sellers of those services together. Our targets are periodic and experimental users, initially in the manufacturing sector. These are people who don't want to jump over huge hurdles to get the benefits of modeling and simulation using HPC. We're an aggregator of services. We also help our partners, our service providers, by reaching out to a brand new community on their behalf.

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