

Chip paves the way for all-in-one handheld

Two of the world's largest cellphone manufacturers are testing SIGPRO's Flexium™ boards

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The Ottawa Citizen

Anyone who has grappled simultaneously with a laptop computer, a personal digital assistant, a cellphone and a digital camera will applaud what SIGPRO Wireless president Sundara Murthy set out to do.

It's a fact of life that the technological advantages of the wireless world -- the capability to receive an e-mail from the other side of the globe a split second after it was sent, the ability to make a phone call far from civilization, the need to send and receive a message on the fly -- have also left humans in a state of singular confusion.

Simply put, humans are a little short in the hands department. We have only two of them and we need to stay in touch with friends and relatives and colleagues at work. We do it with cellphones, laptops, BlackBerrys and an assortment of personal communication devices (PCDs) that need to be taken with us everywhere we go.

Mr. Murthy was thinking along such lines more than five years ago when he realized people soon would be carrying even more. There was a need, he surmised, for a single device that would meet all the needs -- phone, e-mail, instant messaging, surfing the Net, taking a photo -- and relieve users of feeling like human pack horses.

"It started with the remote control for TVs," he says. "Who would think now of turning on a TV by hand? Then the phone went from fixed to mobile. I envisaged at that time that this culture wouldn't stay with the phone. Next it would be the Internet, e-mail, global positioning and cameras, video and audio



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because individuals are on the move and they need communication devices that go with them. I knew there had to be one device because people couldn't carry five or six."

The answer was clear. There had to be a single device that could snap photos, make a phone call, receive e-mail, and be a mini-computer. The stumbling block was that no single processor (chip) existed that was able to perform such varied functions. Other computer scientists had maybe thought the same.

The difference was that Mr. Murthy set out to do something about it and came up with the solution to produce a universal programmable chip: a six-in-one solution, so to speak.

There are gadgets now available that have multi-functions. But they also have multi-chips. That limits the ability to reduce a

gadget's size and it also drives up the costs. For SIGPRO, one chip equals one price equals reduced costs.

Today, two of the world's largest cellphone manufacturers, both huge global players, says Mr. Murthy, are testing SIGPRO's Flexium boards in their labs. Michael Inskip, SIGPRO's director of business development, isn't naming names, but one suspects that the names of Sanyo or Samsung, Nokia or Motorola are in there.

"The Flexium chip," says Mr. Murthy, very seriously, "is not just a chip. It is a convergence enabler. (One supposes that after years in the making, the Flexium warrants such a dignified title.) It is the first programmable chip of its kind that will enable the convergence of telephoning, SMS (Short Message Service) messaging, e-mail, web browsing, computer networking, global positioning systems, JPEG camera, entertainment gizmos such as MP3 audio, MPEG-4 video and video games -- all in one handset.

"There will be no need for someone to carry a Nokia cellphone, a Palm PDA, a RIM BlackBerry, a Canon camera and a Sony portable stereo player. These will be in one single device. It means your cellphone will be a digital camera with which you can take endless photos and then send them by e-mail, and also download music and also receive a text message.

"The Flexium makes all this possible."

Mr. Murthy is unhesitating in his belief that SIGPRO is on the verge of a giant breakthrough. When he initially conceived the idea of a universal chip, only the cellphone was in wide use, but other appliances were gradually gaining acceptance among consumers.

Moreover, a nomadic culture, which was spreading far beyond the business world, supported his contention that a single wireless appliance capable of supporting multiple applications and permitted by multi-service protocols and multiple standards would be needed.

The market SIGPRO is chasing is huge. In 2002, more than 450 million cellphones were sold worldwide. In early 2003, the number of cellphone subscribers crossed the one billion mark, surpassing wireline phones. The industry estimates annual revenue this year of approximately \$50 billion U.S. from handsets and a service revenue of \$500 billion U.S. That is expected to grow exponentially over the years as the mobile phone industry introduces new models and the industry gravitates into China, India, Brazil and countries where the phones are today still a novelty.

"We are going after a billion-dollar market. Mobile phones no longer are the luxury item they once were," says Mr. Murthy. "They're now considered essential, but you have to imagine that if we were to turn the clock back six years, who in their right mind would buy five different appliances to handle communications, information, navigation, computation and entertainment? Well, of course no one would. They would buy just one if they could. They are not far away from being able to do just that."

The incentive for SIGPRO is that the company has a three-year headstart on its closest rival. "This time next year, we expect to be shipping in volumes," says Mr. Murthy.

The first deals will likely be the springboard for SIGPRO to go public via an initial public offering, Mr. Murthy said.

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Sundara Murthy

"SIGPRO believes it can be the Intel in this field. Until Intel came up with the architecture for its 286 chip, there was the Wang computer that only did word processing, IBM only did database, other microprocessors controlled

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specific systems. This is where Intel and Bill Gates made a difference.

"What happened 20 years ago with computers we are emulating today with communication devices for the next 20 years. Is SIGPRO going to make a difference?"

"Absolutely. It's going to open up a new frontier for those who need these devices. SIGPRO is going to be Ottawa's biggest success story.

"The next 25 years belong to us. This is not simply a three- or four-year opportunity."

Venture capitalists Terence Matthews and Leo Lax are the main investors behind SIGPRO. Together, they've injected about \$15 million into the company.

The time is not far off when they will sit down with the SIGPRO board and decide whether to accept a takeover offer or stay the course and go public through an IPO.

Mr. Murthy said he would prefer it was the latter, but the consensus will determine that, he said.

It hasn't been an easy road for the company, caught, as it was, in the technology crash. There were breakthroughs and moments of despair. There were times when it was five steps forward and one step back.

"But in October 2001 when we saw our first version of the chip design work in the lab, that's when I felt a sigh of relief that I knew we could do it," said Mr. Murthy. "Before that it was still a dream, because we had taken several things that we didn't know."

In July, SIGPRO opened a technology centre in Coimbatore, India, where the Flexium chip will be tested and verified when it enters production. The Coimbatore plant is another step in Mr. Murthy's six-year plan to put Ottawa on the wireless map.

Should the lab test reports come back positive, the wireless revolution that he has long worked for will be a reality.