Looking back, it's easy to see all the missed opportunities that could have made us money. We could've invested in Microsoft, Intel and Cisco when they were still fledgling companies. But how do you spot those opportunities in time to make sound investment decisions and ratchet up your portfolio?

"If you're riding a giant wave of change, like wireless or the Internet, you do not have to be a genius to make money. You just have to show up," said Steven C. Halstedt, general partner, Centennial Ventures, in his address to the Global Executive Forum.

With an exceptional management team and an exceptional business model, "there is almost no limit to the value that can be created if you do show up."

Centennial's investments are in the field of electronic communications, the convergence of three traditionally separate industries: computers, media and communications. "This is a $2.5 trillion business in terms of revenues worldwide, growing at about $200 billion a year in scale. It's being driven together principally by digital technology, but also by complimentary advances in wireless and optical technology. The Internet is right in the middle."

Catching the wave

To make sure his company benefits from waves of change that are on the horizon, Halstedt engages in white space planning, which is the process of tracking trends for business analysis, synthesis and strategic planning. It's a threefold approach with threefold benefits. "If somebody sends me a business plan, I can look at that plan and say, "Okay, what trends is this thing riding? Which of the trends is particularly important? Analyzing business plans for these waves of change is really helpful."

Synthesis is the hardest part of white space planning. "This is where you start crossing these trends somewhat at random, recognizing patterns and trying to come up with a business model." Separate but related trends combine to form a wave of change. "Multimedia communications is a wave of change that involves widely dispersed intellects using powerful computers on broadband networks."

The objective in trend tracking is to spot a great idea -- like a surfboard riding a wave of change -- that will have value in the future. "The application service provider business came out of that kind of thinking."

White space planning is as important for existing portfolio companies as it is for startups, and can help a company remain competitive in a hyper-competitive environment, "By tracking the various trends and trying to understand where the world is going to be in three to five years, you can take steps to position your company to be successful in that environment."

In picking winners, what happens to old and established companies that are not part of the wave? "We do not necessarily believe that the incumbents are going to lose their value," said Halstedt. "In fact, many of
The internet economy: Creating billion dollar companies

Steven C. Halstedt

the incumbents are going to benefit mightily from this stuff as long as they adopt the change. They may even benefit more than some of the new entries.

Surfer model

Halstedt uses a surfer model when talking about waves of change. "The surfboard represents a simple idea. The simpler the idea, the better -- like telephones in cars. We find complex ideas typically don't work; they require too much coordination."

But the idea does not go anywhere on its own. "You need to have an entrepreneur who can take that idea and ride the wave as far as possible." And timing is the key to buoyancy. Try to catch the wave too soon, and it flips underneath you and out of your grasp. Wait too long and the wave swamps you as you try to catch it.

"With the right entrepreneur, however, you can catch the wave and move forward. And that person then coordinates the people, the plans, the money, and the strategic partners in order to make that business a reality and to actualize it."

Given all the obstacles in getting a company going, it takes an entrepreneur with an attitude to keep riding that wave. "Usually it's someone too dumb to know what they can't do, and they end up being enormously successful because they tried."

While Halstedt prefers to invest in companies with strong and experienced management people, he points out that Microsoft's early management team had no track record whatsoever. "Yet, they were some of the great business geniuses of the 20th and perhaps the 21st centuries. Apple computer was exactly the same way," said Halstedt. But how do you identify those folks who are going to be successful?

"Part of it is, are they on this big wave? If they've got a nifty idea, they're on a big wave, and you can sit down and go through a planning process with them and see if they're receptive to change and are willing to hire very strong people to run the company."

Brainstorming change

Spotting the next wave of change is a time consuming process that involves a broad base of people. Every year, Centennial Ventures brings together experts from various fields to brainstorm about trends as they affect the convergence marketplace. They are CEOs and chief technology officers of portfolio companies; they are technology researchers, members of economic or socio-political think tanks. What they have in common is "some grounding in this whole notion of the convergence space."

Using computers, the experts identify the most important technology trends, economic trends, socio-political trends, and industry trends for the last five years. Then they look to the future and name the most important trends in these areas for the next five years. The purpose of using computers instead of oral discussion is to ensure that everyone has the same input, and that no one person dominates the session.

The next step is to sort through the trends to arrive at the four or five that are similar and consolidate them into one trend.

Then the participants rank the trends according to importance to arrive at a consensus of the top 10 trends. Once a consensus is reached, Centennial collects data on each of the trends.
The internet economy: Creating billion dollar companies

Steven C. Halstedt

Opinions about trends tend to change from year to year as the experts bear down on a particular issue, Halstedt said.

Generally right

Forecasting is as much art as science, and only in looking back can you tell if the forecasts were on target. Said Halstedt, "The forecasts about 1998 made in 1993 are all wrong; however, directionally they're generally right. Directionally, a lot of people got some of the trends right: the broadband trend, the wireless trend, and the digital data trend. Those trends were unmistakably correct. However, very few were able to predict the implications of these trends."

A Forum guest pointed out that Centennial has fewer and fewer lemons among the companies it backs. Therefore, white space planning must be working to some extent. "Yes," Halstedt agreed, adding that it's the process that is most interesting.

"The whole exercise of white space planning means that you've got people who are now thinking outside the box. Instead of thinking about the world as it is today, folks are thinking about the world as it's going to be tomorrow and the various changes that are going on, which is very beneficial."

The major benefit of white space planning is the effect it has on entrepreneurs. "When we get a business plan that we like, we'll do a strategic planning session with the management team and they will change their business plan in response to how they see the marketplace changing, without any suggestion from us."

Trends

Halstedt shared with the Forum some of the data he has collected on trends, past and current, and how the economy is changing:

- **Specialty pricing to commodity pricing.** The value of pricing to consumers is improving. The cost of a 2.1 GB drive, a 166 MHz Pentium processor, and 32 MB of memory dropped from $2,000 in 1995 to $200 in 1998. The retail price of PCs is also decreasing. "The whole notion of this digital divide is absolute nonsense, because anybody can afford this stuff," said Halstedt.

- **Analog cellular to digital cellular.** There is a wave of change from analog to digital, and analog is phasing out. Another change that is occurring is a shift from pure digital cellular to Internet enhanced digital cellular.

- **Wired to wireless.** By 2002-03, wireless phone usage will account for 50 percent of revenues. In 1993, wireless accounted for only one percent of total usage; in 2000, that number jumped to 26 percent even as total usage increased. "All the projections we have in the wireless business were consistently wrong for 15 years; the forecasters underestimated what was going to happen by sometimes a factor of two or three," said Halstedt.

- **Narrow band to broadband.** In 1998, there was virtually no broadband access available on the Internet unless you had a direct line into a super computer. It will be a $120 billion to $140 billion industry in 2007. This is split up among various technologies: Global xDSL, cable modems, satellite, wireless. "Keep in mind," Halstedt said, "that these are somebody's projections of what the future is likely to hold. The numbers are likely to be wrong, but they show you the trends."

- **Data storage.** Multiply the implications of computers, broadband, networks and software and it's clear that the need for data storage skyrockets. But right now, the data market is totally out of favor and is not a place for investments.
The internet economy: Creating billion dollar companies

Steven C. Halstedt

- **Physical commerce to eCommerce.** In 1998, e-commerce was a $40 billion industry. It is expected to soar to $900 billion in 2003. Merrill Lynch is much more bullish on this industry. A recent report says the business-to-business sector alone will be $2.5 trillion by 2002.

- **Information appliance sales trends.** In 1998, 39 million appliances were shipped; 92 percent of these were PCs, 8 percent were non-PCs such as game units and Palm Pilots. It was predicted that information appliance shipments would rise to 83 million in 2002. "The predictions were so far off that it's remarkable," said Halstedt. This year, there will be more than 200 million appliances shipped, including cellular phones, PCs, and gaming devices that can be hooked up to the Internet.

- **High speed home networks.** The number of households with active networks has been rising steadily, driven by innovations such as medical devices that can measure your vital signs and send the information to a central point for evaluation. This is expected to be a very big marketplace at some point in the future.

- **From value chains to value networks.** The traditional value chain includes all the businesses involved in the manufacture and distribution of a product. Control is a key element. In the emerging value network paradigm, the rigid business structure is replaced by outsourcing. Knowledge based, value networks merge the flow of products and goods of traditional value chains with the flow of services, processes, and information of the new, more "virtual" economy.

- **Services outsourcing.** In the U.S. and worldwide, spending on services outsourcing continues to rise. "This is a very powerful concept," said Halstedt. "If you cannot outsource something to a best-in-class or best-in-world provider, you lose the competitive edge in a hyper-competitive economy." New as well as old companies are now outsourcing as much as they can. This creates huge opportunities for businesses that can fill a particular need at a particular time.

- **Applications on demand.** Instead of buying expensive software applications for their businesses, companies will be able to outsource the applications through the Internet, paying only by the seat for using them.

These are technology projections of what the world is going to look like in five years, said Halstedt.

"If you can spot these trends, and if you believe that they're much bigger waves than those forecast by the companies that specialize in data and forecasting, then you can have an advantage in terms of investing."

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**Centennial Ventures: Benefits of white space planning**

- **Analysis**

  Enables the rapid identification and quantification of trends that underlie business plans that we receive. Mutually reinforcing trends create a wave of change that propels the business concept.

  Trend 1 + Trend 2....Trend n = Wave of change

- **Synthesis**

  We can cross and compare selected technology, industry, economic and socio-political trends, and then develop resulting business opportunities that we believe will become very significant. Centennial can start companies to realize these opportunities.
The internet economy: Creating billion dollar companies

*Steven C. Halstedt*

- **Portfolio Company Strategic Planning**

  We present these trends at each planning session, brainstorm additional trends of significance to that particular company and enable the company executives to rank them. Then we can ask: "What is the resulting business opportunity? How can the company be positioned to dominate the realization of that marketing opportunity?"

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**Focus on the future**

*Projected Figures of Merit*

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<tr>
<th>TREND</th>
<th>WORLD IN 1998</th>
<th>WORLD IN 2003</th>
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<td>Digital cellular users</td>
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<tr>
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*Projections derived are consensus estimates among participants

Centennial Ventures white space planning session