

Virtual Industry Roundtable

What Chief Execs DO Know About the Internet

Pharmaceutical company executives and eHealth entrepreneurs explore the revolutionary potential of the Internet for their businesses, for healthcare, for professionals, and for patients.

Getting four busy executives together at the same place and time can prove impossible—and it did. So we turned to other means. Here, we bring you four leading executives of major pharmaceu-

tical companies in a “virtual roundtable” to talk about how eHealth will transform their business. Our moderator, Dr. Stan Bernard, an eHealth expert and business consultant, first conducted a separate interview with each of the four executives, using a mix of standard and spontaneous questions in a common structure by subject. Then, through the magic of creative editing, we synthesized the following discussion.

Our panel consists of two Chief

Executive Officers and two Chief Information Officers—providing a balance of strategic and technical viewpoints. They are Ford Calhoun, designated CIO of GlaxoSmithKline; Roy Dunbar, CIO of Lilly; Paulo Costa, president and CEO of Novartis USA; and Bernard Poussot, CEO of Wyeth-Ayerst Global Pharmaceuticals.

In our March 2000 issue, we included an article titled “What CEO’s Don’t Know About The Internet.” Here is the other side of the story:

Moderator Stan Bernard begins by asking the panelists to introduce themselves.

Bernard: How would each of you define your company responsibilities, especially for eHealth?

Calhoun: I will be responsible for the information technology strategy of GlaxoSmithKline—and most of the information technology operations and services provided within the company.

Participants:

Roy Dunbar

Eli Lilly & Co.

Bernard Poussot

AHP/Wyeth-Ayerst

Ford Calhoun

GlaxoSmithKline

Paulo Costa

Novartis

Moderator:

Stan Bernard

Management Consulting Services

Pictured left to right



We partner to provide information about our products, including prescription data through drugstores.

Paulo Costa

Dunbar: Everything to do with information technology. I have been shepherding our eBusiness focus until recently. But we have named a new executive, Newt Crenshaw, who will head up our eBusiness world as that grows to be a bigger part of our overall corporate activity.

Costa: I have chief management responsibility for our US business, pharmaceutical. Developing strategies for the Internet has become a key element of those responsibilities.

Poussot: President of Wyeth-Ayerst Global Pharmaceuticals.

Bernard: Thank you. We will divide our discussion into several topics, beginning with eHealth's potential effects on pharmaceutical company strategies.

STRATEGIC HITS

Our moderator challenges the panel to account for the pharma industry's apparent lag in understanding and implementing eHealth strategies.

Bernard: It appears that pharmaceutical companies and the industry overall have been slow, relative to other industries, to adopt the Internet. Why is that?

Poussot: Pharma companies have moved cautiously to embrace the Internet. The adoption rate is due to the regulatory, safety, and legal considerations inherent in discovering, manufacturing, and selling ethical pharmaceuticals. Predictably, the industry initially

focused on business-to-business opportunities and has only recently moved more aggressively into business-to-consumer activities. That evolution will likely accelerate as consumer demand for information increases and government regulations adapt accordingly.

We should see greater Internet-based information sharing and collaboration among business partners. The Internet represents a culture change for all pharmaceutical companies. We must learn to balance the inherent regulatory and legal considerations of the business with the growing information needs expressed by our consumers.

Calhoun: The pharmaceutical industry has never been very aggressive in information technology. We are an information intensive industry, and one can argue that we should be primed for aggressive use of information technology. But even financial institutions have been more aggressive in using information technology over the years. It is not deterministic relative to the things that drive our business.

For the pharmaceutical industry, new products are obviously critical. It's not clear that Internet technologies can play a dominant role in the discovery and development of new drugs in the near term. Those tend to be deeply expert scientific domains. In marketing and sales, we are highly regulated, in a way that is probably appropriate. We have less freedom to experiment than the typical retailer.

Having said that, we still have significant opportunities for Web technologies to lend advantages to drug discovery and development and to inform the public about how to use our products most effectively. We will probably see more aggressive adaptation of such technologies. Those are flexible technologies that can fit into many different business models and give advantage in many different contexts.

Dunbar: The pharmaceutical industry is a bit of a navel-gazer. There are a lot of barriers that protect us from the broader industrial picture. Information

technology is at a lower level of development in the pharmaceutical industry than in a lot of others. We started from a lower base anyway. We are regulated in many different directions. Our frame of reference, be it real or psychological, has caused us to be very cautious about extending ourselves too far outside of what the FDA or another regulatory body may approve.

Our focus has been on a customer level, primarily on the physician and the other intermediaries in our value chain—distributors, wholesalers, and so forth. We rely heavily on the model of the representative being the most effective communicator. The number of pharmaceutical reps in the United States has doubled to about 65,000 in the last five or six years. Now companies are beginning to test the waters, to ask themselves some critical questions. Why, despite doubling the sales force, does the total contact time between our reps and physicians never seem to rise? The reps have been seeing doctors individually for shorter and shorter periods of time. Is there another model for reaching the physician?

We also recognize that the physician is only one of our customers, though an important intermediary. Our end customers are truly the patients who use our products. In recent years, regulatory changes have allowed us to go into print and TV advertising, and that has given us some experience in using technology to reach patients. But that's a new relationship. It's almost as if the industry is trying to re-intermediate itself with the end consumer.

Costa: The business models for the pharma industry are more complex than those for other consumer businesses. We don't sell directly to end customers, so development of a business model suited to the Internet is somewhat more difficult than for other industry segments.

But I don't believe that the industry has been a slow adapter of the Internet. Developing business models will take some time, but the industry has already incorporated many aspects of the Inter-

net in drug research, development, and marketing activities. We continue to see a fair amount of innovation in the Internet by pharmaceutical companies. The start-ups of dot.coms have not faded away, but a lot of them have problems. Now the legacy companies will move in, apply the lessons they have learned from the start-ups, and bring in tried-and-true marketing and business know-how to the Internet space. There will be a balance between dot.coms and traditional companies as they become more adept at using the Internet.

Bernard: How do you see eHealth and the Internet changing the pharmaceutical marketplace?

Costa: The Internet is the most pervasive new influence on how business is conducted everywhere. Every month, there is a new business application for it. Our forecast is that by the year 2004 about \$370 billion of business will be conducted through the Internet. Most of it will be in business-to-business, but a significant amount will be in consumer transactions. Rx drugs will be a significant portion of that. Visits to health sites on the Web represented 14 percent of all Internet users in the last quarter of 1999. The total number of health users on the Internet was 24.8 million in 1999 versus 3.2 million in 1996. That is explosive growth. Twenty-eight percent of adults have used the Internet for health and medical information during the last 12 months. We recently did a survey and found that, of people who requested brand-name drugs, 15 percent reported learning about the products from the Internet. That will gain in importance.

Poussot: eHealth provides consumers with self-care capabilities for managing their health that were never available before. Examples include Internet-based health-assessment tools, online disease and therapy information, and online support/advocacy groups. eHealth also opens up new ways to interact with consumers, enabling

pharmaceutical companies to tailor information to consumers' individual needs. Outside the United States, where direct-to-consumer advertising is more restrictive, the Internet will break boundaries in providing expanded access to pharmaceutical products through greater communication and sharing of information.

Calhoun: There is a great deal of content out there for everyone. That is the positive and the negative part. Internet content gives people insights that they otherwise might not have gained. With that comes a tremendous amount of misinformation. So it's difficult for people to filter through all of the material out and gain insights that give them an opportunity to improve their health.

Bernard: The Internet, in many ways, allows pharmaceutical companies to have more direct interaction with patients than ever before.

Calhoun: It surely is another way to provide information to the public at large—a way to educate them to both the advantages and the disadvantages of different therapeutic modes and to provide tools that would help them, in concert with their physicians, to manage their care.

Bernard: How has the tremendous availability of Web-based information affected pharmaceutical companies?

Calhoun: We are still in the very early stages of experimentation. Pharmaceutical companies will have to be energetic in providing current information to the public in a context such that different communities can easily access the information and judge its merits.

CUSTOMER CLOUT

Internet channels give patients, physicians, and payers new power to reach out and touch pharma companies.



We are still experimenting with ways of providing information to customer groups.

Ford Calhoun

Bernard: What new demands and pressures can these new customers, patients in particular, bring to bear on the pharmaceutical industry and on your company through the Internet?

Calhoun: With greater access to information today, many people want to search every avenue and glean whatever information they can, then compare notes with their physicians, neighbors, etc. Being a company that discovers and markets new therapeutic entities, we believe it is important to provide people with the best information tools possible to help them gain the insights they need.

Poussot: Online communities and advocacy groups will enable consumers to influence the focus and speed with which new products are developed and approved. A recent example in the

news is the fast-tracked development of Novartis' chronic myelogenous leukemia (CML) product. The Internet will likely raise the standards for the industry as online information and sharing among consumers accelerates. For example, online ratings of doctors, hospitals and drugs will eventually be available through a third-party source or informal consumer ratings.

Dunbar: The demand for information from patients has always been there. It isn't new. All we are doing is uncovering it. On the Internet, the tools are now there for patients to seek answers to their questions. They want to know a great deal more about healthcare than pharmaceutical companies can tell them because of regulatory constraints.

planned, we will have spent only two and a half years in the clinic. That is a clear example of how customers can press their demands on the industry, and the industry will need to be flexible and responsive because that's what people on the Internet expect. (See "Patient Pressure.")

Bernard: How are your companies leveraging the Internet to reach, affect, and better serve those customers?

Dunbar: We are a seller of pharmaceutical products and, therefore, that's our focus. We won't be able, at least in the near term, to provide the very broad sets of information that patients may want. Lilly knows depression very well, so we hope to have an important voice—as objective a voice as possible—in talking about depression. But there is a dilemma. Any pharmaceutical company will have a level of enlightened self-interest, even as it wants to inform and educate. That is a difficult balancing act.

Let me continue using depression as an analogy. We recognize that we have a very successful product and a deep amount of expertise around depression. On our Web sites, we ask patients to tell us what depression means to them. Then we incorporate their answers in the iterations of our Web site.

You continue to evolve a site based on the best research you can do with patients and physicians. Having done the research, you build something, you trial it, you see how patients are responding to it—what services they go to and spend more time with.

On our product Web site, you'll see everything from tools that help people understand the disease state, with models of neural transmitters and nerve cells, to how they can begin to take control of their disease, and how others can gain information to help care for somebody with depression. They have the ability on our Web site to share their experience of depression with other sufferers to build a sense of community. There are specific tools that help them track their recovery, as well

as those that tell about Prozac. So the offering is broad enough for people to customize it to their own needs.

Costa: For our B2B customers, we put together a very attractive application for wholesalers that allows them to track orders and print online their bar coded labels for received materials. That facilitates their inventory transactions. We presented it to NWDA and won first prize as an application for wholesalers and distributors. We have a major effort in e-procurement with Ariba that will provide a lot of savings and benefits for all our purchasing by the end of this year.

For connectivity with physicians, we have a pilot agreement with Cybear dedicated to healthcare Internet service providers. They have a virtual private network that can securely connect physicians and related healthcare institutions. They will deliver Internet connections to physicians selected by Novartis. It allows physicians to access a co-branded Internet site and receive customized healthcare content. It also gives those physicians the opportunity to subscribe to a suite of Internet-based office, clinical practice, and administrative tools. We are also conducting a pilot with Physician I-Net for eDetailing, and we have reps right now calling physicians and detailing over the net.

Industry is looking at the Internet for ways to achieve a dramatic collapse in the development timeline—from patient recruitment to electronic form handling.

Roy Dunbar

Costa: The Internet is a great place for communities of interest to be established through user groups and patients who share information, compare experiences, recommend options. All of which, I feel, is a positive development.

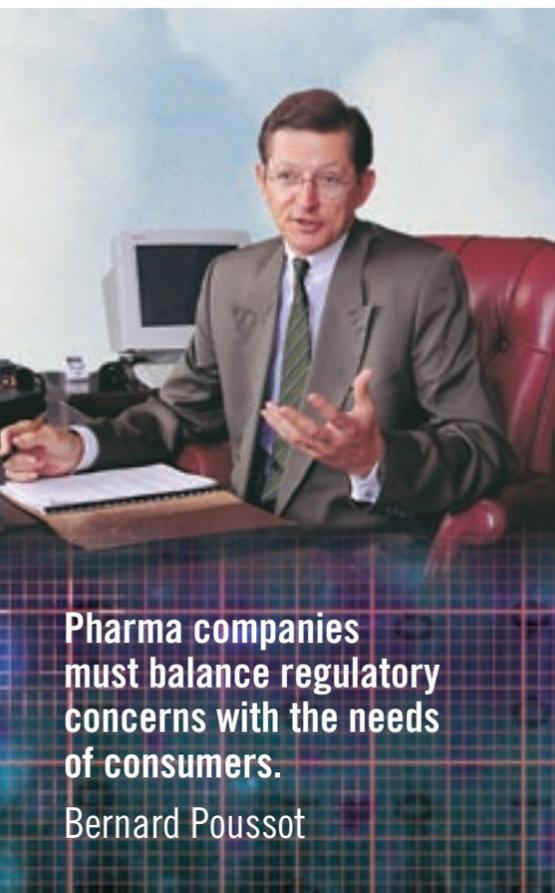
We have a compound called STI-571 that we are developing for chronic myelogenous leukemia. Two days after we presented the data, we got a petition with 4,000 electronic signatures collected through the Net asking for access and asking us to speed up the delivery and development of the compound. We responded in a couple of days, and it has been a very positive experience. Take a look at the comments of the users groups in favor of how Novartis is handling this. If it is approved by the middle of next year as

ORGANIZING PRINCIPLE

As customers and markets exert new demand through the Internet, companies may also use Web tools to streamline their organizations. Panel members describe how they plan to do just that.

Bernard: How has eHealth helped change the way your company does business at all levels—from research and development to manufacturing, marketing, and distribution?

Poussot: eHealth allows us to develop more personalized customer relationships through new forms of marketing



Pharma companies must balance regulatory concerns with the needs of consumers.

Bernard Poussot

and selling, shorten time to market for our products, and create new revenue opportunities through online relationships with key business partners.

Costa: We manage R&D globally, but here in manufacturing we have the effort in e-procurement. In marketing, we have the eDetailing effort with Cybear, the disease and product Web pages, and a strategy to establish a virtual call center on the Net. In distribution, we have the online tracking system, and we are talking to a group about an initiative in business development. It's a little too early to talk details, but if it comes through, it will give us a competitive advantage there.

Calhoun: We purchase supplies online. We have experimented with or are incorporating the typical B2B approaches into the way we work. Within R&D, scientists follow their ideas from gene fragments through

pathways and animal models with the click of a mouse. Almost every new application considers, and in most cases uses, some Web technology.

Dunbar: The changes are critical to every point along the value chain. Our value chain starts with a hypothesis that a particular molecule will attract some sort of biological target, then continues through working on that lead, putting it into animals and then into man, submitting to regulators, and on to manufacturing, marketing, and sales. At every point along that value chain, the new technologies mediated through the Internet are having a profound impact. In the pharmaceutical industry, we are at the beginning of the process. A few other industries are not yet mature, but they may be a couple of years ahead of us in their use of it.

With high throughput screening, genomics, and other discovery technologies, the new Web-based tools will allow us to reach out and touch other companies' databases, dramatically improving the capacity of the system and the scientists to work through the huge number of variations and get quick results. We already have products moving into clinical development using information technology interacting with genomic databases.

Clinical development is one of the most painful and time-consuming processes. But the time to develop a drug doubled between 1960 and 1996 because of the complexity of the process. Lilly and other companies, inside and outside the industry, are looking for ways to achieve a dramatic collapse in the timeline—from Web-based patient recruitment to electronic form handling.

Still, other opportunities exist for using information technology around the supply chain—visualizing the supply chain, linking the supply chain from an inbound perspective with suppliers and from the outbound perspective with wholesalers. Where applicable, that may involve supplying products directly to physicians or patients.

On the procurement side, many companies outside our industry have

created market exchanges, either vertical or horizontal. Pharma companies are looking at those collaborative programs and making some progress.

On the far end of the value chain, our sales and marketing processes are really quite antiquated. We have used some electronic territory management systems. But they are not deeply connected across the full spectrum of marketing. They are not connected to customer relationship management with the selling capability of data warehouses, knowledge management tools, and analytical tools. The industry is just beginning to make progress in that direction.

Ultimately, "e" will need to be linked to all those elements to create a total, integrated picture for the enterprise, so that we don't just build individual e-based solutions. We are not just building Web sites or eCommerce solutions. We are building a set of solutions that are integrated with the flow of information across our whole enterprise. A lot of people are still seduced and excited by e-based technologies, but they are not thinking big enough.

Bernard: In all the areas just described, where will the Internet have the greatest impact and why?

Dunbar: The most important element of these e-based tools isn't what you do outside of your company. It's what you can do for people in the company through knowledge management. Knowledge management is a key to the future. It's how companies figure out what they know and build systems to ensure communication across the enterprise. Anyone with a relevant question the right to ask and get the answer can do it. When employees are competent to use e-based tools for knowledge management, they will be in a much better position to create ways to link to customers.

Bernard: You can imbed Internet data technologies throughout the organization to make it more competitive and productive?

Dunbar: That's right. You can do that for the organization. Rather than wait for a few evangelists to make your company "e", get thousands of people who use e-based tools all the time to innovate for you. That brings a totally different competitive picture. You are in a position where your organization is the killer application, not a sexy application like a Prozac Web site. We are pretty proud of our Prozac Web site, but the goal is to have a total picture that integrates Prozac with our customer-relationship management capability, and ensures that the information about how patients view depression, how they take Prozac, and what their overall experience is, comes back into the organization and helps us to innovate the next antidepressant.

checks out any benefit does it through a browser, so the information is untouched by human hands. The same is true for outside customers buying merchandise. But I don't believe Cisco did it by picking a key element; they gained advantage by being holistic.

The Web gives us great opportunities for re-engineering the way we work. The companies that gain the most value here will be the ones who do this across every aspect of the business, driving for the most attractive opportunities first and the more difficult ones later on.

Purchasing goes across the board. Imagination is the limit. There are all sorts of purchasing consortia or bidding systems for obtaining supplies under favorable terms. We've been experimenting with these and we think they have significant value. One can even see the industry forming some sort of consortium as Ford, Chrysler and GM did just a few months ago. The dollar return can be tremendous. In R&D, Web technologies can reduce the costs of clinical trials significantly. Marketing is essentially mining information to gain insight about the strengths and weaknesses of your product as perceived by customers and the opportunities for mining information and making it available from the detail people on up is extreme. So I can take almost any aspect of the business and readily think of ways we can use the Internet to shorten the cycle time, to reduce costs, to speed time to decision, etc., across the board.

Dunbar: This is the beginning of a journey. Every time I build a project or work with others who are building a project that incorporates such technologies, we find a basketful of unexpected consequences. Suddenly we find new opportunities for even greater value. The hope is that individual companies will be unafraid to experiment, to push the envelope, to learn from the lessons that come out, and to reimplement that learning intuitively.

From 1995 to 1999, Cisco saved \$350 million by not hiring 5,000 more

service engineers. Instead, it built on its ERP system, a really effective CRM, customer relationship management capability, which allowed its customers to self-serve on problems and questions that they had on line. Customers could get on instantaneously, 24 by 7, anywhere in the world. Cisco not only drove up its customer-service ratings, it avoided \$350 million in costs.

Bernard: How are your companies being organized or re-structured to succeed in the eHealth era?

Poussot: The Internet is forcing a culture change for pharma companies, which have traditionally been constrained in their communication to the public. Pharma companies must learn to balance the inherent regulatory and legal considerations they face with the growing information needs of consumers. To drive that culture change, support from the top is critical.

Calhoun: We have made no grand organizational commitment to eHealth. We have set up a small office to sense what the world is doing and to encapsulate those learnings and make sure that we understand them. That office facilitates the different business units as they look for opportunities and test ideas for the Internet.

As we become a new company, everything could change, but at this stage we don't believe we'll gain those changes by bolting the Internet onto the company, or by setting up some super-extra organization. We will get significant change by ensuring that each business unit understands the opportunity and is independently driving to gain advantages that the Internet can offer. We believe the business has to drive it, or it won't work. We believe that this coordination office is the organizational catalyst we need.

We have very strong leadership and we feel strongly that those technologies can have a major impact on how we do business. Those who know JP Gaunier, the designated CEO, know that JP only measures execution. It's not how

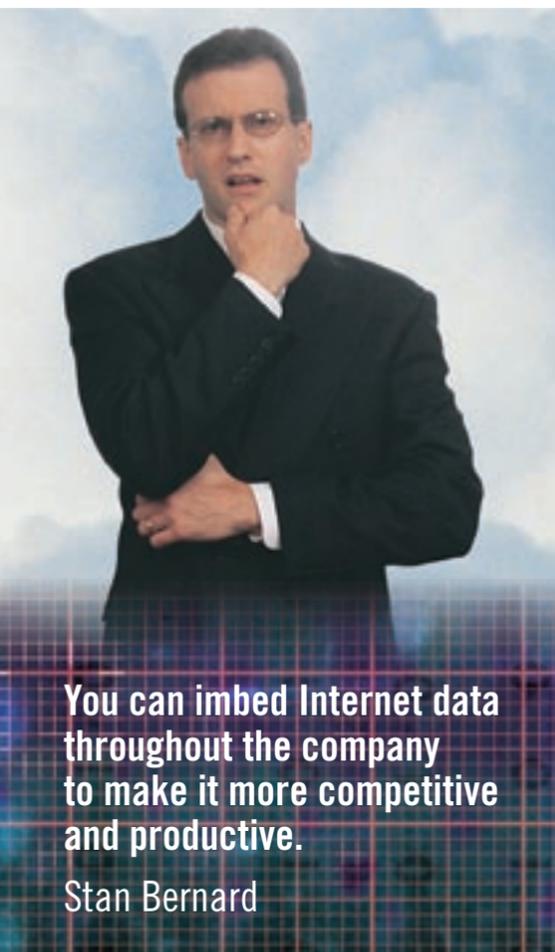
I believe it would be a mistake to have an Internet training program, with apologies to any of the panelists who might.

Ford Calhoun

Bernard: Clearly, Lilly is focusing on how to leverage the Web and other new technologies through each of its functional areas. Is that correct?

Dunbar: Yes, but I would extend it. Even to speak of a functional area is probably a faux pas in this world of "e" because it is helping break down the functional silos. So we think more about the processes that we need to enable throughout our enterprise. We talk in terms of the flow of information rather than functional blocks.

Calhoun: I agree. For the pharma industry, there's no sweet spot. Everyone is aware of the Cisco model. Cisco has Web-enabled its entire organization. Any employee who registers for or



You can imbed Internet data throughout the company to make it more competitive and productive.

Stan Bernard

well you express the idea, it's the ability to drive the change. So that's the way we will go forward with the Internet.

Costa: We've discussed several initiatives. In the global organization, we recently hired Larry Perlow, former VP of marketing with Warner-Lambert. One of his responsibilities will be to provide leadership and integrate our eBusiness strategies. Locally, we have added a similar position and hired Matthew Timms, formerly of EGM. We also set up a dot.com internally to explore Internet possibilities, headed by Dave Pierson and based in Basel.

Bernard: Can you elaborate on the "internal dot.com?" What exactly do you mean by that?

Costa: We wanted to look at things that didn't fit neatly into one of our business structures but that held

promise for the industry and the healthcare environment. We thought that the best way to do that was to set up a venture-like company within Novartis—and to give it the flexibility and the freedom to operate outside the common structure.

So Dave Pierson reports to the CEO, Thomas Ebeling. His responsibilities are to identify opportunities for a profitable venture. So it is not just providing services or to be supportive of the pharmaceutical business. We have the flexibility to do that ourselves. We will try to identify opportunities and develop a business over the Internet. It's kind of bold, but we felt that if we didn't take the first step or waited for the bright idea, we would probably never do it. So we have a team that's actively searching and identifying opportunities that may be synergistic with our business, but we have a clear intent to develop a viable Internet-based business.

Bernard: Could what you offer through that business involve some of the information that a pharma company like Novartis generates as part of doing business—information that might have value in itself?

Costa: Yes, it could. We haven't made a final selection but we're looking at several things—from being the information provider, to developing Web page applications for common customers, to establishing partnerships for online transactions and online pharmacies.

Bernard: In what ways are your companies integrating eHealth into business and marketing strategies?

Poussot: Initially, we focused on business-to-business opportunities to improve partnerships and expedite product development. We're now building stronger relationships directly with consumers using the Internet. We will continue to integrate the Internet into all aspects of our business to bring even more value to our customers and to transform how we do business.

Costa: Marketing will always be about serving customers, both patients and physicians. The interaction with patients will allow us to better understand customers. We have a strategy at Novartis—beginning with patients, we want to understand the marketplace, gain insights and leverage those insights to develop better products—not just from the physician's perspective, but also from the patient's. The Internet fits into that strategy, and it will be one of the key ways we can communicate and gain those insights. It also gives us the opportunity to do the same with physicians.

I mentioned the virtual call centers, the eDetailing. Our assumption is, in the next two to three years, broadband access through DSL and cable modems will be widespread, allowing us to develop and deploy higher quality, multimedia-rich content. For instance, in eDetailing we will be able to incorporate media clips of medical education programs and even host conferences live on the net. There are all kinds of possibilities there.

Bernard: How are you preparing your employees to make your company successful in this new environment?

Dunbar: That's a task of both IT and this new "e" Lilly organization, but frankly, a lot of the preparation will come just through people using those tools. An effective Intranet that allows people to do work through Web-based technologies on their desktop is probably one of the most powerful forms of preparation to give people direct experience of the new technology. They can see the value of it, and it puts them in that frame of reference. So this isn't something new or different that they require training for. It becomes as intuitive as Yahoo is to any of us. I want to create an environment within Lilly where it's intuitive for us to think in "e." It will become prosaic.

Costa: We have routinely reviewed our global eBusiness initiatives and shared best practices, so I'm aware, for instance, of our initiatives in Spain and

UK. We're taking some of those best practices and spreading them around the world. That's one thing we've been doing all along. On July 7th we held Pharma e-Day, an awareness day for Novartis employees which showcased all our global projects. We will continue to do things like that.

have ever trained anybody how to use the Internet. The IT professionals and the business professionals working with IT have to create the solutions that become obvious, so people just move toward them.

Costa: We are not trying to teach or train people. The way we got started with our online tracking system was that I had a conversation with our CIO, and we talked about making sure that all of our IT employees could develop Web-page applications. We gave them the skills in that area, knowing that the training also would make them more valuable in the marketplace. It was almost like a bootstrap effort. Within a couple of months they put together this application, and they submitted it to the NWDA. Out of 29 submissions for electronic applications for distributors and wholesalers, ours took first prize. You just need to give people the opportunity. Globally, we have eliminated any restrictions to Internet access. A few years ago, companies were concerned about people spending time on the Net. We still monitor, and obviously we don't want abuse, but it really hasn't been an issue.

COMPETITION PLUS

If eHealth has power, it must also offer advantages to the companies that master it. But panelists voice mixed views on what eHealth competition means to the industry.

Bernard: How would you characterize the race among pharma companies for competitive advantage in the eHealth arena?

Poussot: Only within the last 18 months have companies begun to explore more innovative Internet-based opportunities for competitive advantage. Though few have distinguished themselves, most companies are grouped closely together, with any one company able to leapfrog the rest with the right new business model.

Costa: A lot of competition exists in developing Web pages that are more creative and that keep consumers and physicians coming back. So we have seen good examples of healthy competition that is improving content on the Web. Some companies are pursuing consumer relationship management initiatives, and, in a sense, we are pursuing one as well through the virtual call center. It's at the end of the CRM applications. Some companies are developing proprietary applications. They don't want to talk too much about it, and I can understand why. If you have something that is really hot, you want to have some lead time before you implement it.

Bernard: This concept of customer relationship management—please describe what it means from a pharmaceutical perspective.

Costa: With the virtual call centers, it is the ability to communicate with physicians in a way that is consistent, high quality, addresses their needs, and provides a positive experience in their interaction with us. We are not there yet, but our goal is for anyone who contacts us over the Internet or the telephone to receive a prompt reply, and to have consistent handling of messages. So we developed frequently asked questions for our products. We developed a package of information. If someone calls us for information, our operators immediately ask how the person prefers to receive it.

We also maintain a database to provide feedback to the marketing groups and sales organization on the interactions. Our long-term vision is to integrate all of those contacts between the sales force and the call centers so they are transparent to our sales reps. We can leverage that and have some good insights into the subjects and topics of interest to physicians. We can make sure that our marketing materials address and clarify their doubts. That is where we are in CRM.

Dunbar: I chuckled at the question about competition. I don't believe there

is a race here. A race presupposes a given starting point—there's some sort of line, the gun goes off, and they start running. Most pharma companies are starting from entirely different positions. The industry fomented at the moment with some companies recently merged, others merging, and a few like Lilly, Merck, and Johnson & Johnson opting out.

There is hardly a pharma company that has all the right parts in place today for success in the e-world. Resource systems that link the whole enterprise together—eCommerce, knowledge management—no pharma company has all the answers. Success involves all three areas. So we should be building towards it in a methodical manner, without a focus in one area at the detriment of others. It has to be done with an idea of what the complete picture will look like at the end.

Calhoun: There is little value to competing in eHealth, and here's why. As an industry, we discover and develop drugs. We manufacture the approved drugs and provide information to people on how to get the most value from them. That is where we compete. There are many unmet medical needs, a tremendous need for new therapies. So we invest heavily in that domain, in scientists, in technology. Some of our technology will be Web technology—to the extent that it helps us shorten the cycle times, develop better drugs, and better inform people.

PARTNERSHIP PRIORITIES

Although pharma companies may not compete directly as do eHealth dot.coms, they may join the fray in other ways.

Bernard: How can companies collaborate with the new eHealth players in pharmacy and medical information?

Poussot: There are substantial online collaboration opportunities in providing consumers and healthcare providers

with the health, disease, and therapy information they are asking for to make informed healthcare decisions.

Costa: We partner to provide information about our products, including prescription data through drugstores; we might do the same with online pharmacies. Compliance and patient support programs represent another clear possibility. For certain disease areas we can suggest changes in lifestyle and diet and tips to help patients better manage their disease, including personalized compliance reminders and access to patient support counseling. Those are just some of the possibilities.

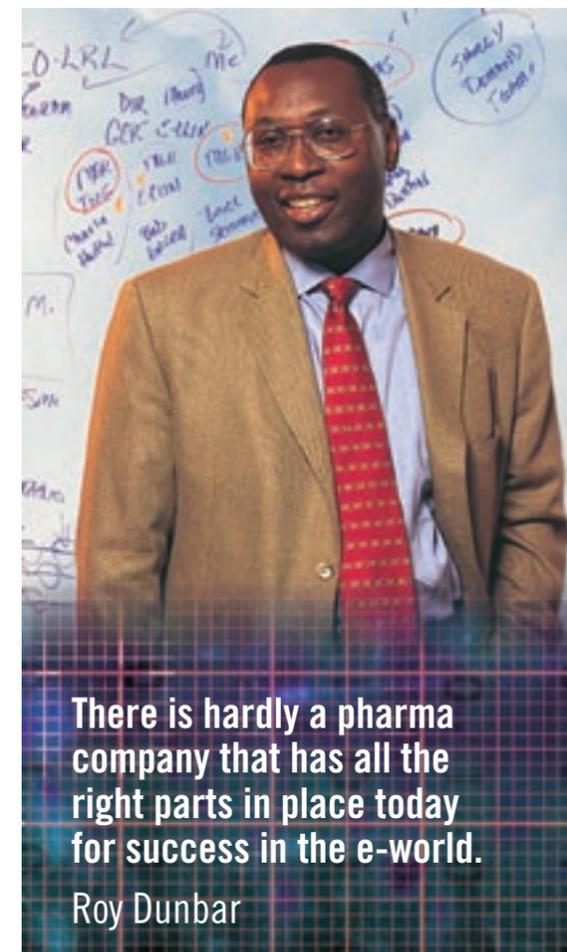
Bernard: What partnerships or alliances has Novartis formed as a result of the Internet and why?

Costa: First to come to mind is our deal with Cybear and iNet. One of Larry Perlow's charges is to identify partnerships we should be striking. We have smaller partnerships such as one with the Mayo Clinic. We have a couple of other small things with patient advocacy groups, but those are not true partnerships. We need to know whether we should partner in a big way with an HMO or one of the health portals, and the pluses and minuses of striking those relationships.

Bernard: What types of partners might you consider other than HMOs?

Costa: In the B2B area we might consider a consortium of companies. We can look at partnering with our customers. Independent groups of physicians are ideal candidates. We already have a triangular partnership with an assistant physician organization and Cybear. But we've seen the potential to do a lot more.

Poussot: We sponsor over 20 different educational and informational Web sites around the world with major universities and healthcare institutions—in menopausal health, sleep disorders, rheumatoid arthritis, etc. The Internet



There is hardly a pharma company that has all the right parts in place today for success in the e-world.

Roy Dunbar

has also enabled us to build even stronger relationships with our many business and research partners. We will continue to aggressively pursue alliances with both e-based and traditional healthcare companies that support our strategic direction. There are substantial online collaboration opportunities to give consumers and healthcare providers the health, disease and therapy information they are asking for to make informed healthcare decisions.

Calhoun: We are investigating opportunities to form significant partnerships relative to the Internet. In many areas there is no advantage to the industry competing. It is a high-cost waste for everyone. We will work with a variety of players to put together relationships that reduce the cost of drugs.

Dunbar: In sales and marketing, we

The Internet represents a culture change for all pharmaceutical companies.

Bernard Poussot

have links with CBS/Medscape and Healtheon/Web MD, and there are others in the works. In other parts of our value chain, we are talking with some partner companies in the industry and beyond about eMarketplaces and exchanges—not just on the procurement side. We have thoughts about the exchange of intellectual property, from molecules to patents to processes. In the earlier phase, we are working with companies on access to genomic databases and screening capabilities.

Bernard: How can pharma companies collaborate with new eHealth players in the area of pharmacy?

Dunbar: There have been several such collaborations, but many are proving to be bad investments, because the online pharmacies were unable to actualize their vision and extract value from their business model. We didn't do any of those things. I believe we'll see another wave of online pharmacies. As they get more robust and as the value of healthcare traffic on the Internet becomes clearer, online pharmacy will grow. And Lilly will engage when it is sensible to do so, when we find the right opportunity.

FUTURE TRIPS

No discussion about the state of the industry is complete without a glimpse of the future.

Bernard: Where do opportunities lie for pharma companies to exercise leadership in the eHealth market?

Costa: There is a role for us to play in providing valuable and trusted information about medicines and diseases. We gather a lot of information, not only about our specific products but also about the diseases they treat. That give us an excellent opportunity to become good sources of reference to patients and to physicians.

Poussot: As consumers become more knowledgeable and active in managing their own health, the pharma companies that can create partnerships with consumers and key advocacy groups will find them to be strong allies in raising disease awareness, obtaining public/government support for their cause, and accelerating product approvals. The Internet could stimulate patient communities around specific diseases and increase awareness of existing and new therapies. Pharma companies that effectively execute a consumer-driven e-strategy will likely become leaders in the eHealth market

Dunbar: Clinical trials are a prime area of leadership. That is where the greatest opportunity lies for collaboration across companies within the industry and beyond, and ultimately even with FDA and other regulatory authorities.

Calhoun: Our leadership might come in the form of setting standards. For example, how do we interact with the FDA and what constitutes a submission? What kind of information do they care to see? In what format? At what stages? How do we interact with regulatory agencies in drug development, from preliminary reviews, to protocol approvals, all the way through the process. It's easy to see that Web-technologies could take much of the overhead out of those decision steps.

Industry and government might well be able to agree on standards for interaction and decision-making that would reduce costs and improve the cycle time for many interactions that we must undertake together. If a consortium could agree on definitions of data objects in, say, clinical trials, it would

reduce overall development costs. And other technologies offer unparalleled opportunities for agreeing on and implementing practical standards.

Bernard: Please look in your proverbial crystal ball and tell us, how will the Internet change the pharmaceutical industry in, say, five years?

Calhoun: It's not going to dramatically change the pharmaceutical industry unless some company demonstrates the possibilities. This is a reasonably conservative industry. In some ways it's not unlike financial institutions in the early days. But the possibilities are immense for the company that integrates those technologies into the way it works—using it to re-engineer its mission and critical business processes.

Dunbar: The industry has had great barriers to entry that has made it a bit protected. High, high, high capital barriers. Very high technology barriers. Our value chain is somewhat impenetrable. A more pervasive use of information technology around healthcare will reduce those barriers. In Europe, even the regulators can't stop the tidal wave of patients getting information about their healthcare directly on the Internet. Patients everywhere in Europe are going to US-based Web sites, getting information, engaging their physicians in dialogue, and getting the right therapy even if it costs more. That will change how pharma companies ultimately respond, because the regulators will be forced to open things up. Similar barriers around research, clinical trials, and other areas will be eroded by the pervasive use of information.

In some cases, they will add a lot of value to pharma companies; in others, they will take a lot of value from pharma companies. It can help the industry to innovate and sell products in new and better ways. But it will also allow new players to join the picture and attack some of the margins we have at different points in our value chain—from R&D to sales and marketing.

PATIENT PRESSURE

Bernard: Novartis' experience with the leukemia patient group over the development of STI-571 seems to indicate how powerful patients can become through the Internet. What are the implications from your point of view? What if every patient group exercised the same kind of pressure on companies in development at that level?

Costa: It has to be justified. In the case of STI-571, the results were so remarkable—a 100 percent remission in patients with chronic leukemia—that if the patients were not jumping up and down I would be surprised. They should be. What that will do is force companies to be very responsive. It is unlikely to happen for improvements that are not very significant. But if we have a breakthrough in an area that offers significant hope of benefits that are currently unavailable, I fully expect to get a lot of pressure from patients. The industry will just have to learn to deal with it. In our case we responded very quickly and moved from producing the drug in a pilot plant to a 20-ton capacity program in a couple of months.

Bernard: Could that take some of the direction out of the hands of the companies? Let's say you have a candidate in which the marketers see little market potential—and by all other standards you might eliminate that drug from development—and yet patients

mass on the Internet to demand it. That seems in opposition to the idea that you can be market-conscious for every drug in development.

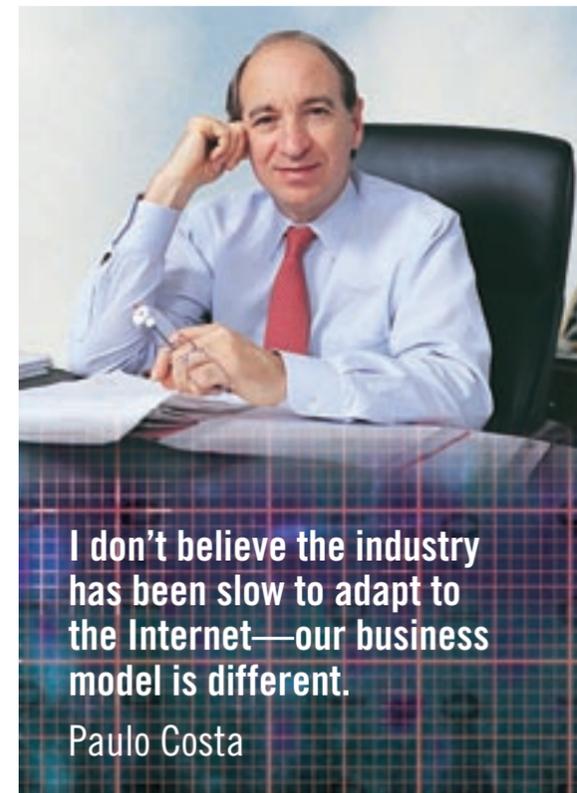
Costa: We are in the pharmaceutical industry, and though we have to make a profit to fund research, we also have a social responsibility. In the case of CML, it is only 5,000 patients per year in the United States. What drives us here is not the potential commercial return. What drives us is that this is an incredible compound that also offers significant hope. There is no way that we could walk away from it. We have a responsibility to bring it to patients, and we really don't care how much it costs. We wouldn't use the same criteria for something that brings a marginal improvement; we would be more hard-nosed about the economics. But when you have a drug like that, you have the responsibility to do what's right for patients. That's part of our reason for existing.

Bernard: We congratulate you on meeting that responsibility; it sets a great example.

Costa: Thank you. People at Novartis are extremely proud that we are doing it. With the internal impact of developing this drug aggressively and knowing that it will do a lot of good for those patients, it pays itself just in how the employees feel about the company.

Poussot: The way our business is conducted will likely evolve based on significant increases in information availability, knowledge sharing, and communication from both a business-to-business and business-to-consumer perspective. That will raise the quality of care, expedite globalization, and help drive inefficiencies out of the current healthcare system.

Costa: Five years is a lifetime on the Internet. I don't know if I have a five-year horizon. But in a two- to three-year time frame, we will see eDetailing more broadly used. Many companies will learn how to develop multimedia-rich content. It's almost like being in the entertainment industry. We will learn how to develop content that is



I don't believe the industry has been slow to adapt to the Internet—our business model is different.

Paulo Costa

interesting, appealing, and worthwhile for physicians and patients to come back to. Pharma companies are likely to partner with online drugstores. Patients are even more active and vocal in getting information about their diseases and treatment. So, I can see consumers, physicians, and the industry using the Net a lot more broadly. I wouldn't be surprised if purchase of medical supplies on the B2B side grows and we have significant automation of the entire healthcare supply chain.

eHealth is an area of great opportunities and challenges. We'll have to experiment a lot and learn as we go. But it's also one of the greatest tools for innovation, and that is exhilarating. It will require us to be open-minded about what can be done because we will see a different business model. We will have to check a lot of our past experiences and biases at the door, but the opportunities it offers are very significant. Companies willing to experiment will develop a good understanding of what the medium can do. ■