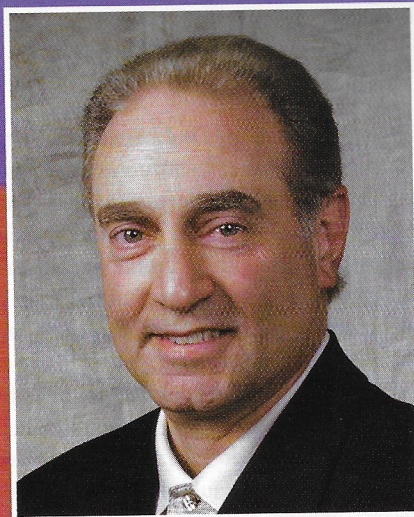


Tom McCausland

SIEMENS



Paul Mirabella

GE Medical Systems



Jouko Karvinen

PHILIPS

Presidents' Day

Industry leaders discuss their companies' technologies and plans for the future

The radiologic industry is no different than most communities that rely heavily on advances in technology to enhance the quality of customer care. *RT Image* sat down with Jouko Karvinen, president and CEO of Philips Medical Systems, Paul Mirabella, president and CEO of GE Medical Systems, Americas, and Tom McCausland, president and CEO of Siemens Medical Solutions, USA, to discuss their views on the current radiologic technology market, the benefits they provide to both patients and technologists and what we can expect from their companies in 2003.

RT Image: How do you see your company's role in developing patient care and new technologies?

Jouko Karvinen: The whole industry has been on a technology push, and I think it's a different game from the traditional one that imaging companies such as Philips are used to playing. The key difference will be the emphasis on partnering. Being a good partner and finding the right ones to bring innovative, integrated solutions to customers will determine success. Molecular imaging and molecular diagnostics are emerging trends that serve as great examples of this. There are applications today in these areas that are possible through partnerships between researchers and professional organizations, contrast agent companies and medical imaging companies. Philips is playing a leading role in this area, but we realize we cannot do it alone.

Also, I came from a different industry. We learned quite some time ago that before you tell a customer that you have perfect solutions, you better make sure you understand what the problem is. Take information management: There is no single problem in the customer base. There are all kinds of different realities and

infrastructures. Going in and saying, "Why don't you throw everything away?" is not the answer. I've seen a few hundred customers over the past few months, and I think there's a bit of a question in the market now. Our customers are saying: "Well, when will you guys (and your competitors) start listening and answering our needs, rather than fighting about who's got the best solution?" Competition is good to accelerate the pace of innovation, and develop enhanced patient care. However, customers are looking for true partners that will listen to their needs to collaborate on future plans. A lot more listening and learning together with customers and other parties is critical.

Paul Mirabella: I think that radiology has been in the forefront of patient care for a long time. One of the messages at RSNA was getting the radiologists closer to the patient as well as the technologist. But diagnostic imaging has always been at the forefront of patient care.

What we do as a company is bring clinically relevant, preeminent technology to market. It's not enough just to work on technology for technology's sake. It must be clinically relevant. You rarely walk into one of our exhibits and find us talking about a particular aspect of technology for technology's sake. I think the president's message [at the 2002 RSNA meeting] about pushing radiology and radiologists closer to the patient is very appropriate. I think it will be even more true just looking into the future as we move from today's reactive, diagnostic: "I have a symptom. Somebody analyze this" to predictive medicine and molecular imaging. I think radiology will be pushed even more to the forefront of patient care.

Tom McCausland: We have three key areas of focus for the future. First, there is innovative technology. We see the complete portfolio of products and services that Siemens offers helping our customers provide improved diagnosis and treatment of disease.

Whether it's an imaging center or a hospital, it's essential to be able to utilize technology to not only improve diagnostic

imaging capabilities, but also to streamline administrative processes. The healthcare facility will continue to need technology to ensure that the patient can schedule an appointment, flow through the admission process quickly, move through their visit smoothly while their records are accurately updated and receive the correct billing at the end of the cycle. This has to happen so that a diagnosis for the patient can be determined and treatment can be decided, and so the hospital can be compensated for its services and continue to provide care to other patients.

Second, Siemens is networking the future — that is, bringing it together. All the technology that is now available has to work together to ultimately treat a patient's disease. A patient isn't at an imaging center just to get an MR image of their body. They are there because they have a disease symptom and they need to go through a process to get diagnosed properly and seek a cure.

Siemens has introduced two key components in networking the hospitals of today with the future. First, there's syngo® — we're the only company that has one common operating system and user interface for all of our modalities, from CT to ultrasound to radiation therapy. This provides the healthcare institution with a real benefit because they are now training employees on one Windows®-based operating system for all of the modalities, and the user interface is intuitive and much easier for technologists to operate. It's also possible to view images from a variety of modalities and access patient information on one workstation, so workflow and efficiency improves for the entire radiology, cardiology or oncology department. That's one

part of networking that Siemens provides.

Then, there is the new Soarian™ software for the clinical as well as the administrative side of the operation. Fully compatible and interactive with syngo, Soarian is the first enterprise-wide system that is offered by any of the medical imaging companies. It's designed to work with and operate alongside all of the modalities, and offers capabilities ranging from intelligence engines that watch for errors in physician order entry, to score-card information that allows physicians or institutions to provide quality assurance and track compliance with standards and practices. This helps the institutions improve efficiency and effectiveness and ultimately achieve better patient outcomes.

Siemens' third area of focus is outcomes. Is what we're offering relevant? Are we making a difference in patient care? Are we improving quality? Are we helping our customers reduce costs? Are we making a difference in speed and comfort of the patient? Are we satisfying the needs of the clinicians who are operating our systems every day? In addition to improving patient care, we believe the focus on outcomes also improves the facility's workplace. We know that there's a shortage of healthcare professionals. What we want to do is try to help the institution have a better atmosphere for attracting good clinicians, technologists, and physicians so they will have higher job satisfaction, which equals better patient satisfaction.

I can guess what most people would say if you ask: "What first comes to mind when you think of Siemens Medical?" They're going to say: "Technology, quality, German engineering and cutting-edge innovations." This is the history of Siemens for the last



Tom McCausland with Siemens' biograph Sensation 16 PET/CT scanner

125 years. That's the traditional view of Siemens and it continues.

We certainly live up to that tradition, whether it be through the new biograph™ Sensation 16™ PET/CT system; 4-D ultrasound on our premium performance Sonoline Antares™ ultrasound system; the development of 3T and 7T MR technology that we believe will become the gold standard in magnetic resonance imaging; or the new digital mammography product that is currently in clinical trials at UCLA and expected for release late this spring. And there's the Soarian cardiology information technology system, which is making a huge difference in efficiency and patient care at South Carolina Heart Hospital; the Axiom Aristos FX™ flat panel, digital X-ray system, which gives hospitals high quality imaging and flexibility; the most comprehensive range of CT systems available, including the new Somatom Emotion 6 and Somatom Sensation 10; and a new, state-of-the-art linear accelerator — the Oncor™. Every one of our modalities has at least one new, unique innovation this year, and two-thirds of the products that Siemens offers to its customers today are less than three years old.

But what sets us apart is that as we at Siemens Medical begin any new endeavor, we keep the customer in mind. In the

design of our products, we say the process is from the customer to the customer. First, we gather all the information from the customer — the technologists, the physician, the administrator — and find out what they want us to incorporate in our new designs. It's not enough to have scientists and engineers sitting in the lab, developing a product and then building it. If you used that process to take products to the marketplace, more often than not they would turn out to be impractical to use. We have to bring our customers in at the front-end of the process and ask: "What are your practice patterns? What would streamline your process? What tools do you use every day? What are you missing?" Then, we can incorporate that information right into the development process so that when we develop either the software or the hardware, all of that feedback is incorporated right from the beginning.

Yet we have to take it one step further. It's not enough just to talk to our customers. We also have to talk to the patients because we understand that the patients are going to continue to be more involved and have a significant impact on their own healthcare decisions. They research their options and come to the healthcare provider as a much more informed consumer, challenging the traditional thinking of a physician-patient relationship. We have to

take this informed patient/consumer into account while we develop technology because we want the patient to have a good experience throughout the process of diagnosis, treatment and cure.

We are keeping patients in mind as we continue to develop products that help physicians conduct minimally invasive procedures instead of surgery. When I was growing up, it was very common for someone to go into the hospital for exploratory surgery. In those days, if there were symptoms, the physician would have to surgically open the patient to see why they were having symptoms. Today, with the imaging and surgical technologies that are available, that type of surgery is virtually unnecessary.

In addition, we now have interventional procedures for cardiac disease and screening procedures such as virtual colonoscopy and mammography. Much of what we do today is either non-invasive or minimally invasive, which is reducing hospital stays and the cost to the patient and the healthcare facility. People aren't having 10-day hospital stays or going through major surgery at a tremendous risk and cost. And disease is being detected earlier, also reducing the cost of care and improving a patient's chances of surviving disease. In addition, we're developing tools that will help physicians to monitor care from the patient's home or to review patient tests completed on a mobile PET/CT system that visited a rural area some 150 miles from the healthcare facility.

Siemens is committed to developing technologies and processes that will provide healthcare facilities with proven outcomes in reduced cost, improved care and increased employee and patient satisfaction.

So, our key areas of focus today and for the future are innovative technology, networking capabilities and proven outcomes. Siemens will continue to offer its customers a complete healthcare solution that reaches across the continuum of care.

RT Image: How do you view your role as CEO?

Karvinen: If I may quote a customer (chairman of radiology), he said: "Jouko, you've got a very powerful crew in Philips

Medical who not only understand the technology, but also understand the technology value to the physician and to the patient which makes all the difference." He then went on to say that while our reps can sell solutions for today, my job as CEO is to help him see the future, which goes back to what I said about partnering, joint R&D, clinical research, etc. It's important for me to lead a company that builds a future with our customers.

I look at 2002 as the year of integration. With that behind us, I look at 2003 as the year to accelerate our success and build on our future. My priorities are to continue to drive the pace of innovation, stay focused on business performance and to continue to delight our customers. We will also continue to leverage being part of such a successful company, with a strong brand identity and world-class research organization.

"It's not enough just to talk to our customers. We also have to talk to the patients because we understand that the patients are going to continue to be more involved and have a significant impact on their own healthcare decisions."

— Tom McCausland

Mirabella: I have responsibility for the sales service and marketing people from Latin America to Canada. I'm not really developing the technology, although I have in the past. I have run the ultrasound business, the CT business and the MR business, so I have been on that side of it. But for the global business, their responsibilities are to understand the needs of our customers around the world. To bring the best possible, relevant product to market, it's up to us to make sure that we get it in front of the right people.

The right people are the radiologic technologists that use the equipment. So we have to make sure that it's user-friendly, and we have to make sure that the physicians that use

it are getting the best possible diagnosis. It's also the hospital executives. We have to make sure that what we are doing actually helps them lower their costs and improve their productivity, and not just giving them a new piece of equipment to buy.

So my job is all of those commercial activities and my biggest challenge is to not allow some to reduce this extremely high technology to a commodity. The fact of the matter is, if you design the product right, not only have you brought the best diagnostic capability, but you've done it in the most cost-effective manner. So actually I would suggest that high technology can actually save money over time, simply because it can lower the per-unit cost of healthcare by getting an accurate diagnosis as early as possible and getting it right early on.

McCausland: My role and the role of all of the management of Siemens Medical is to know and understand what the customers and their patients need. What are the driving forces that are occurring in healthcare today that we as technology providers need to answer? In addition to responding to that question on our own, we also must understand the trends in medicine so that we know how our systems and solutions complement and interact with products from other companies.

Secondly, our job is to make sure that Siemens is an attractive place for employees to work. In this business, you need highly motivated people who are really passionate about the healthcare business. We want our people to put themselves in the position of the physician, the technologist and the patient and say: "What would I want if I were sitting in their shoes?" I think that keeps us

grounded and helps us to make sure that what we are doing is relevant to better healthcare and improving outcomes for the patient and the institution.

In addition, our role is to work with all of the regulatory agencies to ensure that our technology receives the approvals it needs so that it can reach the physician and patient and be used in the diagnosis and treatment of disease. We also lead the efforts to effectively inform our customers of the benefits and effectiveness of our new technologies, whether it speeds diagnosis, streamlines the administrative process, improves patient comfort or reduces cost to the customer and the patient.

Overall, my role is to keep the company focused on improving the outcome for our customer. That means keeping us focused on the needs of the patient and customer, innovation in hardware and software technology and efficiently delivering solutions to the customer faster and less expensively.

RT Image: What's the biggest modality for your company?

Karvinen: I guess on its own it would be X-ray. But, if you come to see me in a year or two, we should talk more about what's the biggest, strongest application. Cardiology has traditionally been strong for us. It's creating quite a bit of pull now. We were in Chicago last November at the American Heart Association meeting and the discussion there wasn't about X-ray, CT or MR. It was about what we could do as a company to solve the issues of the cardiologists. The focus was not that modality-driven. I think that's what's going to happen in this market. If

you walk around [the RSNA exhibit halls], most people still talk about specific modalities. But I think more and more, we need to get focused on the applications. I really believe that it's not a single modality that will help us succeed in the market, but will be the combination of them.

Then I think we need to talk about the biggest areas of applications. Cardiology will always be strong. I think radiology over all will be strong, but if you look at PET/CT coming out now in nuclear medicine, there are big promises. As I mentioned earlier, molecular imaging is a trend that everyone talks about. Today, not in five years, we actually do more than many other companies.

“What we do as a company is bring clinically relevant, preeminent technology to market. It's not enough just to work on technology for technology's sake. It must be clinically relevant.”

— Paul Mirabella

The underlying theme is: Our technology, or anybody's technology, on its own is useless. Technology must be put in the right hands at the right time to make a difference. And I can tell you that's what I keep preaching to my own people. And, that's the message I will carry to our customers.

Mirabella: Well, you know you can't really single one out. Every single GE Medical Systems' business is highlighting new technology. I can highlight a few of them for you. We introduced the flat plate detector technology into vascular from cardiology. We now have a 41-cm flat panel, the Innova™ 4100, which is clearly the most exciting product in the X-ray business.

When we introduced the Innova 2000 a couple of years ago in the cath lab, we wound up displacing the top two vendors in cardiology and catapulted into first place

gaining 17 or 18 points a share the first year. I have a good feeling that will also happen this year. We already enjoy a pretty good position in both diagnostic X-ray as well as vascular imaging. For the clinician that's in the radiation field you will experience 30 percent to 50 percent less dose. The image quality is exquisite. And frankly the amount of contrast agent that is needed and the amount of time the patient spends in the radiation field goes down dramatically because you see the pathology so much quicker. So that's going to be a spectacular product, and my guess is that both radiologists and cardiologists will be interested in that larger field.

In MR, we are showing both the Excite technology as well as the next generation of 3T products. We expect that will continue to have a lot of play with everyone from the scientists to the day-to-day radiologists. 3T is easier to site. The magnets are smaller than they were a year ago and that's going to come onto the mainline of radiology. People will be acquiring whole-body systems and not just neuro systems.

In CT we have both the Lightspeed®¹⁶ as well as the new e-Speed™ products. So you have the whole range of extremely fast whole-body CT equipment to cardiac specific CT imaging with all of the applications in between.

In our functional imaging area there are a lot of new exciting products. The new Discovery™ ST, which is a CT/PET hybrid product, has a larger bore for patient comfort, but a smaller footprint. Users can choose between a 4-slice or 8-slice CT scanner. Discovery ST is optimized for oncology applications.

Ultrasound has a completely new product line, which has been sequentially introduced over the entire year.

Our Advantage Windows product, which is an applications post-processing workstation, should be very interesting to your readers. We are really moving in the direction of what is of interest to them, which is the software and applications. The truth is really what box it sits on. We have changed our approach so that you can put those applications on anything. What's actually being demonstrated is it running on a Pentium 4 2.2 GHz laptop. That is the wave of the future.



Paul Mirabella with GE's Innova 4100 X-ray system

The centerpiece of what we have [at RSNA] is the Centricity™ display, which has really become the integrated information highway. Once you embrace using PACS and radiology information systems, you will wonder how you ever managed your workflow before.

One of the most pleasant things I have heard came from a user, who happened to be the manager of radiology at Mt. Sinai in New York. He said something that you might find surprising. He said: "Everyday I come in and it works. It works all day long. It works for all of the referring physicians that are depending on me." He could have elaborated on specific features but he didn't. What he was most pleased with was how robust and how reliable the product is. Right now, you now have a network city of highways and if the main intersection shuts down, it's over. Centricity changes that and it's good to get that feedback from that customer.

The technology pavilion is the other place where you are seeing excitement. I mean at some level as you walk around [the RSNA exhibit hall], you realize that this is a big statement and it's a big statement of technology preeminence. We started doing this at the Roentgen Ray show four years ago and we have been doing it at the RSNA show for the last three years. It's great because nobody is in

there selling. Physicists, physicians and anyone can go in there and have their mind bent about where we could be.

Going to a 3-D acquisition and display in real-time is only a matter of time. Really, it's about how soon we can develop computer software that can handle it. You watch all of diagnostic imaging. There is acquisition, processing and post-processing. As soon as one step gets faster than the other two, the other two have to catch up. Otherwise it becomes a bottleneck.

McCausland: At Siemens, there are three big areas of emphasis: imaging, solutions and information technology.

Within the imaging modalities, it's difficult to say which might be most important. MR, CT and angiography systems are key areas for us because they are in high demand. Siemens continues a high rate of innovation in these products, ever increasing the imaging accuracy and applications these systems can be used for. Clearly, ultrasound is an important modality for us, as evidenced by our investment in Acuson Corporation in 2000. Ultrasound is a radiation-free imaging tool that also offers increasingly accurate, real-time information, helping clinicians make faster decisions in diagnosis and treatment.

PET imaging also shows strong promise as researchers continue to discover new

applications for its molecular imaging capabilities. Combining PET with CT has increased the imaging accuracy, and new systems have increased the speed so that complete PET/CT scans now can be completed in less than 15 minutes. We're also about to introduce a new digital mammography system to the U.S. market. Our oncology business now offers new software tools to improve efficiency and workflow and a new linear accelerator to deliver more accurate treatment.

The one thing that amazes me is how each of the various imaging modalities continue to re-invent themselves with new breakthroughs that make them more relevant. Just when we think one modality, such as X-ray, has been replaced by CT or MR, we introduce flat-panel X-ray products. And this isn't an example of developing technology for technology's sake — these new systems can be used in interventional procedures when others cannot. So clearly, there is still lots of room for growth in all of the modalities. That's what makes this business so fascinating.

But imaging is only one part of the puzzle. We also focus on providing our customers with complete solutions. Siemens offers not only the imaging systems, but also the service, networking and workflow solutions that help our customers get the most out of their investment in new technology. We enable customers to manage the information flow, combining the diagnostic imaging scan conclusions with the lab and pathology results. We help them put that together, and make sure information for each patient is gathered rapidly and consistently, and then presented in a fashion that is logical so that clinicians can form clear judgments about diagnosis and treatment.

And like our imaging systems, part of the solution is information technology (IT). Siemens allows the IT systems to follow the patient with confidential and accurate records throughout the healthcare process, while also improving the workflow and efficiency for the healthcare facility. This helps us get back to the proven outcomes, which are a clear part of our strategy.

Healthcare providers and patients are demanding that device manufacturers and drug companies separate the marketing hype from the proven performance. We have to be truthful in our product claims and deliver evidence-based medicine. We have to demonstrate that we can do what we say we can do and offer proof statements from our customers who are benefiting from our solutions. And we've done that. With every one of our solutions, from imaging systems to networking software, we have prime examples of how we are making healthcare diagnosis better, how we're improving outcomes and how we're doing it at a lower cost.

RT Image: What was your biggest accomplishment in 2002?

Karvinen: Let me be very honest. The way I run this team has very little to do with what Jouko did. It's about what we did. My biggest personal goal is to come in and accelerate success from the point my predecessor left.

My focus is clearly on customers and competition. I think we're very strong at the clinical level and within the medical community. One of my challenges now is to build my senior management and their level of



Jouko Karvinen with Philips' Gemini combined PET/CT system

relationships with the CEO and the CIOs of our customers.

Over the last few months that I have officially run the ship, my biggest accomplishment was to finish the integration, motivate the sales force and meet with several customers around the globe. We are happy to accept the fact that we are going to have to win over some fairly formidable competitors. If you add up my plans, our plans and what's published by the two other major players, it adds up to more than 100 percent market share in a few years. We are happy to take the challenge. That's how we enter 2003.

Mirabella: This year, virtually everything that we said was going to happen happened on time. [Last year], we announced Lightspeed, and by the time this year ends, we will have shipped over 250 machines, which is probably five times as much as our nearest competitor, and they have mostly been talking about it. Whereas our competition has been talking about hybrid imaging, we introduced the product last year and here it is not even the end of the first full year and we are introducing the second generation of it.

In MR, we introduced a technology in Excite that we said was the most revolutionary breakthrough in MR in the last 10 years. A whole bunch of our competitors "pooh-poohed" it saying that we over used the term revolutionary. A couple of publications even jumped on our case.

But I think the fact of the matter is, based on customer response, based on the number that we sold, based on the number of people in our installed base that are running to upgrade our systems (most of them driven there not by the physicians but by the hospital administrators), we're right. Because you can process so many more patients per day using this technology, the ROI is a no brainer. So I think this has been an excellent year for the predictable introduction of technology.

McCausland: We continue to have double-digit growth in the marketplace — that's an accomplishment Siemens Medical is proud of. In addition, we've come to the point where we've fully integrated the acquisitions made over the last couple of years of Acuson and Shared Medical. We now have one Siemens Medical Solutions sales and service organization,

and we offer one face to the customer, removing the complexity of Siemens that includes multiple modalities and a variety of IT systems and solutions. The customer now meets with one representative, one sales force. It's another solution that Siemens provides to the customer that makes their investigation of new technology and services easier.

I am personally proud of how Siemens has matured to the point where we truly are providing complete solutions, and we can demonstrate that with proven outcomes from customers who are benefiting from those solutions. We can help institutions cope with and even solve their problems, ranging from shortage of capital, medical error and quality issues, HIPAA requirements, efficiency and cost of care issues and patient and physician satisfaction. We're delivering on our claims and building trust with our customers.

RT Image: What do you anticipate for 2003?

Karvinen: Again, the acceleration of success and solid execution. In many ways, if you look at [what Philips had at the RSNA conference in December], like the Vequion family of IT solutions, I think you see the early signs of the fruits of integration. Also, take a look at some of the ultrasound products, as well as some of the combined technologies from the acquired companies.

Take a look at the sign of our products — they look and feel Philips. What you're going to see [this] year is a very non-linear exploration of that pipeline coming up. The hard work is behind us, and the fruits of our labor are paying off. In many ways, I am a lucky guy.

If you take time a year from now to sit down with me, you're going to see, quite dramatically, things coming out of Philips that are the fruits of good work from the past 18 months, not only in technology innovation, but also in the services arena.

Earlier this year, *MD Buyline* ranked us number one in 15 out of 26 modality sections, and those were the 15 we participate in. Philips also earned top honors for overall service performance in eight different categories in the IMV Limited

annual survey of medical technology companies. Point being, I held it up to my own people and said if that's what you guys are able to do in terms of taking care of the customer through the year of integration, I really look forward to 2003.

I think it is a big accomplishment from the worldwide organization that we have been able to very significantly extend the business, take care of our customers, service them, and grow through what was a challenging time. Now I want to get everyone's energy back on the market and the competition. I said to the board that I was very excited to join Philips back in June, but now I am more excited than ever, which is a good sign I think. The more I see, the more exciting things get.

“Customers are looking for true partners that will listen to their needs to collaborate on future plans. A lot more listening and learning together with customers and other parties is critical.”

— Jouko Karvinen

If you have the opportunity, talk to our people at Philips Medical. I think you're going to find the one unique thing that made me really fall in love with this industry from the first day was that our people truly care, not only professionally and intellectually, but they're also very passionate about what they do and why they do this. When they talk to a customer, they not only talk about CT slices or scan speed, but they are very interested in the impact and benefits our technology has on people. I think that it is true for our sales people. It's quite true for our research people. And that's a strength we have for the future.

Mirabella: Walk around RSNA and you'll conclude that we have a leader position in the technology and in services where we bring productivity solutions and asset

management solutions, if you don't conclude that we are someone to be considered as a partner not just a supplier that sells equipment and services, but somebody that they can look to be a long term. We are a technology leader. We expect to be a technology leader in every part of the world in everything that we do.

Beyond that we also have terrific productivity solutions in both our approach to information technology as well as our approach to information services. What can people expect from us in 2003? More of the same.

McCausland: Proven outcomes for 2003. With proof-positive demonstration of the complete solutions we offer, we can show that we are improving the way that workflow is managed throughout the healthcare enterprise. Siemens can help its customers improve the delivery of care, more accurately measure their outcomes, practices and quality of care and reduce the cost of delivering care so that customers can be more effective and fiscally sound.

I remember the time when we at Siemens Medical could only imagine what it might be like to deliver a complete solution to our customers.

Today, we no longer have to imagine it: We are actually achieving it. We are helping our customers achieve proven outcomes with the most innovative medical imaging products on the market, enhanced clinical and administrative workflow and networking capabilities that are delivering more effective, affordable healthcare to patients around the world.

— Jeremy Kuhar and Tom Schaffner