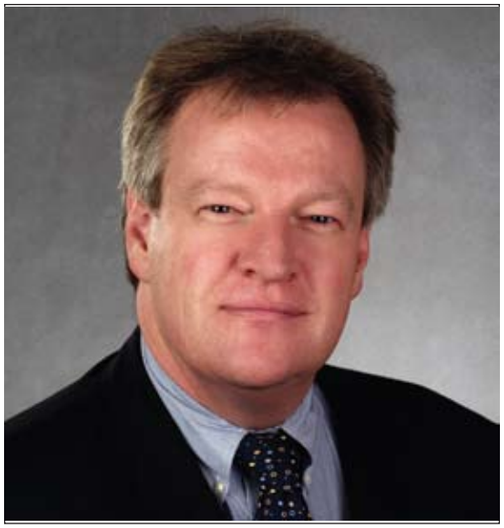
Leveraging Technology

A LEADERS CIO ROUNDTABLE WAS HELD AT the New York Stock Exchange and moderated by Stanley Young, CEO of NYSE Technologies and Co-Global CIO of NYSE Euronext. The seven technology leaders who participated in this roundtable represent a wide range of fields and discussed how they each exploit technology to excel in their work environments, how they're going about investing in technology in the current climate, and the changing role of the CIO within an organization.

Young: **The New York Stock Exchange is where 100 percent of the market used to walk in every day, trade, and then walk home in the evening. Today, as NYSE Euronext, we're better categorized as a technology company that happens to run markets than a market operator that happens to be in the business of technology. If you want to run world-class markets, you need to have world-class technology. We are making incredible investments in data centers, in our trading platforms, our network infrastructure, our gateways, and our low latency architectures, all in the belief that we will continue to operate the best, most liquid, and deepest market in the world. So it feels more like a technology company even though, at the end of the day, our core business is still bringing buyers and sellers together in a low-cost optimum way.**

We firmly believe that as a market operator and a technology company, we need to be involved in each element of the value chain. It's no longer good enough to provide a matching engine. The network infrastructure that we provide to allow firms to access our core matching technology and the fact that that is housed in a data center may sound a little strange, but we need to own our data center. We view our data center today as an exchange viewed its trading floor 20 years ago. Those of you who have been in this industry long enough know that the Specialists downstairs, now called Designated Market Makers, had lines on the floor, and if you were a Specialist, you were allowed to be inside that blue line, or if you were a client, you were allowed to get close to that Specialist post. That was all a part of the proximity of the broker. All we're doing is replicating that in the virtual world. Most brokers are now algorithms. We still need people involved in the process, but co-lo algorithms need to be situated right next to our matching engines. And firms are fighting for space within our data center, or liquidity hub, as we now know it. We're building a 100,000-square-foot facility out in New Jersey and a 70,000-square-foot facility in London just for co-location services. As a CIO of this business, I need 20 percent of that space to run Group technology. The other 80 percent is available to commercialize, to allow trading firms to get as close to our market centers as physically possible, and to squeeze latency out of their trade execution. What I'd like everyone to leave today understanding is that technology is a mission critical component of running deep liquid markets of the future.

***STANLEY YOUNG** is Chief Executive Officer, NYSE Technologies and Co-Global Chief Information Officer, NYSE Euronext*



***ANDY BROWN** is Managing Director, Head of Global Technology Strategy, Architecture and Optimization at Bank of America Merrill Lynch*

Andy, in terms of your business and how you view the markets of the future, what are your key drivers, and how do you see the business playing out for you?

Brown: Networks have already changed dramatically in our own lifetime from human to electronic and now, thanks to technology, back to human again. So relationship networks have become more important. The strength of our relationship measures value on both sides. How much additional value do we give to Deutsche Asset Management, as an example, versus what they perceive that value to be on their side. And in a trading world where the race to zero latency is the technology mantra, it's the exact opposite – it's the race to 100: to maximize relationship value that is also important.

So the question becomes, how do we make sure that this client is happier, more engaged, and is getting better value out of the services that we're delivering because he's taking for granted that we are a member of the race to zero?

The flow-oriented businesses and the algorithm-oriented businesses are clearly different. One of them is about "with whom" and the other one is about "how." The human element of the business is the one thing that has persisted over time, and it's always been sticky. There is a closeness of relationships that exists between the sell side and buy side today, and to a certain extent, there is an element of subjectivity in how flow is delivered between the buy side and the sell side.

So if you don't differentiate on the relationship, it's actually becoming more difficult to

differentiate on pure technology because of the race to zero.

***Young:* Sean, as a client of these electronic marketplaces, how do you view that?**

Kelley: The buy side is the sell side 10 years ago. So for complex products, for instance, what our sell side does in a day, we do in one year. I continuously mark to market with the sell side to position our business for the future. We look at our technology as a portfolio, consisting of alpha (core) and beta (non-core) technologies. On the alpha side, we want device proximity to provide for things like high availability and low latency. For the processes we consider beta, we use a networking concept and buy/rent those from the market as opposed to run them or build them ourselves. We're moving from a command and control IT – keeping everything in the borders – to an air traffic control model, where you keep the alpha on the inside and move the beta out. Sell side providers, exchanges, dark-pool, and algorithmic providers are part of the external network we are sourcing things from.

***Young:* And is the ratio of that business changing over time?**

Kelley: Yes. The alpha is more concentrated and of higher value. And there is more beta buyability available today because the markets are mature and advancing, and the technology is advancing, thus allowing you to pierce your corporate envelope and exploit services from the outside. Thus the ratio is skewing more to buy than to build in our part of the business.

Sharkey: As a smaller institution, we deal in relationships – that's what Signature Bank is about. That's how and why we started, and how we keep growing. It has very little to do with the technology we offer – in fact, sometimes, it's quite the opposite. Many clients are with us because another institution may have said, unless you have X million dollars, don't call us directly, go online for your services.

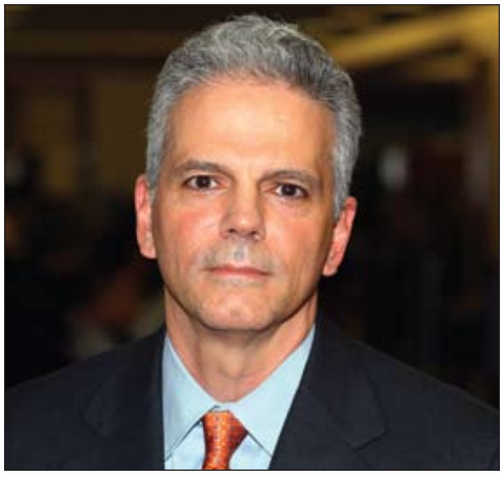
We're an $8 billion institution today. We started with zero but built our infrastructure to support the growth we anticipated and achieved. We can deliver whatever technology our clients want, but we don't typically do that by building; we do it by buying. We outsource just about everything. If it's not something we can purchase for our clients, we will custom build it. This way, we're never put in a position where we have to say we can't or won't do something.

Garvey: We are not driven by technology in the same way. We're a consumer business and we look at technology like any other investment opportunity; it has to have the right payback for the business. I provide low-cost operations, reliability, consistency, security – the whole palate of normal provision, as cost effectively as possible, and I want to have some money to invest in strategic things that will move us forward. But ultimately, what matters most is our brand and our brand equity and the value of our product.

***Young:* At the end of the day, our offering is a virtual product. We don't physically deliver anything, people don't physically consume anything; we facilitate electronic transactions.**

***SEAN KELLEY** is Global Head of Technology and Operations for Asset Management, Deutsche Bank AG*

***MICHELLE GARVEY** is Chief Information Officer, Warnaco Group, Inc.*



***THOMAS FORTIN** is Managing Director and Chief Information Officer, BlackRock, Inc.*

Garvey: In my business, if I don't poll a store today and I get it tomorrow, as long as I account for it properly and I replenish, it's not life or death if I get it hours later. And for many leaders, seconds matter – hundreds of seconds can matter.

***Young:* For us, of course, technology problems are front-page news.**

Fortin: We take a different tack than most organizations. We started 20 years ago as a small fixed income manager recognizing that the sell side was selling products that the buy side had no idea what it was. So we decided to start building our own models to bring sell-side technology to the buy side. As a result, we ended up building our own investment platform from portfolio management all the way through settlement. That has been the core of what BlackRock has done for a very long time. We believe investment management is as much about alpha creation as data, because you can't create alpha unless you have the correct data. Recently, with the merger with Merrill Lynch Investment Managers, we were thrust headlong into the equity markets, which was a very different animal. We decided rather than buy technology, we would build on top of the fixed-income platform that we had developed. So we're very much build-it-in-house and we invest in those tools, because many of the things that BlackRock does cannot be supported by off-the-shelf products. You end up bastardizing and building around it and creating reconciliation nightmares until the end of time. So we're very much on the side of one system with one database and one process globally. And that is what we all strive to achieve.

With equities, some of the frustrations we've had as we've grown to support those capabilities are the splintering of access to the markets. So when I look at technologies and what we outsource, it's the broker and connectivity as opposed to the platform post-execution, the point at which you connect to the broker. And we're comfortable with that as a strategy, because we have to look at what we can do well and what we don't have the capability of doing as quickly as the markets are evolving. The connectivity, building our own fixed network, and building our own algo tools, gets to the point where you're in a catch-up mode, whereas we're in an advanced stage across many of the other areas that we're building out.

***Young:* That complexity is, in a way, what you have created. It was perhaps because exchanges of old were too powerful and were de facto monopolies that forced the creation of competitors, and as a result, we now have fragmentation. With fragmentation comes added complexity, and with complexity comes the need for more and better technology to make sense of the complexity and so forth. It becomes an ever increasing race towards zero latency and we wonder where it's going to end.**

Brown: It's unrealistic to expect the market itself would become captive. The movement away, or the pendulum between, fragmentation and consolidation is the pendulum that's swung at least twice in most of our careers, and I don't see that changing anytime soon, especially when we're currently in the more fragmented rather than less fragmented space.

Our strategy for achieving some of the client value we talked about is, to a certain extent, to abstract away that complexity so that the buy side's use of sell side services is much simpler than the underlying infrastructure would have you believe.

So if you're in the buy side and you're trying to get into sell side business, it's an extraordinarily expensive business to get into, because you've got to build that entire abstraction layer, what you might call a virtual exchange. If we want to do business with BlackRock, that business has to be earned. You have to have services that compete. And you have to simplify what is an underlying ecosystem of complexity.

The fragmentation itself creates an opportunity for more consolidation throughout, but while there is a capital market mentality around the capital markets, it's hard to believe that future liquidity points will be merged.

Kelley: To take Andy's pendulum example a step forward, it has now swung from markets selling complexity (CDO, CLO, etc.) to one more based on flow. In flow business, there is a heavy dependence on tech but more to provide capacity and resiliency. When the pendulum swings back to complexity instruments – which it will – the technology imperative will go beyond an algo arms race to one where transparency and simplicity via abstraction will be a key differentiator. We saw examples of this in the current market when clients demonstrated a flight to quality and control havens.

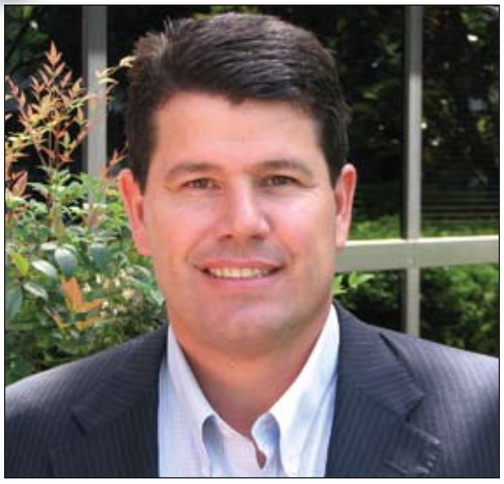
***Young:* Daryl, as a supplier of technology, what are your thoughts?**

Ganas: A lot of the challenges are pretty similar depending on what market you're at. At the end of the day, the world is mobile; it's about consumers. And these new consumers are going to access whatever they do very differently than the last consumers. So Intel is looking at how we're influencing them, how we're building products to reach them, and the Internet is going to be the thing that's driving those.

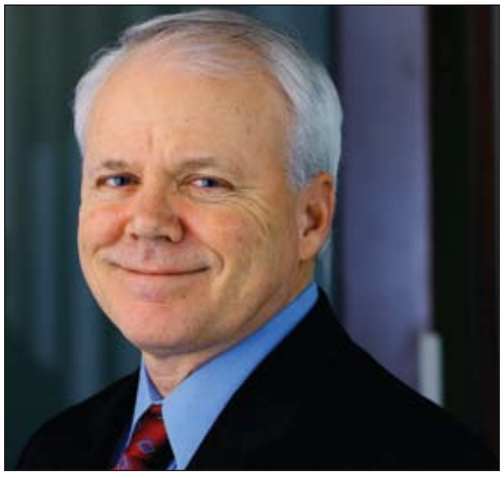
From an IT shop, we're focusing a lot more internally on employee productivity connection. We have design teams all around the world and people are traveling less. The needs of these people for social computing and for videoconferencing over the past three to four months are huge.

And the other thing is focusing on business capabilities. We traditionally sell to large OEM, but a lot of our new initiatives are all about scale, and how we reach thousands of customers. And you can only do that through technology and scaling, because we're not adding another ~10,000.

And, from a corporation perspective, our IT shop has been asked to make our employees a heck of a lot more productive. And the groups



***DARYL GANAS** is Director, IT Customer Capability, Intel Corporation*



***MIKE SHARKEY** is Chief Technology Officer, Signature Bank*

that we support are looking to go scale in these new markets, and those are usability, and all the different things out there. We have a pretty efficient IT shop, but we're being asked to more enable the business than we ever have before.

***Young:* So you basically consume what you produce in terms of your capabilities? Are you the best advocate for your own technologies?**

Ganas: We do, and absolutely. We walk the walk and talk the talk. And we have some great products, especially in the servers, but we're no different than you. We have four-year clients out there and your employees are probably 40 to 50 percent less productive on a four-year old machine. That is unacceptable when we're asking these employees to do a heck of a lot more. So in the cutbacks, we have not in any way cut on the internal side or on building new capabilities.

***Young:* I don't think there is anyone around this table that isn't being asked to deliver more for less, and also being asked to make sure the business isn't damaged when the markets pick up. How are you coping with that?**

Fortin: It's about prioritization and creating efficiencies across the organization. One of the things we've recognized over the years is that big initiatives require a simple objective and overwhelming force, and that's where you get the biggest bang for the buck. In August, we might have had 50 initiatives we were working on, but now it's 20. So we're narrowing it down across the whole firm, and making sure that at the end of the year, we get those 20 things done.

***Young:* Is technology an equal partner in making those decisions, or is it business driven?**

Fortin: It's an equal partner. In many cases, we're the ones going to our business partners and telling them they're not operating efficiently and how we can help them change either how they're operating from a back-office perspective or even from a client management perspective.

Ganas: But when businesses get put under a lot of pressure, they're willing to ask us how we can help them. So this is the time to get your goals accomplished. Your alignment with the business will never be better.

Fortin: The death of every technology project is the desire to make it work for 101 percent of all situations. You're a lot more successful shooting for 85 and dealing with the residual through business process.

Garvey: Warnaco historically was a loosely knit consortium of brands that could be acquired and divested at any point in time. That dynamic has really changed under our current direction where we're heavily focused on our global Calvin Klein businesses. Our retail/direct-to-consumer business has grown rapidly and continues to grow and the core strategy that I've put in place is the standardization and simplification of IT. In the current economic environment, where resources are limited and there's no appetite for huge levels of risk and big transformational technology investments, it's a great time for my team to refine what we have installed and fully leverage the tools we've already deployed. In initial implementations, you generally get 80 percent of the potential benefits in phase one and you're not exploiting the full capability of the technology. If the team has moved on to the next material investment, it can be challenging to go back and get that incremental improvement. This is an ideal time to get that residual benefit with minimal investment. My team is focused on what we jokingly call shovel-ready technology; we have investments ready to go with business cases prepared, so we know what to do when the market turns and money starts to flow again.

***Young:* When you bring the business down to its basic building blocks, it is possible to simplify. We've all made an art out of taking something relatively simple and making it**

In terms of the competitive differentiation of a business, it is the 20 percent of processes that you have that you execute differently than your competitors that differentiates you.

– Andy Brown

complex. You can appropriate some blame to the business people, but I believe that technologists are offenders too, because we love creating.

Fortin: The complexity that we've created was the easy way out at that time. The hard thing is to take it back and figure out how to make it simple.

Sharkey: One of the major benefits of doing what we did, which was starting up an institution from scratch, is that things become blatantly obvious to you, when in the past, everything was just lost in the chaos; you don't see the flaws, your own faults included. So when we got together in a room with a flip chart and wrote down what we needed to start a bank, it was eye-opening. There is a tremendous amount of work and cooperation that is needed to run a financial institution. Joining Signature Bank and getting to start with a clean slate was the smartest move I have ever made.

Ganas: A few years ago, Intel went through a company-wide efficiency exercise. We did an IT and enterprise mapping, and asked what the health of all the core capabilities were. And then we asked which ones were core competitive advantages, and we had almost all of them. Probably 20 percent of your processes or what you do is core competitive. So we overlayed the core competitive and asked if certain things were good enough. As a market leader, we think everything is best, but figuring out where that 20 percent is that you're going to customize is hard to do. But that's what we're focusing on. Internally, we're using a lot of Lean Six Sigma to squeeze out some of these inefficient processes that we have.

***Young:* But haven't you had difficult conversations with business owners of those processes who think it is unique?**

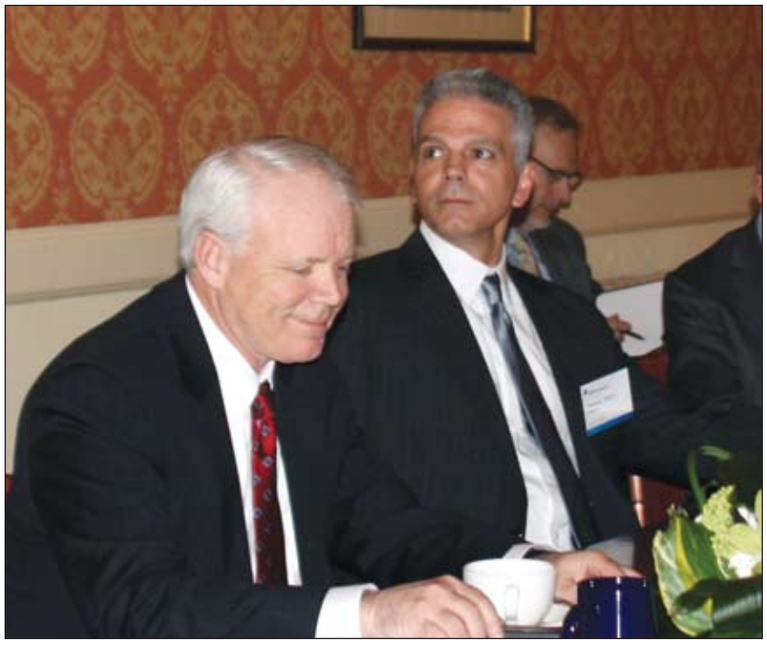
Ganas: It is, but when you're focused on efficiency and it's top-down, it's much easier conversation. And then you focus on your end goal, which is getting to the customer. You couldn't do it in a time where everybody has big budgets. But you also have to have some big wins with them too.

Garvey: But not everything is global. You have to focus on the vast spectrum of things that can be consistently standardized globally and the things where there is regional uniqueness, and you need to respect that and support that. The trick is knowing what belongs where and driving consensus on that.

Brown: You often start off with two or three of everything, then you need to get to one where that makes sense, and at the same time recognize and be cognizant of where one doesn't make sense. So that applies to getting operating efficiencies out through simplification, consolidation, and proper business IT alignment.

Getting the right business guys in the room with the right IT folks is very important. There can be quite a subjective discussion about whether one particular platform is better or worse than another one, but you have to come up with objective criteria that allow you to get to a decision point.

The process we've been through has allowed free conversation and has closed out those discussions in a very fast period of time. It gives you the chance to do almost greenfield analysis because you're looking at the set of capabilities you have and you're trying to decide which is better for the clients, for relationship value, and for your brand. Then you're able to move forward.



Mike Sharkey and Thomas Fortin

Decisions are made on business process, application architecture, information architecture, technical architecture, and security architecture all at the same time, which can be a tough set of things to execute in parallel, but I think we've done a pretty good job.

The big budgets and evolution is what's created complexity, and without this kind of down cycle, you don't get the consolidation opportunity, because there are always more things you need to do to drive the top line rather than net margin or the bottom line.

It's about looking at the opportunities in the down cycle to change unit cost, as an example, so when you come out the other side, you don't grow costs at the same rate as revenue grows, opening up net margin.

***Young:* As budgets become tighter, people automatically think that's when innovation is turned off when, actually, it's the exact opposite; it's when innovation is actually turned up a notch. You have to use those dollars more intelligently, and the business is much more supportive of being innovative to achieve results. The business needs to remain competitive especially when their markets are under pressure and they are turning to us for help. We're constantly being asked to do more with less, but to spend wisely.**

Fortin: When you look across financial technologies, over the past 10 years, technology groups grew more marginalized away from the business units, and this is the opportunity to get back in the game on the business side. If the teams mess that up, you have another 10 years of

being ticket punchers. So they're looking to the technology groups to help solve problems and make the firm better, not just program this or that little thing because "I will make money if you do that." You don't get many shots like this.

Kelley: One thing that's grown up is a new discipline on the business side of people architecting the business, like taking a technical discipline, and saying, this is what I want to make of business. The leadership for our foreign exchange business architected and predicted where they were going to be and it's a thing of beauty to watch. It's fun to watch businesspeople take the language of technology and architect a business around that, and we're seeing that more and more.

Thomas Fortin, Michelle Garvey, Daryl Ganas, and Stanley Young

***Young:* You're starting to see that crossover between technology and business where the next generation of leaders will come up through the CIO's office rather than from the CFO's office. The more dialogue I have with the latency players, the more I find myself dealing with technologists as opposed to traditional business folks. This is because the market is now becoming more than ever dominated by algo traders and technologists.**

Brown: The discipline of process is taught to technologists from the beginning. In terms of the competitive differentiation of a business, it is the 20 percent of processes that you have that you execute differently than your competitors that differentiates you. Technologists are taught to think that way. It's a gene, and if you've got the gene, you will immediately get it. If you haven't, it's very hard to drive that level of cohesion, because you can't see the "big picture view." You have to have tools that help people understand the processes that are their business and how those work. If you can have the business partner visualize their end-to-end flow, and even better, if you can show metrics in the visualization that show where their competitive differentiation is coming from, then they're not just engaged; they're five inches away from the screen.

There has been a lot of change in the way requirements are captured and the way we've helped show what's possible. Suddenly, the pen is dropped and you're able to have a different dialogue with your business client. And that's a challenge we all have every day. The process gene is definitely a gene that helps in that dialogue.

Kelley: The other crossover point is that technologists are becoming more commercial. Gear heads now wear the hat of commercialism as it were. When we deliver product to our clients, we know what the profitability is of that product. Thus, I would say two simultaneous crossovers are happening: the business is crossing over the technology side, and some of the genetics of the technology side are crossing over to the business.

Sharkey: When we started the bank, I joke that I was the most technologically savvy person of the group, so I became the CTO. I also have responsibility for our cash management group, which is the crux of our product offering for most of our clients. I can't tell our CEO that we can't sell product because the CTO isn't delivering it because I'm the CTO, so it's a major benefit. I had to hire a lot of folks from the IT group from our former company. It took some time to get them all to stop saying "they and you" as opposed to "we" because the perception of the IT group is that you, the businesspeople, are the cause of this, not me, and vice versa. It took awhile to get those groups to work together and start delivering, but when they did, you could see the positive difference in product development.

Garvey: There is definitely a difference when you have business leadership that's process savvy, because they think in a more linear manner. We have big design businesses and it's a whole different issue, but if you can demonstrate the benefits in a way that resonates, that's the core of it. Working from an understanding of how business process drives technology, the process lays the way for the requirements of the technology solutions. You have to start with the business and what success looks like, define and agree on the metrics that you will use to evaluate success, and be clear on that from the beginning of the project.

Ganas: People are getting more architecture savvy, but nobody in the business is going to talk IT language. So you have to figure out where you can be that advisor. We had a situation with a new sales organization that we started, and instead of saying, we want this, they said, we want a system to go manage our business without operations; here's what we need, can you come back and tell us. So it was very different.

Kelley: The language of the business architect is not technology language but rather where people visualize what the business will look like after all the smoke clears in the future. If the language is procedural and not technical, it will be easy for everyone to get it.

Garvey: The most success I've had in interbreeding between IT and the business is in my business intelligence group, because the people who are driving analytical support get the business mindset, and they can mold a business perspective. While they're not the leadership of the company yet, but are at the middle management level, we've definitely had good experience taking people from business analytics into operational roles, and vice versa, often in our financial group.

***Young:* The business side has been the traditional source of CEO's in the past, and I wonder whether we're going to see that continue or see a few people who have come up the technology route getting to the boardroom. Often the CIO is still not at the boardroom level; it's operated either through the CFO or the CAO. In the technology literate world we now live in, I wonder whether that next generation is going to have a real voice in the boardroom.**

Fortin: I see the next logical progression going to the COO; who is operating the firm. But technology in many ways operates the firm and I see that as the next logical step. I laugh, because one of the mantras in our firm is that process drives the technology, not the other way around. When you start from the other way around, you end up with garbage. It's technology looking for a problem to solve. You either have it as a culture in the firm or you don't, and you've got to drive it from the process. I have found that many of the operating units don't even know what their own business process is. We start with a business process review when we go in to understand what they're doing – to teach them what they're doing –—and to highlight some of the challenges in their process. When you get to that point of the business process review as you start any major investment, you end up with a better product.

***Young:* Not so long ago, we were dealing with fax machines and telexes, and we automated processes around that, but we're coming out of that cycle. We are looking at what the processes are that**

really add value to what we deliver to our client, and then automating that rather than automating old tired manual processes.

Ganas: We've outsourced some of our basic operations in customer support that saves us time. We figure out the business process, we document it, we hand it over to our outsource partner, we work with them, and let them run for about three months, and they come back and tell us what to automate. But we're not allowed to hand it over until there is a documented business process. If you leave that to IT people, we will create the best automation tool that will automate for every scenario under the moon, and it will take nine months to do. We actually started doing a little more on basic tasks. Generally, we'll handle their task that is seven steps. They will look at it and say, we need these three data feeds and I don't think you need these two, because we're getting paid by job function rather than a paycheck. So automation for automation's sake is completely a thing of the past.

Kelley: We very much subscribe to the Michael Hammer reengineering approach of "obliterate" then "automate." Our job is to simplify the process and get rid of as much as we can. Whatever is left over we then automate.

***Young:* Unfortunately, often the people doing that review are the very same people whose jobs are on the line. They have the experience of the process, and they realize they're processing themselves out of jobs, so they think about adding a step.**

Brown: The industry itself is going to drive that dialogue pretty quickly. "Consolidation" and "simplification" are two themes, but the other theme is "good enough." And if you look at salesforce.com and the whole As A Service community, the criterion for quality is "good enough." In some cases, it's better than enough.

There's an external set of forces coming to bear on that discussion, and they don't engage with IT – they engage with the business. The sale is made to the business. And that's because it's a business service, for a business process.

IT has to be careful to position itself in the right place going forward. You need to think about how you become the best integrator, not how you compete with the people who are building good enough, because they've got so much scale on multi-tenant platforms, and they know good enough across so many customers and companies, that you can't compete.

IT used to run in a captive market; IT now runs in a capital market, because it's the Internet service providers themselves which have eliminated the boundary between Internet, Extranet, and Intranet. This term was coined in a prior job as "Entranet," because we're all converging to the same point. IT is still left with the challenges of integration, but that's the point. Integration becomes a core competence.

Ganas: A couple of years ago, we were doing some on-demand pilots. And at the end of the day, you've got the SaaS model, and you've got integration, and the faster those two things figure out how to play with each other, then the cloud becomes more relevant to businesses.

Kelley: The trick with the people equation is to make them realize that the new future state also has opportunity for them as well. While not all will find a home in the consolidated view of the future, many new types of roles will be created in the new IT. The trick is illustrating this to them in a simple, believable manner.

Garvey: Everyone conceptually gets the idea that sometimes you have to cut weakness for the health of the herd, but it matters a lot if you're a part of the herd or not. And you need to know that up front, or else people will get protective and start to get proprietary. The key is to trust in the decision-makers.

Ganas: You talk to business intelligence, and only half of them are in IT; the other half are part of the business. We have a huge user-generated BI initiative. No more sales guy calling into his customer service rep to send him the weekly report. It's user-generated, at your fingertips, operational two levels down, and it's powerful.

Garvey: But once you actually put the platform in place, and once it's populated, then it's training, education, and marketing.

Ganas: But you're skipping steps and whole groups of people in your corporation need to find different things to do.

Brown: No longer do you have a generation where they print their e-mails so they can read them. It's a completely different approach to how the business folks use productivity tools, and their interaction with and expectations of the technology.

Garvey: Some people want to be self-sufficient, and there's another group that wants to call someone and get the report brought to them.

Kelley: Corporate environments are evolving from a "knowledge is power" schema to a "sharing of knowledge is power" orientation. Hence the recent surge in collaboration and social networking technologies.

Ganas: People over 35 use the Internet and tools to manage their life, and people under 35 use technology to connect with their life. Sometimes we are in decision meetings on social networking, and very few of the people in the meeting will be the users of the technology. So the discussion becomes about reverse mentoring.

Sean Kelly, Andy Brown, and Michelle Garvey

Brown: It makes sense because time is one of the criteria for becoming an adopter. Most of those who are in that over-35 category are people who don't have time. Grandparents and grandchildren are connecting in the Internet ecosystem better than parents and children. So it isn't just over-35; it's about whether you "live" in the Internet space or not, and if you do, then you're going to use the tools that make your processes more efficient.

Ganas: A big topics at Intel is how we are going to manage consumerization, all the new technologies, bring your own computer to work, if we're taking advantage of the new apps, and a lot of these make us very nervous in terms of security. And yet, we have to try them.

Garvey: We support that at the margins. We have alternate ways through the firewall even if you're in the office, so you can get a secure route when you don't have a secure device that has a permanent IP within my network. We have a guest network and Citrix Access, so you can bring in your personal device, but you can't look like you're one of my devices.

Brown: There is no doubt that convergence is occurring. And the challenge we have is that, in a lot of cases, the requirements versus the individual need are not coalescing at all; they're going in almost the opposite direction.

There is a challenge because consumerization is almost a fashion accessory approach to IT. The computer itself says a lot about you and doesn't have to weigh nine pounds.

In financial services, that creates a challenge. People are using their home computer or home persona to engage in the Internet the same

way everyone else is. But in the work environment, where regulations and risk management are important, there are restrictions on doing that. That's a challenge for our era.

***Young:* Will that ever change?**

Ganas: I don't think it's something that information technology can avoid; it's happening. It's how we're going to deal with it and the security policies that we're struggling with.

Fortin: The mentality is still stuck in the '90s when you used technology at work and not at home. People's lives and their work with technology are so intermingled at this point that all of our companies are demanding its convergence. Our job is just to make it secure.

Kelley: What's happening is that the generation coming out of school walks into the corporate environment and feels somewhat "dumbed down" from a technical capabilities perspective.

Ganas: And some of that talent are not going to go to the companies that are dumbed down.

Kelley: But it's also a productivity thing. Corporations tend to make simple things very complex. IT's whole job is around the abstraction of complexity. Security is one area, and there is whole host of others, but that's what keeps us relevant. If we can make technology a convenient and consumable thing, regardless of the complexity, we have jobs for a long time.

I'm starting to get demands for mobility in the business applications that people are using, and that is probably the most challenging frontier I can imagine. – Thomas Fortin

Garvey: It's the same challenge IT has always had. If you have a specific need, it is always cheaper and faster to just meet that specific need by jotting down some code. It's the stuff around that - the replicability, the reusability, the security, the commoditization of it - that adds some overhead and is worth it at a corporate level but maybe not to me as an individual, and it's the same challenge with this sort of technology. We have a much different regulatory view in the consumer product sector. We still have plenty of regulation, and plenty to comply with, but we don't have it at the level of financial services. So one of the things I did was take away the clause that you will be fired if you use the Internet for personal use. I allow reasonable personal use of the Internet on appropriate sites only. I block access to sites that are dangerous to the company or offensive. So I let them use Facebook. And there can be controversy about allowing access to sites like Facebook, but we, along with HR, believe the company is not big brother, and that the productivity of your staff is your responsibility as a manager.

***Young:* I wonder how these communities will eventually come together. We pride ourselves in running markets, providing a very secure infrastructure for very low latency transactions, with the goal building a fast, resilient, secure superhighway so we view private, slower, less-secure, Web-based access on that superhighway as a hindrance. In our world, how do you bring those two together when it doesn't seem possible in the near future?**

Sharkey: At some of our locations, we built separate Internet connections that are physically separated from our network in order to provide services that were not secure inside of our network.

***Young:* As your clients become more sophisticated in technological terms but also more fragmented, a hedge fund could be one person sitting at home communicating via the Internet.**

Kelley: We look at technology as an electronic umbilical cord. If you make it convenient and you make it facilitate clients doing business, the more they tie into it, the harder it becomes to break that relationship. So your performance goes in the bin for a couple of quarters and your client will not likely unwind all of these connections for a short blip on the performance radar. The stickiness of the client relationships via the electronic umbilical cord is going to be really important in the future.

Brown: It's unavoidable though. In a change from the way relationships are managed today, Generation "F", the Facebook generation, requires service providers who let them manage relationships in their own way.

The crossover between the secure information superhighway that is the banking world of today and the need to provide Generation F's access to that infrastructure will force a dialogue that is only just emerging.

The need to answer these questions is imminent. The answers will have to be in place three to five years out at most. That's the scale of how fast we need to adapt.

***Young:* About our roles, do we feel good about the contribution that we're making to the profitability and performance of our organizations? Do we feel technology is important to our organizations?**

Kelley: More and more of the role has moved from chief information officer to chief ideas officer. Technology is fairly creative and somewhat artistic, and the more you get into the ideas space, the more the job is rewarding and you leave a much longer impact on the organization.

Garvey: There is an evolution, at least in my company, with regard to IT governance. I started an IT steering committee and we meet every month and prioritize everything. As the projects get longer term and as they get wedded into the business, the need for that has shrunk, but paradoxically my participation on other steering committees has gone up. And you start with the process bent, the KPI's, the analytics – it all comes together to be a problem-solving approach that is relevant to overall business decision-making. While my company is not driven by technology, we are driven by information, so IT is integral.

Sharkey: And besides the auditors, in most organizations the CIO knows more about the operations in the business as a whole, about the way they processes work throughout the organization. It's rare that you've got the accounting department talking to the Internet banking guys at the same table.

Fortin: I caveat that with the CIOs who are doing the job that a CIO should be doing. Too often it's just been the tech guy with a data center; that's the failed model. Technology departments have not done themselves a favor by elevating those types of people.

One of the challenges in the future for us all is consumer mobility for our employee force, but I'm starting to get demands for mobility in the business applications that people are using, and that is probably the most challenging frontier I can imagine. Giving somebody e-mail, personal e-mail and a BlackBerry, or getting an iPhone hooked up to your network is hard enough, but having business applications on mobile devices and ensuring the security, particularly transactional types of applications, is something that we have been successful in not going too far into, but I don't know if I can avoid that for very long.

***Young:* Executing a buy or sell order on your BlackBerry from a restaurant at lunchtime is a little bit worrying, but perhaps it will happen.**

Fortin: It's going to get there at some point, but I don't even know if society and regulations, let alone the technology, is ready for something like that. You have a whole other level of infrastructure that you have to support.

Stanley Young and Andy Brown

Garvey: And the regulation needs to catch up with it, because regulation is definitely lagging technology.

Ganas: A lot of different companies are looking at which tasks you can approve, disapprove, or do in two to three functions. Everybody wants BI on their BlackBerry, so you can give them some basic stuff.

***Young:* Will your mobile device become a replacement for cash? Will you be able to hold your cell phone up to the vending machine and get what you want? Will you pass an ad photo in the street and, if you like the jeans you see, can you find the location where they're sold?**

Ganas: Intel continues to shift to online to reach consumers in the Web 2.0 world. This includes a large shift in our marketing and advertising dollars to online. So we had to redo our online infrastructure and capabilities and social networking. What we're finding is, it's much more about communities. Don't tell people how great you are – tell them how useful you are. You have to let people say good and bad things about you, because that's what communities do. But one of the big technology things we're seeing is Location M-E-G-S. I believe location-based programs are going to open up a world of possibilities.

***Young:* With a BlackBerry, there is the expectation that it works unless it's switched off, and switched off means that you do not wish to be contacted. Since our cells are always on, is there a complete blurring between work and life?**

Brown: There is a saying that technology is only technology if it didn't exist when you were growing up. And for this generation, they don't even think about the concept of being online or offline; it's just part of what they do every day.

Kelley: I believe technology is creating more life-time rather than detracting from it. I can do things when and how I want to do them, such as working in New York and living in Florida; it's only through technology that I can do this. A lot of my life is spent desktop videoing to different parts of the world, and I'm more connected as a manager to my people than I've ever been.

Garvey: It takes discipline to have work/life separation. But turning off the connectivity really isn't an option, especially in IT; this is the nature of this job. And you're responsible as an adult for making sure that doesn't impede your family connections. It requires self-discipline, and some people are better equipped to handle that than others.

Ganas: IT is going to have one of the biggest roles to play in sustainability too, where we have a real responsibility.

Brown: Some 52 percent of carbon emissions from your average enterprise come from people commuting to and from work.

Ganas: We're calculating their carbon footprint. If you look at the biggest costs in the data center, land is less than 2 percent of it; it's power, concrete, water, and all the other uses of that.

Brown: In a flat world, where global corporations need to continue to work in an environment where the government is likely to regulate emissions, the companies that will do best are the ones that stay connected almost completely electronically.

You will still travel, but you'll do it much less frequently. The basis of your personal relationships, even with your direct reports, is going to be through video, and it's already happening.

Fortin: The most transformational thing we've done recently is putting personal video cams on senior management desks. To be able to see facial expressions when you're speaking to your people is very valuable.

Garvey: We get a lot of that, but we had to sort of tamp down on people who are in the same office doing conference calls from their desks instead of going to the shared conference room because they were multitasking.

***Young:* What's the biggest challenge you face in the next 12 months? What keeps you awake at night?**

Sharkey: The thing that keeps me awake at night is security and protecting the client data. There is the constant fear that your customer list is going to show up somewhere. You know there are people out there who are looking for a way in.

Kelley: It's impossible to be future proof, thus the need for "extreme agility" or, as one of my colleagues at DB calls it, being "simply instantaneous." Product life cycles today move from innovation to commodity at lightning speed and you need to be able to move as fast as if you had a crystal ball and saw into the future.

Brown: The balance between "innovation" and "run the bank" is the way I think about it. In "run the bank," I'd include security as one of the most important things.

Stability and up-time; all of those things are equally important and things you worry about. But getting the right balance between change and run is going to be the trick, as will investing in innovation in the down cycle so you've executed the right changes so when the business grows, the run rate doesn't change with it.

Garvey: It's about continuing to drive the efficiency of the core so I can free up funds to invest in the strategic.

Ganas: We are looking to shift more of our resources toward transform and grow initiatives, and continue to take reductions in areas on how to "run" the business. And the one way you're going to do that is when you innovate and design for much different operational needs. So it's squeezing out the core, but also the new things we put on there, have to be at 1/10th 100th level as far as operational support.

***Young:* It's transforming and innovating while maintaining operational integrity, and keeping off the front page of the *Wall Street Journal* for the wrong reasons. If I can do that, then I'm happy.**

Sharkey: The good news for all of us is, I don't think anything really scares any of us. You're concerned about security and protecting clients and data, but I don't think there's anything down the road that anybody is afraid we can't deliver on. ●