

Plugged QUARTERLY IN

security | solutions

[safety]

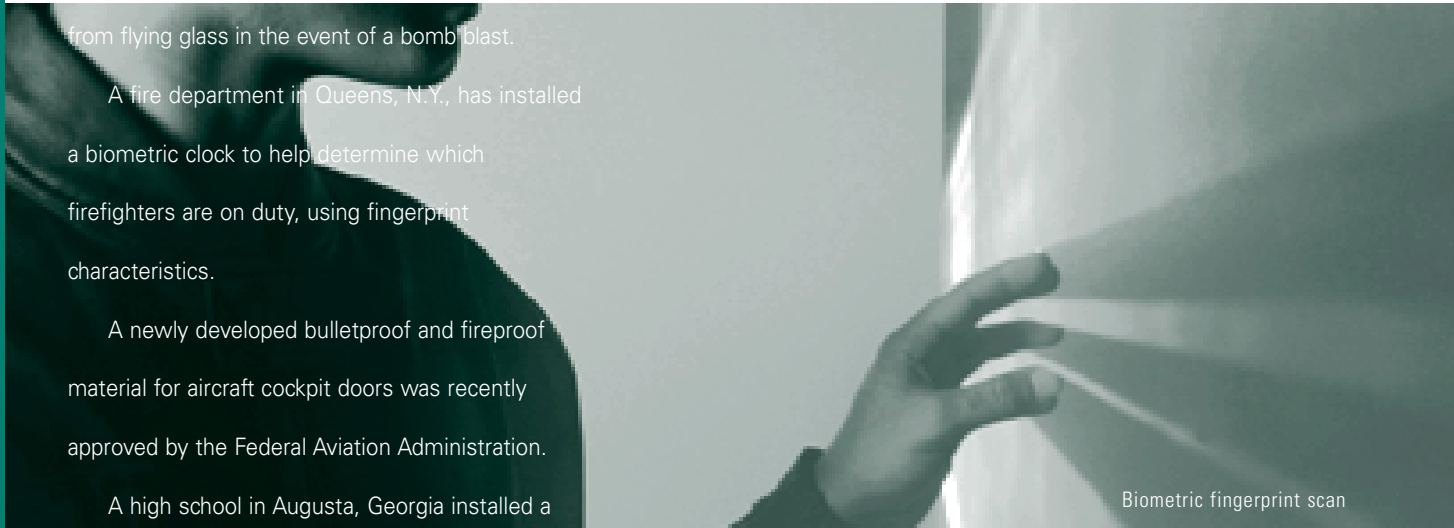


The Hoover Dam recently installed a special glass protection film in its visitor center to protect people from flying glass in the event of a bomb blast.

A fire department in Queens, N.Y., has installed a biometric clock to help determine which firefighters are on duty, using fingerprint characteristics.

A newly developed bulletproof and fireproof material for aircraft cockpit doors was recently approved by the Federal Aviation Administration.

A high school in Augusta, Georgia installed a digital video surveillance system that allows law enforcement officials remote access to the school's cameras.



Biometric fingerprint scan

Who would have imagined that a common thread could be found between a fire department and an international tourist attraction? Before the September 11 terrorist attacks, it was unlikely. Since then security issues have become a top priority for organizations all over the world. Our customers are no exception.

Demand for commercial security systems has been on the rise for the past few years, as witnessed by the steady growth of Johnson Controls' security business. Today, our customers are asking for even more. In this issue of *Plugged In*, learn how we're stepping up to the plate to provide security solutions that do much more than keep a building and its occupants safe.

INSIDE

- The Face of the Customer 4
- In Focus 8
- Japan Business Thrives 10
- ROC Solid Service 14
- In Your Words 16



Security Business [Stepped Up for Signific

With over a hundred years of building controls experience, Johnson Controls is a world leader in creating and managing quality building environments. It's only logical that Johnson Controls should strive to become a leader in providing integrated security solutions.



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We need to truly understand the security risks associated with the businesses of our clients, then develop security solutions using the appropriate technologies and processes.

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Ross Shuster
Vice President of Security Sales

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The company has made forward-looking statements in this document that are subject to risks and uncertainties. Forward-looking statements include information concerning possible or assumed future risks and may include words such as “believes,” “expects,” “anticipates” or similar expressions. For those statements, the company cautions that numerous important factors could affect the company's actual results and could cause its actual results to differ materially from those expressed in any forward-looking statement made by, or on behalf of, the company.

“Over time, customers have asked us to do more and more,” said John Bobek, vice president, Strategy and Globalization. “Security ties in perfectly with our controls and facilities management work, so many of our customers are looking to us to provide security solutions as well. We can provide the customer a truly complete solution for his building, not just individual subsystems. Growing our security business is really a natural progression for us.”

An important step toward growing the security business was the acquisition in 1998 of Cardkey®, a widely recognized brand in the access control business. “In acquiring Cardkey, we made a conscious decision to begin to focus on building the security business at Johnson Controls,” said Patrick Young, president, Security Solutions. “The Cardkey product, people and installed customer base that came with this strategic acquisition were a seed for growth.”

The integration of the Cardkey field organization with JCI field offices was

completed in mid-2001. “We are now focused on building the security business and core competency with all of our field offices throughout Johnson Controls worldwide,” added Young. “The ability to deliver security solutions globally will be a key competitive advantage with global customers.”



Integrated Solutions

System integration is an important part of Johnson Control's growth strategy. Today, customers are looking for solutions that work for their particular building, not simply products out of a box.

“The security industry has become very focused on technologies almost to a fault,” said Ross Shuster, vice president of security sales. “Our approach must be consultative. We need to truly understand the security risks

associated with the businesses of our clients, then develop security solutions using the appropriate technologies and processes.”

The recent acquisition of SCIENTECH Security Services, now called Johnson Controls Security Systems (JCSS) demonstrates our commitment to offering integrated security solutions on a worldwide basis, particularly in the federal government marketplace. “They are the best security system integrator for high-end market needs such as federal buildings,” said Bobek. “They work with the customer to assess what is needed, design a system that meets these needs, and ensure it is installed properly and continues to work well.”

JCSS's focus is on the Federal Government market, although its skills, capabilities, and knowledge could also be applied to





other markets, which is a future challenge for our company.

Growth Strategies

Many large customers have locations throughout the world and are looking for a company that can provide a security solution for their entire enterprise. “The security industry is very fragmented, with most providers being local or regional organizations,” said Shuster. “We’re one of the few companies organized who can provide consistent security solutions on a global basis.”

Johnson Controls is in the process of building the infrastructure to deliver the security business globally. This includes developing a business model, which provides a road map each area office can use to plan

the security business and build an organization to sell and deliver it. Coinciding with this is a major hiring initiative, which will more than double the security sales force in North America by the end of the year.

Growing the security business will demand a very clear focus across the entire organization. “Because of the acquisition of Cardkey and the strong name association of ‘Cardkey’ with access control systems, people think we are purely an access control company,” explained Shuster. “But our focus is on comprehensive security solutions.”

All offices worldwide need to develop a core competency in security. Johnson Controls is developing a

“We’re one of the few companies organized who can provide consistent security solutions on a global basis.”

standard sales approach to help security sales personnel and their support teams to analyze security threats customers are facing, and then apply the appropriate processes and technologies.

The Centers of Excellence for Security will provide support for these efforts by planning the business globally, establishing relationships with key partners, and following up with technical support to ensure customer satisfaction.

“Security was a growth

market even before September 11, but what September 11 did was reshuffle our customers’ priorities,” Young said. “It created an atmosphere where our customers really want to go back and reassess their security needs. This complements our consultative sales approach, where we go in and help them do threat and vulnerability assessments and offer complete security solutions that protect their people, assets and intellectual property.” **PI**

New Products for a Growing Market

The emphasis on complete security solutions has driven product development. Johnson Controls is broadening its product portfolio to include a whole range of products that weren’t part of the core offering three or four years ago. Access control continues to be the central part of a security system, but we continue to expand our offerings to include CCTV, video badging, intrusion detection, and perimeter protection.

We are also investing heavily to integrate biometric technologies with our systems, which

provides a more secure environment by positively identifying an individual using a nontransferable physical characteristic such as a fingerprint. The technology is gaining wide acceptance, as it has become much easier to implement and cost effective in recent years. (see *Invent*, page 6).

Demand for biometrics is being driven in part by airports, one of the largest security markets. Airports must comply with the Aviation and Transportation Security Act passed January 3, which requires airports to

upgrade their systems to include biometrics.

Johnson Controls expects significant activity in this market over the next several years and is creating a team to specifically address its needs. We recently won contracts to provide integrated security measures to over 1,000 FAA sites and 60 airports around the country.

Young believes security is very much a growth market. Johnson Controls has doubled its security business over the last two years, and expects to double it again in 2002. **PI**

THE FACE OF THE CUSTOMER



in|fact

Sept. 11, 1941

Date the groundbreaking ceremony took place for the Pentagon.

Commanding Performance

how do you control energy costs in a 7.2 million square foot building occupied by over 29,000 people at any given time? “Not by merely telling people to turn their lights off before they leave their offices,” said Steve Carter, assistant building manager, Pentagon. “We needed to reduce our electric bill, which was \$1.1 million per month, and we felt controls were the way to go.”

Over the last five years, Johnson Controls has been retrofitting the entire building with new controls and a centralized control system, including constructing a Building Operations Command Center (BOCC). Until recently, many of the controls in the 60-year-old landmark were manual.



complies with current health, fire, and life safety codes. During the 60-year history of the Pentagon, the building has not undergone any major renovations.

Renovation to Wedge 1 area, which represents about one-fifth the total area of the Pentagon, is being completed in phases. The first phase was completed early in 2001, and Wedge 1 officially reopened for occu-

pancy on March 8. The remaining areas and the rest of the wedges are to be renovated one section at a time to ensure all systems are maintained during the renovation.

As the renovation continues, Johnson Controls will provide a

variety of solutions, including upgrading safety systems, lighting retrofits, and communications support features.

Not Just Any Normal Work Day

September 11, 2001, began like any other workday for Steve Carter. This date is a significant one for the Pentagon. Construction began that day in 1941, which made September 11, 2001, the Pentagon’s sixtieth birthday.

As they made routine system checks from the BOCC, Carter and his team watched the events at the World Trade Center unfold on one of the center’s 90-inch monitors. When the second plane hit the second tower of the World Trade Center, the team immediately began lockdowns, securing mechanical and electrical areas and searching for unauthorized people and unusual packages.

One hour after the first Trade Center tower was hit, Carter felt a jolt. The fire alarm and HVAC systems completely lit up the command center’s huge screens, indicat-

“We are in the process of putting every building system – access, fire, life safety, lighting, mechanical, electrical, and HVAC – under control of one command center,” explained Rohollah Mahboobi, Pentagon site manager, Johnson

Controls. “Everything is being integrated into one network so every system could be monitored from a single seat.”

The retrofit work – ongoing since October 1997 – includes major renovations of segments of the building referred to as wedges. The main command center, the BOCC, was completed in June 2001.

Major Renovation

The wedge retrofit is part of a seven-phase, 20-year, \$1.1 billion Pentagon renovation project, which will ensure that the building



The Pentagon Team.

First row: Season Hickcox, Dan Delgados, Rohollah Mahboobi, Behrooz Mahboobi, Stanley Carl Berry; Second row: Robert Andrews, Jarvis Cain, Chad Hensen, Mike Hallberg, Carols Alfaro, Stephen Bauman; Third row: Mike Ganskopp, Dave Nichols, Ed Decker, Kevin Hensen

ing everything on the newly completed Wedge 1 was on fire. Fortunately, the plane had hit the section of the Pentagon that had just finished renovation and near another section where renovation was just beginning, so few people occupied the area, greatly reducing casualties.

Sixteen Johnson Controls team members were working near the area of impact when the plane hit and all made it out of the building safely. Chad Hensen, systems applications engineer, Johnson Controls, was only a few hundred feet from the impact site. He immediately went to the BOCC to offer his help.

Carter had Hensen use the system to control the air pressurization in different parts of the building, get system fans running, and

determine where equipment was down. This helped contain the fire and minimize the spread of smoke. “You can’t imagine how important it was to have a programmer on hand to make all of this happen automatically,” recalled Carter. “Chad was invaluable.”

As part of the renovation, Johnson

Controls installed a new fire system, which has smoke control features. On September 11 it worked exactly as designed. “The systems we put in place were instrumental in getting smoke out and keeping the fire contained,” explained Carter.

For the next several weeks, the Johnson Controls team worked 12-hour days, setting up a remote monitoring site, going through the entire building to monitor equipment, opening and closing air dampers as necessary, and pumping fresh air into areas of the building that could still be occupied. The team also monitored levels of combustible gases and toxic fumes.

“We can’t imagine having to struggle through these events without the Johnson Controls team.”



Symbol of Freedom

The team’s efforts helped keep 4.5 million square feet operational while the fire continued to burn in 1 million square feet of the building. By the second day, many of the Pentagon’s occupants were back to work. Key military command centers remained in the building and did not have to relocate to other sites.

“The Pentagon is a symbol of freedom, a security blanket for people around the world, and in light of the attacks, it was important that we minimized the area that had to be evacuated and kept the building operational,” said Carter. “We can’t imagine having to struggle through these events without the Johnson Controls team. It’s not just a contract to them. They’re a committed team that feels as much ownership of our place as we do – they’re really quite amazing.”

Carter and his team learned a lot from the events of September 11. “What we did in a matter of hours was to take systems that were installed to save energy and improve indoor environments and used them to provide air barriers,” Carter explained. “This stopped smoke infiltration, minimized the spread of damage, and, most importantly, potentially saved lives. If there is a silver lining in this very dark cloud, it’s that the experience gained will provide us with a system second to none.”

Despite the events of September 11, the renovation is proceeding according to schedule. Contractors have partnered together to work around the clock to ensure Wedge 1 will reopen on September 11, 2002. **PI**

Inside the Building Operations Command Center at the Pentagon.

in fact

\$83 million | Amount appropriated by Congress to construct the Pentagon in 1941.

\$145 million | Value of the Johnson Controls contract award for the Pentagon renovation.

\$1.1 billion | Cost, as required by Congress, that cannot be exceeded for Pentagon renovation.

Biometrics



Gaining access to high-security areas using facial recognition, fingerprint, or retinal scan sounds like something out of a James Bond movie or futuristic espionage thriller. As it turns out, those movies could be imitating reality sooner than you think.

*voice patterns
fingerprints
retinal scans*



Industry experts agree that biometric technology is becoming more reliable, cost effective, and easy to use and integrate. Technologies such as smart cards and biometric readers provide Johnson Controls' customers with a viable alternative to previous security technologies.

“Biometric input provides the highest return on your security dollar you can get right now,” said John Hooper, global product manager, Johnson Controls Cardkey® Solutions Security Products. “Security data output is more secure than older technologies such as magnetic stripe cards and proximity readers, because even when PIN numbers are used you can never be certain that the person gaining access is the actual owner of the card.”

Biometric technology can more accurately verify the identity of an individual. Biometric readers measure actual physical characteristics, which are unique to each individual and nontransferable. Because these characteristics cannot be lost, stolen, or forgotten, biometrics is more convenient for the user, and greatly reduces the potential for collusion and fraud.

How it Works

The Biometric Consortium defines biometrics as “automatically recognizing a person using distinguishing traits.” In terms of security technology, this means taking an individual sample of hand geometry, voice pattern, fingerprint, retina scan, facial pattern, or signature to create an electronic template against which the user can be identified. A biometric reader compares a live sample to the stored template to make a match.

“This technology is available on the market now and works for virtually any type of security application,” reported Hooper. “For example, a thumb print reader that requires two separate fingerprints could be installed in a hospital to control illegal use of narcotics. One



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person could never be alone in the area where the drugs are stored; two people would always have to be there together in order to gain access.”

Biometric input is com-



pared two different ways. Recognition answers the question, “Are you who you say you are?” Authentication occurs when the user’s actual biometric – a fingerprint, for example – is compared one to one with the template stored on a smart card.

Verification occurs when a live biometric is compared electronically to a large database and secures a match. In comparing one to many, it attempts to verify the person uniquely among a large population and answer the question, “Who are you?” An example would be using facial recognition technology at a large sporting event or airports to identify possible criminal elements. Because it requires a large database, verification is more expensive and complex than recognition. Verification also increases the likelihood of false acceptance or false rejections, weakening security.

Get Smart

Smart cards resemble credit cards and contain a micro-processor chip that stores biometric templates as well as other electronic data. “Johnson Controls offers six different smart card technologies from vendors around the world,” said Hooper. “This really expands our customers’ options in terms of meeting their application or the type of technology needed for biometric input.”

Smart cards employ an electronic filing cabinet system, which typically includes sixteen “drawers” of information. Some drawers could store facial templates for use with one type of reader, other drawers could store finger print templates for another reader, while other drawers could include text or raw data for cashless vending.

Enterprise-wide Solutions

Smart cards can carry

virtually any information, including employee, medical, or academic records or financial balances. This makes them suitable for a number of campus- and corporate-wide solutions, and makes it easier for a student or employee to travel from location to location. “By putting security and other pertinent data on a smart card, you greatly reduce an organization’s internal communications, personnel time expenditure, and database storage,” explained Hooper.

Another major potential market for biometric security technology is the airline industry. The Federal Aviation Administration’s benchmark specifications require the use of proximity smart cards (smart cards that don’t require contact with a reader) at security points in airports. Johnson Controls recently contracted with several major airports to install over 500 thumb print readers. This installa-

tion will meet the FAA Part 107 Regulation that mandates biometric application updates to normal access control security systems.

Other smart card applications such as loyalty cards have enormous market potential. Airlines, for example, could present frequent fliers with loyalty cards that carry a passenger’s biometric along with proof of registration with the members of the International Air Transport Association, enabling these passengers to bypass long security lines. E-purse technology allows users to store financial balances and authorize purchases, allowing a parent to set a student’s spending limit, say, at the campus bookstore or local McDonald’s.

“Smart cards are the way things are headed,” said Hooper. “And smart cards with biometrics are going to get a lot cheaper. They offer a pretty wide range of solutions that work in a variety of climates and work environments.” **PI**

in fact

Nearly 0% | False accept rate of retina scans, the best biometric performer on the market.

100 | Number of patents that have been issued for signature dynamics, a hot biometric field of development.

1975 | Year the first commercial biometric device was introduced when finger measuring machines were installed on Wall Street.

20,000 | Number of areas to which access is controlled using biometric technology.

\$6,000 | Average cost per access point for a biometrics reader in 1993.

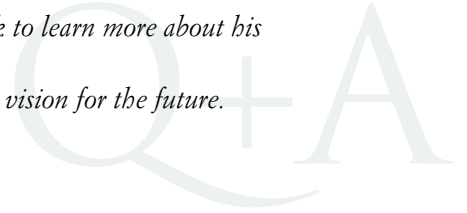
\$500 | Average cost per access point for a biometrics reader in 1999.

IN FOCUS

MARK FILTEAU [vice president & general manager of government systems & services]

Mark Filteau came to Johnson Controls in 1997 to head up the then Integrated Facility Management (IFM) federal business unit. Today, he's vice president & general manager

of Government Systems & Services. Plugged In talked with Mark to learn more about his organization and its vision for the future.



pi **Mark, can you explain what Government Systems & Services does and how it differs from the previous IFM federal business unit?**

FILTEAU The big difference is we're delivering much more than facilities management services. We continue to serve the federal government exclusively and work mostly with the same internal teams, but our organizational reporting is more streamlined and is better

integrated with the rest of the Controls Group. As a result, we're now able to offer the full spectrum of our capabilities, everything from building automation and security systems to worldwide contingency operations support.

Currently, we have three divisions around the country and a front-office marketing operation in Washington D.C. Keep in mind that facilities management for the federal government isn't like traditional facilities management for

business or industry. You'd be surprised at what we do.

Our largest entity – Johnson Controls World Services, which is headquartered in Cape Canaveral – accounts for about \$600 million in revenues every year and operates as a fully disclosed legal entity, meaning it's audited and regulated by the federal government.

World Services provides on-the-spot contingency operations to the US government anywhere in the world,

combat situation before actually experiencing one. We even get involved in humanitarian efforts – things like shipping blankets and tents into areas of conflict around the world. The bottom line is that we apply our full capability to support the government in its mission.

Johnson Controls Security Systems, (formerly SCIENTECH Security Services) is located in Gaithersburg, Maryland. It's been operational for

“It's sad to say, but I think a lot of our federal growth will be war-related, at least for a while.”

including logistics support and special technical services. For example, we built the Kosovo refugee camps. We also operate a tank warfare training facility, which simulates enemy equipment so our armed forces can be exposed to a “real-life”

about six months and also is a fully disclosed entity. It provides security systems integration services, primarily in situations that require very sophisticated solutions. Projects frequently are top secret or classified.

Finally, we have Johnson Controls Government



“

Our mission is to maximize our business with the federal government.

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Mark Filteau
Vice President & General
Manager of Government
Systems & Services



Sunlight pours through the dome of the U.S. Capitol in Washington, D.C. We provide high-tech security in and around the Capitol building.

Systems in Milwaukee, which provides building automation, energy management and security services on a commercial basis. In other words, the government buys from Government Systems just like any company would buy from us. As a result, it operates as part of SSNA and not as a separate entity.

pi: What's your most important objective and how will you accomplish it?

FILTEAU Our mission is to maximize our business with the federal government. That means we have to leverage all our capabilities, whether it's building automation or security or anything else that we can provide. Right now, we do a lot of work with the FAA, Army and Navy. But, in the future, we plan to expand into other areas.

To be successful, we need to stay focused on providing the best possible service and building relationships at all levels in the customer's organization. As a service business, we're really selling trust. In this respect, federal customers are no different

than commercial customers. If you have the customer's trust and confidence and the resources of Johnson Controls behind you, the sky's the limit. If you don't have their trust, you're dead in the water.

pi: What do you see as your biggest challenge?

FILTEAU Probably resources. Because the government is so massive, it's almost more important to know what you won't bid on than what you will. In some cases, it can take two to three years to secure a new contract. In the meantime, you have to maintain near-term business by marketing to your current base. So, you have to know where to focus and allocate resources. Otherwise, you could easily end up cutting into profits or choking off growth.

I think the key to balancing resource allocation is to make intelligent choices and know up-front which federal customers to pursue.

pi: So, what lies ahead?

FILTEAU I'd expect to see a lot more contingency operations work due to the war.

we'll see an increase in security and building automation work, again due to current affairs. Additionally, we'll see increases in facilities management through add-ons to existing contracts that are designed to improve the quality of life for our troops.

pi: Switching gears, what qualities do you believe make a leader?

FILTEAU A leader has vision and inspires trust. In other words, she or he has to be able to articulate what, why and how things need to be done and then say, "I'm right there with you." After all, people generally won't follow you somewhere that you won't go yourself. People will tolerate enormous variability in style, if they trust you. But once that trust is lost, it's over.

pi: Can you offer any career advice?

FILTEAU Be ethical and be flexible. One thing that's really impressed me is how straight-on the company is. Sure, we focus on profit, but never at the expense of doing the right thing.

People also need to be flexible, especially in this business, where no two deals are alike. You have to adapt to situations quickly and without too much trauma.

pi: What's your favorite book and why?

FILTEAU *Prince of Tides* by Pat Conroy. I'm familiar with and really like the South Carolina tidewater area where the story took place. I also think Conroy had great character dynamics – it was so easy to get drawn into what was going on, partially because his portrayal of the area was so realistic. Since my wife is a southerner with roots in Charleston, it was a fascinating read for me.

pi: In closing, tell us how you handle stress?

FILTEAU I try to read something interesting every night before I go to bed. It doesn't have to be any particular genre – mysteries, science fiction, historical...just about anything will do. I've even been known to read books on cosmology and physics. As long as I can distract myself so I won't dream about work. If reading fails, I get on the computer and play strategy games. *Cossacks* is one of my current favorites. **PI**



Japanese Business Thrives

On January 24, 2002, Johnson Controls announced it would “assume 100% ownership of Yokogawa Johnson Controls Corporation, a controls systems and services company supplying the non-residential buildings market in Japan.”

Previously the company owned 55% of the firm in a joint venture with Yokogawa Electric Corporation, which owned the remaining 45%.

“This was a very happy day for all of us,” Takeshi Toga, president of the predecessor joint venture firm and the new subsidiary, said with pride. “Now we are a full member of the Johnson Controls family.”

Severe Economic Climate

Johnson Controls-Japan (JCJPN) serves customers within Japan’s borders and has performed well despite the country’s severe economic climate. As *The Economist* magazine recently reported (“Checking the Slumpometer,” February 28, 2002), “by several measures, Japan’s slump is now worse than America’s was in the 1930s.” Toga explained that the decline began in 1989 when “the bubble burst,” and land values that had risen to dizzying heights crashed, along with the stock market. “Real estate today is worth 40% less than 12 years ago,” he said.

How does he explain

JCJPN’s nearly consistent double-digit growth throughout the crisis? “There are many reasons for our success,” he said, “but the bottom line is we have excellent products, services, and strategies, and most of all, smart and hard-working people.” JCJPN’s share of the \$1.1 billion Japan controls market is about 25%, well behind primary competitor Yamatake Building Systems (YBS), which has an estimated 70% share.

Vertical Marketing

“Being smaller is actually one of the key factors in our ability to keep growing,” Toga said. “We’ve employed the vertical marketing strategy to great effect, provided value-added support, and lured customers away from YBS, which often takes its share of the market for granted. Customers definitely notice when YBS neglects their needs,” he commented, “and we take advantage of the situation.”

The first vertical marketing effort focused on data centers and resulted in 15 contracts. Current targets include commercial real estate (both multiple-building and single-building

ventures), hospitals, and other medical facilities. “Like many industrialized nations, Japan’s population is graying,” Toga explained, “and the health care industry is flourishing as a result.” The commercial real estate industry has remained fairly successful, too, he said, mainly because lower land



Deutsche Bank Tokyo

prices have made it easier to construct new office buildings. Long-term interest rates of 2% also help.

Industries such as telecommunications and high-technology manufacturing, however, have been hit hard by the downturn, and biotechnology is not taking off in Japan, Toga said. Pharmaceuticals, with its close link to health care, is doing well, and so is the amusement sector, including Tokyo Disneyland, which attracts 60,000 visitors daily.

HEADQUARTERS
Tokyo, Japan

EMPLOYEES
850

POTENTIAL CONTROLS MARKET
\$1.1 Billion

President
Takeshi Toga



“We’ve employed the vertical marketing strategy to great effect, provided value-added support, and lured customers away from YBS, which often takes its share of the market for granted.”

Takeshi Toga
President, JCJPN

”

Sales Improvements/ Global Approach

Toga pointed to two other factors that have contributed to JCJPN's success: the new company-wide sales system and the global focus and capabilities of Johnson Controls. "Our salespeople have always been excellent, but now they are more effective than ever," he said.

"We translated the Sales Management Discipline manual into Japanese and are reaping many benefits."

Johnson Controls' global approach, another major factor, contrasts sharply with primary Japanese competitor, YBS. "They have concentrated on Japan

only," Toga said, "but many of Japan's most successful companies conduct business around the world. Stiff international competition and the poor local economy have made them extremely cost-conscious.

Consequently, they see many advantages in doing business with Johnson Controls so they can use the same type of system, wherever they have facilities. Our global emphasis helps them save money and achieve their worldwide objectives."

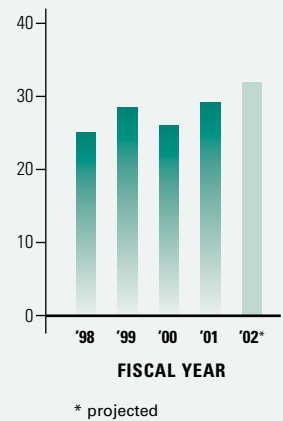
Reputation for Service

JCJPN's reputation for excellent service also keeps existing customers happy

"We have been very successful at taking bites out of our competitor's market share..."

and has helped secure new business. In December, 2001, a subsidiary devoted to service was formed and now fields 80 people. It is focusing on meeting customer needs in sprawling Tokyo, but plans are in place to expand across the nation. In addition, 20 specialists are currently being trained to interface with and service equipment manufactured and installed by competitors. "This is a great way to get a foot in the door," Toga said. ■

JCJPN Sales Trend
(in billions of yen)



OUTSTANDING!

Recent Success Stories

Outstanding recent successes include sizeable contracts with a bank, a hospital, and a commercial complex. "We signed a \$1.8 million O&M contract with Deutsche Bank Tokyo and installed a Metasys Building Automation System," said Toga. "We'll service all their mechanical and electrical equipment, using the Remote Operation Center-Japan to monitor and analyze their energy consumption 24/7." The goal is reducing the bank's overall costs.

"The Hekina City Hospital chose JCJPN for a \$3.8 million retrofit project



Rendering of the Roppongi project.

because it was impressed by the quality of our service work and enthusiastic about our proposal for energy efficiency improvements," Toga continued.

JCJPN's most recent achievement is a \$5 million contract with the Roppongi Six-Chome Redevelopment project, which occupies 11 hectares (27 acres) of land in one of Tokyo's busiest commercial areas.

"Executives chose us because they were pleased with engineering and system integration work we had performed for them previously," Toga said. The giant project will feature



The Roppongi project is slated for completion in March 2003.

offices, residences, hotels, shops, and other facilities. JCJPN has responsibility for the mission-critical museum, concert hall, and district heating and cooling plant.

Toga projects JCJPN sales will be approximately \$270 million in fiscal 2002, up from \$250 million in 2001. He is confident business will only improve in the years ahead. "We have been very successful at taking bites out of our competitor's market share, and once the economy improves, we'll do even better," he predicted. ■

Serving the World

Taking a Global Approach [to our Service business]

Taking a global approach to service requires much more than a wider geographic perspective – new ways of working and thinking are also necessary. “For example, one of the primary things we’re doing is changing our thinking about what customers want from a service provider,” said Eric Reisner, vice president of Global Service.

When customers purchase a building automation system, they’re buying it to create an environment that contributes to productivity, not for the sake of having one. The same is true of service.

“Customers want us to help them maintain comfortable temperatures, reduce energy costs, improve security, and so on,” Reisner continued. “The service contract is just a means, not an end. This is an important distinction, and it’s at the heart of consultative selling.”

Building on Strengths

Selling service using a consultative approach is just one of the ways Johnson Controls is working to build a stronger global service organization. Another is realigning personnel and responsibilities to create a lean reporting hierarchy. “The key to building a customer-focused organization,” Reisner explained, “is to embed consistent and stan-

dard processes. The Controls Group is driving this hard with Alex Molinaroli leading Sales, John Murphy heading up Marketing, and Glen Wegworth driving Operations. This will then allow the World Area organizations to implement strategies that have been field-proven and are globally consistent.”

Reisner stressed that the process of combining Integrated Facility Management (IFM) and the Controls Group inspired many of the changes. “We’ve taken two very successful organizations and integrated them in a way that will help us meet customer needs even more effectively, both here and abroad.”

Four Solution Levels

Each organization brings specific capabilities, expertise, and experience to the new structure. The Controls Group has more than 500 offices worldwide and a long tradition of providing three levels of service solu-

tions: responsive, scheduled, and operations and maintenance. “IFM gives us a fourth level – facility management,” Reisner said. “Facility Management will be our most comprehensive solution level yet.” (See *Our Newest Solution Level*, page 13.)

Consistent Excellence

Another major initiative is establishing best practices to help ensure the service organization puts its best foot forward at all times. “We’ve identified areas that consistently achieve high performance levels in certain activities, asked them how they do it, and created best practices around their responses,” Reisner said. “This is being accomplished as part of the Service World Series Competition (see story page 18), and we’re expecting big improvements across the board.”

Expanding Opportunities

Just as the service organization is working on smoothly integrating Systems and Services and IFM, Reisner sees opportunities for Johnson Controls to help companies in the process of acquiring or merging with other businesses. “Acquisi-



DG Bank, Frankfurt, Germany



“The key to building a customer-focused organization is to embed consistent and standard processes.”

tions and mergers are fairly common now,” he said, “and Johnson Controls has successfully integrated a number of companies into our organization. This gives us the skills and experience it takes to help customers achieve smooth transitions.”

Many times the various facilities involved in a merger have different systems, equipment, and approaches to providing building services. Each might also have its own management structure, making a high-level perspective essential. “If we can interact with key decision makers who have responsibility for large parts of the combined entities, we can help them smooth the transition, standardize their systems, and improve their overall operations,” Reisner continued.

New Capabilities

This is one reason he is excited about the Remote Operations Center (see *ROC Solid Service*, page 14). The Remote Operations Center is able to monitor, analyze, and report on diverse kinds of customer data, from how well the chillers are working to the number of false alarms the

security system is experiencing. Providing this organization-wide view is a natural way of gaining the attention of high-level customer executives.

The most formidable capability in this regard is the new Facility Performance Assessment, which Reisner emphasized must be sold as a package. “The Facility Performance Assessment is a powerful and far-reaching tool that evaluates asset condition, system performance, energy performance, and operational performance. It looks at a multitude of parameters and can address all of a customer’s facilities, and how they work together. Selling its components individually reduces its impact and also positions

us at lower customer management levels. On the other hand, presenting it as an unbreakable bundle maximizes the value proposition to customers and positions us where we need to be, with top decision makers.”

Helping Customers Succeed

Top decision makers are charged with achieving major objectives, and the new global service organization is focusing its considerable resources on helping them. In the education market, for example, Reisner encourages discussions with administrators that center on how Johnson Controls can help them achieve goals such as

(continued on page 19)

OUR NEWEST SOLUTION LEVEL

Facility Management (FM), our newest solution level, is a result of combining IFM and Controls. “One of the qualities customers like most about the Facility Management solution is our ability to handle tough jobs at far-flung locations,” said Reisner. “Providing superior outsourced facility manage-

ment in the United States is one thing, but offering the same level of excellence in a host of other nations is another. This capability impresses customers and will produce many opportunities for our global service organization.”

Reisner also pointed out the FM solution level involves Johnson Controls “owning the

customer’s budget”; that is, FM operates on the customer’s behalf and takes responsibility for managing and allocating financial resources. “This unique perspective has greatly influenced how we have restructured the organization and how we will approach the market,” he said. **PI**

The ROC will have a measurable impact on a customer's ability to achieve key business objectives.

a new way
of thinking

ROC solid service



A major milestone in Johnson Controls' commitment to helping customers succeed was established in 2001 with the opening of three Remote Operations Centers (ROC) around the world.

the ROC is a supporting strategy that will help customers optimize facility performance and have a measurable impact on their ability to achieve key business objectives.

Operating around the clock, 365 days a year, the Milwaukee ROC provides powerful new facility data collection and analysis services, in addition to the remote monitoring and operations capabilities that have been offered for several years.

ROCs are also operating 24/7 in Brussels, Belgium, and Tokyo, Japan, to help meet the needs of customers in other nations.

Center of Excellence
Stacy Mueller, marketing manager of eBusiness

services, Milwaukee, stressed that "the ROC is much more than a place. It's a Center of Excellence for Facility Performance – in fact, it's a new way of thinking about facility performance and how we support our customers. The ROC combines highly skilled individuals and the best technology available to monitor, analyze, and optimize a customer's portfolio of buildings."

Masahide Imura, manager of the ROC-Japan, agreed: "Our primary aim is helping customers lower their facility lifecycle costs."

Investments in systems and application development allow ROC personnel to gather and analyze data about energy usage, key operations indices, building automation systems, and other conditions. The ability to monitor a wider range of parameters has produced the Facility

Performance Assessment, a new service that evaluates overall building health based on four criteria – asset condition, system performance, energy performance, and operational performance. This information – coupled with Johnson Controls' more than 115 years of experience – allows ROC personnel to make recommendations designed to improve facility performance and help customers achieve larger business objectives.

"Through the Facility Performance Assessment, we're turning data into actionable information that customers find extremely useful," Mueller said. "In addition, by looking at both current and historical trends,

"We're turning data into actionable information that customers find extremely useful."

The ROC in Milwaukee, Wis., serves customers throughout North America.



we can often spot areas where performance is declining and recommend preventive measures before more serious problems appear.”

ROC-Japan

The ROC-Japan’s offerings include remote alarm monitoring, energy data analysis, and performance test services; it also serves as a help center. “For buildings with critical systems



and equipment, our service is more comprehensive and involves tracking and reporting on a range of factors,” Imura said.

Located in the Ichigaya area of downtown Tokyo, the ROC-Japan serves facilities within Japan exclusively, and business is increasing steadily. “By August, 2002,” said Imura, “we expect that more than 60 customers will be using our services, including hospitals, office buildings, data centers, and government facilities.”

Imura pointed out that the ROC concept supports Johnson Controls’ global strategy of producing long and lasting growth by expanding business domains, providing value-added services, and improving customer satisfaction levels.

“We are still in a trial and error period and are continually fine-tuning our services to meet customer needs more effectively,” he said. “For example, we are building a Web site for customers that will allow them to download and upload data in report formats, participate in online discussions, and obtain helpful applications.”

Looking to the future,

Imura predicts that the demand for ROC services will continue to grow. “We’re entering a time when a central monitoring system may no longer be necessary in every building.

The ROC is positioned to serve as the customer’s system operator, and this, combined with our help center function, presents many new opportunities.”

ROC-Europe

Because the Brussels ROC’s customers are located in Belgium, France, the Netherlands, and the United Kingdom, the facility is known as the ROC-Europe. Director Robert Plouffe said the ROC-Europe is providing call handling, monitoring, dispatching, and energy and asset management services to customers ranging from retail chains to telecommunications industry co-location facilities. A co-location facility is a secure, specialized building where various clients house servers and other equipment needed



At the opening ceremony of the ROC-Japan, August 1, 2001. Takeshi Toga, president, JCJPN, is on the left.

to run data networks.

“One exciting development is we are beginning to handle food temperature monitoring for a large Netherlands chain, using the same data collection systems and applications we use to provide ROC energy services,” Plouffe said. “In this environment, temperature monitoring and record storage are critically important to complying with quality audits.”

The ROC-Europe also serves as a help center for some customers, with incoming calls sorted by country to assure the answering ROC staff member is able to speak the customer’s language. “Depending on where the call is coming from, I’ll say ‘bonjour, goede morgen, or good morning,’” said Laurent Hunaerts, a trilingual operator.

Sales Support

According to Mueller, ROCs are also designed to work hand-in-hand with account teams. “Account team members have close relationships with customers and are in the best position to understand what business objectives are important. They also know the facilities involved firsthand and can use their knowledge to make our analyses even more valuable. It’s

definitely a team effort.”

Plouffe concurred and said that the decisions of two major customers to go with Johnson Controls’ service and facility management offerings were influenced by the capabilities of the ROC-Europe. One customer is a communications company with operations in the United Kingdom and Germany and the other a retail company with facilities across France. “Our ability to provide central monitoring and call handling played a role in both sales because customer executives didn’t want local technicians spending a lot of time in front of screens,” Plouffe said.

Better Outcomes

Ultimately, the ROC helps account teams deliver four of the things customers want most: increased operational efficiency, improved reliability, better environments, and lower costs. This is possible, Mueller said, “because better information equals better decisions equals better outcomes.” The best outcomes, she continued, “are ones that help customers achieve their business goals, and this is where the services offered through our ROCs will prove most beneficial.” ■

WORDS

In Your Words

ARE YOU
ONE STEP AHEAD?



Customer expectations are increasing. Are you one step ahead? That is the theme for Vision Week 2002, which is May 6 - 10.

In celebration of Vision Week we asked employees from all over the world to tell us how they stay one step ahead of their

customers' expectations. Read their answers and then challenge yourself. How can you improve your understanding of your customers' needs? How can you contribute to our mission to continuously exceed our customers' increasing expectations?

“How do **YOU**
identify customer expectations
so **YOU** can
prepare to **exceed** them?”



“My customers are both internal and external. I’ve learned that being knowledgeable about my job, pleasant, and patient goes a long way in exceeding expectations. I think it’s also important to get quickly to the point of finding a solution to a customer’s concern, and to take the proper steps to create a win-win situation. Communication is also a high priority for me. I ask questions to learn more about the customer’s needs, and I follow up in a timely manner to make sure the problem has been solved or determine what other action needs to be taken.”

Maria Padgett
Service Admin Coordinator
Customer Success Center
Milwaukee, Wisconsin



“As a part of the Roppongi 6-Chome Redevelopment Project, I am in charge of the theater building where all the system is configured with LonWorks and monitored with the four Metasys units. I always try to identify customer expectations by having an open communication with the owner. The owner expects JCJPN to help them attain the optimized operation of the building, including saving energy. My team member and I are striving to live up to and exceed the customer expectation by providing the most comfortable building environment.”

Atsushi Yasuda
Installation Engineering Group 1
Engineering Division
Johnson Controls – Japan



“As a consultant, I am constantly meeting new customers through our business development and ‘business as usual’ activities. It is important to fully understand the customer’s perception of the service they require – which can quite often be different from what they actually say! Only when this is clear, can I ‘walk’ the customer through a tailored solution and explain how it meets their specific requirements. Managing this process effectively, and specifically, fully involving the customer is key, as this manages their expectations and prepares us to exceed them.”

Sunil Shah
Energy Consultant
London, England



“I exceed my customers expectations by listening to their concerns, researching the problem and finding a solution. I listen by taking notes and repeating back to the customer what they’ve said to make sure I have a clear understanding of the problem. I also do research by checking my computer system, and calling the appropriate plant and/or vendor to identify how the error occurred. Finally, I find a solution by entering a replacement order if necessary, expediting the order to possibly ship the same day and calling the customer back in a timely manner. I feel that listening, doing research and problem solving shows that I’m concerned and exceeds my customers expectations.”

Rosalind Owens
Senior Customer Service Representative
Customer Success Center
Milwaukee, Wisconsin

Six Sigma Pays Off

Pay When Paid

Working in conjunction with the Business Owner and Area Offices, an employee team created a new subcontractor payment process expected to net considerable savings for Johnson Controls. Called *Pay When Paid*, the new process is a direct result of applying Six Sigma principles to problem solving.

black Belt Senior Systems Analyst Orhan Danis spearheaded the project. According to Danis, historical data indicated that before *Pay When Paid*, subcontractor checks often were issued before Johnson Controls received customer payments for the installation work. These early payouts

flow – not to mention that it’s sound business practice to hold payment until you’ve been paid.”

Thanks to *Pay When Paid*, the early payment figure should drop by almost 75% or \$748,000 on an annual basis. Gurley says this will go a long way to balancing cash flow.

Just how did *Pay When Paid* come about? Danis attributes it to Six Sigma. “By following the DMAIC (Define, Measure, Analyze, Improve and Control) steps and focusing on data analysis, we ultimately uncovered multiple drivers behind the early payments,” said Danis. Major problem sources were:

- Misinformation about payment options,
- Limited access to subcontractor invoice history,

- Lack of links between Accounts Payable and Receivable systems,
- Ambiguity surrounding early payment discounts,
- Lack of subcontractor payment performance measurements.

To counteract the problems:

- A new metric, Subcontractors Days Paid Outstanding (SDPO), was introduced to measure the financial impact of subcontractor payments.
- Payment options, system programs and web-based tools were modified or developed to provide Project Managers with the information required to determine when subcontractors should be paid.
- Accounts Payable and Receivable systems were linked.
- A workbook was created to help Project Managers determine when early payment discounts are beneficial.
- A subcontractor history and payment tracking mechanism was implemented.
- Subcontractor invoices are now sent to the Shared Service Center (SSC).



Team members

- Sharan Zelinski
Manager SSC Disbursement & Licensing
- Bridget Gallagher
Delivery Standard Manager
- Mark Nolan
Field Financial Manager
- Marcus (Skip) Greenleaf
Project Manager
- Charles Caldwell
Area Installation Manager-Wisconsin
- David Lopykinski
Project Manager
- Jim Scharine
Six Sigma Champion
- Jai Padmanabhan
Master Black Belt

What does all this mean for employees? Installation Manager Mark Wade sees *Pay When Paid* as a time-saver. “Project Managers no longer have to get bogged down monitoring both payables and receivables because the new system does it for them. Having subcontractors check invoice status through the SSC also frees them up to focus on more important issues,” Wade said.

So far, *Pay When Paid* results have been pretty impressive. Besides the cost and time savings, as of mid-March, 100% of Project Managers say they have the information needed to know when to pay subcontractor invoices. And, the company appears to be well on the way to another Six Sigma success. **PI**

DMAIC

Define • Measure • Analyze • Improve • Control

added up to a sizable expense, roughly \$1.07 million annually.

Malcolm Gurley, Eastern Canada area quality manager, offered this perspective on the situation. “Prematurely paying subcontractors impacts our efforts to maximize cash

Six Sigma

J O H N S O N C O N T R O L S

Grand Slam 2002

Service Grand Slam 2002

carries four innovative programs to the field:

- Remote Operations Center Services
- Linking Services to Construction Projects
- Repositioning the Results Oriented Service Strategy
- Value Reporting

By scoring four runs with one crack of the bat, baseball's grand slam has won many games over the sport's storied history. This crowning achievement is also the inspiration for Service Grand Slam 2002, a major league effort recently launched by the Service organization to the North American Area offices.

"We've launched four programs designed to strengthen account management, grow the service business, and help account team members demonstrate the value we provide customers," said Shannon Lippold, manager, Service Marketing.



Remote Operations Services (ROC)

will help account teams introduce customers to the Remote Operations Center (ROC) and the Facility Performance Assessment, a new service that evaluates building health based on four criteria: asset condition, system performance, energy performance, and operational performance. "ROC personnel regularly communicate customer facility data and recommendations to account managers, who can then use the information in management reports for customers," Lippold said.

Projects aims at selling renewable service contracts to building owners undergoing construction projects. The thrust of the program is making sure customers know that the expertise we provide during the construction process can continue for the life of the building, helping them manage their assets effectively and profitably.



Repositioning the Results Oriented Service Strategy

re-emphasizes and improves upon an existing program. "While the release originally focused on the development of a mechanical maintenance strategy, going forward it will focus on creating asset strategies that are directly linked to achieving customer



Linking Services to Construction

SERVICE

WORLD SERIES

The baseball season started early at Johnson Controls thanks to the Service World Series – an exciting competition for our North American employees that will determine which area team can score the most service growth runs during the nine months



(innings), from January, 2002, through September, 2002.

Personnel from sales, front-line service, project management, engineering, and other specialties will have to play their best – and play as a tightly knit team – to emerge on top. Winners will receive prizes ranging from autographed baseball memorabilia to expense-

paid trips to Milwaukee to watch a Brewers game from great seats in the Johnson Controls suite. World Series Champions will advance to the Master Club event, and the entire winning area team will receive special bonus prizes.

Team rankings are posted monthly on the official Service World Series intranet web site. The site also reports on MVP nominees and winners. **PI**

Path to Service World Series web site:

advisor home page: sales: business focus: marketing and sales home page: service world series

Serving the World...

(continued from page 13)

goals and objectives,” Lippold said. “We’ve designed opportunities for identifying continuous improvements around energy, building systems, staffing, and training. It’s much more than just mechanical service.”



Value Reporting

works hand in hand with account management and will set the stage for standard tools to be used by account teams. Value Reporting is critically important because customers need to understand the positive impact our

solution is having on their bottom lines, thus encouraging renewals and spurring business growth.

Each of the Service Grand Slam 2002 programs is a direct reflection of executive management’s commitment to battling service business growth out of the park. Short-term objectives include building customer awareness, driving consistencies, and providing new tools. Plans to expand the Service Grand Slam to international locations are in the works. **PI**

maintaining or increasing enrollment. “Our service solutions can result in significant savings in their operational budget,” Reisner explained, “and we’re talking about multi-million dollar allocations. That’s money that can be re-employed to hold down operating costs, with a very significant payback: Tuition increases that might otherwise be necessary, can be reduced or eliminated, making it easier to attract students.”

By providing services that vary from calibrating a thermostat to managing all of a customer’s operational

needs, Reisner is confident the new global service organization is well prepared to help customers achieve major objectives. “We can handle a wide array of facility needs, large and small, anywhere in the world, and that’s the ticket to long-term success in today’s marketplace. We have the people, processes, products, and tools we need to give customers what they want, and we’ve never been better organized to take advantage of the opportunities.” Much remains to be done, Reisner stressed, but the future looks very bright. **PI**

Stark...

(continued from page 20)

system and give the customer better control of things like heating and air conditioning. If 15 rooms in a building are empty for a day, why keep the heat running and the lights on? We can also take that occupancy information, match it with manufacturing systems, and help a customer determine if there are enough on-duty employees to meet manufacturing requirements. There are a lot of ways that a security system can also help lower the cost of running a building.

PI: When a customer comes to us for security work, do they realize the added value of an integrated security system?

Stark: No, they rarely realize that. They’re thinking about the safety of their employees, which is an honorable thing to do. To be successful we have to show customers that they are not investing in just a security system. It will help keep their people safe – and it will also help turn their building into a valuable business asset. I think that’s where we’ll have success. There are a lot of people who can sell perime-

ter systems or a CCTV camera; we want to sell solutions. What will set us apart is how we work with the customer to identify their security issues and then apply the technologies to help them create a solution and run their facility more efficiently, while providing a safe and productive work environment.

PI: From a security standpoint, how are we stacking up against the competition?

Stark: The people who just want to sell devices or hardware or sub-systems are

all over the place. Our goal is to sell integrated security solutions to our customers, be it government or commercial, and that’s what we’re focused on. Our Cardkey® product certainly helps us, and really ties into our whole philosophy of providing a fully integrated security solution. We must not think of security as a stand-alone business. That’s our value position, and overall I think we’re doing a great job of bringing more value to our customers. **PI**

ON THE

RECORD

WITH BRIAN STARK
President, Controls Group

Growing our security business

Our customers government vs commercial

Challenges focus on operations

“We’ve gone beyond just selling commodities to providing integrated security solutions that offer much more than safety.”

PI: We’ve seen huge growth in our security business. How are we keeping that momentum?

Stark: Our Security Business has had excellent growth in the past three years due to our focus on security and our approach to this business. We’ve gone beyond just selling commodities to providing integrated security solutions that offer much more than safety. Certainly there has been a lot of attention on

security since September 11, and I think all of our customers are more concerned about providing a safe, secure work environment for their employees. So, security has become a driver for our business and we must continue to be positioned very well for that.

PI: Government security versus commercial security.

How do those customers differ and how do we serve them?

Stark: One of the most significant differences is that we have a separate business for all of our U.S. Federal government work because these customers usually have very specialized security needs. We have moved the SCIENTECH Security Services acquisition, which is now called Johnson Controls Security Systems, into the government sector. SCIENTECH’s business was almost exclusively government contracts, and they excel at high-level security system integration and threat analysis. We bought them just prior to September 11 and since then security has, for obvious reasons, become a much bigger priority than ever for all of our government customers. So that business is growing very



rapidly around value-added services and solutions.

As for our commercial customers, our biggest challenge is becoming more operationally driven. And by that I mean we have to offer those customers more than just the pieces and parts that make up a security system – there are plenty of people out there who already do that. Every time we approach a current or potential security customer we need to be looking at not only their security needs, but how a security system can also help them run their facility more effectively. A key for us is how we use the data gathered by the system in special applications that we offer our customers.

For example, an access control system keeps track of the number of people in any given area. We can transfer that information to the temperature control

(continued on page 19)

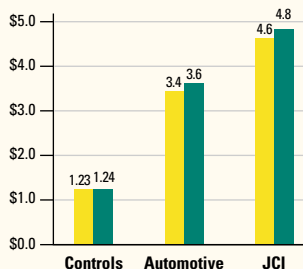
RESULTS

Second Quarter 2002

2Q 01 2Q 02

Second Quarter 2001 and 2002 compared.

Sales Results (in billions)



Operating Income (in millions)

