NOLA

Peer to Peer

AN INFORMATION TECHNOLOGY NEWSLETTER

# 1 of NOLA's finest

*Quality assurance manager Bill Gough is still adjusting to the bright sunshine of southeast Louisiana, after relocating here two years ago from St. John's, Newfoundland, Canada (below).*

"In order to fix mistakes, you've got to make them," says Bill Gough, NOLA's quality assurance manager, "and initially I made a lot of mistakes. But I learned from them all."

Early on he discovered he was good at making things work. While earning a bachelor of commerce degree from Canada's Memorial University, he applied his troubleshooting talent during internships at Newfoundland and Labrador Computer Services, known as a Crown corporation because it is owned by the provincial government.

"I had a blast, I was able to fix everything that I got my hands on," he says.

Memorial University houses one of Canada's top business schools and is located in the city St. John's (Mr. Gough's hometown)—"as far east as you can get in North America without going in *the drink* [the Atlantic Ocean]."

After earning his degree, he signed on at NLCS full time and set to work on a series of programming projects. A year later he was selected to to work with Andersen Consulting at Pacific Bell in northern California.

"This was my first exposure to everything American," he says. "It was

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INSIDE THIS ISSUE

President Richard Jackson (left) with CEO Stanley Jordan

# dear colleagues

> *"I didn't want to become some great IT martyr: 'Here lies Richard Jackson, he wrote one hell of a program.'"*

In late June I was bedridden with a severe case of vertigo. For those unfamiliar with vertigo, it's a condition that affects your equilibrium and causes dizziness and nausea. Unfortunately, no medication could relieve me of the horrible sensation I was experiencing. The only relief came from lying absolutely still and keeping my eyes shut. For five days I couldn't read my trade journals, check my e-mail, surf the 'net, work on my computer, or watch TV. The sight of any kind of screen, including the screen on my bedroom window, made me sick. My doctor said I was working too hard—all the long hours, business trips, stress, and lack of exercise had finally caught up to me. It could have been worse.

Yes, it's true, I work a lot. But I wouldn't call my job hard. I consider shoveling cow manure or tarring a roof in the middle of July working hard. My job isn't hard, but it is stressful.

Stress on the job can be caused by many factors. These factors may include improper training, a hostile work environment, or lack of support from our co-workers. Two primary culprits are lack of communication and inefficient work processes.

In the past, NOLA gained its excellent reputation by having very intelligent people working really hard, doing whatever it took to make the customer happy. Though this method built a good reputation for the company, it wasn't the smartest, most efficient way to do business. Furthermore, it was very *stressful!* Laying yourself on the line for your customer's success is a noble notion, but trust me, I didn't want to become some great IT martyr: "Here lies Richard Jackson, he wrote one hell of a program. R.I.P."

Over the years NOLA has become a smarter company. We recognized the need to improve the ways in which we communicate with each other and deliver services to our customers. Our organizational changes and this newsletter are examples of our efforts to improve communication. Our ISO and CMM efforts are examples of our strategies for improving our business process—with these initiatives we'll deliver an even higher level of service, in less time, at a lower cost, with fewer errors. We're not stopping here. We'll continue to seek new ways to improve our business and remain on the leading edge of new technology.

My illness in June made me appreciate the importance of health, my family, and my life in general. I also thought about my job and came to appreciate it more. We work in an industry that has a bright future. We have many loyal customers who value our work. We work with some of the smartest and friendliest people around. And, on top of all that, there are always opportunities to learn something new and exciting.

I encourage every one of you to "work smarter" and help one another whenever possible, so that you'll all be able to handle the duties of your jobs most efficiently and achieve a balance between your professional and personal lives. Otherwise, you may find yourself suffering a fate like mine.

Remember, the one time in my life when the world was revolving around me, I was stuck in bed, unable to enjoy it.—Richard

NOLA COMPUTER SERVICES

*Peer to Peer* is published by NOLA Computer Services, Inc. to recognize the accomplishments of our NOLA colleagues, and to provide our clients with information concerning developments in the field of information technology.

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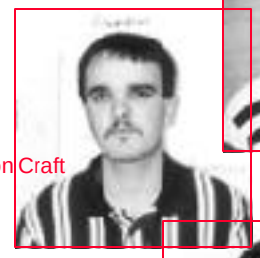
# nola salutes navo team

Mike Bennett



Brandon Craft

Bob Clifton

Michail R. McFarland, LT, USN, recently expressed his gratitude for "the excellence attained" by the rewiring team at the Naval Oceanographic Office at Stennis Space Center, which included three NOLA employees, Mike Bennett, Brandon Craft, and Bob Clifton. "The rewiring team's efforts and accomplishments are admirable," said Lieutenant McFarland, "exemplifying the standard work ethic which NAVO employees are known for."

## 3 of nola's newest

Patrice Briant, NOLA's new office manager, has worked in the field of human resources for five years, most recently with the Louisiana Coca-Cola Bottling Company. Born in New Orleans, Ms. Briant says she moved away only once, to Atlanta, but came back after a year "because that city is just too busy" and because she missed her mother.

On board since June, she says she already considers NOLA her home away from home. "A lot of people wake up in the morning dreading going to work, but I wake up excited!

"It's more than just a job, it's something I love doing, and one of the reasons that I love my job is the people that I have the pleasure of working with. I feel that I am blessed because many people can't say that about any job they've ever had."

Ms. Briant looks forward to growing with NOLA while she broadens her involvement in our hiring and benefits management processes.

Born and raised in Chicago, Illinois, Jill Henry spent 4½ years in the military, where she worked as a network switch operator and met and married Timothy Henry, a native of Lafayette, Louisiana. When they completed their tours of duty in 1996, they decided to settle in New Orleans and finish their degrees at UNO. Ms. Henry joined NOLA in May and is working on conversions and custom software development at CNG Producing.

"I love New Orleans for the atmosphere, the French Quarter, the antique shops, the food, and the music," she says. "The only things I miss about Chicago are the pizza and the museums." The main difference between Chicago and New Orleans? "You don't have to shovel your car out of the driveway in winter." What does she enjoy about working for NOLA? "I have big plans for myself, and NOLA is very good about encouraging employees to achieve the next professional level."

Her goals for the future? "Get as many certifications as I can, become an Oracle guru, turn my mother-in-law's business into an Internet success story, and make it back to Stuttgart, Germany, one of the most beautiful and underrated cities in the world."

Andrea Washington is a native New Orleanian who says she's "never traveled beyond the outskirts of New Orleans." A student of business at Southern University at New Orleans, she has three years administrative experience. When she's not at NOLA she designs gift baskets and floral arrangements for her own small business.

Mrs. Washington, who in June joined our team as an administrative assistant, says, "I've worked in a lot of different office environments and feel as though NOLA is a perfect fit. I see my position here as an endless opportunity to broaden my horizons. My goal is to take in as much knowledge as I can."

# password security

## is your system at risk?

When it comes to computer networks, you need two things to get inside: a user ID and a password. Your ID tells the network who you are, your password tells the network that it's okay to let you in. Making sure that users pick strong passwords is the job of your network systems administrator. If even one user in your network is using a "weak" password, your system security is compromised.

Password storage is another prime responsibility of your systems administrator. Every system has a password database. Each time you attempt to log on, the system matches the password you enter against the database and decides whether or not to let you in.

The three basic ways to store passwords are:

1. As clear text. (A really bad way—Can a hacker ask for more?)

2. In an encrypted format. (Better, but not great.)

3. As a unique, obscured representation of the password. (Best available.)

Unix and Windows NT use the third method to store passwords, but, actually, when this method is used, passwords are not stored at all. Confused? Don't be. It's simple. What the systems store instead are hash values calculated with an irreversible mathematical function that uses the password as the parameter. In order to validate a log on, the system takes the password you enter, does the math, then compares the result to the hash value stored in the database. If the values are equal, you get to enter the system.

It's impossible to decrypt passwords stored in hash values—even for someone with full access to the system database—but there are other ways to break in. The files that store hash values are somewhat accessible to the public. (For instance, Windows NT stores the hash values in \WINNT\SYSTEM32\CONFIG\SAM.) Publicly readable files such as these are vulnerable to a "brute-force" attack. Hash functions are well documented, so a hacker can generate all possible passwords, calculate their hash values, and compare the results to the stored hash values.

The good news is we have some safeguards against this sort of thing. Not everyone has the computing power needed to launch a brute-force attack. Also, some systems—Windows NT is one of them—can accommodate passwords up to fourteen characters long. If each of us used fourteen ASCII characters to create our passwords, it would take a computer capable of generating, hashing, and comparing ten million password guesses per second more than 60,000 billion years (or at least a very long time) to search the password space of an entire network.

The bad news is we can't use all ASCII characters. On top of that, many of us choose passwords containing less than eight characters, substantially

*See Password Security page 5*

About the author

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In addition to being a certified PowerBuilder developer, Zewen Liu is a postdoctoral fellow of Rice University. He earned an M.S. and a Ph.D. from Tulane University, an M.S. from the Shanghai Institute of Pharmaceutical Industry, and a B.S. from Xiangtan University. He recently added Microsoft certification to his long list of accomplishments, and is currently at work on Microsoft systems engineer certification. A certified instructor, Dr. Liu teaches classes at NOLA's New Orleans office (see facing page).

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reducing the number of passwords through which a hacker must sort. And, a brute-force attack is possible with a Pentium II or III—not so hard to come by.

To make things worse, many of us choose well-known words for passwords, putting our systems at r for the "dictionary attack." And smart password-cracking programs—many of which are available on the Internet—don't take time to generate every possible password. Instead, by combining a database of common words and some common-sense logic, they generate only plausible passwords. Common tricks like reversing the password or substituting zeroes for Os may be part of the program logic as well. A well-equipped PC—a Pentium 133 MHz with a 1 GB hard disk and 32 MB of RAM—will run any of these packages just fine.

What if you're a network administrator? What can you do to protect your network? First, eliminate weak passwords. Set your system to automatically reject them, then train users to mix cases and choose from all allowable characters. Set up a minimum-characters policy: require at least eight, but encourage the maximum count your system can accommodate.

Second, establish a forced-retirement policy: make users select new passwords every six months or so.

Third, set your system to lock an account after three failed log-on attempts, then audit failed log-ons regularly. Windows NT has several tools to make this task easier (see www.l0pht.com/l0phtcrack/).

You should also apply the latest service packs and hot fixes to your system, and reapply them whenever you install files from original Windows CDs. Disable the guest account. Change the name of the default administrator account (since you can't disable or lock this account). Disable unnecessary services, and install virus scan software. Contact us if you need help, (504) 488-1111 or zliu@nolacom.com. Good luck!

# Comparing rmi dcom & corba

In our last issue we looked at using Distributed Object Computing to integrate heterogeneous applications. You may recall that DOC extends an object-oriented system by providing a means to distribute objects across a network, allowing each component to inter-operate as a unified whole. Objects look "local" to applications, even though they are distributed to different computers throughout a network.

In "Flexibility," (*Peer to Peer*, spring 1999) we focused on the Common Object Request Broker Architecture model, but other approaches are available as well, including the Distributed Component Object Model and Java Remote Method Invocation. Here we'll compare all three models, and explain how each model invokes a remote method, also known as *remoting*.

First, a note on remoting. To invoke a remote method, the client makes a call to the client-side proxy. The client-side proxy packs the call parameters into a request message and invokes a wire protocol to ship the message to the server. At the server side, the wire protocol delivers the message to the server-side stub. The server-side stub then unpacks the message and calls the actual method on the object.

CORBA depends on an Object Request Broker—a central bus over which CORBA objects interact transparently. CORBA uses Internet Inter-ORB Protocol for remoting objects. To request a service, a CORBA client acquires an object reference to a CORBA server object. The client then makes method calls on the object reference as if the CORBA server object resided in the client's address space. The ORB finds a CORBA object's implementation, prepares it to receive requests, communicates the requests, and carries the replies back to the client. CORBA can be used on a range of operating system platforms, from hand-held devices to mainframes.

Think of DCOM as an extension of the Component Object Model, a Microsoft framework that supports program component objects. DCOM supports remoting objects through a protocol named Object Remote Procedure Call. ORPC is a layer that interacts with COM's run-time services. A DCOM server is a body of code capable of serving up particular objects at run-time. Each DCOM server object supports multiple interfaces, each of which represent a different behavior of the object. A DCOM client calls into the exposed methods of a DCOM server by acquiring a pointer-to-server-object interface. The client object calls into the server object's exposed methods through the interface pointer, as if the server object resided in the client's address space.

RMI is the Java version of what is generally known as a remote procedure call, with the added ability to pass objects along with the request. The objects can include information that changes the service performed in the remote computer. This property of RMI is often called "moving behavior." Java RMI relies on the Java Remote Method Protocol and on Java Object Serialization, which allows objects to be transmitted as a stream. Since Java Object Serialization is specific to Java, both the client server object and the Java RMI object have to be written in Java.

Java RMI allows client/server applications to invoke methods across a distributed network of servers running the Java Virtual Machine. Although RMI is considered by many to be weaker than CORBA and DCOM, it offers such unique features as distributed automatic object management and has the ability to pass objects between machines.

The naming mechanism, RMIRegistry, runs on the server machine and holds information about available server objects. A Java RMI client acquires a reference to a Java RMI server object by looking up a server object reference and invoking methods on the server object, as if the Java RMI server object resided on the client. These server objects are named using Universal Resource Locators. A client acquires a reference by specifying the server object's URL, just as you might specify the URL to an HTML page.

While CORBA, DCOM, and Java RMI all provide similar mechanisms for transparently accessing remote distributed objects, DCOM is a proprietary solution that works best in Microsoft environments. For an organization that has adopted a Microsoft-centered strategy, DCOM is an excellent choice. However, if any other operating systems are required in the application architecture, DCOM is probably not the correct solution. This may change as Microsoft attempts to make DCOM cross-platform compatible.

Because of its easy-to-use native-JAVA model, RMI is the simplest and fastest way to implement distributed object architecture. It's a good choice for RAD prototypes and small applications implemented completely in Java. Since RMI's native-transport protocol, JRMP, can only communicate with other Java RMI objects, it's not a good choice for heterogeneous applications.

CORBA and DCOM are similar in capability, but DCOM doesn't yet support operating system interoperability, which may discount it as a single solution. At the moment, CORBA is the logical choice for building enterprise-wide open-architecture distributed-object applications.


About the author

Paul Augustin, NOLA's VP of Consulting, is one of the technical architects on the DIMHRS team at the U.S. Department of Defense. The team plans to use CORBA ORBs to integrate legacy, custom developed, and commercial off-the-shelf systems. Designed to replace dozens of legacy personnel and pay administration systems, DIMHRS will be one of the largest systems ever deployed.

# iso initiative begins sepg

NOLA's ISO 9000 quality program gained momentum this quarter when we enrolled in the ISO registration program at the Center for International Standards and Quality.

Founded at the Georgia Institute of Technology in Atlanta in 1991, CISQ has coached over 2,500 companies worldwide—including Coca-Cola, BellSouth, and IBM—through the ISO registration process. CISQ cites a 100% success rate for companies that have enrolled in the program and followed through on program recommendations.

CISQ coach Dennis Kelly was assigned the task of guiding NOLA through the program. Mr. Kelly's 27 years of experience include ISO 9000 work as well as work on military quality systems and software development.

In July, Bill Gough and Bruce Woods attended a CISQ orientation workshop that focused on the scope and level of effort and responsibility required to achieve registration. In his new role as quality assurance manager, Mr. Gough will travel to Atlanta this fall to attend biweekly workshops on such topics as "Auditing," "Gaining Advocacy," and "System Establishment." Other NOLA SEPG members will attend workshops too, depending on their role in the quality program effort.

The current program comprises nine companies, with NOLA being one of two software companies and the only non-Georgia headquartered firm enrolled. In addition to working with our coaches, the program stresses interaction between companies to share information and help each other achieve registration. Because our earlier involvement with the Capability Maturity Model puts us about 6 months ahead of the curve, we expect to assume a lead role in the program, and to share the many lessons we've learned.

About the author

Mr. Woods serves as the Vice President of Business Development for NOLA. In this capacity he is responsible for the implementation of all quality programs at NOLA. He also serves as a project manager in the Financial & Corporate Systems department for Entergy.

## ***NOLA's Finest*** from page 1

very interesting. I got to see a lot of contrast between Canada and the U.S.—for one thing, the money is all green!"

He was also impressed by the "sheer number of people, and the sheer volume of traffic." Although California covers roughly the same amount of land as Newfoundland, California has a population of nearly 30 million, while the population of Newfoundland is a mere 540,000.

"It's kind of humbling to work for a company that has more customers in one state than in all of Canada put together," says Mr. Gough. Nevertheless he managed to get a year of good experience with COBOL and, as assistant to the technical architect, got to troubleshoot within both programming and execution environments.

When that project ended, he moved on to BellSouth's headquarters, flying into town the night before the '96 Olympic Games opened. Initially on board for a 7-week COBOL assignment, he ended up staying a year. First he wrote code to support a financial system revamp and a PeopleSoft installation, then he parlayed an Oracle interest into an eight-month stint as the project's database administrator.

In the fall of 1997, when his girlfriend moved to New Orleans to begin her dissertation work at Tulane, he considered moving here himself. After a search of the yellow pages, a cold call to NOLA, and a conversation with CEO Stan Jordan, Mr. Gough was sold.

"It was a perfect fit for me," he says. "At a larger company, there's a tendency toward pigeonholing. At a company like NOLA, which is smaller and sometimes has to pull on a number of different resources to get something done, programmers could wind up doing their own PC maintenance or helping the network administrator along. They may even have a chance to participate in analysis and design."

In the spring of 1998, while working on a conversion project at CNG Producing, Mr. Gough joined NOLA's Software Engineering Process Group. Several months later, when SEPG manager Bruce Woods needed to devote more time to client commitments, Mr. Gough assumed the lead role.

His quality program experience at Pacific Bell and BellSouth fuels his enthusiasm for NOLA's initiative to obtain ISO 9000 registration. Working on two different project teams totaling 125 people, he appreciated the careful oversight built into Andersen's project management and execution methodologies.

"It kept me honest. It pointed out problems that I hadn't seen before we got too far along in the process. After that, I was convinced that implementing some form of quality effort was the right way to go."

Of the tens of thousands of IT firms in North America, only about 300 are ISO 9000 registered. With Mr. Gough's guidance, and the supportive infrastructure already established by the SEPG, NOLA should easily join this elite group in the very near future.

About the author

Trish Thomas is NOLA's corporate communications manager. In this capacity she is responsible for print and electronic media, and serves as managing editor for *Peer to Peer* and webmaster for NOLA's new website at *www.nolacom.com.*

## birthdays

| | |
|---|---|
| Clark Lizana | 8/4 |
| Paul Augustin | 8/8 |
| Michael Bennett | 8/7 |
| Joe Dartez | 8/10 |
| Tommy Gray | 8/14 |
| Charlene Griffen | 8/13 |
| Richard Jackson | 8/24 |
| Brandon Jaffe | 8/19 |
| Grace Johnson | 8/17 |
| Marilyn Kitchen | 8/24 |
| Cesar Morataya | 8/18 |
| Dwane Tillis | 8/24 |
| Rita Faulkner | 9/3 |
| Michele Johnson | 9/14 |
| Mark Smith | 9/30 |
| Vicki Sobel | 9/13 |
| Alma Holley | 10/26 |
| Cynthia Littles | 10/17 |
| Stacy Williams | 10/16 |
| Barrin Davis | 11/28 |
| Bill Gough | 11/15 |
| Uyless Landry | 11/22 |
| Bruce Woods | 11/06 |

## anniversaries

Bill Gough, August 18, 2 years
Vicki Sobel, August 19, 6 years
Randall O'Neal, August 25, 2 years
Arvind Gaitonde, September 22, 2 years
Christian Miltenberger, October 27, 2 years
Donald Jordan, October 29, 3 years
Trish Thomas, November 6, 1 year
Michael Bennett, November 29, 4 years

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