

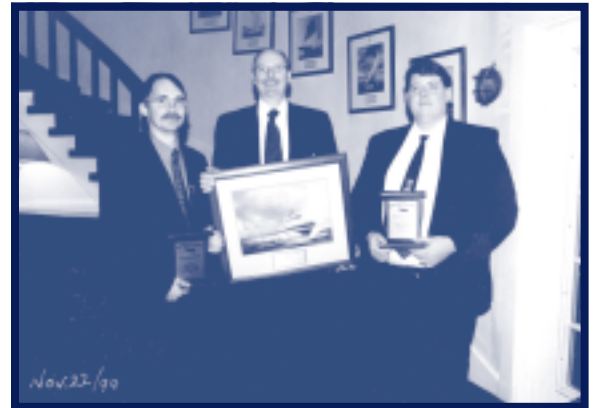
## President's Message

The last two years have been very busy ones for Nicom Ltd. We were fortunate to have been chosen by a number of organizations to provide consulting services and to develop new software systems to replace aging systems, many of which had Year 2000 problems.

An unexpected but very pleasant event occurred this past winter when one of our customers, the Atlantic Pilotage Authority (APA) formally recognized Nicom for the services we had provided to their organization. Nicom has helped the APA in a number of initiatives that included purchasing a new financial information system, developing a custom billing system, installing and supporting the LAN, and, most recently, developing a computerized dispatching system that incorporates an e-commerce web site for the organization.

As a formal recognition of the benefits Nicom has provided, we were invited to the APA's annual service awards dinner where Nicom was presented with a beautiful limited edition print of an APA Pilot Boat. In addition, the APA formally recognized two of Nicom's employees for the dedication and support they provided to the APA. We are very proud to have the pilot boat displayed in a prominent location in our office and are very proud of both David Miller and Mike Hatfield for their contribution to the APA's successful implementation.

In our next issue of Nicommunicate, we will begin featuring articles of our customer success stories with their IT initiatives. In the first article we will review the APA project and the positive impact it has had on the organization.



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## What Exactly is e-commerce?...Really?



A person simply cannot read a newspaper today without stumbling across the word "e-commerce." The term e-commerce is being tossed around in all business circles these days. Corporate CEOs want it, small business merchants want it, and customers want it. So, just what exactly is e-commerce, really?

E-commerce is short for Electronic Commerce. E-commerce is the idea of replacing physical business transactions with electronic business transactions using the internet. E-commerce cuts through boundaries such as time and geography to put businesses and customers into a virtual contact with one another.

Philosophically, e-commerce is about openness, connectivity, and integration between businesses and customers. For Nicom's purposes, we have defined e-commerce as "the ability to process business transactions through the internet."

From the business owner's perspective, e-commerce provides a way to instantly satisfy demand for products, services, and

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information of each customer individually. From the customer's perspective e-commerce offers convenience, variety, cost savings, and anonymity. Ultimately, e-commerce shifts the power from the business to the customer. Interestingly enough, the benefits to both the business and the customer are tremendous. The customer has immediate access to the information he requires, and the business can provide an enhanced level of service to the customer and reduce costs at the same time – talk about your win-win scenario. It's no wonder e-commerce has become as popular as it has.

A common feature of e-commerce is the ability to take orders and receive payments through a web page. E-commerce can encompass a number of other features as well such as order inquiries, inventory inquiries, price checks, etc.

E-commerce also provides a way for the business to connect its customers, vendors, suppliers and employees all over the world. E-commerce can enable a business or organization to reach an infinite number of customers over the web: seeking out potential markets that were once outside the traditional boundaries of its business. For some organizations, e-commerce has also opened up new opportunities for the business to provide additional services to the customer, for a fee, that could not easily be provided cost effectively before the advent of the web page.

Is e-commerce for you? Some feel that all businesses will have to be providing services through the internet if they are to survive into the next decade. Realistically, it depends on the type of business and the products and services being provided. Looking at the internet and deciding how you can use this new medium to better your organization would certainly be a wise investment for everyone.

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## Access Tips & Tricks – Compacting and Repairing

In this edition of Access Tips & Tricks, we will discuss the compacting and repairing process for MS Access databases. We will also look at how performing this function on a regular basis has greatly increased the performance of one of our client's systems.

We will begin by defining compacting. Compacting is the process of eliminating wasted space from a database. You can think of it as a de-fragmentation of your database. In MS Access, like many other database solutions, when records and/or tables are deleted, the space occupied is replaced with deletion markers. This means that removing records or tables does not actually decrease the file size of your database (.MDB file), and it also leaves your database fragmented.

If you do not compact a database that has volatile data, for example temporary tables used for report data, it can lead to serious performance issues, inaccurate results and even database file corruption.

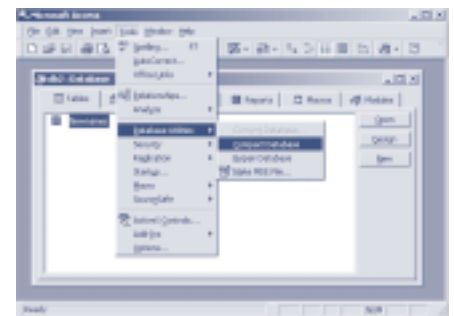
The process of compacting replaces your original database with a compacted version. If there happens to be an error in the process for some unforeseen reason, your database may be damaged and unrecoverable. For this reason, you should make a backup copy of your database file before you begin the compacting procedure.

Once the backup is made, open the database you want to compact. Next, under the Tools menu, select Database Utilities -->Compact Database (see figure 1).

**Fig. 1 – Selecting menu option on Access 97**

When you select Compact Database, the automated compacting process begins. First, MS Access closes the database so it is not locked: a database cannot be compacted if there are other users accessing it. Then MS Access compacts the database into a temporary database file. Next the original database is removed and the compacted temporary file is renamed as the original. Finally, when the process finishes, MS Access opens the freshly compacted database file.

To demonstrate the importance of regular compacting on databases that use temporary tables or that have other sources of highly volatile data, let me describe a situation that one of our clients had encountered that involved some very serious database issues. This client runs a database, developed by a student working on a summer job, which manages the payroll data for thousands



of employees. The database has one main table that contains several million records, and this table is the core of the database: all reports, queries and supporting information tables are related to this main table. The MS Access database file was approaching 670 megabytes in size and uses several temporary tables in a data import process that runs every second week.

We received a call from our client claiming that MS Access was generating inconsistent data reports. Each time a report was run off, the totals were different. Due to this problem, they were seriously considering either scaling up to an expensive high-end database solution or fragmenting this large table into several smaller databases.

As a first step toward saving this database and avoiding the potential costly upgrades, we simply performed a compact on the database. It took a little over an hour for MS Access to compact the database, but once it had finished, the database was only 410 megabytes in size, 260 megabytes smaller. It was also faster but, more importantly, the data reports were accurate.

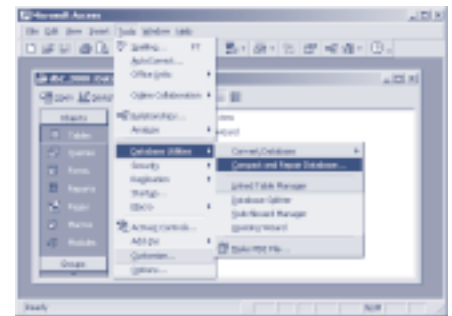
It is also a good idea to repair your database on a regular basis. MS Access uses hidden system tables to track table definitions, table relationships, forms, etc., and these can become corrupted. Performing a database repair checks each of these objects and verifies that they are accurate and functioning properly. It also repairs any index damage that may have occurred.

In MS Access 97, the repair utility is located in the Tools menu under Database Utilities and can be found just below the Compact Database Menu item. The automated repair process is very similar to the compact process, so it is a good idea to backup the database file before performing a repair.

MS Access 2000 makes this entire process a little easier by merging the compact and repair into a single function. In figure 2, we see that in the Tools --> Database Utilities menu, the feature is labeled Compact and Repair Database. As always, you should make a backup of your database file before compacting and repairing.

**Fig. 2 – Selecting Compact and Repair from Access 2000**

I hope we have been able to shed some light on this seldom used but very important function in MS Access. Remember to backup, compact and repair often to ensure a finely tuned database solution that will make your life both easier and more productive.



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## Safeguard Your Data With a Good Backup Procedure



**W**e have all heard horror stories about hard drives being destroyed or files being deleted by mistake and then discovering that there are no backups that can be used to restore the lost information. Over the years at Nicom, we have seen a number of these horror stories first hand. To protect yourself against such a situation it is necessary to have a regular backup procedure in place that includes saving information off-site. At Nicom, we have instituted a formal backup procedure that we would like to share with you. It is difficult to have a totally foolproof system, but at Nicom we know that in the event of a disaster the most that we would lose is one day of information.

The main reason for any tape backup system is to recover as much general information and current data as possible if a disaster strikes. The idea behind this rotation schedule is to try and insure that we can recover the most recent revision of our files if they were deleted or otherwise destroyed. It is important that the tapes get switched every day, and that a rotation schedule similar to the one below is followed very closely.

In Nicom's case, we make a complete system backup at the end of each week. This weekly backup contains all of the files and data from the server as well as all of the files and data from each of the desktop computers in the office. This backup is saved off site. We also make an incremental backup of any files that have changed since the last full backup throughout the week. Each incremental backup is saved on a different tape. We save each week-end set of tapes for a month.

We then save each month-end set of tapes for a year, and we also save a set of each year-end tapes indefinitely.

Using this approach means we have the following sets of backup tapes available:

- Day of the week – on- site: Monday, Tuesday, Wednesday, Thursday.
- Week of the month – off-site storage: 1<sup>st</sup> Friday, 2<sup>nd</sup> Friday , 3<sup>rd</sup> Friday, 4<sup>th</sup> Friday, 5<sup>th</sup> Friday (if needed)
- Month of the year – off-site storage: January, February , March, etc.

This schedule provides daily backups for the previous week, weekly backups for the previous month, and monthly backups for the previous year. As well, at the end of each year, we make a full system backup and save this backup, off-site, indefinitely.

All tapes should be stored in a secure place in your office. It is important not to leave the tapes lying around where anyone passing by could take one, and thereby have your entire companies information. For added security, you may want to password protect the backup tapes; additionally, make sure the tapes are not stored near a magnetic force or a heat source as these environmental conditions could destroy the information that has been saved on the tape.

The need for off-site storage cannot be stressed enough. There are several options available for secure off-site storage of tapes. A common method is simply to have a senior, trusted employee take the tapes home on a regular basis. There are also companies who specialize in providing vault storage services where you can store items like tapes and sensitive and important documents. If your company has multiple sites, the tapes for one site could be stored in a secure place at a different site. In this scenario, it would be important to have all tapes clearly labelled as to which site they belong to. Backup systems should be tested to assure they are working properly. We have seen a number of instances where the tapes were being changed on a regular basis and being saved off-site, but the tape backup was not actually making the backup. In our case we will test the system on a regular basis by simply deleting some files that are unimportant and then restoring them from one of the backups.

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## About Nicom



**N**icom Ltd. is a computer system consulting company based in Dartmouth, Nova Scotia. We have been providing services to private industry and government departments since 1982. Our focus is on helping organizations become more efficient and profitable through the use of information technology.

### Services We Offer Include:

- Project Management
- Requirements Analysis
- Information Technology Assessments
- System Evaluation and Selection
- System Analysis and Design
- Database Application Development
- Financial and Distribution System Procurement
- Local Area network Installation and Support Services
- E-commerce and Electronic Data Interchange (EDI)
- Web Site Construction
- Internet Database Integration
- On Going Hot-Line System Support Services
- Maximizer Contact Manager Consulting

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