REVELATION
SOFTWARE

Why should I opt for a Revelation-based application?

A paper that explores some of the reasons why businesses all over the world rely on Revelation-based systems to drive their business critical database solutions.

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Introduction

This Revelation Software white paper has been written to explore the key reasons behind a Revelation developer's choice to continue developing in Revelation over another 'more mainstream product'.

The many advantages to using a Revelation-based system are painfully obvious to everyone at Revelation, Revelation's application developers, application designers and also to the millions of end-users around the world.

This paper aims to provide the reader with an insight as to why Revelation's developers have seen, and continue to see, their Revelation-based systems go from strength to strength from one decade to the next.

Low Cost of Ownership

Revelation Software's underlying database is now so mature that it requires very little database administration other than normal data cleaning practices. Revelation and Revelation's application designers often refer to it as a 'set and forget' database, meaning the application designer installs the system and pretty much walks away, leaving the database to simply do its job. For this reason most Revelation-based systems do not require a costly technically minded database administrator. In most cases a power user is given the responsibility of the role, spending on average just a few hours each month on simple database administration duties.

Revelation's product licensing is also very economical. Not only are the end-user runtime licenses very inexpensive but most multi-user licenses up to 250-users do not carry any *per annum* costs. Once the multi-user license has been bought it remains the property of the purchaser in most instances. This can make a 250-user 32-bit OpenInsight system cost less than £15.00 (GBP) per user with *no* annual licence charges.

Application designers and corporate users wishing to roll their applications out to single-user (standalone machines) also benefit from Revelation's FREE single-user runtimes. This enables start-up companies and small companies to use very economical systems. It also enables Revelation application designers to make their applications available to more customers than they would otherwise be able to, as no revenues are required by Revelation for these single-user runtimes.

Just imagine, as a developer you can use OpenInsight to build an application and then give a single copy to everyone in your marketplace free of charge or with a nominal charge to meet your costs. Or, as a corporate developer with single-user satellite offices, you could deploy your application across your company without restriction or additional cost, while maintaining the ability to turn your single-user systems into multi-user systems extremely easily and without having to make changes to the base application.

In addition, through the purchase of a single (per developer) low cost OI WORKS license the developer can create upgrades using their development machine, wrap these up as an upgrade deployment using the RDK (Runtime Deployment Kit) and supply the upgrades to every user of their application free of charge.

Longevity

Revelation Software has been in existence since 1982 and during that time the company have based their systems around one evolving database technology known as a Linear Hash Filing System - more on this later. While this underlying technology evolved during the 1980's it quickly matured and has adapted to cope with the growing demand for increased storage capabilities. Providing Revelation's application designers and users with such a stable and reliable database has enabled their developers to build systems and then to extend them though the years making use of new and emerging technologies. To this day Revelation still have users running old DOS systems that were written in the 1980's. Why? Because they simply do their job, causing the users no grief whilst remaining flexible and economical.

Technology has of course changed during Revelation's life. One of the biggest changes was the introduction of the Windows operating system which in the main replaced the old character based applications with feature rich and user friendly GUI (Graphical User Interface) based systems. The industry also saw a move from large mainframe based systems to smaller more cost-effective PC based networks with peer-to-peer, workgroup and central server based networks. In more recent years the internet has been embraced and it is now widely used to share corporate data with employees, subscribers, customers and the general public anywhere in the world. PC based networks have mostly utilised Novell and Windows NT (including Windows 2000 and 2003) and more recently Linux has begun to make an impression on the industry.

None of these changes have caused a threat to Revelation - not even the millennium which had many non-Revelation users spending whole annual IT budgets on preparing for the big event and then holding their breath as the clocks ticked over midnight. Revelation-based applications treated the millennium just like any other day (yesterday plus 1). Revelation has consistently provided its developers with the technology and products to maintain their old and new applications on these ever changing technologies.

Revelation are proud to have systems running on every continent, in just about every country (including the South Pole) and many of these systems have been in use for many years. Revelation sees no reason why they should not be used for many more years to come.

Revelation's unique licensing strategy makes enumerating the exact number of licenses all but impossible. However, a recent exercise put the numbers in excess of 1.6 million users in over 60,000 sites right across the globe.

Scalability

For historical reasons Revelation has been considered a toolset for SMEs (Small and Medium Sized Enterprises). PC based systems in the 1980's and early 1990's tended to be departmental level systems with little integration with other departments. While large corporate companies could afford to spend hundreds of thousands, if not millions, on their main frame IT systems, smaller companies and departmental managers working within their budgets could not. Thus the SME market evolved and it continues to suit Revelation-based systems very well as Revelation and Revelation application designers are able to offer high quality and value and an extremely cost-effective technology for companies with departmental level projects and small budgets.

However, in more recent years we have seen many of these companies grow and we have also seen the large corporate companies begin to watch their IT spend and question the excessive sums being allocated to IT projects delivering few benefits. True to the nature of the technology and business model, Revelation-based systems have consistently demonstrated an exceptional ability to simply grow with the business and we now have systems with over 1000 users running over LAN and WAN networks and web based systems handling tens of thousands of sessions per hour, day-in and day-out. One such web system is responsible for over $60,000 worth of business every hour, another is responsible for managing customer's share portfolios, a third enables a courier company to enable their customers to track shipments on the web and a fourth handles extremely sensitive data that required military level security testing to be passed, to name but a few.

When we talk about scalability we also need to look at the size of the database itself. While many software vendors claim to be able to handle huge amounts of data and provide systems that will run and run for years, Revelation has consistently proved that this and more is possible with Revelation-based systems. There are few other software vendors in today's marketplace that can say that they have actually had systems running without issues for over a decade (and some Revelation-based systems are now into their second decade of use) and that these systems have gone from just a few hundred records to millions of records with large amounts of data with no changes to the database structures other than those required by the application.

Reliability and Performance

Providing a consistent technology on which Revelation developers can build extremely reliable systems has been a major factor in the development of each and every Revelation product. Even as new technologies have emerged Revelation have continued to create and enhance products and services to ensure that every Revelation-based system is as reliable and fast as possible, regardless of the deployment method.

During the early 1990's the industry saw a move to the 32-bit world and with it a whole host of technology changes and innovations. True to Revelation's form, the developers set about building products that would not only maximise performance for current products but also products that would further extend the life of Revelation's DOS based systems and make them compatible with contemporary operating systems.

Today we see Revelation being used in some of the most mission critical environments. Why?

Any correctly configured Revelation-based system using one of the network products should and usually does provide the users with trouble free use for extremely long periods of time. Revelation's frontline staff are often called into companies that use non-Revelation application development tools in their IT departments, but who use a Revelation-based application within their business written by an experienced application designer. In nearly every case the reason for such a meeting is because it is often the Revelation-based system that is the only application running on their servers that has never let them down, even where major end-of-month routines (such as payroll runs for thousands of employee's) are being run and an unusually heavy load is put upon the system.

Another example, this time to do with performance, involves a major UK bank who uses many different application development tools, one of which is OpenInsight. A member of their staff contacted a Revelation consultant to complain that the system was bottle necking as it was only single threaded and they wanted to make better use of their vast systems resources - the Revelation system at full capacity was using less than 10% of their system resources. A Revelation developer sat down and wrote a routine that would seriously load their system, simulating an abnormally high client loading. At full load the routine still only managed to peak their system at around 20% usage. The result had their IT department admitting that their OpenInsight system was extremely light on resources while offering optimal performance and stability. It continues to grow.

Flexibility

It seems that modern day business practices change more and more rapidly as the years progress and the faster they change and evolve the faster the technology that drives their business needs to adapt. If this sounds familiar, you'll be looking for a technology that can integrate with your business (rather than the other way round) and more importantly evolve *with* your business. This is true for both bespoke solutions and boxed product systems.

Revelation's development suites, such as OpenInsight, give developers this edge when building applications. Time and time again Revelation's application designers comment on business that they have won and retained on the strength of being at the forefront of their marketplace and by having the ability to enhance their applications as quickly as their customers business needs change *and* at the same time embrace new and emerging technologies.

The reasons for this are too application varied and often too technical to even touch on here. However Jim Butler, a developer specialising in developing applications using Revelation's products sums this section up perfectly in an article that appeared in International Spectrum magazine[1]. Jim Butler said, "I can prototype a system far faster in Revelation that any other development tool. And that's why we aren't too worried about our competitors in aviation software, because they're all writing in C or SQL Server or the other development languages of the past. They're either not robust enough to be able to scale up, or they're too rigid and inflexible to accommodate changing business needs. We can make those changes easily, and that's really our competitive advantage."
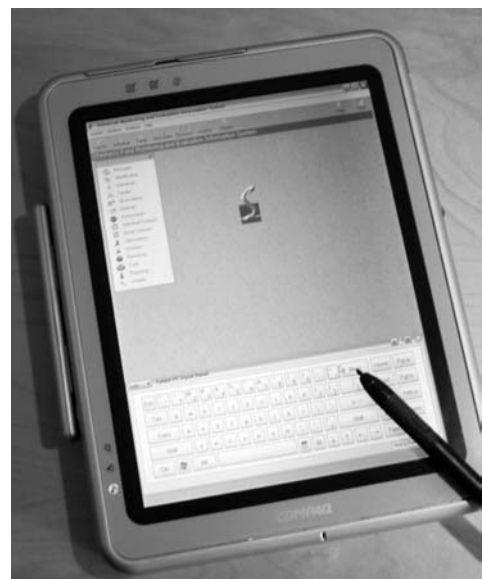
[1] The full Jim Butler article can be found in the July/August 2002 edition of International Spectrum magazine, a copy of which can be found on www.intl-spectrum.com

Repository Driven and Inheritance

As database technology matures, the industry is seeing a move towards favouring repository style application development environments. Revelation has consistently been ahead of the game with regard to application development tools and since the early days of OpenInsight Revelation has adopted a repository driven approach to the toolset. Most of the benefits of this are experienced by the developer, especially those with a diverse customer base or several developers who all want to share and reuse their application's components.

However, there is also one huge benefit to end-users as well. Imagine for a moment that you have found your dream supplier with a ready-written shrink wrapped application that meets 80% of your businesses needs. You could decide to forego the other 20% and settle for the box on the shelf *or* you could sit down with your chosen supplier and talk about extending the existing application to meet your needs head on.

This is a discussion that many Revelation developers will be able to enter into owing to the inheritance built into OpenInsight and the ability to reuse components between applications. Quite simply the developer would create a new instance of the application choosing to inherit all of the application components (we call them entities) from the original one. This new application can then be extended and modified in any way to suit the business and get nearer to the elusive 100%. Furthermore any enhancements to the base application can be used in the customised application, thereby providing the best possible benefit to the end-user *and* easier support of the various applications for the developer. Typically, Revelation Developers are amongst the best in the world at matching business needs by rapid application development methods and techniques. Evidence of this is the extreme persistence of Revelation-based applications.

Single Technology Base

Many application developers in recent years have built systems using 'mainstream' products because they are more readily accepted in the marketplace. However, this has often meant that they have had to decide on a suitable back-end database and then a different suitable front-end design tool. For instance a recent favourite has been SQL Server as a database to a front-end built in Visual Basic. Revelation believes in providing one single toolset that provides the developer with everything that they need in one single box - referred to as a 4GL. Of course Revelation have also provided their developers with the ability to use a third party back-end database such as Oracle or a front-end design tool such as Delphi, but in the main most of Revelation's developers use the one single toolset.
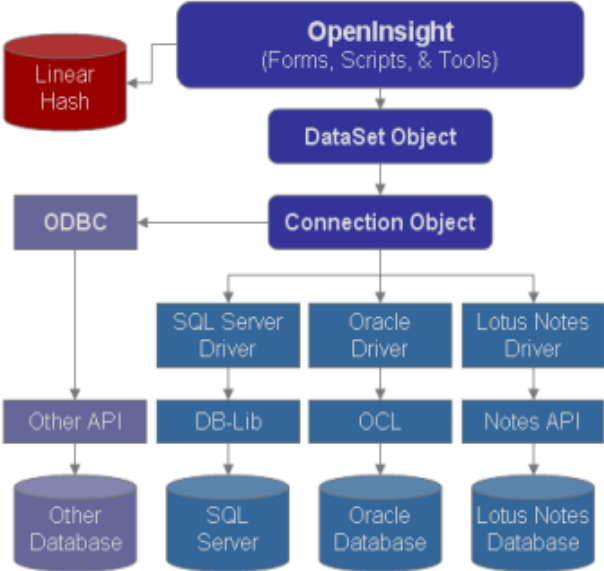
This provides both the developer and the end-user with one key benefit. No one needs to be overly concerned with how one technology change from one supplier will impact on the software being used from another software supplier. Because Revelation's systems are self-contained, all of the technologies to build and manage the back-end database, the front-end interface *and* the business logic in between are built with each other in mind and tested for compliance before they even reach the beta test phase or get into the hands of Revelation's developers. The end result is a progressive development cycle where the developer does not need to factor in several weeks or months testing for product compatibility every time one of their suppliers release a new version of their product. It also means that end-users can take advantage of new and emerging technologies and product enhancements much more quickly and with less risk to the business.

Multiple Deployment Options

Modern day applications are required to run in a wide variety of environments. Revelation offers its developers many different supported deployment options and even some unsupported options work equally well.

Globally Revelation have thousands of sites running with standalone non-networked machines, machines networked in peer-to-peer workgroups or client-server style environments with central servers running as LANs or WANs based on Novell, Windows and Linux operating systems. Many WAN systems have been deployed using officially unsupported environments (such as Terminal Server and Citrix) to very good effect, demonstrating the flexibility of the underlying technology. OpenInsight will even run on a Macintosh given the appropriate emulation software.
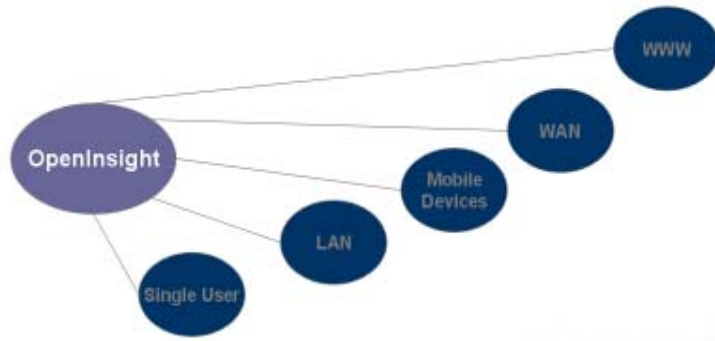
In recent years the IT industry has seen the World Wide Web being more widely used for Intranet, Extranet and Internet based systems. More recently this technology has been extended to employ Tablet PC's, WAP phones, Palm Pilots and other mobile devices - Revelation have also received reports of a hospital that was using wireless technology to bounce the Revelation-based application off of walls of buildings between sites.

Using Revelation's products and associated technologies to full effect, Revelation application designers are able to deploy reliable, secure and powerful systems in the right environment to meet the business's needs and, through minor enhancements, continue supporting those chosen environments for the life of the application.

Dictionary Driven Data Structure

Some databases put the data definitions in the same table as the data itself. What they'll do is put aside some space at the beginning of the file and in there they'll describe the data. That's all well and good but when the developer needs to add new columns to the table they have to recreate the file, copy all the data around and other generally high maintenance chores. Other issues arise if end-users want to be able to do their own queries and see dates in their local format (assuming some are American and others English).

Dictionary driven databases, like Revelation's, store their data definitions in another table called the "dictionary" so they usually have one table for the data and one table for the data descriptions. If more data needs to be added the developer can just add another dictionary definition and if some users need to see information in one format and others another way (like our date example) then the developer can just define a data dictionary definition for each view. As many dictionaries describing a column can be created as needed giving more power and flexibility to the developer!

While this can be perceived to be yet another 'developer only' benefit the impact on the end-user can be very positive when it comes to modifying an already deployed application. All to often an end-user decides that it would be nice to have a new column (field) to capture an additional piece of information or a calculated column that automatically brings some data together, removes data entry duplication or just plain makes data entry easier. With a Revelation-based system the developer can simply define the new column in the dictionary (a job that takes seconds), drop the prompt onto the appropriate form and provide an update to the users. In many cases where a customer has a bespoke system (customised for the business or purpose-built) the developer can make extremely rapid changes to the live system and in doing so bring immediate business benefits to the desktop rather than having to wait days while the system is changed, tested and deployed. It goes without saying that not only is there a cost saving in downtime but also in the cost of the change.

Another benefit is that the design can more easily achieve a straightforward way of managing complex data and relationships as well as make adjustments which have little no impact on the database structure as a deeper understanding of application requirements emerge. Simply put, the tight integration between the development environment and data storage radically streamlines the process of designing to meet real business needs.
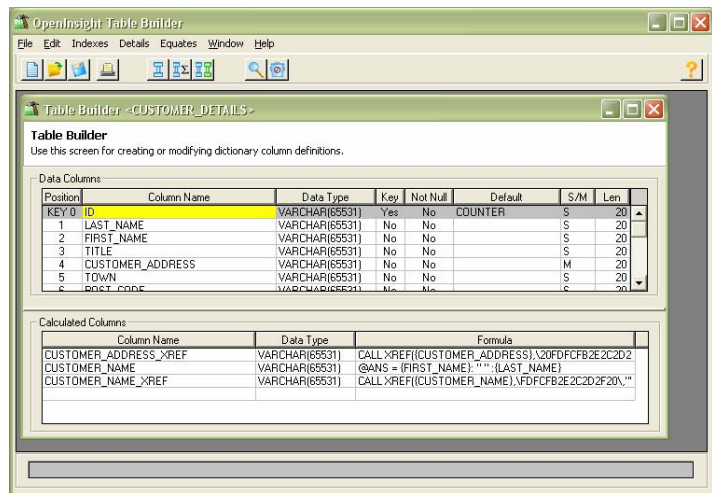
OpenInsight's Table Builder.

Hashed Retrieval System

"Hashed Retrieval System" describes the mechanism by which Revelation-based systems locate rows that have been stored in the tables. It doesn't matter how well databases store information – if users can't get their data back it isn't worth storing!

There are several traditional ways of retrieving information from a database and most of them have some flaws. The simplest is "Sequential Access Method" and involves the system reading through the file until it finds what the user is looking for. There are application variants of this such as Indexed Sequential Access Method (ISAM) and BTREES but none are as efficient as Revelation's "Hashing" system.

As an example:

> *Think for a moment about when you want to get a client file out of the filing cabinet.*
>
> *You may have 4 draws labelled A-G, H-M, N-T, T-Z.*
>
> *You're looking for Otigbah.*
>
> *Do you go to the first draw and start looking through sequentially? That's what a 'sequential access' method would do.*
>
> *Do you go to the third draw and start looking sequentially? That's what an 'indexed sequential access' method would do.*
>
> *Do you go to the third draw and glance at the middle file, seeing that it is for Robertson you know that Otigbah must be before the middle. So you glance at the middle file of the first half set of files. Then seeing this is for O'Doul you know that Otigbah must be after the middle of the first half. So now you glance to the middle of the top half of the bottom half… eventually you find the file. That's what a BTREE lookup would do.*
>
> *Or do you, like our hero the hashed retrieval system, open up the third draw and go straight to the right file?*

How does it do this? By an algorithmic design called "Hashing". Essentially the steps are simple:

When a file is created it is split internally into "data buckets" called "frames". Imagine you were given a file and a pile of names to store in the file. You need to be able to get them back quickly so you could split the file into 26 data buckets and put the As in the first one, the Bs in the second, the Cs in the third and so on. Then if someone asked for Zachariah you would know to go straight to the 26th data bucket.

What you would have created there would have been what we programmers call a "mod 26 file" – or to be more formal – a modulo 26 file. The modulo is simply the count of data buckets in a file.

Now hashing is a bit more complicated than just making 26 buckets but it effectively does the same thing.

Imagine the hashing algorithm as a Black Box. You tell it how many data buckets you have and you tell it the name of the person you want retrieved – Otigbah say. The Black Box then does some clever arithmetic and says – oh that'll be in data bucket 123,456 so off you can go and get it, going straight to the place on disk where the information can be found.

This works because all of the frames are of a known size and where the data becomes too large for the frame an overflow frame is created for the user automatically. There are other systems similar to Revelation's but most need to have their files manually recreated larger from time to time to minimize overflow. However with a Revelation-based system this is not a problem for users to worry about as Revelation use something called "Linear Hashing with Partial Expansion" – that means that the files automatically resize as they are used, thus eliminating the maintenance overhead of periodic resizing and as a result reducing the cost of database administration.

Variable Length Data Structure

Most databases require developers to predefine the structure of a row before data is added to a table. This is normally referred to as a "fixed length data structure". In other words, say the application needed to store purchase orders in a computer file. The developer would need to create a "Table" called say "CUSTOMERS" then tell the computer the structure that they wanted this table to have, for example

- Customer number – primary key – 10 digits
- Entry Date – DD/MM/YY
- Name – 30 characters
- Address Line 1 – 30 characters
- Address Line 2 – 30 characters
- Address Line 3 – 20 characters
- Town – 20 characters
- State – 2 characters
- Zip – 5 characters
- Phone – 12 characters

In the above example each order recorded (normally called a "Row" but sometimes called a "Record") would be 10+8+30+30+30+20+20+2+5+12 or 167 characters long. Each separate piece of information recorded (e.g. Town) would be called a "Column" or sometimes a "Field".

This works very well when the row is of a known structure, as if a column is shorter than a definition it can just be padded with spaces to ensure that all columns start and stop where expected. So for example, customer 1234 recorded on the 12th May 2002 as Revelation Software at 99 Kinderkamack Road, Suite 109, Westwood, NJ 07675 on 201 594 1422 would be stored as:

> 1234▼▼▼▼▼▼12/05/02Revelation Software▼▼▼▼▼▼▼▼▼▼▼99 Kinderkamack Road▼▼▼▼▼▼▼▼▼Suite 109▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼
> ▼Westwood▼▼▼▼▼▼▼▼▼▼NJ07675201 594 1422

and the system uses a total of 87 bytes out of 167 – so nearly half of the space on disk is wasted.

However developers run into problems if the data doesn't match with their preconceived expectations. So for example, say that the developer needs to use the same structure to store some information about a German client, say 9000 Ingenieurbüro für Projektentwicklung GmbH. at Gorkistraße 12 99084 Erfurt with a telephone number of 00 49 3615 62 18 51. This would be stored as:

> 9000▼▼▼▼▼▼12/05/02Ingenieurbüro für ProjektentwiGorkistraße
> 12▼▼
> ▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼Erfurt▼▼▼▼▼▼▼▼▼▼▼
> ▼▼▼▼9908400 49 3615 6

In the above example the system uses a total of 72 bytes out of a total of 167 and more importantly the user loses data!

Worse still, if the system users need to enter multiple address lines – that information could be lost as well. This is very common when working with American written applications or when dealing with American companies for mail order who are used to Street Address, Town, State and Zip. A classic example of this was when Revelation, in their old London office, ordered an item for delivery from a supplier using such a system with limited address functionality.   Asking suppliers to record "Revelation Software Limited, Northumberland House, 11 The Pavement, Popes Lane, Ealing, London, W5 4NG found them getting quite flustered. And when you see what actually turns up on the printed label you can see their systems have problems!

Naturally the developer could make all of the columns much bigger than they think their users we will need, but it can often be hard to get this right. Imagine you were a developer working in America where for years zip codes were 5 digits in length. You'd just assign 5 characters to the column and that would be fine until a decade or so ago when the Postmaster General decided that 5 was no longer enough and added a hyphen and another 4! Now ALL of the record structures are wrong and they need to be laboriously changed and the data read and rewritten, creating a headache for both the developer and the end-user.

This is where Revelation's "variable length data structure" excels. With this sort of structure, whilst the table is still defined, the length of the columns is not. Instead the developer just defines the position of the column in the record. When data is added to the row it is just recorded as it is typed, then when the end of the column is reached, the system puts in a special "End of column" character before starting the next column. Traditionally these are referred to as "Field Marks".

Multivalue Data

A major benefit to opting for a Revelation-based application is the use of 'Multivalue Data'. Taking the previous example, a Revelation developer will drop the multiple address lines (Address Line 1, Address Line 2, Address line 3) and simply use one multivalue column called 'Address'.

So in the above example the Revelation developer would define the structure of the data table as:

- Customer number – primary key – field 0
- Entry Date – DD/MM/YY – field 1
- Name – field 2
- Address - Multivalued - field 3
- Town – Field 4
- State – Field 5
- Zip – Field 6
- Phone – Field 7

What does this mean to users and developers?

Normally in databases application developers can only store one value in one column/row combination but if developers can have "multivalues" it means that a column can accept multiple values, with no limit to how many values there are. So in the example above the developer would be able to get rid of three address columns and just have one that can contain the contents of the previous three. Each line of the address then becomes a "multivalue" within a "multivalued" column. And note – these values can themselves be application variable in length because the system will use another delimiter to show where each value ends! These characters are traditionally referred to as "Value Marks".

So let's look at how the two examples above would look in an application variable length, multivalued filing system.

> 1234■12/05/02■Revelation Software■99 Kinderkamack Road²Suite 109■Westwood■NJ■07675■201 594 1422

and

> 9000■12/05/02■Ingenieurbüro für Projektentwicklung GmbH■Gorkistraße 12■Erfurt■■99084■00 49 3615 62 18 51.

In the above examples ■ is a field mark and ² is a value mark. Note that a lot less disk space is used and more importantly no valuable data is lost.

Revelation and XML

Increasingly critical applications cannot stand in isolation to one another and new corporate approaches are seeking new benefits from data exchange and application interoperability. WC3 open standards are increasingly providing routes out of 'lock in' to proprietary formats and increasingly expensive software development overheads. When data exchange is based on XML and XML transformation standards this enables a new visibility around application data and data reuse.
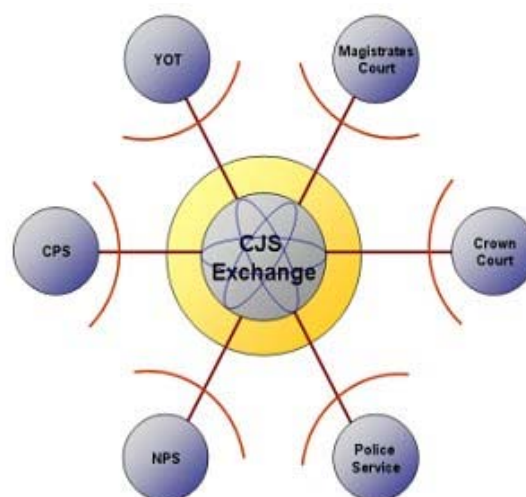
The XML standard provides a complete and natural representation of data. It will be no surprise to Revelation developers that this is close to a multivalue representation. XML Schema designs are able to represent highly complex data relationships for which the Revelation environment is more than a match. In addition, to requiring many fewer tables, the Revelation environment can more easily manipulate raw XML data compared with other languages.

Most importantly Revelation has undertaken practical research and development to create a feature rich parser environment integrated into OpenInsight. This means XML production and consumption and business logic can be handled by easily mapping to OpenInsight dictionaries and any required extensions or exceptions coded in BASIC+ (OpenInsight's programming language).

The availability of XML tools and a parser together with HTTP server technologies enables OpenInsight developers to extend their rapid application development capabilities into XML production and consumption and to have a real competitive advantage in the systems integration arena.

Social Software the leading UK Youth Offending Services application supplier using Revelation's tools, worked with Criminal Justice IT (CJIT) to develop the functions of the exchange hub (CJSE). The project goal was to prove how to link three or more existing systems using XML data, regardless of the data-source. At the outset of the project, several suppliers declined to participate due to the risks and complexities involved.

Social Software's XML hub - designed to dynamically share data between UK government departments and outside agencies running databases from various suppliers such as Revelation, Microsoft and Oracle.

Backed by a leading Revelation consultancy and the OpenInsight technology itself, Social Software was a key supplier in delivering a highly successful project outcome. They continue to work within the CJIT supplier club helping focus on delivering real business benefits in the joined up government services arena.

Prestigious Customer Base

Occasionally people looking to purchase a Revelation-based system have reservations owing to Revelation Software not being a household name. All too often this is the number one (and sometimes the only) hesitation for some IT Managers.

Revelation's lack of public awareness is not because the company do not want people to know about them, nor is it because they are ashamed of what they stand for. It is because Revelation products are used by professional application developers to build solutions that are marketed under the developer's own name or their own application brand name.   There is no need for the end-user to know what the application was built in so long as it continues to meet real business needs, is reliable, flexible and cost-effective to maintain.

More recently, business leaders have been looking beyond the claims of IT vendors in an attempt to find a better fit with the businesses goals and in doing so gain better value from their IT budgets. This encourages IT Directors to take interest in the real business needs and to build in flexibility for the longer term. In this way Revelation's underlying technology and flexibility is being rediscovered in a more open company IT infrastructure and architecture.

Interestingly, when Revelation talk to people with reservations they often find that those peoples lives have been touched by a Revelation-based system. During the 1990's around 1 in every 3 UK employee's were paid using a Revelation-based system, hundreds of thousands of people still are today. Several hundred UK doctors' surgeries, hospitals and medical establishments continue to use Revelation-based systems. And, up and down the UK countless schools, colleges and libraries run Revelation-based systems.

Many end-users use applications based on Revelation's technologies for mission critical and highly secure systems. Many of these establishments wish to remain anonymous for obvious reasons and Revelation strictly respects these wishes. Taking a more generalised view however, globally we have major financial institutions, military, local and central governments, health establishments, HR and Payroll companies, educational establishments, research centres, manufacturing, national and international institutions to name just a small fraction of the type of people from all industries who rely on Revelation Software day-in and day-out.

Thriving Developer Community

Around the world application developers in general work hard to keep themselves to themselves and their knowledge in their own heads in order to keep one step ahead of their competition. Consider the current trend towards the outsourcing of resources to India and you'll understand why developers in America, Europe, Africa and Australia are so keen to retain a knowledge advantage and even in India each company is trying to keep one step ahead of its neighbour. The end result is a fragmented pool of knowledge that is difficult to readily tap into.

The Revelation developer community is just that - a vibrant community willing and able to help each other. Check out the online discussion base on www.revelation.com to see this in action and then consider that this is just the global forum for Revelation users and developers. Hidden away in the Private WORKS area (a subscriber only area) is another similar forum for the real Revelation professionals who are all eager and willing to help each other to the benefit of the whole community. The result is an ocean of knowledge that is readily accessible to Revelation's developers.

While the benefit of this to the end-user is not always felt directly, the impact is extremely positive. With such a large number of developers all helping each other there is no better way of getting the most demanding of issues resolved with the help of someone who has already been there. This means that end-users experience shorter downtime when issues do occur (well this is software and problems do occur from time to time) and even before the software is delivered the developer has the resources to capitalise on other peoples knowledge to meet real business needs head on and in a more timely manner.

Revelation Software Management

Unlike the majority of application development tool providers, Revelation's most senior management are always available to the Revelation Developer community. Whether it is answering postings on the forum (yes EVERY posting is read by the company owner), responding to customer's email personally or meeting developers at user groups, conferences and other events a Revelation Developer is never far from a decision maker. When was the last time you had access to the CEO of Microsoft or Oracle?

Not only is the senior management at Revelation available to Revelation developers, but they are also available to personally discuss serious business issues that require top level attention. This might be a case of embracing a new technology, the discussion of a business specific issue that goes across industries and requires additional functionality in the product suite or just a piece of code required to make something work the way the business needs it to.

Revelation believes from the top down that "It's just software and, as it is just software, it must be possible to achieve that customer need. It's just a question of taking a little time."

Revelation and the Future

For over two decades Revelation has pushed the boundaries of database technologies and in doing so they have provided their developers with toolsets that have evolved with the fast pace of the IT industry. Through the closest of customer relationships, Revelation has refined a valuable ability to tap straight into the requirements of both the people building database solutions and also to the people who rely on their solutions day-in and day-out.

Throughout the world many Revelation-based projects have benefited from the direct input from Revelation's product developers and the companies most senior management. In doing so, Revelation's decision makers set policy and define future product direction based on customer needs and reactions.

More than that, OpenInsight is now so mature that the product is now used to build itself – a major benefit in the early 90's for users of Revelation's DOS product called Advanced Revelation, which won the admiration of developers across the world. Using the product to build itself has removed the reliance on any third party technologies and means that the product benefits from renewed flexibility and reliability.

As a leader in the multivalue world and a key player in the global database market, Revelation keeps a close eye on industry trends and reactions. This, along with the flexible nature of their products, enables the company to quickly exploit new and emerging technologies, while taking the time to evaluate them before embracing them. Revelation are often quick to provide tools to meet developers needs in a just in time manner, such as the provision of XML tools as XML was beginning to be embraced and JOI before that to harness the power of the Java environments.

In not 'jumping onto the bandwagon' too early, Revelation can deliver functionality in their toolsets based on sound technologies, rather than getting into the syndrome of deliver, change, deliver, change and deliver again as the new technology goes through it initial rapid change period. The benefit to the application designers is that they know that they can afford to embrace the technology once delivered in Revelation's products without the worry that they will have to spend countless hours redesigning their use of the new functionality.

Revelation knows and values the fact that its application designers and end-users alike can trust in the company's direction and decisions. By working closely with customers at all levels and embracing new and emerging technologies, Revelation has continuously delivered rapid application development tools required for today's ever changing application design and development marketplace.

Who knows what the future will hold, but can you honestly expect your current applications to still be working and benefiting your business in another decade or two? Revelation's customers can - as the last 20 years have proved.
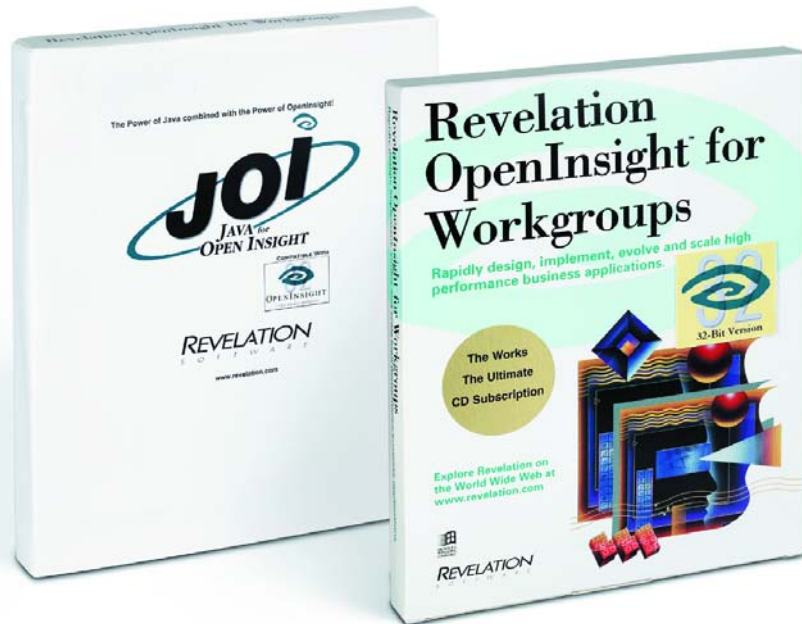
OpenInsight for Workgroups - a repository-based applications development environment that enables development teams to work collaboratively to design, develop, deploy and scale high-performance business solutions. OpenInsight's complete tool set (including a Form Designer, Editor/Debugger, UI Workspace, XML Workspace and more), advanced BASIC+ scripting language and powerful client/server development combine to deliver a complete environment for deploying and evolving network applications. OpenInsight is delivered with a flexible Multi-Valued, variable length, filing system, or has the ability to use SQL Server, Oracle, Lotus Notes, Universe/UniData, D3, or any ODBC compliant data back-end. Delivered with both XML and Web-enabled tools, OpenInsight is a tremendously powerful development tool for Windows and Linux-based applications.

JOI - an integrated environment for managing the entire lifecycle of Java component based enterprise applications. JOI provides a single centre and integrated toolset for automating the design, development, assembly, deployment, customization, extension, and maintenance of Java component-based enterprise applications, tailored to the specific needs of the Revelation developer.

Revelation Software – Delivering feature rich multivalue application development tools that empower both developers and users alike.

Experience the toolset at www.revsoft.co.uk

REVELATION
SOFTWARE

With more than 1.6 million users, at over 60,000 sites, on all seven continents, Revelation Software is in nearly every industry imaginable.

Revelation Software specialise in the provision of database development tools that permit applications to be developed in a fraction of the time required by traditional development environments. Revelation products may be scaled from single-user to large enterprise wide networks, from the desktop to the World Wide Web - for a fraction of the cost of other enterprise software solutions.

Revelation has a proud heritage, built on the provision of PC Database Software since 1982. During this time, Revelation has embraced the benefits of "post-relational" data structures that are now being more readily embraced by the mainstream.

Revelation applications are characterized by the enduring nature of the solutions implemented using its products. Revelation continues to invest in technologies that enable systems implemented in its earliest development tools to operate successfully on modern 32-bit client and network operating systems, and be extended to the Web - 20 years on, Revelation-based systems are still working hard for their owners.

Revelation continues to provide new tools that natively exploit the capabilities of the latest operating systems, network computing platforms, and programming languages and techniques. The combination of this focus and a commitment to continuous improvement and innovation has enabled Revelation to thrive and prosper in the challenging and ever-changing market of application development tools and deployment technologies.

> *"Social Software Limited has relied on Revelation for over 18 years. Throughout numerous changes in operating environments as well as unexpected changes in application requirements there has been no substitute tool which has offered the same development and maintenance benefits.*
>
> *Thus we have developed an extremely mature software library including reporting tools which significantly extend the Revelation's environment in order to achieve a tight fit with our marketplace. As application developers we have complete confidence that Revelation will be a key part of our capability to satisfy any kind of application demand and challenge which typically exceeds customer expectations in our chosen domains."*
>
> *Marc Radley, Managing Director – Social Software Limited*

Revelation Software USA	**Revelation Software UK**	**Revelation Software Australia**
99 Kinderkamack Road	45 St Mary's Road	Unit 2
Suite 109	Ealing	21 Old Pitwatter Rd.
Westwood, NJ 07675	London, W5 5RQ	P.O. Box 300
United States of America	United Kingdom	Brookvale, NSW 2100
		Australia
Toll Free: (800) 262-4747	Phone: +44 (0) 20 8912 1000	Phone: +61-2-9939-6399
Phone: (201) 594-1422	Fax: +44 (0) 20 8912 1001	Fax: +61-2-9939-6366
Fax: (201) 722-9815	Email: info@revsoft.co.uk	Email: info@revelationsoftware.com.au
Email: info@revelation.com		