

**THE NEW BASICS OF  
MANAGING HEALTH CARE  
INFORMATION**

**THE HOLIDAY INN ON KING  
OCTOBER 30TH & 31ST, 1997**

**SECTION 10**

**Bridging Your Current Infrastructure With New Information Technology**

**Paul Brown  
RIVERSIDE HEALTH CARE FACILITIES INC.**

## **BIOGRAPHY**

Born and raised in Stratford, Ontario, Paul Brown holds a masters degree in health services administration from the University of Alberta. His work experience in hospitals, a child health centre, and a healthcare association has taken him to Ontario, Alberta, and Nova Scotia. He has had a long interest in marrying the benefits of technology with the needs of patients. Paul is an avid golfer and has just named a new patient unit, "The New St. Andrews".

**BRIDGING YOUR CURRENT INFRASTRUCTURE  
WITH NEW INFORMATION TECHNOLOGY**

**A Presentation By**

**PAUL F. BROWN  
PRESIDENT  
RIVERSIDE HEALTH CARE FACILITIES INC.**

**To**

**The Conference On**

**The New Basics of Managing Health Care Information**

**Institute for International Research  
October 30 & 31, 1997  
Holiday Inn on King, Toronto**

## **BRIDGING YOUR CURRENT INFRASTRUCTURE WITH NEW INFORMATION TECHNOLOGY**

In preparing this paper for this conference one presentation title that kept running through my mind, was: *Managing Health Care Information For Dummies*. I thought that it would be a catchy attention getter, perhaps generate a couple of laughs and get us off to a good start. But would it be an accurate facsimile of the real thing: that is what we have been going through at Riverside Health Care Facilities Inc. I'll let you be the judge of that as you listen to and evaluate the merits of this presentation. Let me say at the outset that like the disclaimer at the beginning of a book the term should only be applied to the corporation's CEO and not any of the other participants in the process.

I want to point out in the beginning of this talk that Riverside accomplished what it set out to achieve in leaving our old computer systems and introducing our new information technology. We did a lot of preparation and spent a lot of time planning in order to bridge our current infrastructure. And we did good work. But from my perspective, that of the CEO, there is more to do and there always will be.

## **BACKGROUND**

In 1992 Riverside was facing limitations with the computer applications that were running at our hospitals. So we set aside some of our capital reserves, a relatively modest sum of \$400,00, and went about replacing our computer (information) systems. We established a committee called an Information Systems Advisory Committee (ISAC), comprised of members of the user departments, to take the corporation through the planning process and advise administration on the replacement of the old system and the implementation and the operation of the new system. This was in contrast to what Rob Krumm, the author of *Microsoft Office Developers Guide*, describes as so often being the case. He says "In most companies, desktop computing is a tower of Babel. Applications are generally selected by individuals or small groups, without regard as to how this will fit in with other users with whom data will eventually be exchanged". So we were taking a different approach. At that time, we also hired a new manager to coordinate and manage our systems/finance services. Terri Tucker is her name and she became a main driving force behind the bridging process. This was 1992 and 1993 - five years ago.

Two other significant events were also occurring at that time that had an impact on bridging our infrastructure. Firstly, we were a test site for the Ministry of Health "Smart Card" project, which both exposed our staff and departments to leading edge information technology, as well as promoted a closer working relationship with a local pharmacy and a physician group practice. A second relevant element at that time was

the fact that our corporation was involved in the development of a comprehensive health organization (CHO), and the replacement of our computer systems became an integral part of a CHO planning process, with the goal being to integrate Riverside's new information system into a broader community information network linking the information systems of the hospitals, with the doctor's offices, the health unit, home care, the home of the aged, etc. At this stage representatives from the other health agencies were added to the ISAC, including the Ministry of Health participation. With so many parties and stakeholders now on the ISAC, the process became longer, wider, and deeper, in respect to time lines, a growing user membership, and an increasing complexity to information and communication requirements. For example, the price tag rose to something like \$3 million plus and it was 1995 before we knew it. Nevertheless, the committee did a lot of good work and with the expected lift off of the CHO we would see the introduction of a grand comprehensive health information system. In fact the image was one very much like the one on the cover of the program brochure that was mailed out for this conference picturing an Integrated Health System.

## **PLANNING**

During the planning process all of the users, from the hospital and from the other agencies, were involved in determining their own requirements and with the assistance of a consultant, Chi Systems, ISAC was guided through a thorough needs assessment, the development of a specification document , and a vender selection protocol. The consultants' primary role was to guide us through a legitimate and structured process,

and I feel the consultant met that objective. It was now late 1995 and we were awaiting the approval of our information system as part of the CHO.

The Ministry of Health aborted the CHO project in early 1996 and with it evaporated the \$3m information technology dream. But not the replacement of Riverside's computers and information systems. For we had designed the CHO information project as a two staged process - the hospital as the first stage and the other agencies as the second stage; with the hospital stage designed to accommodate external users for information interchange down the road. Riverside went ahead with its stage later in 1996 at a price of \$700,000, with a scheduled implementation period covering a period of twelve months. The schedule is 95% complete. The system is doing largely what it set out to do. I want to add that during the implementation phase the project was supplemented with an internal administrative network, Novell's Perfect Office.

## **IMPLEMENTATION**

I didn't expect the transition from the old to the new systems to be seamless, but on the other hand I did find it to be orderly. I signed ten contracts with ten program vendors and one contract with the middleware supplier, ie. The Flexible Information Transport System, which is the key to our system. The eleven contracts include:

1. Heron Technology Corporation (Markham) - for accounts receivable, general ledger, statistical ledger, budgeting, adt/cpi, ambulatory, emergency, and imaging.
2. Integrated Hospital Solutions (Brampton) - for accounts payable, chart of accounts, and material management.

3. Cactus Systems (Toronto) - for health records and case mix grouping.
4. Computerease (Halifax) - for human resources/payroll and scheduling.
5. EPIX (Montreal) - for building maintenance.
6. Techno Labs (Markham) - for clinical laboratory.
7. Crown Software (Texas) - for pharmacy
8. Coopers & Lybrand (Toronto) - for case costing.
9. InfoMed Development (Vancouver) - for rehabilitation and clinical nutrition workload measurement.
10. GRASP (USA) - for nursing workload.
11. Stratsys Corporation (Markham) - for the Flexible Information Transport System ('FITS')

## **IMPLEMENTATION RESULTS**

What are the results of our implementation, the “bridging” from the old system to the new information system? The system works! When the ISAC had its meeting to make its buy recommendation and invited me to be there I listened to each member give her or his views as we went around the table. It was not just the systems or finance reps that gave their endorsement to the middleware approach. I heard the environmental manager (the chief housekeeper of yesteryear) say we had to go to this new system. Midway through the implementation schedule as I walked through the lab one of the technologists said to me, “This system really works. We can transfer our results right to emergency.” And later when our laboratory manager and our systems manager made a presentation to six other hospital laboratory managers, during the assessment of our Techno Labs laboratory information system versus the laboratory information

system that MDS Laboratories was proposing, the managers favoured our Techno Labs system. When I visited the nursing units part way through their workload information installation a nurse said, "Mr. Brown, we need more computers". I felt these were good testimonials. We left nursing to the end because it was more complicated, larger, and involved nursing units in our two other facilities. But again the nursing managers and the staff put a lot of time and effort into introducing their programs.

And as fate would have it our old system crashed when we were one quarter through our implementation process; and over the course of a weekend our systems staff had recreated what was necessary to run the new system and they didn't look back. But so much for the security blanket of running your old system parallel while you introduce new systems. I have had very little criticism, if any, of the systems that have been introduced.

## **MIDDLEWARE EFFICIENCIES**

I will mention some of the main efficiencies attained by using the middleware product to interface the different applications. The middleware allows us to control and customize our applications. Secondly, the middleware allows us to interface any two applications. And a third efficiency is the ability to reduce duplicate data entry in many of our departments. In fact, we achieve the best of both worlds. The Best of Breed departmental satisfaction with their own product. And we have interfaced products with no ongoing costs to external vendors to support those interfaces.

But there are some other realities that bring an expanded perspective to this IT success story. And some of those are not as pretty. First of all, we are in the age of Management Information Systems (MIS) and while we were in the process of introducing our new information technology systems, we have also introduced the staff to new MIS requirements that add increased expectations and different documentation responsibilities to their jobs. And then along comes case costing and we are selected to be a beta site in what's portrayed as being an essential component in future hospital funding. Nor can we forget that workload measurement has been added, again, as a way of quantifying our services and justifying our Ministry of Health funding. Now, mix in five years of budget slashing and restructuring. These changes, therefore, add a broader dimension to our information technology environment; and I would say colour the overall appreciation for the advances that have been made in helping us bridge our infrastructure with new information technology. This begs the question. Have our new systems helped us get through this change. Yes, for the most part. But the technology as an aid to helping us provide our services has to continually be improved. And other hospitals are not exactly beating down our door, particularly with the concept of middleware, to learn from our experience. In some respects, hospitals don't look at a successful project as being an off Broadway opportunity to introduce a new show, work out the bugs, and then bring it into the mainstream. In fact, I am not sure that it doesn't work in the reverse in hospitals. That is, take the information technology failures of the biggies and export them to the boonies. But that is another story.

## DUMMIES TOP TEN LIST

Perhaps this is where the “Dummies” description can be applied. Maybe this is where I can get away with a top ten list for bridging infrastructure for dummies.

1. The world doesn't stop while you bridge your old technology with the new. Power outages, system crashes, government MIS demands, labour disputes, Social Contracts, budget cuts, case costing, etc. etc. will continue. Deal with it.
2. It takes longer than expected to make the change. While we hit about 80% of our schedule on time, the last 20% has taken the longest, primarily because of the shortage of resources (as a result of sickness and death), consolidation of nursing units, and off-site complications with our other two facilities.
3. Mistakes will be made. We still have some incompatibilities. Administration (me to be specific), wanted an internal network for schedule sharing, desktop publishing, internal email, group administrative tasks, etc. I grew impatient waiting for the CHO/ISAC saga to unfold and went out and purchased Novell's Perfect Office for our administration network. Strictly speaking that's not on the middleware although there does seem to be a peaceful coexistence between the two.
4. It is a neverendum. The bridging process is not a one time final solution. It is one more step in an evolutionary development in information processing, resource utilization, and continuous quality improvement.
5. You may think you're ordering a Cadillac but you'll find that you'll receive an Accord. There is a limit to the budget. So even though we went from \$400,000 to \$700,000, we still had to compromise on the features and applications that we wanted. We

are still missing an order entry component and are working with other hospitals to determine their interest in a joint purchase.

6. The vendors are good to deal with if you've done your homework; even the unsuccessful ones. Stratsys, the Flexible Information Transport System (middleware) was excellent. Their ally, Heron Technology Corp. are our cheerleaders.
7. Don't expect handouts, government grants, etc. to finance your new information systems. You may wait a long time; and equally possible you may have needs corrupted by a Ministry agenda that has different goals from yours.
8. Don't expect your way off Broadway success to be critically acclaimed by the Big Boys. They are absorbed in their own mega system development and either unable or unwilling to acknowledge the benefits that could result from serious cooperation. It is one of the sad ironies of our hospital system.
9. Don't expect the cost returns to jump out at you in the first year, or perhaps ever. Too many other variables have intervened to cloud the return on investment of your new information technology. I just know that when I ask departments if they would like to return to the old system, I hear a resounding NO.
10. We are no closer to the integrated community information system with the other agencies. With their budget cuts and municipal restructuring implications they are absorbed in other priorities.

And remember! A bridge is only a mechanism to get you across an obstacle so that you can proceed to your true destination. I hope this presentation gives you a

perspective on how we are trying to reach our objective. Good luck in crossing your bridge and reaching your goals.