On The Horizon

My Take On It
with William Gearin

Business and Socialized Medicine

I’m of the philosophy that the only stupid question is the one that goes unasked. I’ve learned to believe this in every aspect of my personal and professional life. So, naturally, I often ask a lot of questions.

One question in particular that I’ve been asking since I got into the business is this: Why does the government not provide monetary incentives and bonuses for our Hospital and Healthcare Managers to beat their budget?

Most businesses offer a bonus structure for their managers to meet or exceed certain criteria and goals; a bonus structure is important for many reasons of which most notably are productivity and efficiency. Upper Management will get the most out of their Middle Managers, while Middle Managers will get the most from their subordinates. It is a very effective and proven way to get your people to try new ways of achieving certain goals. To take risks; to “Think Outside the Box”. This creates another question. Just because, “It’s always been done this way” does that mean there isn’t a better way?

Now, don’t get me wrong. I’m not saying anyone in particular is doing a poor job, nor that I could do it any better for that matter. What I am saying is that the government is constantly cutting back and Managers are often doing the best job they can in a system and situation that I think could be better. For certain, there is less and less money. So quite simply, it seems the mentality of the Managers would be to spend every cent of the budget and hopefully it won’t get reduced next year. As a taxpayer and business minded professional that doesn’t make very good business sense: to reward spending and penalize saving.

For example, it is common practice in all business to continually find ways to reduce costs and increase profits. Here is a simple ‘Business Philosophy’ that I learned a long time ago and hangs in my office as a constant reminder:

In order to be successful, we must sell our goods at a profit and still satisfy our customers.
If we satisfy our customers but fail to get the profit, we will soon be out of business.
If we get the profit but fail to satisfy our customers, we will soon be out of customers.
The secret of doing both lies in one word: SERVICE.
Service means doing something so valuable for the customer that he/she is glad to pay a price that allows us to make a profit.

So then why would our government and leaders hold our Healthcare Managers accountable for running their Hospitals as businesses, but not treat them as business people?

I know a bonus structure will not fix every problem or flaw in our current healthcare system. But, for example, we need to crawl before we can walk. However, I definitely believe a bonus structure would be a step in the right direction. And that’s my take on it.

Send your ideas, questions or comments to: willvg@sympatico.ca

On the Horizon: The Right IT Investment Can Lead to Clinical Transformation

Maybe FRANK LLOYD WRIGHT was right about technology when he said, "If it keeps up, man will atrophy all his limbs but the push-button finger." Although the potential savings of time, cost, and personnel are dramatic, the investment this technology demands is no trivial sum for a number of reasons. Most organizations must not only invest in the PAC's technology itself, but also in supporting infrastructure (network, storage, etc.) and integration with, and upgrades to, existing modalities. The challenges facing today’s healthcare providers include: fewer dollars, more expensive procedures, rising costs yet lower transfer payments; increasingly stringent safety standards and a more demanding public; and clinical labour shortages amidst a rising patient population. As organizations face this litany of problems, many are tempted to cut back in the one area that could be their salvation: Information Technology (IT). IT alone, of course, is not the answer. But the right IT investment can lead to clinical transformation—which is the key to overcoming today's challenges. Of all the technologies that promise to transform the business of healthcare, enterprise digital imaging (the extension of PACS technology across the enterprise) is probably the most significant. Enterprise digital

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What’s On the Horizon:
- CT Scanning for Veterinary Medicine
- Message from the CEO
- PACS

“The true measure of a man is not how he behaves in moments of comfort and convenience, but how he stands at times of controversy and challenge.”

~Martin Luther King Jr.~
A Message from the CEO
Horizon Medical Services Ltd. Digiray Inc.

Having spent the last 28 years directly involved in Canada’s Healthcare Industry, I have seen and experienced a significant number of changes.

My career in Healthcare started with EMI Medical Systems in 1975. Hired as a CT Engineer, one felt as if you had “Golden Tipped Shoes”, CT Scanners had just broken into the Medical Imaging Market; even with an 80 x 80 matrix display, the technology was perceived to be “Rocket Science”.

How technology has changed and advanced to the likes of Spiral 16 Slice Machines. EMI no longer exists as a medical equipment manufacturer; they instead, just collect patent royalty cheques on CT units produced by the “Big Four”: GE, Siemens, Philips and Toshiba.

I recently read an article in the April 2003 issue of Medical Imaging: Service Option’s Demystified. Some of the top headers included:

- The Ins and Outs of In-House Service
- ISO’s: The Other Independent Option
- The Kinder, Gentler OEM

We are also seeing a dramatic change in the way service is delivered to the customer. “The Kinder, Gentler OEM” section was of particular interest. Horizon Medical, at that time, was in the final stages of negotiating and signing a Strategic Service Partnership with a major OEM. This Service Partnership is to better facilitate the service delivery on some of their product lines.

The “times are changing” and whatever mode you have chosen for your service delivery, must be weighted on several factors:

- Cost
- Quality of Service
- Response Time
- Experience
- Remote Diagnostics (to name a few)

The importance of each of these will be a large contributing factor in choosing how your service is delivered.

But, you do have a choice; and your demands as a customer has made our industry that much more flexible.

Larry Riley
President and CEO
Horizon Medical Services Ltd Digiray Inc.

On The Horizon: Spiral CT’s for Veterinary Medicine

We do not have to be veterinarians to understand how challenging it is to properly and effectively treat pets that cannot speak for themselves. This is why as veterinarians, we rely so heavily on diagnostic tools such as radiographs, blood chemistries and, more recently, ultrasound. As client’s expectations rise, our ability to pursue advanced diagnostics rises with them.

Newer high tech modalities are becoming both more popular and affordable in our profession thanks to efforts by veterinarians such as Dr. Daryl Bonder and Dr. Jeff Silver. Unfortunately, very few of us have had the opportunity to study them carefully to be truly comfortable with either their uses or applications. MRI and CT scanning are two newer ways of giving us more complete diagnostic images. There are literally hundreds of areas where these technologies can give us the answer in difficult cases. The purpose of this article is to expose veterinarians to many of the clinical and diagnostic applications of CT scanning in daily practice and to stimulate one’s mind as to the possibilities.

CT (Computed Tomography) is a series of thinly collimated X-rays beams that are generated by a tube that rotates around the patient. As veterinarians, we are already very comfortable with the principles of x-rays. The information from each rotation is analyzed by a computer, which then creates a digital image of the volume data in an axial plane. The information from each slice can then be stacked to-

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imaging is defined as a comprehensive solution for organizing, storing, and accessing information from many sources. From a practical standpoint, it is a method of providing clinicians with a single, patient-centric, connection with the many imaging elements and work flows of medical and document imaging.

“Enterprise digital imaging is designed with an enterprise view, the goal of which is to eliminate barriers between imaging services, physicians, and patient information, and make the flow of information seamless.”

Integrating the enterprise digital images into the customer’s computerized patient record (CPR) allows the clinician to make critical patient-care decisions in a timely fashion. It also reduces the number of disparate systems within the organization, and assists in reducing clinical errors. Implementing an enterprise-wide network has the potential to shave hours from the workdays of valuable clinical staff—enhancing their operational efficiency dramatically. The results include faster and improved clinical decision-making, which in turn enhances patient satisfaction, while reducing wait times for procedures.

In addition, this makes it easier to attract and retain vital personnel (a practice in Canada which is exponentially becoming more important (as our Federal Health system privatises.) The main motivation is to have the fastest and cheapest solution for long term archiving. For many large hospitals, the operational and financial benefits of PACS adoption are clear. From lost or misfiled films, films needed concurrently by multiple users, storage handling costs, and the high volume of films generated by scanners—all of these factors contribute to their PACS imperative. However, what about the smaller healthcare facilities and clinics? A clinic with no residents or teaching may have a well-managed file room with relatively good film-tracking capabilities.

**WHY BOTHER WITH PACS?**

Additional revenue and increased modality capacity constraints provide some of the answers. The lure of capturing additional market share from service improvements can be modelled to create an argument in favour of a PACS purchase. Often there is market share that can be taken from the competition if superior service is offered in terms of image and report availability. Once the outstanding market share has been estimated, the potential revenue from even a very small percentage of that share can be forecasted. The positive impact on an ROI may be significantly greater than the effects of film savings or any other expense reductions attributable to a PACS implementation. If revenue increases is included, it can turn the ROI positive in a relatively short period. Even if potential revenue is rejected as a cash inflow for the ROI, the recouped productivity and capacity that results by eliminating film handling by technologists can still be a good "soft" argument for a PACS.

The capability to meet future demand without a commensurate increase in equipment and technologist resources is appealing to most administrators. This is especially true for those institutions that rely heavily on technologists for film-handling tasks and for those areas of the country hit hard by the current shortage of technologists.

**NO ONE WAS EVER FIRED FOR BUYING ‘BIG-BOX’**

Yes, but did they get promoted?

For Ken Holls, PACS Administrator at JACKSON GENERAL HOSPITAL (JGH), his facility’s recent selection of a ‘big-box’ solution was based upon desiring a "relationship with a company they could trust—trust they’d be in business in ten or fifteen years, and also trust they’d support JGH 24 hours a day."

JACKSON GENERAL CIO, Jeff Frielings, furthered, “buying PACS technology is stronger than getting married—you can divorce a spouse almost overnight, but just try and change a database once it’s up and running. You’re talking about a real long-term commitment—that’s the issue in PACS, you’re stuck with the company you choose.”

It should be noted; sailors at one time in history also once feared falling off the edge of the world—as it was widely believed that crossing beyond, what was the horizon, would surely result in their untimely demise. Imagine just how easy it would be to cast fear into those who would question such logic? Certainly, a big-box, map-maker that at that time would not encourage any questioning of this two-dimensional understanding (in lieu of what might become stockpiles of worthless paper.) Moreover, said company might even be better served by bolstering fear and perpetuating the myth.

"Play it safe.” “Don’t rock the boat.” “Why put your head above the trench?” “An opportunity missed is a mistake avoided.” The argument for buying PACS’s from a big-box company is, for many, as seductive as convincing. One can justifiably argue that the big-box systems will do a job that is adequate, acceptable, and competent.

**Adequate? Acceptable? Competent?**

Come, come. Are these the words any of us might want on our annual performance review? Of course not. Weren’t healthcare facilities supposed to be empowered by technology—rather than be bound by it? Wasn’t the “age of proprietary systems and platforms” over?

Wasn’t technology meant to free us from the shackles of draconian bricks-and-mortar inefficiencies? What ever happened to scalability, integration, assimilation, synergy (and a host of other dot-gone buzz-words?) Shouldn’t today’s customers expect to see a tangible return on investment?

Hardware costs are at all an all time low, and platforms are easily interchangeable. Databases are easily upgraded, exchanged and administered using open-platform off-the-shelf, best of breed software. The software is the real equity and subsequently cost, but even, CE-DAR’S SINAQ QGPS add-on, for example, is Microsoft XP compatible, integrates quickly and seamlessly, and costs only around five thousand dollars ($5000 USD) PAC’s quote’s still surface where the software to hardware cost ratio (in conventional ‘big-box’ terms) range from 10:1, to as high as 15:1.

**AN ALTERNATE COURSE OF ACTION - PAC’S PROVIDER PROFILE**

COMPANY: THINKING SYSTEMS™ (www.thinkingsystems.ca)

REVIEW: It’s what notables Yale University, John Hopkins, GE and Toronto Western Hospital have in common.

Anything, anywhere, anytime access to dataocompliments of ThinkingSystems™ provides a unique method of archiving that facilitates retrieve times of less than 30 seconds—for an unlimited number of patient’s images, all-modalities, secure teledicine, and the system: enables fast automatic storage, eliminates the need for creating CD’s (or any other removable media) completely, saves time, space and money. In addition, it allows for the automatic viewing of any DICOM CD created by the system in ANY computer, and makes advanced post procedure viewing abilities, including Telemedicine, report generation, analysis, customisation, and much more. The best part---buy the same components the ‘big-box’ company’s do. Direct—for a fraction of the big-box price. Toll Free in Canada at 877.434.5311

By ANDREW B. GILES (IDSTRATEGY@YAHOO.COM)

ERP/ NETWORK PACS CONSULTANT
Spiral CT’s for Veterinary Medicine: Cont’d

gather and reformatted by the computer to
give you sagittal, coronal or oblique
views. In other words, once the computer
interprets the result, you can see the im-
age from a lot of different perspectives.
With Spiral CT, the computer can also
manipulate the raw data to project 3D
images.

CT scanning is 20 times more sensitive
to differences in tissue density as com-
pared to standard radiographs. It has a
full range of 256 shades of grey as com-
pared to only 5 in standard 2 dimensional
radiographs. CT Slices can also vary in
thickness from 1mm for high-resolution
images to 1-cm. for faster acquisition
times. The sensitivity of the units often
reach a spatial resolution of as little 0.3
mm which means the images are very
sharp. (Varies with each machine.)

The benefit to us as veterinarians lies
in the CT’s ability to bring us detailed
images of areas where ultrasound and
plain radiographs cannot (lungs, brain
etc.). Imagine all the pages of information
in your average newspaper being
compressed into one flat page. This is a
standard x-ray. Now open the newspaper
page by page and read each line. This is a
CT.

High-resolution imaging is used in
many different situations such as in
the nose to rule out causes of nasal dis-
charges, bullae of the ears, intervertebral
disc disease for nerve root compressions
or prolapsed discs without the need of a
myelogram in most instances. The brain
appears clearly on CT.

Trauma cases to the head clearly benefit
from CT through 3D reconstructions
of the skull and the ability to outline any
cerebral hemorrhages. (Although MRI is
more sensitive for the brain itself, trauma
cases are best interpreted through CT
since MR does not outline acute hemor-
rhages as well).

Brain tumours, such as a Meningiomas
and Pituitary macroadenomas, stand out
with contrast studies. Even the optic
nerve and retro bulbar muscles of the
eyes or masses are outlined sharply.

Spiral CT of the chest is still the gold
standard in human imaging. It can outline
very small masses in the chest that can
evade standard x-rays or ultrasound, and
identify their relationship with adjoining
vessels. CT can even image the interstitial
parenchyma of the lungs in high-
resolution settings with surprising clar-
ity.

The abdomen is also a clear candidate
for CT exams. All of the organs are well
visualized along with their associated
vasculature, even the mesenteric vessels
are seen. A thromboembolism or occlu-
sion within the portal vein such as in
complicated bloat case is readily visible.
CT is not hindered by gas, fluid or obe-
sity, factors which may complicate an
ultrasound exam or radiographs. High-
resolution images will identify structures
such as the pancreatic duct and their asso-
ciated tumours or abscesses for example.

In human medicine and surgery, CT is the
norm for pancreatic disease work-ups,
especially when making decisions with
respect to whether the case is feasible for
a tumour resection surgery or not.

Acute pyelonephritis is well visualized
in CT exams. A calculus within a ureter
can even be identified with non-contrast
studies. The scans will demonstrate gas
pockets within abscesses organs thereby
helping differentiate between aerobic
over anaerobic infections in some in-
stances. Infarcts and lacerations within
the spleen, liver or kidneys are routinely
demonstrated in CT studies.

There are more possibilities than can
be covered in the scope of one article.
Each CT slice is a digital creation that
can be manipulated with many different
preset filters and settings in order to bring
to light the desired tissue. With a turn of
the track ball, we can take one scan of a
skull for instance, and highlight the brain.

Turn the settings slightly and the nasal
meatus appears. Open a different filter
and only the bones are outlined. Take the
same raw data, change me reconstructive
algorithm and the inner ear bones and
cochlea appear. All of the information is
present on a single slice, digi-
tally stored.

Where is CT headed? In 1972, the
first crude prototype CAT scanner was
developed. By 1989-91, the
technology made a dramatic
breakthrough with the introduction of
Helical or Spiral CT scanning. It was with
these third generation scanners that the
modality truly took off, developing many
of today’s applications for scanning pa-
tients. The advent of “slip ring” technol-
gy meant that the tube could continuously
rotate around the patient without resetting
itself. Larger surface areas could be
scanned within a shorter period of time
with less motion artifacts and x-ray tube
overheating. Some newer helical CT ma-
chines have now reached sub second rota-
tion times. Faster scans mean contrast
studies of organs are possible in both arte-
rial and venous stages of perfusion. Some
tumours are only visible in one stage. As
in the advent of ultrasound in veterinary
medicne, CT will find new and rewarding
clinical applications limited only by our
imagination.

At the present time CAT scans are
available at the Veterinary Emergency
Clinic in Toronto (416-920-2002) and
Spiral CT scanning can be found at the
North Town Veterinary Hospital in Brampton (905-451-2000 & 1-888-689-
7773) and the Thames Valley Veterinary
Services located in the Lawson Health
Research Institute in London (519-646-
6100 ext. 64679).

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