

TMC'S ADVISOR

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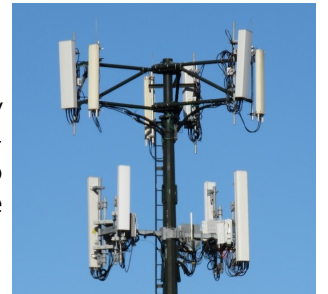
The After-bite of Data Breaches *By Ellen Koskinen-Dodgson*

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The 5G Conundrum *By Tony van Wouw*

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Contact Centre Assessment

If you focus on making callers feel valued, you spend time to select your system and plan the configuration very carefully. You also improve your policies and procedures. Does your customer service reality match your expectation? TMC can benchmark you against:

- Customer expectations
- Your peers
- Best practices

For a complimentary 15 minute discovery call, contact Ellen at ellen@tmcconsulting.ca.



Death Of The Payphone *By Peter Aggus*

They used to be a common sight—before cellphones, but most lose money. Some argue that the entire concept is anachronistic and payphones should just go extinct - but that misses issues like their 'social role' for those who cannot afford personal phones, as well as the fact that payphones are the last line of service in a disaster. Most of us don't need them ... until they become a matter of survival. Payphone demise may have major unintended consequences.



What To Do First – Digitizing Records *By Guy Robertson*

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Bad News

It used to be that a successful cyber-attack was shocking news. When you read about it, it was almost an intellectual exercise and it was fascinating to figure out how the bad guys had gotten past a company's defenses. Things are changing.

Stakes Rise

In the Wendy's press release this month, it became clear that the stakes have risen. Rather than just the usual press releases acknowledging the breaches in some Wendy's franchisees' POS systems and telling people to monitor their credit card charges, a group of banks started a class action suit. Now Wendy's has exhausted their insurance and has had to find an extra \$22.5 million – and this on top of their own legal costs. It doesn't take much to forecast that similar events will bankrupt some companies.

Blame the Victim

Cyberheist News reported that a UK company, Peebles Media Group is suing an employee for over \$100,000 pounds after she fell for a CEO fraud



scam. She transferred money to fraudsters in response to an email that she understood to have been from her vacationing boss. Her defense has been that she had received no training on how to identify the risks of online fraud. If she loses the lawsuit, it's easy to predict that she'll sue for wrongful dismissal and damage to her reputation.

Priority 1

All of this suggests that cyber-security should no longer be just one of a list of many priorities for an IT department. It should not be one of the budget requests that gets balanced off against every other important IT resource request.

Rather, it needs to rise to the very top of the list.

Your Cyber-Security Strategy and Policies need to be a topic of discussion at every level of management. To protect yourself, to protect your company's reputation and, their financial well-being, you need to now look at things from a defense against lawsuits perspective.

Roadmap

Generally speaking, after a data breach, the best defense against any lawsuit from a bank, a customer, or an employee is to 'prove' that you have not been negligent.

This means that you must show how you are following best practices in every area of cyber-protection including systems, monitoring, policies and training. This is not easy as it requires resources that you need elsewhere. It's doubly difficult as the definition of 'Best Practices' keeps changing, becoming more stringent.

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Demand

Demand from users is ever increasing—'more bandwidth', 'higher speed' and 'lower latency'. Yet there is not an unlimited amount of radio spectrum to support such growth. Additional frequency allocation has been made from former broadcast TV spectrum as a partial solution.

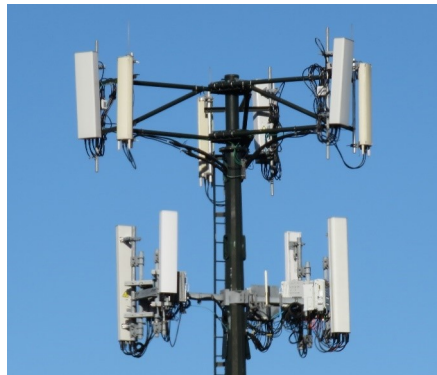
Re-Architect

Lower traffic rural cells may well overlay 5G base stations on the existing footprint of 4G cells, although that will limit 5G's ability to improve bitrate—which is range-dependent.

However the solution for high traffic urban cells is to reduce the cell size massively. Shorter range allows for higher bitrates and lower latency but the biggest issue is simply a numbers game. The number of urban cells is dramatically higher and each cell site requires infrastructure support (like power and back-haul fibre), as well as finding sufficient suitable sites. The costs could be staggering.

Locations

Options include Street Lighting, Traffic Lights, CCTV masts, Bus Shelters and other Street Furniture. With shorter ranges, building rooftops



(as used for 4G) are less attractive and the aim will be to keep sites nearer to ground level—as with urban Wi-Fi.

Shared Sites

WiFi is straight competition using the same frequencies; in contrast, 5G is provider-specific. Attractive as it might be to create a 'shared access network', that is not how 5G has been designed.

The licensing model auctions specific frequencies to different service providers so the antennae and radio gear is provider-specific. As with 4G, site sharing will likely be mandated and competing providers will each install their separate equipment at the site. Whether this is practical within a street furniture installation is

debatable—likely not for more than a couple of carriers. This raises the issue that cities are going to be forced to approve multiple sets of street furniture installations—yet many have started legal action to force the opposite.

As [Peter's article](#) shows, many UK cities that already have lucrative single carrier contracts for WiFi-enabled street furniture are unwilling to allow competition.

Rollout

There are many capacity and technology issues driving 5G rollout. Car manufacturers see it as essential for future automated vehicles; mobile cell sites in trains and busses need the high bandwidth; and there will be needs that we do not yet have.

Many cities, motivated by new revenue streams possible from monopoly deals, see a free-for-all as unacceptable. City planning and revenue models may well be the road block in 5G implementation—not the technology.

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Tony van Wouw is an electrical engineer and wireless communications expert with global experience on microwave, broadcast cellular & other systems. His experience includes Canadian regulatory environment, wired transmission & switching techniques.

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The Decline

By the end of the 20th century, payphone revenue had declined below operating cost, making its future very questionable. Over the next 10 years 75% of payphones across the US were scrapped—and the picture is similar in other countries. Yet there remain many situations where the humble payphone is the best, or even the only, solution.

When the core network cannot support full service, such as in a disaster, payphones represent the fairest way of rationing service and indeed providing any service. The phone system has a 'universal service obligation' and there are still many cases where the payphone is the only access many have to phone service.

The Options

Many have been considered; including advertising, street WiFi, straight government subsidy—and, in the future, 5G cellular base stations.

New York City, for example, makes around \$20m profit from what was a loss-making service. By 2014 NYC had a new contract including advertising and web-based services; with touch screen technology and in-built WiFi.



The whole concept was revisited in the wake of hurricane Sandy, which showed the importance of a resilient public communications infrastructure.

The new service was to be free, with emergency buttons, wireless internet & beacons—at no cost to taxpayers. The bidders were a consortium of companies (financed by Titan advertising, Control Group tech studio, Google and Qualcomm). The result was the LinkNYC kiosk.

[Tony's article](#) looks at how this might help future 5G base stations.

UK Developments

Initial plans to simply market the new kiosk in the UK ran into difficulties caused by the different regulatory

environment. Ironically, the more open UK business had already started to move into offering public WiFi on a large scale using an advertising-funded model very similar to the new US payphone system. This led to a clash where local authorities had already invested in advertising and WiFi infrastructure with options to out-build 5G in the future. As a result they were hostile to competition from new generation payphones.

Ironically the push to provide free public services like WiFi could result in the loss of other services like payphones. This highlights why multiple providers cannot work when the advertising revenue model is predicated on a service monopoly.

The Future

Technology, like the LinkNYC kiosk, is able to address service and emergency issues as well as providing a revenue stream to help pay for it. The biggest risk is of the new city monopolies stifling the competitive multi-provider infrastructure that gives us our advanced services.

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Peter, as an engineer & technology management consultant, has developed innovative & cost-effective solutions for clients in many industries.

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At the top of your list is the conversion of your old records management system to a new technology such as SharePoint, which promises enhanced efficiency. Or to meet industry standards, you will digitize your paper documents for better security of your corporate information.

Big plans make life more interesting and exciting. They can lead to promotion, more responsibility, and higher salaries. But sometimes big plans lead to grief, and you must consider their outcomes realistically.

Assess Yourself

Before you jump in, assess your situation. Are your records in good order? Are they ready to be converted to a new medium, to be indexed for fast access and stored electronically for stronger security and disaster backup. Consider the following questions before you begin any conversion project:

1. Have you designed your metadata architecture? You and your staff want to be able to find your documents through a variety of search methods.
2. Where are your records? Take into account all potential storage



locations. Aside from your file room, you might find document boxes piled high in basements, unused offices, attics, hallways, and parking areas. You might also have records stored in commercial off-site storage warehouses. Be sure you know where all of your records are stored so that you can make accurate estimates of the amount of paper you need to convert and keep your project within budget.

3. How long should you keep records and which should be saved? You need a records retention schedule that tells you how long you should retain your records. Your accounting department might receive

retention advice from various sources including the CRA, but your retention schedule should cover all of your records—not just accounting documents. You do not want to waste money converting records that have no use.

4. What measures do you have to deal with security problems and disasters that involve your records? Are these measures up-to-date, and can you adapt them to protect the records that you convert to a new medium? How will you test your adapted measures, and who will update them to meet new organizational circumstances?

Avoid Magical Thinking

The answers to these questions will help you to avoid magical thinking — unreasonable expectations about any new technology that you adopt to manage your records.

With these answers, you can build a sound project plan that will make it much easier to complete the project

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Guy Robertson is a senior planner at TMC and an instructor at the Justice Institute of BC and Langara College. He has written five books and numerous articles on corporate security and disaster planning, and offered workshops and lectures at conferences across North America and in the UK.