

# The TMC ADVISOR

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## Renting Rooftops for 5G By Ellen Koskinen-Dodgson

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## Beyond Your Primary Regional Focus By Guy Robertson

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## End of the PSTN By Peter Aggus

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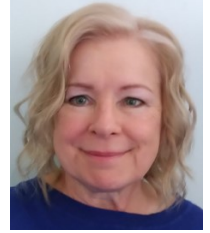
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### Antenna Sites Demand

When we think of cell sites, we imagine towers alongside highways every few km. However, urban cells are often much smaller and the base stations much closer together. These extra sites tend to be installed on building rooftops. 5G cellular has created the need for many times the existing number of urban cell sites.

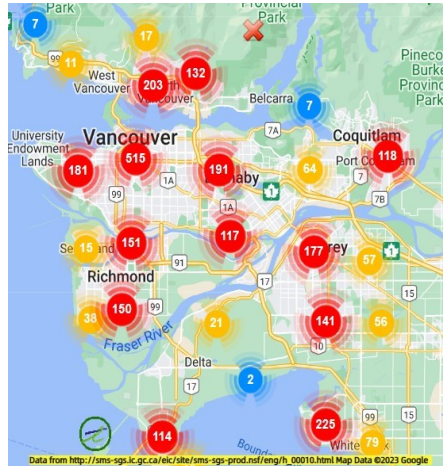
This means that the cellular companies will be looking for suitable buildings to house their new base stations.

Look at the drawing showing the number of current site licences in Metro Vancouver as far east as Port Coquitlam—over 2300 sites.

### Lease Fees

The carriers sign multi-year lease agreements to be allowed to mount their antennae on an existing building. The 'value' of a site is determined by factors like:

- Quantity—the number of antennae that they want to install, usually in groups of 3
- 'View' - the antenna transmission coverage
- Location - rates vary across a metro area
- Competition—the scarcity or overabundance of other suitable options in the vicinity
- Power—can the building owner



supply power, or better yet, generator backed power?

- Space for equipment, if required
- Access requirements—do they need 24x7 access?

While rates vary, a typical urban location might contract for \$10,000+ per year for hosting a 3-antenna installation. We've seen \$90,000 but the site checked all of the boxes.

Carriers like to share costs to economize and it is not unusual for one carrier to build the initial site and sub-let to others.

Savvy landlords either structure the prime agreement to account for this or require a separate agreement with each carrier.

### Safety

There are often concerns over RF

energy levels generated by cell sites, particularly when a concentration of antennae are installed together.

We advise on this for clients and have found instances where staff would have been exposed to unsafe levels if a proposal had been accepted.

### Have a Plan

Cellular companies engage 3rd party agents to find potential sites in the optimal locations to support their network plans.

Be ready to be approached and decide if you're interested and how you'll:

- Establish the right price, considering all of the factors
- Word the contract for maximum flexibility and control
- Ensure RF safety
- Keep the installation from damaging your roof (think wind-loading)

There's a fine line between getting properly paid what the deal is worth and killing the deal by demanding too much.

If you'd like to explore these ideas further or comment on this article, contact me at [ellen@tmcconsulting.ca](mailto:ellen@tmcconsulting.ca).

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## **Beyond Your Primary Regional Focus By Guy Robertson**

Everybody talks about your #1 risk and knows that it will happen, although nobody can say exactly when. In BC it is earthquakes, with the threat of the 'big one' occupying conversations at coffee breaks and during emergency planning meetings. In other regions it could be ice storms or hurricanes. How much of your emergency plan should focus on your #1 risk?



### **Tunnel Vision**

Your #1 risk is what emergency managers call a primary regional focus (PRF), which is a risk that prevails in your region and inspires people to focus on it to the exclusion of other risks. For example, BC is a seismic zone in which little earthquakes occur frequently. seismologists warn BC residents that a big (or "mega-thrust") earthquake could happen at any time. This is true, but there are many other risks that deserve equal and in some cases even more attention.

After all, how many BC residents have been injured or killed in earthquakes since 1950? Almost none. How much damage have earthquakes done to BC properties? Very little.

### **Compare the Risks**

But how much damage has occurred owing to floods, wildfires, and severe weather? How many BC residents have died from Covid-19, or during annual influenza outbreaks? How much money have businesses lost owing to data loss even if "all of their data has been backed up"?

When you compare the likelihood and the impact of the risks that you face, it becomes clear that there are a number of risks that can cause major harm to your organization.



### **Your Current DRP**

It's a serious mistake to write your disaster plan through a PRF lens. Examine your disaster recovery plan. Is it more of an Earthquake Plan? Does your Fire Plan use more than two-thirds of its pages addressing earthquake safety measures? If so, you, your associates, and your company are not protected from most of the risks that threaten them.

While an earthquake plan can be essential to prepare people and facilities for the effects of severe ground motion, it will not necessarily be useful if your office floods, if a wildfire destroys your building, or a pandemic leads to record levels of absenteeism. An "earthquake plan" might not meet the needs of your IT

department. The data you require to conduct business could vanish permanently.

### **Your Ideal DRP**

You need a comprehensive plan, one that covers all of the risks that could harm people and assets. That plan will begin with a thorough risk assessment and analysis (RAA), which will identify the risks that are more likely to result in emergencies and disasters. A good RAA will form the foundation for an effective disaster plan that includes all of the measures and procedures you need to protect yourself and to stay in business.

These would include instructions for assessing damage, deciding on whether staff need to move to alternate quarters or go home, what and how to communicate with staff and customers, what procedures to follow during the disruption, etc.

Avoid concentrating on your PRF alone. Give people a disaster plan that's worth talking about.

If you'd like to explore these ideas further or comment on this article, contact me at [guy@tmcconsulting.ca](mailto:guy@tmcconsulting.ca).

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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.*

## **End of the PSTN** *By Peter Aggus*

The Public Switched Telephone network was created to interconnect telephones using copper wire connections. Copper is on its way out, being replaced by digital delivery to the customer, usually over fibre optic cable. New technology is great for telephones but other services work best on the PSTN and we rarely think about them. How did we get to this? What do we need to do?



### ***PSTN and POTS***

Until the latter half of the 20th century, the entire PSTN was analog, and it was the largest man-made technical artefact ever created. A single user was connected to the CO (central office) with a pair of copper wires. The service provided by this technology is referred to as 'Plain Old Telephone Service' or POTS. While there is still a need for POTS as a service, its delivery via the PSTN will end.

### ***Evolution to Digital***

The Main Network, connecting COs, originally used a 4kHz analogue audio channel for each call with multiple calls multiplexed together on one link. By the late 20th century the Main Network was, in many countries, built using 64KBit/s digital channels - known as the Integrated Services Digital Network (ISDN).

### ***Moving to IP***

In parallel, the IT world focussed on packet switched technology using the then new Internet Protocol, or IP. The delivery of internet to end users originally used dial-up modems over the PSTN. This evolved to ADSL, where internet was piggybacked onto the existing copper pair telephone service. Broadband internet delivery started sharing cable TV delivery systems.

Years later, the cost of copper drove the replacement of copper cables by fibre to



a kerb-side 'cabinet' or directly to end users, making fibre broadband delivery the latest technology.

### ***Deregulation***

The telco monopoly evolved in many countries into a free-market system. It rapidly became apparent that IP was significantly cheaper than ISDN and offered more evolution options. Business phone systems started to move from digital circuit-based systems to Voice over IP systems, enabling the sharing of office networks and ending the days of separate voice and data wiring.

Internet service was available from many companies and PSTN providers lost high volume customers. Regulators had to levy cross-subsidies where the new entrants had to pay to support the old PSTN providers and their legacy services. Pressure is on to

remove that subsidy and effectively kill the PSTN service where adequate broadband IP service exists.

### ***Non Speech Use***

The biggest non-voice PSTN service is fax. There are IP-based fax services and document scanning is now commonplace but PSTN fax remains simple and verifiable. VoIP technology is not fax-friendly because of its lower coding bandwidth and variable latency. It is possible to compensate, but most users have traditionally installed stand-alone PSTN lines for their fax machines, alarm lines, etc.

### ***What Should You Do?***

The future of the analog PSTN is limited—In many locations it is already unavailable. Your services **MUST** migrate to delivery on an IP platform. Simply using PSTN-over-IP boxes will frequently not work unless those boxes are an end-to-end solution that compensates for latency drift and other imperfections. Why go to that expense when every service can be built better on a native IP platform?

If you'd like to explore these ideas further or comment on this article, contact me at [peter@tmcconsulting.ca](mailto:peter@tmcconsulting.ca).

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

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### **16,000,000 and Counting**

DoNotPay claims to have helped users contest over 16 million parking tickets. They also assist with other legal issues such as getting refunds for cancelled flights, help in completing legal documents such as refugee applications, as well as advice on various topics.

They operate on a short-term subscription basis.

### **Milestone Case**

Assisting someone in traffic court is a significant milestone for DoNotPay and the field of AI law. The chatbot will be "arguing" a case on behalf of a client who was issued a speeding ticket. The case will be heard in a US traffic court in an undisclosed location, with the details to be released after the court date.

### **How it Works**

The defendant will wear an earbud in court and has been told to say only what the bot instructs him to. The judge will not be informed of the fact that the chatbot will be used for this case by the defendant, though it may become apparent very quickly as the defendant repeats words from the chatbot, stops talking to listen, then says more words.

DoNotPay has said that it will be responsible for presenting evidence, making arguments, and cross-examining witnesses.

DoNotPay committed to pay any fines and costs related to the lawsuit, should



the judge decide against the defendant.

This may also lead to another "practicing law without a licence" lawsuit.

### **\$50M Lawsuit**

DoNotPay has already been the subject of a \$50 Million Dollar lawsuit as a group of lawyers in Northern California alleged that DoNotPay was engaging in the unauthorized practice of law in providing legal advice and representation to individuals without the proper licensing and qualifications.

The court ruled in favor of DoNotPay, stating that the chatbot was not engaged in the unauthorized practice of law as it was not providing legal representation to individuals.

The court also noted that the chatbot was intended to assist users with the

process of resolving legal issues, and was not intended to replace the need for a human lawyer.

### **AI in Strategic Planning**

Specialty AI applications providing advice in the areas of:

- law, such as lease contracts
- in HR, such as building a case for dismissal with cause
- completing construction permit applications

will become more available and more useful over time.

There are likely to be unexpected obstacles as well, as the "practicing without a licence" lawsuits with DoNotPay. If an AI app becomes an entrenched part of your work process and a lawsuit requires that you stop using it, you need to include a Plan B.

It's important for AI to become a topic of conversation for IT as well as senior management and for AI to be addressed in Strategic Plans.

If you'd like to explore these ideas further or comment on this article, reach me at [roban@tmcconsulting.ca](mailto:roban@tmcconsulting.ca).

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