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feature story

## IP... WHAT IS IT AND WHY DO I NEED IT?

Ever wondered how information gets transferred from A to B in the vast electronic landscape of nothingness that is Cyberspace?

Well, even if you hadn't we're going to tell you. Internet Protocol (IP) is the method or protocol by which data is sent from one computer to another on a private network or over the Internet. Basically, every computer (a.k.a. host) has at least one IP address that uniquely identifies it from all other computers on a given network. Let's call it a fingerprint, shall we?

When you send or receive data – an e-mail or Web page, for instance – the message actually gets divided into little chunks called 'packets', which contain both the sender's IP address – or fingerprint – and the receiver's IP address.

**NOW, THESE PACKETS** are transmitted through a series of gateway computers, which read the destination fingerprint and forward the packet to adjacent gateways until it reaches the gateway that recognizes it as belonging to a computer within its immediate neighbourhood or domain. That gateway then forwards the packet directly to the computer whose fingerprint is specified.

Easy concept, isn't it?

Now, because a message is divided into any number of packets, each packet can actually be sent by a different route across the network, thus arriving in a different order than the order in which they were sent.

But the Internet Protocol just delivers the goods. In this case, think cyber FedEx, without the time guarantee. Each packet that travels through the network is treated as an independent unit of data without any relation to any other unit of data. It's up to another protocol, the Transmission Control Protocol (TCP), a connection-oriented protocol that puts everything all back in the right order.

**An estimated 90% of small and medium enterprise companies are already IP-enabled.**

### So Why IP For My Business?

**Ease of use and proliferation.** Despite the key feature of IP being a connectionless protocol, you can establish communications to just about anywhere. What does that mean to you? It means that you and your company would have the ability to communicate with virtually anyone, anywhere in the world by using IP. That's power.

**Cost-effectiveness.** IP's full flexibility and scalability enables you to start off small and increase appropriately. You never have to change your existing architecture, which saves you tons of dough. What could be better?

**Security.** Think complete private network... with almost all the advantages of the Internet. And if you need a primer on *why* you need security, just check out page 3.

**Futureproof.** Let's face it... within the next year or two, it's likely that every communication device on the market will be able to establish an IP connection with another device.

#### The Bottom Line

When data is transmitted it is sent in 'packets', each containing both the sender's and the receiver's IP address. These packets are transmitted through a series of gateway computers until it reaches the one that recognizes it as belonging to a computer within its domain. The packets are then directly forwarded to the specified computer.

*Of course, if you are NOT using an AT&T Canada IP Service, do yourself a big favour, go to [www.attcanada.com](http://www.attcanada.com) and check out Data section, Business IP Services for more on network or desktop IP solutions that take advantage of the connectionless features of IP while delivering the highest quality of service that you deserve.*

You'll be glad you did.

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## Telecommunications Made *Eeeeeasyyyyyyy*...

**QUESTION.** What's the most underrated business-critical component to your success?

Qualified marketing personnel? Strong sales teams? Nope.

If you said your local phone service, you cheated and read ahead, because no one would have thought to say that. But you'd be right. We'd have accepted coffee too...

### What does it all mean?

- **CLEC** – Competitive Local Exchange Carrier.
- **ILEC** – Incumbent Local Exchange Carrier.
- **DMS 500/250/100** – Digital Multiplex Switch; refers to the switch through which all local calls get routed.
- **Hunting** – A group of local accesses identified by numbers or circuit IDs which roll to one another in a predetermined (programmed) manner based on the users' needs.
- **Non-Hunting** – Stand-alone local accesses.
- **Pilot** – The main or lead telephone number in a "hunt" group.
- **Co-locate** – When a CLEC locates their own switching equipment in an ILEC's central office, thereby gaining access to the ILEC's copper loops, which are the actual lines that run to an end-user business.
- **Resale** – When a CLEC purchases the entire service package from an ILEC and resells the service to the public.

Here's the deal.

You're a PR firm that's opening a new satellite office in lovely Fiction, BC.

Beautiful scenery. Quiet streams.

Very competitive market.

But certainly you think you can compete with the big boy incumbents from Vancouver. You've set up your communications infrastructure and you're all set to go. Except for one thing.

Geez. Why don't the phones work around here??

Looks like someone didn't ask the service provider the right questions. Maybe that's because they didn't know what to ask or how to ask it.

Here's a crash course on what to consider when evaluating a potential service provider.

**Investment** – How long has the provider been in the market? How long has the provider been in the business? What is the company's service delivery track record? How much investment has the provider made to develop and/or expand its business? Am I going to get the same or better service from the provider in five years as I will now?

**National Footprint** – Can I have all my locations serviced by a single provider? What are the advantages of a national service provider to a growing business like mine?

**Business to Business** – Where is the potential provider's focus? What kind of clients entrust the provider with their business?

**Account Support Provider** – How can I contact my provider and when? How quickly will I get answers to my questions?

**Servicing YOUR Customers** – What should I be looking for in terms of a customer service package for my valuable customers? If a customer service number I've published goes down, what are the repercussions?

**Full Product Suite** – Can this potential service provider satisfy all of my telecom needs?

Need we say more?

Because we can, if you like...

*There are a lot of things to know and a lot of questions to ask when making your local service decision. To learn more about local service offerings, go to [www.attcanada.com](http://www.attcanada.com), and have a look at our **Voice section, Local Services.***

See what benefits YOU.

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## Just So You Know...

- Alexander Graham Bell, inventor of the telephone, was originally an instructor for deaf children and invented the telephone to help his deaf wife and mother to hear.
- In Atlanta, Georgia, it is illegal to tie a giraffe to a telephone pole or street lamp.
- When commercial telephone service was introduced between New York and London in 1927, the first three minutes of a call cost \$75.00.
- According to Modalis Research Technologies, 70% of small and medium-sized businesses (SMBs) and government or non-profit organizations in North America feel that having an intranet is important.
- There are more than 200 satellites orbiting earth solely for the purpose of private communications services, including pagers, telephones and computers.
- In computer-ese, “wysiwyg” is an acronym for “what you see is what you get.”
- The average wired adult will spend 5.3 percent of the rest of his or her life online, according to research firm Cyber Dialogue, based on an extensive survey of Internet users. The study’s results showed that the average adult online today will spend a total of 23.5 months of his or her life online. That’s 17,500 hours.

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## Security Solutions – Complete Protection for Your Business

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If your company has employees, partners, suppliers or customers that go online to retrieve, transfer or review information, then you have a security need. Period.

**REMEMBER WHEN CONNECTING** to the Internet was considered a luxurious competitive advantage?

Ah yes, the good old days. Now everyone and their distant cousin's third wife's crumpet shoppe has a web presence. After all, the Internet represents another avenue to enhance communication, promote customer loyalty and build stronger bottom lines. But the move to an increasingly digital economy has spawned a Pandora's Box of threats to the viability of online initiatives.

Hackers. Viruses. Loss of proprietary information. And perhaps the most insidious of them all, corporate espionage. The nerve. Will the competitive insanity *ever* stop?

Can companies protect their networks, their employees and their credibility? Sure.

### Why Security? Why Now?

If your company has employees, partners, suppliers or customers that go online to retrieve, transfer or review information, then you have a security need. Period.

But it goes beyond that. Companies are now buying and trading online, and connecting branch offices and remote workers. With such huge volumes of activity, the vulnerabilities are even greater.

It is crucial to recognize that a company's security needs constantly evolve according to

current and changing business requirements. With an effective and scalable security strategy, companies can truly leverage the Internet to realize its vast potential. They can conduct business online, ensure data integrity and confidentiality, promote customer trust and loyalty and hopefully make a kajillion dollars.

### Here's Where Your Trusty Security Provider Comes In...

Security providers are trained to assess your specific security risks and give you all the information you need to make an informed decision on your security initiatives. But just because we care, here's a helpful checklist of topics to touch upon when you talk to a security provider:

- **Access control** – who can access what data; this can be tiered and/or customized, and settings can be changed at any time by you or other authorized personnel.
- **Encryption** – encrypting your data provides the safety of a secret code, particularly while the data is in transit; as the level of encryption increases, the more secure the data becomes.
- **Authentication** – ensures that only authorized individuals are connecting to your network. Authentication identifies a user through his/her password and username.
- **Virus / content security** – self-explanatory;

let's try to keep worms and viruses out of the picture.

Once the infrastructure has been protected, and the right people are accessing the right information at the right time, advanced information risk management – including enterprise decision support, enterprise security policy management and resource management – completes the process.

Not every company requires the entire security package. The key is to make sure you understand what you need so you can get what you need, when you need it.

And of course, it's always in your best interest to make sure your vendor is reputable. You know what they say about the shoemaker's kids.

Being a true e-business means focusing on revenue, growth and success.

Not fear.

Make it your business to protect your business.

*For more information about AT&T Canada's Security Solutions, check out*

<http://www.attcanada.ca/security/>

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# Real Business Opportunities

## Amid the Wireless Hype

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UNLESS YOU HAVEN'T COME OUT of your office in the last few months, you'll know that the latest buzzword getting all the pundits excited is – 'wireless'. However, while the hype spotlight has focused on personal use of devices, not much attention has been paid to the potential business opportunities coming down the pipe in the wireless space. Here are the three wireless business opportunities I'm most closely watching this month:

### 1. Extending the Office

One application of wireless technology proving to have the strongest ROI (return on investment) is extending the business office. For instance, sales executives receiving urgent e-mails from customers on their cell phones, inventory managers getting alerted to problems regardless of where in the building they are, and so on.

There are simple ways to try it out, if you don't want to commit yet to enterprise-wide infrastructure – by using e-mail filters or Outlook 'rules', you can tell your e-mail program to automatically forward any e-mail you receive to the e-mail address of your pager or cell phone.

But the category is growing and becoming easier to use. Last month, Microsoft launched its "Mobile Manager" program that works in conjunction with its Outlook client and Exchange server. The Mobile Manager is a set of screens that help users set mobile content delivery preferences. Accounting for the small screens on mobile devices, the Mobile Manager will even replace long words with shorter synonyms, or drop all vowels, resulting in an odd but readable abbreviation-like code.

Companies working on more complete wireless office enablers include Vancouver's Infowave, which specializes in opening corporate data behind firewalls to wireless devices, without compromising security.

### 2. A New Advertising Avenue

Start talking about ads popping up on cell phones and you'll get two reactions: marketing

managers begin salivating, and cell users begin shuddering. Most people imagine wireless ads will start making our cell phones beep all the time, but there are two less intrusive models existing today that your company may want to investigate.

1. Branding on wireless portals: Just as you have a home page on your web browser, you will soon have a home screen on your cell phone. Acting as mini-portals, these sites have already started placing brief logos and company information on their screens.

2. Permission marketing: With your customer's permission, and only with their permission, you could send marketing-related e-mails to their wireless devices – for instance: weekly specials, alerts to B2B auctions about to close, time-limited offers, and so on.

### 3. Where You At?

Once cell phones can identify their geographic location to within ten metres (through technologies advanced by companies like Calgary's Cell-Loc), a number of interesting applications will begin to appear. You will be able to page your customers as they walk past your retail storefront, alerting them to specials on products they've indicated they use. One interesting model is from BarPoint.com.

You're fixin' to buy a pair of shoes. But before you run to the cashier, you quickly punch in the UPC barcode number of the shoes you want, and your wireless device sends that information and your current location to the BarPoint servers. The servers match that information with a list of its retail partners, and you're given a list of locations to buy the same product cheaper within a five-minute walk.

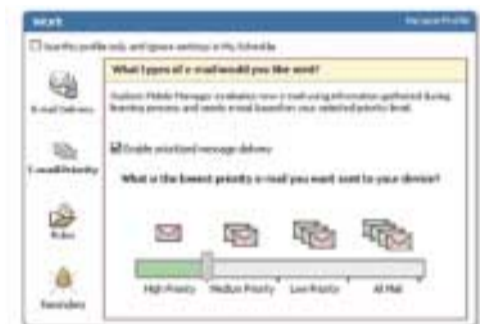
In the short-term, location based services will provide an easy way for users to locate the nearest Greek restaurant, the nearest bank machine, and so on. But don't wait for this technology to revolutionize much in the next two years – this one is still in its infancy.

In summary, while the opportunities for wireless in the workplace are numerous, it

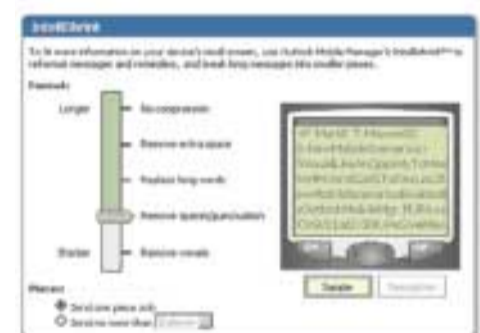
will be the less glamorous applications, like extending office e-mail to wireless devices, that will provide the strongest ROI.

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Technology futurist Tod Maffin is "one of Canada's most influential futurists," according to the *Globe and Mail*. He delivers conference keynotes to more than 50 conventions and company meetings per year, and he is the host of "todradio.com" – a live, interactive national radio show on CBC Radio One (Tuesdays at 8:00 PM). His web site is <http://TodMaffin.com>.

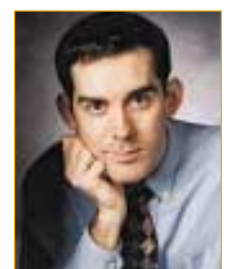


Microsoft's new Mobile Manager can shrink e-mail content down to fit on small screens.



Microsoft's new Mobile Manager gives users easy sliders to manage what content is sent to their wireless devices.

by Tod Maffin  
Technology Futurist and Broadcaster





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## A BEVY OF RADICALLY USEFUL LINKS

<u>Link</u>	<u>Category</u>
<a href="http://www.empori.com">www.empori.com</a>	Future Trends
<a href="http://www.howstuffworks.com">www.howstuffworks.com</a>	Telecom 101
<a href="http://www.trusecure.com">www.trusecure.com</a>	Security
<a href="http://www.emarketer.com">www.emarketer.com</a>	Omni Statistics
<a href="http://www.personalization.com">www.personalization.com</a>	e-Business Resource





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## HELP US HELP YOU



# FEEDBACK

Here's your chance to tell us how you feel about Sphere. What did you like? What didn't you like? What's missing that you would you like to see? And most of all, what would you like to learn from Sphere and from AT&T Canada?

Feel free to drop us a line – these people did...

*"...alternative layout and casual tone is a refreshing change."*

*"The Futurescope article on "Human File Transfer" was very useful. I enjoy reading about technology development and a glimpse into the future."*

*"Telecommunications Made Eeeeeasyyyyyyyy provided me a nice quick update to the types of data transmissions."*

*"I'd like to see more articles like Futurescope. Gives us insight into the future. Just a great layout and easy to read."*

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