

Saved With A Click: Savings on Long Distance Calls

- Presented by
 - Ottawa Public Library
 - National Capital FreeNet
 - City of Ottawa

Objectives of the Session

- How can I save \$ on long distance?
- What do I need to make this feasible?
- What are the limitations and/or tradeoffs?

Three Parts

- I. Use your analog handset or cell phone:
Calling Cards
- II. Use your analog handset over the internet:
VoIP Telephony
- III. Use computers, tablets and smart phones:
Skype, WhatsApp, FaceTime, Viber, LINE...

PSTN vs the Internet

Part I

- **Public Switched Telephone Network** (“Analog”)
 - Conventional land lines
 - **Plain Old Telephone Service**

Parts II and III

- The Internet (“Digital”)
 - **VoIP: Voice over Internet Protocol**
 - Computers, tablets, smart phones, Software

Part I: Calling Cards

- Use anywhere on any Touch Tone or cell phone
 - Home phone, cell phone, hotel phone, other peoples' phone, pay phones
- As far as your home phone is concerned you're placing a local or toll-free call
 - Reduce charges to 1 cent per minute or less
 - Rates depend on country!

Part I: Calling Cards

Send their value to other countries

- Rates to call you may be lower than if you call
- Example: Digicel ↔ Jamaica
- Value can be used to top up data plan

Part I: Calling Cards

- Add steps to placing calls
 - Dial an access number + PIN + Number
- Fees
 - Connection: charge for connecting each call
 - Maintenance: rather like monthly bank account charges
 - Taxes
 - Local Access Number vs toll-free number surcharge

Part I: Calling Cards

- Expiry
 - Six months to a year from date of first use, but check
- Minute rounding
 - Not second-by-second
 - Five seconds charged as one minute
 - Some may round up in increments of three or more minutes

Part I: Calling Cards

- Many retail outlets carry them
 - Even more easily bought and refilled on-line
- Very large number on the market
 - Inform yourself
 - Try small denominations first
 - Reputable suppliers will advise you well

Part I: Calling Cards

- <https://www.ontariophonecards.ca/callingcards?page=0>
 - Ontario Phone Cards
 - Dealer for many suppliers of phone card
- <https://settlement.org/ontario/daily-life/communication/phone/what-do-i-need-to-know-about-prepaid-long-distance-phone-cards/>

Pause: End of Part I

Part II

- **Part II** will discuss using your standard (=analog) land line phone in a new way
 - IP Telephony, or **Voice over Internet Protocol - VoIP**
- **Voice over Internet Protocol**
 - Converts your voice into data packets (Analog to Digital Conversion)
 - Routed over the internet instead of the phone network
 - Converted back into sound at the other end (Digital to Analog Conversion)
- Examples
- Tips

VoIP “Box”: ATA

- **ATA: Analog Telephone Adapter**
- Where conversion to and from digital is done
- Router → ATA → Your phone
 - Corded or cordless phone(s)



Pros of VoIP

- Reduces costs
 - Businesses, institutions save \$\$\$ (50-75% savings)
 - Home users save as well
- Usually unlimited long distance in Canada and US
- Savings on international calls with plans or calling card-like options
- Free calls when both use the same network/vendor

Pros of VoIP

- Innovative features: Ex. - have voice mails emailed to you
- Portability: take your phone/ATA with you
- Keep your existing phone number
- Data load is low
 - Calls use ~0.5 MB of data/minute → 500 MB data plan yields ~1000 minutes
 - G729a codec might yield even more
 - Trade-off in sound quality

Cons of VoIP

- Can be lesser voice quality
- Must have power > UPS for modem/router, ATA, cordless phone base station if used
- 911 service. <https://crtc.gc.ca/eng/archive/2005/dt2005-21.htm>
- Depends on the speed and quality of your internet connection
 - <https://Peakuse.ncf.ca/>
- Fax and Alarm systems

VoIP over Analog Phones

- Many companies offer service
 - <https://www.gonevoip.ca/residential-voip/>

VoIP over Analog Phones

- **Ex. 1: Fongo*** <https://account.fongo.com/home-phone/register/>
 - Adapter: \$59 + \$15 FedEx
 - Port your phone number: \$25
 - Or have them supply a new number: no charge
 - \$4.95 for 911 service and network access
 - \$4.95 per **month**

**Mention here does not constitute a recommendation*

VoIP over Analog Phones

- **(Fongo*** continued...)
 - Unlimited calls within Canada
 - 2¢/min to US, 3¢/min to India
 - Caller ID, Call Forwarding
 - 911 Service, Conference Calling

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VoIP over Analog Phones

- **Ex. 2 : majicJack™*** <http://www.magicjack.com/index.html>
 - Adapter: - Includes 12 months subscription
 - \$44.98 <https://www.walmart.ca/en/ip/magicjack-go-phone-calling-system/6000191296270>
 - \$49.74 <https://www.amazon.ca/magicJack-Digital-Phone-Service-months/dp/B00LN0OM14>
 - Port your phone number: \$US19.95
 - Or have them supply a new number: no charge
 - \$US42.51 per **year** or \$US97.01 for three year plan

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VoIP over Analog Phones

- (magicJack™ continued...)
 - Unlimited calls within Canada **and US**
 - International destinations – Example: India 2.5¢ US/Minute
 - Free calling to other magicJack™ users anywhere

VoIP over Analog Phones

– Ex. 3 : Vonage*

- Higher end of price spectrum <https://www.vonage.ca/>
- Packages of features for ease of use, with an eye to international usage
 - Use smart phones as extensions
 - boomerang™ – ensures **caller** gets free calls

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VoIP over Analog Phones

– Ex. 3 : Vonage* (continued...)

- Virtual Number – 22 countries people can call you “locally” from
- Have incoming calls ring on multiple phones, or be forwarded to multiple phones
- Plans that bundle unlimited calling to many countries
- Plans tailored for Philippines, China, South Korea

- YGWYPF

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VoIP over Analog Phones

- Trials!
 - See how you like it, before porting your number
- As you see, wide variety of prices and packages
- Relative cost is low for suppliers to try the market
 - Existing internet infrastructure
 - Adapters can be sourced inexpensively and private labelled
- General note with VoIP: You should consider another phone for 911
 - Example: prepaid cell

Pause

Part III: Computers, Tablets, Smart Phones

- Leaving behind the “analog” world
- Use 3G, 4G or LTE data plan or WiFi on smart phones
- Use Ethernet or WiFi on computers
- **Free** voice calls, free video calls, free conference video calls
- “What the kids are looking at on those phones”

PART III

- By the end of 2017, 4.15 billion people had used the services of the Internet within that year—over 100 times more people than in 1995

Putting some numbers to that

- **Rank Name Company Active user accounts Date launched Country of origin Date of active user stat.**
- 1 Facebook Facebook 2.23 billion[3] February 2004 United States June 2018
- 2 YouTube Google 1.9 billion[4] February 2005 United States July 2018
- 3 **WhatsApp Facebook 1.5 billion[5] February 2009 United States January 2018**
- 4 **Messenger Facebook 1.3 billion[6] August 2011 United States September 2017**
- 5 Instagram Facebook 1 billion[7] October 2010 United States June 2018
- 6 **WeChat Tencent 1 billion[8] January 2011 China March 2018**
- 7 QQ Tencent 868 million[9] February 1999 China December 2016
- 8 Qzone Tencent 638 million[10] May 2005 China December 2016
- 9 Tumblr Verizon 550 million[11] February 2007 United States January 2017
- 15 **Skype Microsoft 300 million**

VoIP over Smart Phones

- Smart phones are ideal for integrating computer functionality with communications
- Those with standard phones are using smart phones as well
- Providers of VoIP telephony such as those discussed supply smart phone apps that extend the usefulness of their services

VoIP over Smart Phones

- Fongo Mobile*

<https://itunes.apple.com/ca/app/fongo-free-calls-+-free-texts/id473770452?mt=8>

- Free unlimited calls/texts to any other Fongo Mobile user anywhere
- Uses your existing phone's existing 3G, 4G or LTE data plan or WiFi

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WhatsApp



- Owned by Facebook
- Voice and video calls are free among smart phones with the app
 - IOS, Android
 - Windows and macOS clients that work only when a smart phone running the app is synced
- Fully encrypted end-to-end

Facebook Messenger



- Chats, voice calls, video calls and group versions of all
- Android, iOS, Windows app with messaging capability
- Integrated with Facebook
 - Same log in credentials
 - Messenger users show up in Facebook when logged in

FaceTime



- Proprietary to Apple
- All the “i”s: iPhone, iPad, iPod
- Also Macs
- Video and/or audio calling

Skype



- Venerable – launched in 2003
- Owned by Microsoft since 2011
- Instant messaging, video and/or audio calling and conferencing
- Widely supported
 - Android
 - All the “i”s: iPhone, iPad, iPod
 - Windows and Macintosh
 - Xbox One
 - Hololens

Many Others

- Viber, WeChat, LINE, Google Duo, imo, Houseparty, Blackberry Messenger, Google Hangouts, ICQ, KakaoTalk, Tango...
- Example: <https://icq.com/windows/en>

In-App Purchase Options

- Frequently found in free apps in general
- In context of LD, a way to call those without the app
- Set up an account to buy time
 - Calling card-like
 - Skype, Viber, Fongo (Examples)

Summary

- Part I: Calling cards for analog phones
- Part II: VoIP for analog phones
 - Your internet connection: no phone system
 - Wide-area free calls
 - Mature technology

Summary

- Part III: Smart Phones, Tablets, Computers, Game Consoles
 - No monthly subscription, ISP only
 - But, remember it is the internet
 - Security and privacy considerations