

[ Pop captions up ]

**Briana McIvor:** HEY, THANKS FOR STOPPING BY "THE LAB."

I'M BRIANA.

AND SO YOU THINK YOU CAN DANCE

AND YOU THINK YOU CAN SING, BUT

CAN YOU Google?

RYAN'S GOT THE SECRETS TODAY ON "THE LAB."

[ Pop captions down ]

(Theme music: Digital, integrating dial-up modem)

[ Pop captions up ]

**Leo Laporte:** (panting) HI, WELCOME TO "THE LAB,"

I'M LEO LAPORTE.

I WAS ALL THE WAY DOWN THE STREET --

**Briana:** OH, MY GOD.

**Leo:** -- WHEN I HEARD THE

MUSIC AND I SAID I'VE GOT TO

GET BACK, WE'VE GOT A SHOW TO DO!

THIS IS THE SHOW WHERE WE HELP

YOU UNDERSTAND TECHNOLOGY,

COMPUTERS, THE INTERNET, CELL

PHONES, CAMCORDERS, MP3s AND,

YES, THE Google.

[ Pop captions down ]

**Briana:** THE Google.

YOU KNOW WHAT, EVERYONE THINKS

IT'S SO SIMPLE, BUT THERE'S SO

MANY HIDDEN LITTLE SECRETS.

**Leo:** OH, COME ON.

REALLY?

**Briana:** YEAH.

LOTS OF THINGS TO KNOW.

**Leo:** MAGIC, Google MAGIC?

**Briana:** Google MAGIC.

**Leo:** WELL, IF ANYBODY CAN DO  
IT, RYAN YEWELL CAN.

**Briana:** THAT'S TRUE.

**Leo:** RAY MAXWELL IS ALSO HERE.  
HE'S GOING TO DO MAXWELL'S MUSEUM.  
RAY IS SO COOL.

I MEAN, HE TEACHES US SO MUCH,  
BUT HE ALSO HAS AMAZING STUFF  
FROM THE HISTORY OF TECHNOLOGY.  
WE'RE GOING TO TALK-- THIS IS  
THE TRANSATLANTIC CABLE EPISODE.  
I'M REALLY EXCITED ABOUT THIS.  
AND WE'RE ALSO GOING TO TALK  
ABOUT Googling, AS I MENTIONED.  
AND WHAT ELSE HERE?

**Briana:** AND IF YOU HAVE A  
WEBSITE, IT COULD BE FEATURED  
ON THE WEB WORKSHOP TODAY.

**Leo:** OH, MARK YUASA IS GOING  
TO DO A WEB WORKSHOP.

**Briana:** YEAH.

**Leo:** HE DID SUCH A GREAT JOB  
LAST TIME AND I FELT REALLY BAD  
BECAUSE WE KIND OF HAD TO RUSH  
THROUGH IT --

**Briana:** MM-HMM.

**Leo:** -- AND WE DIDN'T GET TO  
SEE HIS FINAL VERSION AS MUCH

AS I HAD WANTED TO, BUT HE IS  
REALLY GOOD.

**Briana:** YEAH.

**Leo:** SO, WHAT HE'LL DO,  
HE'LL DO THE SAME THING, HE'S  
GOING TO TAKE AN EXISTING  
WEBSITE, COMPLETELY CLEAN IT UP.  
BY THE END OF THE SHOW, YOU'RE  
GOING TO SEE AN AMAZING THING HAPPEN.

**Briana:** AND IT COULD BE YOURS.  
WE DON'T KNOW.

**Leo:** WELL, WE KNOW, BUT THEY DON'T KNOW.

**Briana:** YEAH, THEY DON'T KNOW.

**Leo:** WE KNOW.

**Briana:** WELL.

**Leo:** DON'T WE KNOW?

WE DON'T KNOW?

**Briana:** MARK KNOWS.

**Leo:** (laughing) SOMEBODY MUST KNOW.

**Briana:** YEAH.

**Leo:** I KNOW WHAT YOU KNOW.  
YOU KNOW OUR FIRST CALLER'S NAME.

**Briana:** I DO.

HIS NAME IS BOB.

**Leo:** YEAH.

**Briana:** AND HE IS FROM SAN  
RAFAEL, CALIFORNIA.

**Leo:** OH, SAN RAFAEL.

HELLO, BOB.

THANK YOU, BRIANA.

**Briana:** YOU'RE WELCOME.

**Leo:** SHE'S FROM CANADA,  
SHE DOESN'T KNOW.

HEY, BOB, HOW ARE YA?

**Bob:** PRETTY GOOD, LEO.

HOW ARE YOU DOING?

**Leo:** YOU OUGHT TO HEAR ME  
PRONOUNCE CANADIAN NAMES.

I'M VERY WELL.

AND HOW ARE THINGS IN  
SAN RAFAEL?

**Bob:** THEY'RE DRYING OUT A  
LITTLE BIT, LEO.

**Leo:** GOOD, BECAUSE I'M --  
THAT'S MY NECK OF THE WOODS  
AND, BOY, WE HAD SOME STORMS,  
DIDN'T WE?

**Bob:** OH, YEAH, YEAH.  
IT GOT WET, BUT IT'S DRYING  
OUT, FEELS GOOD.  
IT'S NICE TO FEEL THE SUN ON  
YOUR BACK WHEN YOU TAKE A WALK AROUND.

**Leo:** IT IS.

IT'S SO BEAUTIFUL.

WELL, WHAT CAN I DO FOR YA?

[ Pop captions up ]

**Bob:** WELL, THANKS FOR TAKING  
MY CALL AND --

**Leo:** OF COURSE.

**Bob:** -- MY QUESTION IS CONCERNING E-MAIL.  
RECENTLY I CHANGED FROM MSN TO Comcast.  
OF COURSE THE SPEED'S MUCH BETTER NOW --

**Leo:** YEAH.

**Bob:** -- AND I'M REALLY  
ENJOYING IT; HOWEVER, I NO  
LONGER CAN SAVE MY E-MAILS ON

MY HOME COMPUTER, WHICH I, YOU  
KNOW, IT'S -- IT'S BEEN A  
PROBLEM FOR ME.

I'D LIKE TO BE ABLE TO HAVE  
THAT STUFF ON MY OWN COMPUTER.

[ Pop captions down ]

**Bob:** MSN ALLOWED ME TO DO  
THAT AND NOW THEY SAY THAT I  
CAN STILL USE THEIR SOFTWARE  
EVEN THOUGH I'M USING Comcast  
AS THE PROVIDER, BUT THEY'LL  
CHARGE ME ABOUT 10 BUCKS A MONTH.

**Leo:** OH, YOU DON'T NEED TO DO THAT.  
HERE'S THE GOOD NEWS, YOU DON'T  
NEED TO DO THAT.

SO, YOU'RE USING THE Comcast  
WEBMAIL INTERFACE.

**Bob:** THAT'S CORRECT.

**Leo:** IT'S A WEB-BASED E-MAIL INTERFACE.

IT'S JUST LIKE IF YOU USED

Google Mail, Hotmail, Microsoft

Live, SAME THING, Yahoo! Mail.

THE WEB-BASED INTERFACES, THEY  
STORE YOUR MAIL THERE AND YOU  
JUST KIND OF HAVE A WINDOW INTO  
IT, YOU GO TO THE WEB.

THE PROBLEM IS WHEN YOU'RE NOT  
ONLINE, WHAT DO YOU -- YOUR  
MAIL'S NOT THERE OR IF THERE'S  
ATTACHMENTS YOU WANT, THINGS  
LIKE THAT, YOUR MAIL'S NOT  
REALLY THERE.

SO, HERE'S THE DEAL WITH THAT.

Com-- THE GOOD NEWS ANYWAY IS  
THAT Comcast DOES ALSO OFFER A  
STANDARD POP3 SERVER AND THAT'S  
WHAT YOU WANT.

A POP3 SERVER MEANS YOU  
DOWNLOAD THE MAIL FROM THEIR  
SERVER, IT SITS ON YOUR HARD DRIVE.  
GENERALLY SPEAKING IT'S DELETED  
FROM THE SERVER SO YOU HAVE THE  
ONLY COPY.

ALL YOU HAVE TO DO IS SET UP  
YOUR E-MAIL CLIENT TO USE  
Comcast'S POP3 SERVER.

SO, THE SETTINGS ARE PRETTY  
STRAIGHTFORWARD.

I LOOKED THEM UP AT [comcast.net](http://comcast.net).

THEY HAVE A VERY USEFUL LITTLE  
HELP PROGRAM ON THERE.

WHAT E-MAIL PROGRAM DO YOU LIKE  
TO USE?

**Bob:** I ACTUALLY HAVE NOT  
REALLY EXPLORED THIS AREA.  
IN A SENSE I WAS KIND OF  
SPOILED WITH MSN.

**Leo:** OH, BECAUSE YOU WERE  
USING THEIR E-MAIL PROGRAM, I GET IT.  
I GET IT.

WELL, LET ME SHOW YOU THE ONE  
THAT YOU PROBABLY WANT TO USE.  
I'M REBOOTING Vista RIGHT NOW.  
IT'S STILL REBOOTING, SO.

(laughing)

(scatting "Jeopardy" theme music)

I WON'T GET INTO THAT.

LET ME-- WHAT I WOULD SUGGEST  
IS YOU GO TO [get.live.com](http://get.live.com).

ARE YOU USING XP?

**Bob:** YES, I AM.

[ Pop captions up ]

**Leo:** OKAY.

[get.live.com](http://get.live.com) IS WHERE YOU WANT  
TO GO AND THEY WILL GIVE YOU A  
CHOICE OF -- THESE ARE ALL THE  
Windows Live PROGRAMS.

THE ONE YOU WANT IS Windows Live Mail.

THIS IS MUCH BETTER THAN

Outlook Express OR EVEN Vista

Mail, THE FREE MAIL PROGRAMS

THAT COME WITH THE VERSIONS OF

Windows XP AND Vista.

[ Pop captions down ]

**Leo:** THEY'VE REALLY IMPROVED THIS.

IT'S A GREAT PACKAGE, I HIGHLY

RECOMMEND IT, AND IT DOES ALLOW

YOU TO DOWNLOAD YOUR E-MAIL.

IT'S ABSOLUTELY FREE.

YOU'LL -- WHEN YOU GO TO GET

Windows Live, IT'LL OFFER YOU A

BUNCH OF OTHER PROGRAMS LIKE

MSN Messenger, THE TOOLBAR,

THEIR NEW SkyDrive ALLOWS YOU

TO UPLOAD FILES, SpaceIT, BLAH

BLAH BLAH BLAH BLAH.

YOU CAN TURN THOSE ON OR OFF IF

YOU WANT 'EM, BUT REALLY ALL

YOU REALLY WANT IS Mail.

AND THEN WHAT YOU'RE GOING TO DO IS YOU'RE GOING TO GO INTO Mail AND YOU'RE GOING TO START CONFIGURING IT AND THERE'S TWO THINGS YOU NEED TO KNOW. YOU NEED TO KNOW WHAT THE POP3 SERVER NAME IS FOR Comcast AND THAT'S mail.comcast.net.

**Bob:** mail.comcast.net.

**Leo:** YEAH.

AND Comcast WILL TELL YOU THIS ALSO. OR IS IT mail.comcast.net OR .com? NOW WAIT A MINUTE, NOW I HAVE TO CHECK. CAN YOU CHECK, SEAN, FOR ME AND SEE IF IT'S mail.comcast.net OR .com? I PUT IT IN THE SHOW NOTES. AND THEN YOU WANT THE OUTBOUND SERVER. SO, THE POP3 SERVER IS THE INBOUND MAIL SERVER. THE OUTBOUND SERVER YOU'LL WANT TO USE Comcast'S AND THAT'S smtp.comcast. -

**Sean:** net.

**Leo:** net.

OKAY, IT WAS .net. AND NOW THERE'S ONE LITTLE WEIRD THING THAT Comcast DOES - NOT ALL INTERNET SERVICE PROVIDERS DO THIS, BUT SOME DO - THEY DON'T USE A STANDARD OUTBOUND MAIL PORT, WHICH IS NORMALLY 25. THEY LIKE TO USE A DIFFERENT ONE, 587. SO, YOU'LL TELL Live DON'T USE 25, USE 587. IT'S IN THE SETTINGS.

IT'S VERY STRAIGHTFORWARD.  
YOU WILL ALSO HAVE TO HAVE YOUR  
Comcast LOGIN, YOUR NAME AND  
PASSWORD BECAUSE IT'LL ASK FOR  
ON BOTH THE INBOUND AND  
OUTBOUND MAIL.  
AFTER THAT, IT'LL BE EXACTLY  
WHAT YOU HAD WITH MSN Mail.  
IN FACT, Live LOOKS A LOT LIKE MSN Mail.  
YOUR MAIL WILL DOWNLOAD FROM  
Comcast AND IT WILL BE IN  
YOUR -- IN YOUR HARD DRIVE.  
ONE LITTLE CAVEAT, IT'S NOT  
GOING TO BE ON THE WEBPAGE  
ANYMORE ON comcast.net.

SO IF YOU WANT IT TO STAY  
THERE, YOU WILL HAVE TO CHECK A  
BOX IN Windows Live Mail THAT  
SAYS DO NOT DOWN-- DO NOT  
DELETE MAIL FROM THE SERVER.

**Bob:** I SEE. I SEE.

**Leo:** OTHERWISE IT DOES.  
AND, YOU KNOW, THAT'S TO SAVE  
ROOM ON THE SERVER.  
NOWADAYS SERVER, YOU KNOW, HARD  
DRIVE SPACE IS NOT SO  
EXPENSIVE, SO INTERNET SERVICE  
PROVIDERS DON'T SEEM TO MIND SO MUCH.  
BUT Comcast PROBABLY HAS A  
LIMIT, MOST DO, AND AT THAT  
POINT THEY'LL START DELETING  
THE MAIL ANYWAY.

**Bob:** I SEE.

**Leo:** DOES THAT ALL MAKE SENSE?

**Bob:** THAT MAKES SENSE AND  
THANK YOU VERY MUCH.  
THIS REALLY SAVES THE DAY FOR  
ME BECAUSE I REALLY AM ONE OF  
THOSE PEOPLE WHO REALLY LIKES  
TO SAVE A LOT OF E-MAIL --

**Leo:** YEAH.

**Bob:** -- AS A RESEARCH, SO  
THIS IS JUST WHAT THE DOCTOR ORDERED.

**Leo:** I THINK WHAT WE'RE  
FINDING, AND NOBODY EXPECTED  
THIS, THAT OUR E-MAIL INBOX HAS  
BECOME IN A WAY A DATABASE OF INFORMATION.

I DON'T -- I NO LONGER WORRY  
ABOUT PEOPLE'S ADDRESSES,  
CONTACT INFORMATION.

I DON'T HAVE TO REMEMBER  
PREVIOUS CONVERSATIONS.

I SAVE EVERY PIECE OF MAIL I'VE  
EVER GOTTEN.

AND NOWADAYS WITH PROGRAMS LIKE  
Live, YOU CAN SEARCH SO QUICKLY  
THROUGH THE MAILBOX THAT IT'S  
LIKE EVERYTHING'S THERE.

**Bob:** YES, YEAH.

**Leo:** IT'S A DATABASE OF INFORMATION.  
IT'S VERY HANDY.

WELL, GOOD, I'M GLAD WE COULD  
SOLVE THAT.

YOU'RE GOING TO LOVE THIS.

get.live.com, IT'S A MUCH  
BETTER -- BEST APPLICATION

Microsoft'S DONE FOR Mail.

MUCH BETTER THAN Outlook Express.

**Bob:** THANK YOU VERY MUCH.

**Leo:** THANK YOU FOR THE CALL,  
I REALLY APPRECIATE IT.

WE'RE GOING TO TAKE A BREAK,  
COME BACK IN JUST A LITTLE BIT  
WITH MAXWELL'S MUSEUM, AND,  
YES, MARK, IS GOING TO DISSECT,  
CHOP, SLICE AND DICE ANOTHER WEBSITE.

WAIT UNTIL YOU SEE WHAT RAY'S  
GOT FOR US.

IT'S ALL COMING UP WHEN "THE LAB" CONTINUES.

[ Music ]

[ BLACK/COMMERCIAL ]

[ Pop captions down ]

(Theme music playing)

**Leo Laporte:** WELCOME BACK TO "THE LAB."

I'M LEO LAPORTE -- LAPORTE.

MARK YU-- (laughing) I CAN'T

SAY MY OWN NAME.

MARK YUASA IS HERE.

HE'S THE CREATIVE DIRECTOR AT  
RAINCITY STUDIOS.

WELCOME BACK.

**Mark:** THANK YOU.

**Leo:** GREAT TO HAVE YOU.

MARK IS OUR WEB WORKSHOP EXPERT OF THE DAY.

HE IS GOING TO TAKE SOME  
FABULOUS WEBSITE SUBMITTED BY  
ONE OF OUR VIEWERS AND CHOP IT UP.

[ Pop captions up ]

**Mark Yuasa:** RIGHT.

TODAY WE'RE LOOKING AT [windows-xp-update.com](http://windows-xp-update.com).

**Leo:** OH.

NOW, IS THIS Microsoft'S SITE?

**Mark:** NO, IT'S NOT AN  
OFFICIAL SITE FROM WHAT I CAN TELL.

**Leo:** OKAY.

[ Pop captions down ]

**Mark:** IT SEEMS TO BE  
ENTHUSIASTS OR A FANS BLOG --

**Leo:** OH, NEAT.

**Mark:** -- OR KIND OF TECH BLOG --

**Leo:** OKAY.

**Mark:** -- RUNNING SOME  
APPLICATIONS, SOME RESOURCES.

**Leo:** GREAT.

**Mark:** AND IT SAYS "Tips, Tricks & Tweaks for Windows XP".

**Leo:** NOW, I SHOULD SAY THAT  
WE ARE NOT PICKING THIS AT RANDOM.  
HE SENT US AN E-MAIL SAYING HE  
WANTED US TO UPDATE AND FIX HIS SITE.  
NOW, I HAVE TO SAY IT'S A  
PRETTY GOOD START.

IT LOOKS LIKE IT'S FUNCTIONAL, YEAH.

[ Pop captions up ]

**Mark:** MM-HMM.

YEAH, I DEFINITELY HAD SOME  
THOUGHTS WHEN I SAW THIS ONE.  
I'M THINKING FIRST OFF IS THE LAYOUT.

**Leo:** OKAY.

**Mark:** I'M THINKING THAT THIS  
PERSON IS NOT REALLY TAKING  
ADVANTAGE OF THE DIMENSIONS  
THAT MODERN MONITORS HAVE.

THIS IS LESS THAN 800 PIXELS WIDE.

[ Pop captions down ]

**Leo:** IT'S PRETTY NARROW YOU'RE SAYING.

**Mark:** RIGHT, AND I THINK --

**Leo:** WHAT SHOULD YOU DESIGN FOR?

**Mark:** WHAT SHOULD YOU DESIGN

FOR IS A TOUGH QUESTION.

I WOULD -- I'M STILL A FAN OF 800 WIDE 1024.

I DON'T GET MUCH LARGER THAN THAT.

**Leo:** ARE THERE STILL PEOPLE

WHO HAVE 800 x 600 MONITORS, IS

THAT WHY YOU DESIGN THAT NARROW?

**Mark:** NO, IT'S NOT JUST THAT.

IT'S BECAUSE THE HUMAN ABILITY

TO READ REALLY WIDE PASSAGES OF TEXT --

**Leo:** RIGHT.

**Mark:** -- IT'S ACTUALLY VERY

DIFFICULT TO READ ACROSS.

**Leo:** LONG LINES ARE TOUGH, YEAH.

**Mark:** EXACTLY.

JUST LIKE A NOVEL --

**Leo:** RIGHT.

**Mark:** -- IT'S MUCH BETTER TO

HAVE A REASONABLE WIDTH AND YOU

CAN SCAN THEM EASILY.

**Leo:** SO, IT'S NOT A BAD

THING TO DESIGN A SITE TO BE

800 PIXELS WIDE.

**Mark:** DEPENDING ON THE AUDIENCE.

**Leo:** YEAH.

PAGES ALWAYS ARE LONGER THAN 600 --

**Mark:** RIGHT.

**Leo:** -- BUT 8-- BUT THE

WIDTH IS WHAT YOU'RE GOING TO  
LOOK AT, YEAH.

**Mark:** ABSOLUTELY.

NOW, FOR THIS SITE IN  
PARTICULAR, I THOUGHT IT'S  
ABOUT TECH PEOPLE.

**Leo:** RIGHT.

**Mark:** PEOPLE THAT ARE GOING TO USE --

**Leo:** SO, THEY'RE GOING TO  
HAVE 1024 AT LEAST.

**Mark:** EXACTLY.

**Leo:** YEAH.

**Mark:** AND I THINK IF I KNOW  
TECHIES, THAT --

**Leo:** MORE THAN THAT EVEN.

**Mark:** -- THEY'LL BE HAPPIER  
THAT WE'RE MAKING USE OF THEIR  
ACTUAL SCREEN RESOLUTION.

**Leo:** RIGHT.

RIGHT, RIGHT, RIGHT.

**Mark:** SO, THAT'S A BIG THING I'LL FIX.

OVER HERE ON THE NAVIGATION, I  
THINK THAT WHAT WE SHOULD DO  
IS-- ACTUALLY, THIS IS JUST A  
NAME CHANGE, UPDATE THE NAMES  
OF THESE LINKS SO THAT THEY'RE  
MORE EASILY UNDERSTANDABLE.  
WHAT DOES -- YOU KNOW, TO SCAN,  
IT'S HARD TO TELL EXACTLY WHERE  
YOU'RE GOING.

**Leo:** YEAH, THERE'S A LOT OF  
TEXT THERE, YEAH.

**Mark:** OR WHAT YOU'RE GETTING

IF YOU GO THERE.

**Leo:** YEAH.

**Mark:** NOW, PEOPLE DON'T WANT  
TO GUESS AS TO WHERE THEY'RE GOING.  
THEY WANT TO KNOW IMMEDIATELY --

**Leo:** RIGHT.

**Mark:** -- CLICK, AND THEY  
KNOW THEY'RE GOING IN THE RIGHT PLACE.

**Leo:** NOW, IN OUR USER'S  
DEFENCE, I HAVE TO SAY HE'S  
PROBABLY NOT A DESIGNER, I'M  
NOT A DESIGNER, YOU'RE A  
PROFESSIONAL, SO, I MEAN, IT'S  
A HARD THING FOR USERS TO  
DESIGN THEIR OWN WEBSITES WHEN  
WE DON'T HAVE THE SKILLS TO DO IT.

**Mark:** IT IS, ABSOLUTELY.  
NOW, MY JOB IS REALLY A SECOND OPINION.

**Leo:** YEAH.

**Mark:** HOPEFULLY AN INFORMED SECOND OPINION --

**Leo:** RIGHT.

**Mark:** -- BUT, YOU KNOW, IT'S  
EVEN GREAT TO GET SECOND  
OPINIONS FROM FAMILY, YOUR FRIENDS.

**Leo:** RIGHT.

**Mark:** HOPEFULLY SOMEONE IMPARTIAL.

**Leo:** DO YOU FOCUS ON HOW IT  
LOOKS OR ON USABILITY?

**Mark:** A LITTLE BIT OF BOTH.  
MY -- I COME FROM AN ART  
BACKGROUND, SO MY REAL FIRST  
INSPIRATION IS TRYING TO  
UNDERSTAND THE FEEL OF THE

SITE, WHAT ARE THE EMOTIONAL RESPONSES --

**Leo:** RIGHT, RIGHT.

**Mark:** -- THAT YOU GET.

THAT'S THE FIRST THING IN MY MIND, BUT ALL -- WHILE THAT'S THERE, I FOCUS ON IS THIS SITE USABLE, WILL PEOPLE HAVE AN ENJOYABLE EXPERIENCE.

**Leo:** WELL, WE'RE GOING TO LET YOU GET TO WORK ON THIS SITE.

YOU'RE GOING TO USE, YOU SAID Illustrator IS ONE OF YOUR TOOLS?

**Mark:** I'M GOING TO USE Illustrator. I'M GOING TO USE JUST SOME Mac TOOLS THAT ARE AVAILABLE, SUCH AS Art Directors Toolkit.

**Leo:** MM-HMM.

**Mark:** THAT'S ONE OF MY FAVOURITES.

IT'S A GREAT TOOL FOR PICKING OUT COLOUR PALETTES, TESTING OUT TYPEFACES, JUST -- JUST AN INTERIM TOOL THAT I USE TO GET MY IDEAS GOING.

YOU CAN SEE I PULLED SOME COLOURS FROM THE Windows XP OS ITSELF.

**Leo:** SO, YOU'RE GOING TO USE THAT AS YOUR PALETTE?

**Mark:** YEAH, ABSOLUTELY --

**Leo:** ALL RIGHT.

**Mark:** -- YOU CAN USE IT TO BUILD UP A PALETTE.

**Leo:** WE'LL COME BACK IN -- TOWARDS THE END OF THE SHOW AND

WE'RE GOING TO TAKE A LOOK AT  
WHAT YOU'VE DONE.

I WANT TO MAKE SURE WE LEAVE  
TIME THIS TIME BECAUSE YOU DID  
SUCH A BEAUTIFUL JOB WITH OUR  
LAST SITE --

**Mark:** THANK YOU.

**Leo:** -- AND I KNOW THAT THE  
OWNER OF THE Windows XP UPDATE  
SITE IS GOING TO REALLY WANT TO  
SEE WHAT YOU'VE DONE.

SO GET TO WORK, MARK.

YOU HAVE, YOU KNOW, ABOUT HALF  
AN HOUR.

**Mark:** ALL RIGHT.

**Leo:** WE'RE GOING TO PUT YOU  
TO WORK HERE IN JUST A LITTLE BIT.

**Mark:** NO PROBLEM.

**Leo:** BUT WE'LL BE BACK IN A SECOND.

COMING UP IN A BIT, WE'RE GOING  
TO BE TALKING ABOUT THE Google,  
RYAN YEWELL AND THE Google.

BUT FIRST - OH, AND RAY'S GOT  
SOME COOL STUFF - HERE'S A  
CLOSE-UP SHOT OF SOMETHING  
YOU MIGHT FIND AROUND "THE LAB."

WHAT THE TECH IS THAT?

I'LL TELL YOU WHAT, WE'LL ZOOM  
OUT OF THE AND FIND OUT WHEN

"THE LAB"CONTINUES RIGHT  
OF A THIS.

STAY RIGHT HERE.

[ Music ]

[ BLACK/COMMERCIAL ]

[ Pop captions down ]

**Leo Laporte:** WHAT THE TECH IS THAT?  
IT'S SOMETHING SEAN CARRUTHERS  
SHOT AROUND "THE LAB."

[ Pop captions up ]

**Leo Laporte:** LOOKS LIKE A,  
THAT'S THE ACCELERATOR PEDAL  
FOR AN HB94 Silk Slick Sprint Pro GM tripod.

[ Pop captions down ]

(camera shutter clicking)

**Leo:** GET YOUR CAMERA OUT OF  
MY FACE, CARRUTHERS.  
EVERY TIME HE FOOLS ME.  
THAT WAS A GOOD ONE.  
THAT WAS A LITTLE-- THAT LITTLE  
THING I THOUGHT WAS THE  
ACCELERATOR PEDAL WAS LIKE THE  
LITTLE FRICTION GRIP THERE THING.  
YADDA-YADDA-YADDA.  
DID YOU GET THAT RIGHT?  
ARE YOU-- OH, YOU'RE GOOD, SEE.  
I'M NOT SO GOOD.  
BRIANA'S GOT THE LATEST.  
McIVOR, WHAT HAVE YOU GOT FOR US?

**Briana:** I HAVE ERIC AND HE  
IS FROM VICTORIA, B.C.

[ Pop captions up ]

**Leo:** ALL RIGHT.  
HELLO, ERIC.  
THANK YOU, BRIANA.

**Briana:** YOU'RE WELCOME.

**Eric:** HELLO, LEO.

**Leo:** WELCOME TO THE SHOW.

LOOK AT THAT BEAUTIFUL ART YOU  
HAVE BEHIND YOU.

**Eric:** OH, YEAH, THAT'S MY WIFE'S DOING.  
WE APPRECIATE THE NATIVE WEST COAST ART.

**Leo:** OH, IT'S JUST GORGEOUS.

I JUST LOVE IT.

IN FACT, ONE OF THE THINGS I  
LIKE TO DO WHEN I'M UP HERE  
IS -- I DON'T BUY YET, BUT I  
LIKE TO GO AROUND AND LOOK AT  
SOME OF THE GALLERIES AND THE  
STUDIOS HERE.

THEY'RE JUST BEAUTIFUL,  
BEAUTIFUL WORK.

**Eric:** YEAH, IT'S GREAT STUFF.

**Leo:** YEAH.

WELL, WHAT CAN I DO FOR YOU, ERIC?

**Eric:** WELL, I'M JUST WONDERING.  
I'VE BEEN LOOKING AT SEVERAL  
ONLINE METRONOMES FROM SEVERAL  
SITES AND I'M THINKING OF  
CREATING A WEBPAGE WHERE IT  
WOULD BE QUITE EASY FOR  
INDIVIDUALS TO GET INTO READING  
MUSIC AS IT WOULD BECAUSE MOST  
OF WHAT'S ON THE WEB REQUIRES,  
YOU KNOW, SUBSCRIPTIONS AND  
COSTS AND SO ON AND, YOU KNOW,  
I'M A, KIND OF A FREE AND OPEN  
SOURCE KIND OF GUY.

**Leo:** GOOD FOR YOU.

ARE YOU A MUSIC TEACHER BY

TRADE OR?

[ Pop captions down ]

**Eric:** WELL, NO, I WAS IN THE PAST, BUT, YOU KNOW, IT'S -- THE OLD ROUTINE IS IF YOU'RE A MUSICIAN, DON'T GIVE UP YOUR DAY JOB.

**Leo:** (laughing) YEAH.

**Eric:** SO, YOU KNOW, IT'S BASICALLY I'M LOOKING TO PUT SOMETHING INTO THE COMMUNITY, YOU KNOW.

**Leo:** WONDERFUL.

WHAT'S YOUR INSTRUMENT?

**Eric:** CLASSICAL GUITAR.

**Leo:** OH, HOW BEAUTIFUL.

**Eric:** YEAH.

**Leo:** WELL, WE FOUND ONE. ACTUALLY I SHOULD -- "WE" IS WARREN. WARREN FOUND ONE.

HE WORKED HARD AND FOUND A JavaScript METRONOME.

**Eric:** MM-HMM.

**Leo:** THIS IS -- YOU MIGHT HAVE SEEN THIS ONE. IT'S FROM THE PIANO WITH RAYMOND SITE, WHICH IS A SIMILAR IDEA. IT'S A BLOG THAT RAYMOND IS DOING ON TEACHING PEOPLE PIANO AND IT'S VERY SIMPLE.

I MEAN, IT'S NOT AESTHETICALLY PLEASING, BUT IF YOU -- I MEAN, I THINK -- IT CERTAINLY WORKS.

YOU CAN CHANGE THE BEATS PER MINUTE.

YOU CAN CHANGE THE TIME SIGNATURE.

SO, IT GETS THE JOB DONE.

**Eric:** WHAT I'M INTERESTED  
IN, DOES IT DO THE SERVER  
CLIENT REQUEST ROUTINE

(indiscernible)?

**Leo:** NOT AT ALL.

OH, YOU MEAN THE AJAX KIND OF THING?

**Eric:** YEAH.

**Leo:** NO, THIS IS -- BUT  
THEY'RE-- WELL, ACTUALLY, YES IT DOES.  
WAIT A MINUTE, LET ME LOOK AT THIS.

[ Pop captions up ]

**Leo:** YES, IT DOES IN THE  
SENSE THAT WE DON'T HAVE TO  
REFRESH THE PAGE TO CHANGE ANY  
OF THESE SETTINGS ON HERE.

**Eric:** YEAH.

**Leo:** SO, IN THAT SENSE, YES, ABSOLUTELY.  
I MEAN, I WOULDN'T CALL THIS  
FANCY AJAX.

[ Pop captions down ]

**Eric:** BUT IT REQUESTS THE  
AUDIO DATA IN LOOPS, I GUESS,  
FROM THE --

**Leo:** YEAH.

I'M NOT SURE EXACTLY HOW IT'S WORKING.  
HERE'S THE BEAUTY OF IT, IT IS OPEN SOURCE.  
RAYMOND HAS POSTED NOT ONLY THE  
INSTRUCTIONS ON HOW TO DO IT,  
BUT THE FULL SOURCE CODE HERE.

**Eric:** OH, FAR OUT.

**Leo:** SO THIS WOULD BE, I  
WOULD THINK, AN EXCELLENT PLACE  
TO START.

**Eric:** MM-HMM.

**Leo:** AND IF YOU WANTED TO  
FANCY IT UP AND, YOU KNOW, PUT  
A CLICKING BAR OR SOMETHING ON  
THERE, IT WOULD BE EASY ENOUGH TO DO.  
HE'S DONE THE HARD WORK, WHICH  
IS, YOU KNOW --

**Eric:** THE CODING.

**Leo:** -- THE CODING, AND IT'S  
NOT A LOT OF CODE.  
I MEAN, I THINK --

**Eric:** NO, IT ISN'T.

**Leo:** -- IF YOU LOOK AT IT,  
IT'S PRETTY STRAIGHTFORWARD, IT  
SHOULD BE EASY TO FIGURE OUT  
WHAT HE'S DONE AND MODIFY IT AT WILL.  
SO, I WOULD SAY THIS IS AN  
EXCELLENT PLACE TO START WITH.

**Eric:** OKAY, SO THAT'LL BE IN  
THE SHOW NOTES.

**Leo:** IT IS.

BUT IF YOU GO TO [pianowithraymond.com](http://pianowithraymond.com) --

**Eric:** RIGHT.

**Leo:** -- YOU'LL FIND RAYMOND'S FREE ONLINE METRONOME.

**Eric:** HERE, I'LL JUST NOTEPAD THAT.

**Leo:** YEAH.

AND SO, YOU KNOW, I MEAN JUST IT'S  
[metronome.pianowithraymond.com](http://metronome.pianowithraymond.com) ACTUALLY, SO --

**Eric:** OKAY, GREAT.

**Leo:** -- THAT SHOULD BE PRETTY EASY TO FIND.

HE'S A PIANO TEACHER AND HE'S  
PUT TOGETHER A BLOG VERY  
SIMILAR TO WHAT I WOULD SAY  
THAT, YOU KNOW, YOU WOULD WANT TO DO.

**Eric:** YEAH, WELL, I'M  
BASICALLY, I HAVE FREE  
WEBSITE WITH MY --

**Leo:** YEAH.

**Eric:** -- DSL --

**Leo:** PERFECT.

**Eric:** -- THAT, YOU KNOW,  
MOST PEOPLE DON'T USE IT.  
AND WHAT I WAS THINKING OF  
DOING WAS DEDICATING THAT TO A  
FREE AND OPEN MUSIC SITE WHERE  
BASICALLY IT WOULD BE A STATIC  
WEBPAGE, I GUESS --

**Leo:** MM-HMM.

**Eric:** -- BECAUSE -- SO, THE  
PROBLEM IS BECAUSE YOU  
HAVE -- I HAVE A -- YOU KNOW,  
THAT WEBSITE, IT WOULDN'T  
INCLUDE ANY PROCESSOR  
HORSEPOWER, SO THE END RESULT  
IS YOU COULDN'T DO ANY KIND OF  
PHP THING.

**Leo:** OH, YEAH, BUT HERE'S  
THE BEAUTY, THIS IS ALL DONE BY  
THE CLIENT, BY THE GUYS, BY THE  
VISITOR'S BROWSER.

**Eric:** YEAH, BUT WHAT I'M  
GETTING AT IS ONCE THE --

**Leo:** YEAH.

**Eric:** -- -- THE APPLLET IS  
LOADED BACK INTO THE CLIENT  
COMPUTER IS THAT --

**Leo:** IT DOESN'T TOUCH YOU.

**Eric:** -- IT RELIES ON SOUND  
SAMPLES OR SOMETHING?

**Leo:** IT DOESN'T TOUCH YOU.  
NO, IT'S USING -- IT LOOKS LIKE  
IT'S USING MIDI, BUT I'M NOT  
SURE EXACTLY WHAT IT'S USING, BUT.

**Eric:** YEAH, PROBABLY, I WOULDN'T DOUBT.

**Leo:** ALL THE WORK IS  
DONE - LET ME LOOK AT THE CODE,  
BUT ALL THE WORK IS DONE ON THE  
USER'S SIDE.

SO IT'S DONE BY THE BROWSER, SO  
YOU DON'T HAVE TO WORRY ABOUT  
IT AT ALL.

**Eric:** BY USING A MIDI ENGINE  
AND (indiscernible)

**Leo:** YEAH, LET THE COMPUTER  
DO THE WORK, WHY NOT.

**Eric:** YEAH.

YEAH, LATENCY POSES ONE OF THE  
BIGGEST PROBLEMS.

[ Pop captions up ]

**Eric:** THE OTHER THING I WAS  
THINKING ABOUT DOING WAS USING  
PERHAPS A -- A FLASH-BASED ONE,  
WHICH I'VE SEEN SEVERAL OF THEM  
THAT ARE EXCELLENT, YOU KNOW,  
AS FAR AS IT GOES, BUT THEN  
WHEN YOU USE FLASH CODE, IT'S

HARDER TO, YOU KNOW, ALIGN IT  
WITHIN WHAT YOU'RE DOING WITH  
MUSIC SCRIPT.

**Leo:** RIGHT.

[ Pop captions down ]

**Leo:** YOU KNOW, I'M SURE  
SOMEBODY'S DONE A FLASH  
METRONOME AND IT PROBABLY  
WOULDN'T BE SO HARD, BUT IT  
WOULD ALSO BE MORE DIFFICULT TO MODIFY.  
THE NICE THING ABOUT THIS, IT  
IS OPEN SOURCE, SO YOU  
SHOULDN'T HAVE TOO MUCH TROUBLE.  
HEY, I THINK THAT'S A REALLY NICE IDEA.  
WHEN YOU GET THIS SITE UP,  
WOULD YOU GIVE US A HOLLER SO  
WE CAN PLUG IT ON THE SHOW?

**Eric:** I SURE WILL.

**Leo:** THAT'S GREAT, ERIC.

**Eric:** THE THING IS ABOUT IT,  
I WANT TO LEAVE IT FREE AND IT'S --

**Leo:** YEAH.

**Eric:** -- GOT TO WORK WITH  
SOME OTHER PEOPLE THAT HAVE GOT  
MORE EXPERIENCE WITH, YOU KNOW,  
(indiscernible).

**Leo:** THERE'S NO BETTER WAY  
TO LEARN THIS THAN DOING IT.  
I THINK IF THERE'S ONE  
PHILOSOPHY I'D LIKE TO  
COMMUNICATE THROUGH THIS SHOW  
IS DON'T BE AFRAID.  
THE BEAUTY OF THIS STUFF IS YOU

CAN'T REALLY BREAK IT.

TRY IT, WORK ON IT.

YOU KNOW, IT'LL BE FRUSTRATING  
AT FIRST, BUT IT'S A GREAT  
CHALLENGE AND GREAT FUN AND YOU  
COME AWAY FROM IT WITH A WHOLE  
NEW SKILL.

HEY, IT'S GREAT TO TALK TO YOU,  
THANKS SO MUCH.

WE HAVE TO RUN.

**Eric:** THAT'S MY WHOLE  
PHILOSOPHY WITH TEACHING MUSIC TOO.

**Leo:** YEAH, YOU CAN'T BREAK IT.  
JUST DO IT.

**Eric:** (laughing) YEAH.

**Leo:** THANKS SO MUCH FOR THE  
CALL, I REALLY APPRECIATE IT.

**Eric:** YOU'RE WELCOME, LEO. BYE.

**Leo:** TAKE CARE.

BYE-BYE.

NOW IT'S TIME TO TAKE A TRIP --  
TAKE A LITTLE WALK OVER TO McIVORLAND --

**Briana:** YEAH.

**Leo:** -- BECAUSE BRIANA'S GOT  
A TRIP FOR US.

**Briana McIvor:** YOU GET A  
TRIP FOR A LITTLE BIT OF A TIP, YES.

**Leo:** OH, I LIKE THAT.

**Briana:** YEAH. (laugh)

**Leo:** YEAH.

[ Pop captions up ]

**Briana:** SO, I KNOW THAT I'M  
NOT THE ONLY ONE HAS A LITTLE

BIT OF A PROBLEM BUDGETING AND  
SAVING MONEY AND ALL OF THAT  
KIND OF STUFF --

**Leo:** YEAH.

**Briana:** -- SO JUST LOOKING  
AT ONLINE WAYS TO MANAGE THAT  
AND I FOUND THIS WEBSITE THAT'S  
CALLED [expensr.com](http://expensr.com), WHICH IS A  
PERSONAL FINANCE MANAGER.

**Leo:** OH, COOL.

**Briana:** AND THEY HA-- AND  
THEY'RE, LIKE, BIG INTO  
SECURITY AND STUFF.  
SO IF YOU'RE WORRIED ABOUT  
ANYBODY ELSE ACCESSING YOUR  
INFORMATION, THEN YOU CAN READ  
ALL ABOUT IT.

[ Pop captions down ]

**Briana:** BUT BASICALLY WHAT  
YOU DO IS YOU CAN UPLOAD ALL  
YOUR BANK INFORMATION TO THE  
WEBSITE, INSERT ALL YOUR  
SPENDING AND IT -- IT'S ALSO A COMMUNITY.  
SO, IT SENDS YOU -- IF YOU ADD YOUR FRIENDS --

**Leo:** MM-HMM.

**Briana:** -- IT WILL TELL YOU,  
LIKE, IN COMPARISON TO YOUR  
FRIENDS, YOU SPEND WAY TOO MUCH  
ON ENTERTAINMENT.

**Leo:** (laughing) OH, THAT'S FUNNY.

**Briana:** OR, LIKE, YOUR  
FRIENDS SPEND 87% OF THEIR  
MONEY ON GOING TO RESTAURANTS

AND STUFF.

**Leo:** HOW INTERESTING.

**Briana:** SO, THAT'S PRETTY COOL.

**Leo:** I LIKE THAT.

SO, IT'S A SOCIAL SITE AS WELL.

**Briana:** YEAH.

**Leo:** YEAH.

**Briana:** AND IT ALSO GIVES  
YOU FACTS EVERY TIME YOU SIGNED  
IN -- EVERY TIME YOU SIGN IN  
ACCORDING TO TAGS THAT YOU'VE  
TAGGED YOUR PROFILE WITH.

SO, I'VE PUT I'M A WOMAN IN MY  
20s AND I WORK FULL TIME.

SO EVERY TIME I SIGN IN, IT  
TELLS ME LIKE --

**Leo:** YOU CAN COMPARE THAT TO  
OTHER WOMEN IN THEIR 20s, YEAH.

**Briana:** YEAH, EXACTLY.

SO, IT'S LIKE YOU SPEND TOO  
MUCH MONEY ON SHOPPING AND,  
WELL, I ALREADY KNEW THAT.

**Leo:** DID IT SAY THAT?

**Briana:** YEAH, SOMETIMES IT  
SAYS THAT, YEAH.

**Leo:** NO, YOU DON'T SPEND TOO  
MUCH MONEY ON SHOPPING.

**Briana:** YEAH, AND IT ALSO,  
LIKE, YOU ENTER ALL YOUR  
INFORMATION IN FOR YOUR BUDGET  
AND IT WILL TELL YOU HOW MUCH  
YOU HAVE LEFT AND HOW MUCH  
YOU'VE GONE OVER.

**Leo:** OH, THAT'S A REALLY  
GOOD IDEA, YEAH.

**Briana:** YEAH, IT'S PRETTY  
COOL, SO YOU SHOULD CHECK THAT OUT.

**Leo:** expensr, IN TRUE WEB  
2.0 FORM, IT'S MISSING THE LAST VOWEL.

**Briana:** YES. (laughing)

**Leo:** THAT'S HOW YOU --  
THAT'S HOW YOU'D FIND IT.  
AND OF COURSE YOU COULD FIND IT  
ON labwithleo.com.

THANK YOU, BRIANA.

**Briana:** YEAH, NO PROBLEM.

**Leo:** COMING UP IN JUST A  
LITTLE BIT, TAKE A TRIP BACK IN  
TIME TO THE ORIGINAL INTERNET.  
YES, BEFORE THERE WAS THE  
INTERNET THERE WAS THE  
TRANSATLANTIC CABLE.  
WE'LL VISIT IT IN MAXWELL'S  
MUSEUM WHEN "THE LAB" CONTINUES.  
STAY RIGHT HERE.

[ Music ]

[ BLACK/COMMERCIAL ]

[ Pop captions down ]

(Theme music playing)

**Leo Laporte:** WELCOME BACK TO "THE LAB."  
THIS IS HISTORY, MAN, REAL HISTORY.  
RAY MAXWELL'S HERE, RACONTEUR,  
STORYTELLER, HISTORIAN, IS ALSO  
A COLOUR EXPERT AND A Photoshop  
WIZARD AND A GREAT PHOTOGRAPHER  
AND A PILOT, BUT WE'RE GOING TO

TALK ABOUT THE RACONTEUR

HISTORIAN PART --

**Ray:** THAT'S RIGHT.

**Leo:** -- RIGHT NOW.

AND WE WANT TO THANK DAN  
GELBART FOR PROVIDING SOME OF  
THESE AMAZING ARTIFACTS.

**Ray:** YES, THE FIRST THING I  
WANTED TO SAY IS THIS IS NOT  
FROM MY BASEMENT, OKAY?

**Leo:** YEAH, YEAH.

[ Pop captions up ]

**Ray Maxwell:** THIS IS FROM  
THE PRIVATE COLLECTION OF DAN  
GELBART, WHO WAS ONE OF THE  
COFOUNDERS OF CREO, WHICH IS  
PART OF Kodak NOW.

**Leo:** UH-HUH.

**Ray:** AND HE'S RETIRED AND  
STILL INVENTING THINGS AND...

**Leo:** AND AN OLD FRIEND  
BECAUSE YOU WORKED AT CREO FOR  
YEARS, YEAH, YEAH.

[ Pop captions down ]

**Ray:** YEAH, WE WORKED  
TOGETHER AT THREE DIFFERENT COMPANIES.

**Leo:** SO, BEFORE THERE WAS  
THE INTERNET, BEFORE THERE WAS  
A TELEPHONE --

**Ray:** THAT'S RIGHT.

**Leo:** -- THERE WAS THE TELEGRAPH.

**Ray:** THE TELEGRAPH.

**Leo:** AND OF COURSE IF YOU

HAD A TELEGRAPH, IT'S ONE THING  
TO GET ACROSS THE COUNTRY, BUT  
WOULDN'T YOU LOVE TO GET ACROSS  
THE OCEAN?

**Ray:** EXACTLY.

**Leo:** THE TRANSATLANTIC CABLE.

**Ray:** THEY LAID THIS  
TRANSATLANTIC CABLE AND THIS  
CABLE WENT ACROSS 2800 MILES.

**Leo:** WOW, LOOK AT THIS.  
LET ME HOLD THIS UP.

**Ray:** YES.

**Leo:** WOW.

**Ray:** AND --

**Leo:** LOOK AT THAT.

**Ray:** YEAH.

**Leo:** AND THERE'S THE COPPER  
CORE RIGHT IN THERE.

**Ray:** RIGHT.

**Leo:** SO, THIS WAS FOR TELEGRAPH SIGNALS.

**Ray:** THIS WAS TELEGRAPH SIGNALS.

**Leo:** WHAT YEAR DID THEY LAY THIS?

**Ray:** 1858.

**Leo:** A LONG TIME AGO.

150 YEARS AGO.

THIS IS THE ANNIVERSARY.

**Ray:** RIGHT.

**Leo:** THE SESQUICENTENNIAL.

**Ray:** THAT'S CORRECT.

**Leo:** SO, YOU KNOW, IT'S KIND  
OF TIMELY BECAUSE OF COURSE  
JUST A FEW MONTHS AGO THE  
INTERNET CABLE WAS ACCIDENTALLY

CUT IN THE PERSIAN GULF.

**Ray:** RIGHT.

**Leo:** SIMILAR KIND OF CABLE?

**Ray:** VERY DIFFERENT.

**Leo:** (laughing) OKAY.

**Ray:** VERY DIFFERENT.

I'M GOING TO TELL YOU THE  
PERFORMANCE OF THIS CABLE.

LET ME JUST SHOW YOU BEFORE I  
GET INTO THAT.

**Leo:** WHAT IS THIS?

THIS IS NEAT.

**Ray:** THIS IS THE  
GALVANOMETER THAT WAS AT THE  
END OF THE CABLE.

**Leo:** SO, THIS IS WHAT THE  
CABLE WENT TO?

**Ray:** THIS WENT TO THIS  
DEVICE AND THIS DEVICE ALLOWED --

**Leo:** LOOK AT THIS.

IT LOOKS LIKE A COFFEE MAKER.

**Ray:** -- THEM TO READ VERY,  
VERY SMALL CURRENTS AND LET ME  
SHOW YOU HOW IT WORKED.

IT HA-- THIS IS A GALVANOMETER.

IT HAS A BIG MAGNET --

**Leo:** OKAY.

**Ray:** -- AND A LITTLE COIL  
HERE LIKE IN A METRE MOVEMENT.

**Leo:** YEAH.

**Ray:** AND THEN THERE WAS A  
MIRROR RIGHT HERE.  
AND THROUGH THIS LITTLE WINDOW

THEY SHONE A LIGHT IN AND IT  
REFLECTED A DOT ON THE WALL AND  
THAT DOT WOULD MOVE ON THE WALL.

**Leo:** (laughing)

**Ray:** NOW, YOU KNOW, WE GET --

**Leo:** THAT'S A LITTLE PRIMITIVE.

**Ray:** WE GET 500 KILOBAUD --

**Leo:** RIGHT.

**Ray:** -- TO, YOU KNOW, 10 MEGABITS --

**Leo:** RIGHT.

**Ray:** -- THROUGH OUR THINGS TODAY.

**Leo:** RIGHT.

**Ray:** WELL, THEY DIDN'T KNOW  
HOW TO MAKE TRANSMISSION LINES.

**Leo:** RIGHT.

**Ray:** SO THIS CABLE, THIS TRANSMISSION LINE --

**Leo:** YEAH?

**Ray:** -- IT TOOK 2 MINUTES TO  
GET ONE MORSE CHARACTER THROUGH  
THE LINE.

**Leo:** I DON'T UNDERSTAND.  
DOESN'T IT TRAVEL AT THE SPEED OF LIGHT?

**Ray:** NO, BECAUSE THEY DIDN'T  
UNDERSTAND ABOUT BALANCING AND  
IMPE-- IT'S THE WRONG IMPEDANCE  
AND IT'S HEAVILY CAPACITIED  
WITH VERY LOW INDUCTIVES.

**Leo:** SO, IN OTHER WORDS,  
PUSHING THIS SIGNAL DOWN 2,800  
MILES OF THIS THING --

**Ray:** BIG CAPACITOR.

**Leo:** (laughing) IT TOOK A LOT! -

**Ray:** BIG FILTER.

**Leo:** - A LOT OF JUICE AND IT  
TOOK A LONG TIME.

**Ray:** YEAH, IT TOOK 17 HOURS  
TO SEND THE FIRST MESSAGE.  
IT TOOK 2 MINUTES FOR ONE MORSE CHARACTER.

**Leo:** WOW.

**Ray:** OKAY, MORSE.

**Leo:** SO, THE WAY YOU'D READ  
THE CHARACTER IS YOU'D LOOK AT THE WALL?

**Ray:** YOU LOOKED AT THE WALL  
AND YOU WATCHED --

**Leo:** AND WATCHED THE DOT MOVE?

**Ray:** -- THIS LITTLE DOT  
SLOWLY MOVE BACK AND FORTH --

**Leo:** (laughing)

**Ray:** -- ON THE WALL.

**Leo:** HERE'S AN AMAZING ILLUSTRATION.

**Ray:** NOW --

**Leo:** THIS IS FROM "HARPER'S WEEKLY."

**Ray:** RIGHT.

I'VE GOT SOME CLOSE-UPS OF THIS.

**Leo:** 1865.

**Ray:** LET ME GO THROUGH THE  
PICTURES ON MY COMPUTER.

**Leo:** YEAH, I'D LOVE TO SEE THIS, YEAH.

**Ray:** FIRST OF ALL, THIS IS  
THE CERTIFICATION.  
THIS CABLE, WHAT IS  
INTERESTING, THIS CABLE WAS THE  
REMAINDER OF THE CABLE IN THE  
BOAT WHEN IT GOT HERE, THE SHIP.

**Leo:** SO, THEY CHOPPED IT UP AND SOLD IT.

**Ray:** AND THEY CHOPPED IT UP

AND TIFFANY'S OF NEW YORK SOLD  
IT AND IT'S CERTIFIED BY TIFFANY'S.

**Leo:** IT PROBABLY COST A  
PRETTY PENNY, I WOULD IMAGINE.

**Ray:** I HAVE NO IDEA.  
NOW, LET ME SHOW YOU THEIR PLAN B.  
WE HAVE THIS MAP.

NOW, THESE GUYS WERE WORRIED  
ABOUT CROSSING 2800 MILES OF  
WATER THAT IT MIGHT NOT WORK.

**Leo:** WHERE DID IT GO FROM?  
IT WENT FROM NOVA SCOTIA?

**Ray:** OKAY, WELL, LET'S START IN LONDON HERE --

**Leo:** OKAY.

**Ray:** -- OKAY, AND IT WENT UP  
INTO SCOTLAND AND SO FORTH AND IRELAND.

**Leo:** YOU HAVE TO USE YOUR  
POINTER, WE CAN'T SEE YOUR FINGER.

**Ray:** OH, SORRY.

**Leo:** YEAH.

**Ray:** IT WENT FROM LONDON --

**Leo:** YEAH.

**Ray:** -- OKAY, OVER INTO HALIFAX.

**Leo:** HALIFAX, OKAY.

**Ray:** OKAY.

THAT WAS THE PLAN.

**Leo:** YEAH.

**Ray:** BUT IF THAT DIDN'T WORK --

**Leo:** YEAH.

**Ray:** -- THEY ALREADY HAD AN  
EXISTING CABLE THAT WENT TO  
CALCUTTA, INDIA.

**Leo:** (laughing) OVER LAND APPARENTLY.

**Ray:** OVER LAND ALL THE WAY  
AND THEY HAD ONE THAT WENT ALL  
THE WAY OUT INTO, I DON'T KNOW  
WHETHER THAT'S CHINA OR --

**Leo:** EURASIA SOMEWHERE, YEAH.

**Ray:** -- SOMEWHERE AND THEY  
WERE GOING TO EXTEND THOSE TWO  
CABLES TO A PLACE OUT HERE IN SIBERIA --

**Leo:** (laughing)

**Ray:** -- AND THEN COME UP AND  
GO ACROSS THE BEARING STRAIT  
AND COME DOWN AND TERMINATE IN  
NEW WESTMINSTER, WHICH IS ABOUT  
30 KILOMETERS FROM WHERE WE'RE SHOOTING --

**Leo:** B.C., I'LL BE DANGED.

**Ray:** -- OKAY?

**Leo:** I'LL BE BANGED.

**Ray:** SO, THAT WAS PLAN B.

**Leo:** YEAH.

**Ray:** NOW, THEY STARTED --

**Leo:** IT'S A GOOD THING THEY  
(laughing) DIDN'T HAVE TO DO PLAN B.

**Ray:** RIGHT.

NOW, THEY HAD AN EXISTING CABLE --

**Leo:** IT WOULD HAVE TAKEN 80  
MINUTES TO GET A DOT ACROSS.

**Ray:** THEY TOOK -- THEY DID  
HAVE AN EXISTING CABLE THAT  
WENT DOWN TO NEW YORK AND OUT  
TO SAN FRANCISCO.

**Leo:** SO, THIS WASN'T THE  
FIRST CABLE THAT THEY HAD LAID?

**Ray:** NO, THIS WAS THE FIRST

THROUGH WATER.

**Leo:** ACROSS AN OCEAN.

**Ray:** SO THEN --

**Leo:** OH, THE FIRST THROUGH WATER, WOW.

**Ray:** YEAH.

SO, THEN THEY HAD THIS CABLE  
THAT WENT FROM SAN FRANCISCO UP  
TO NEW WESTMINSTER, AND HERE IS  
A PICTURE OF THE WATERFRONT IN  
NEW WESTMINSTER IN 1858, OKAY?

**Leo:** SO, THAT WAS A LONG TIME AGO.

**Ray:** YES.

AND HERE WAS THE ACTUAL COLLINS  
OVERLAND TELEGRAPH STATION.

**Leo:** AHH.

SO, THEY WOULD HAVE HAD ONE OF  
THESE GALVANOMETERS THERE --

**Ray:** THAT'S CORRECT.

**Leo:** -- TO HOOK UP THIS CABLE TO.

**Ray:** RIGHT.

NOW, THIS ONE, IF WE --

**Leo:** IT'S BEAUT-- YOU KNOW,  
THEY REALLY ENGINEERED THINGS  
BEAUTIFULLY BACK THEN, DIDN'T THEY?

**Ray:** THIS ONE'S ACTUALLY  
ENGRAVED "HALIFAX DEPOT".

**Leo:** SO, YOU KNOW THIS  
IS THE ONE THAT WAS IN  
NOVA SCOTIA.

**Ray:** YEAH, THIS WAS THE ONE --

**Leo:** HERE, SHOW THEM BECAUSE  
THEY COULD JUST PICK THAT UP.

**Ray:** OH, THERE IT IS.

**Leo:** OH, SULLIVAN'S GALVANOMETER.

**Ray:** YEAH.

**Leo:** PATENTED.

**Ray:** AND OF COURSE IN THOSE  
DAYS BEAUTIFUL INSTRUMENTS WERE ENGRAVED.

**Leo:** BEAUTIFUL.

I MEAN, THIS IS A WORK OF ART.

**Ray:** AND I CAN EVEN PULL THE  
MOVEMENT OUT OF THIS.

**Leo:** AND OBVIOUSLY DAN HAS  
KEPT IT IN PRISTINE SHAPE.

**Ray:** ABSOLUTELY.

**Leo:** IS THIS BRASS?

**Ray:** YES.

BECAUSE THIS IS A BIG MAGNET,  
SO IT HAS TO BE --

**Leo:** IT HAS NONCONDUCTIVE.

**Ray:** -- NONMAGNETIC.

**Leo:** NONMAGNETIC.

WOW.

**Ray:** AND THEN FINALLY, THIS  
IS THE BIG CENTRE SPREAD --

**Leo:** THAT'S WHAT WE'VE GOT  
RIGHT HERE, YEAH.

**Ray:** -- WHICH YOU'VE GOT  
RIGHT THERE, THAT SHOWS THE  
"GREAT EASTERN,\A WHICH WAS  
THE SHIP THAT LAID IT.

**Leo:** AND FOR SOME REASON BEN  
FRANKLIN IS THERE ON THE LEFT.  
I'M NOT SURE WHAT BEN HAD TO DO  
WITH THIS.

**Ray:** BEN FRANKLIN AND MORSE,

THEIR PICTURES ARE BOTH THERE.

**Leo:** SAMUEL MORSE.

**Ray:** AND --

**Leo:** DID FRANKLIN PROPOSE  
THIS, IS THAT WHY HIS PICTURE  
IS THERE ORIGINALLY?

**Ray:** HE WAS -- I DON'T KNOW  
HOW HE WAS INVOLVED.

**Leo:** (laughing) HE WAS LONG GONE --

**Ray:** YEAH.

**Leo:** -- IS HOW HE WAS  
INVOLVED, BUT VERY INTERESTING.

**Ray:** NOW, LET ME TELL YOU  
ABOUT THE PEOPLE INVOLVED IN  
THIS BECAUSE IT IS A STORY UNTO ITSELF.

**Leo:** LOOK AT THIS, THEY HAVE  
AN ILLUSTRATION, "PROFESSOR  
JOHNSON READING THE MORNING'S  
NEWS FROM EUROPE."

**Ray:** THERE WE GO.

**Leo:** AT THE TIME IT TOOK  
SEVERAL WEEKS FOR NEWS TO REACH  
YOU FROM EUROPE.

**Ray:** EXACTLY.

**Leo:** THE IDEA OF GETTING THE  
MORNING'S NEWS FROM EUROPE WAS  
QUITE AMAZING.

**Ray:** EXACTLY, YEAH.

**Leo:** OF COURSE AT ONE DOT AT  
A TI-- 2 MINUTES, YOU WOULDN'T  
HAVE GOTTEN VERY MUCH NEWS.

[ Pop captions up ]

**Ray:** WELL, NOW, LET ME TELL

YA HOW THIS CABLE WAS FLAWED.  
WE ALREADY SEE THAT IT'S DATA  
RATE WAS EXCEEDINGLY --

**Leo:** VERY SLOW, YEAH, YEAH.

**Ray:** -- BAD.

AND SO, ONE OF THE GUYS HAD A  
BRILLIANT IDEA ON ONE END OF  
THE CABLE.

HE SAID, YOU KNOW, WE CAN MAKE  
IT FASTER IF WE RAISE THE VOLTAGE.

**Leo:** UH-HUH.

[ Pop captions down ]

**Ray:** OKAY, WHICH ISN'T TRUE.

**Leo:** OKAY.

**Ray:** IT'S RC TIME CONSTANT,  
IT DOESN'T MATTER WHAT THE  
VOLTAGE IS, ALL RIGHT?

**Leo:** I'LL TAKE YOUR WORD FOR IT, OKAY.

**Ray:** AT ANY RATE, HE RAISED  
THE VOLTAGE AND THREE MONTHS  
INTO THE LIFE OF THE CABLE, HE  
BURNED THE CABLE OUT.

**Leo:** (laughing)

**Ray:** MURPHY --

**Leo:** THAT'S A LOT OF WORK.

**Ray:** MURPHY WAS ALIVE AND WELL.

**Leo:** THAT'S A LOT OF WORK  
FOR THREE MONTHS WORD OF DOT

(pausing) --

**Ray:** DASH.

**Leo:** -- DASH.

**Ray:** (laughing)

**Leo:** WOW.

DID THEY CABLE ANOTHER CABLE?

**Ray:** YES, IN 1865.

**Leo:** AND DID THEY GET BETTER AT DESIGNING?

**Ray:** YES.

NOW, THEY GOT EVEN BETTER WHEN  
A FELLOW CAME ALONG.

FIRST OF ALL, LET ME POINT OUT  
THAT THERE'S A WEBSITE ABOUT  
THE TRANSATLANTIC CABLE HERE --

**Leo:** IT LOOKS LIKE A WIKI.

**Ray:** -- ON MY COMPUTER.

**Leo:** IS THAT Wikipedia?

YEAH, IT'S Wikipedia.

[ Pop captions up ]

**Ray:** THE -- WE'VE GOT THE  
URL FOR THIS WEBSITE AND IT'S  
IN THE SHOW NOTES.

**Leo:** OKAY.

**Ray:** AND YOU CAN GO TO THIS  
WEBSITE AND READ ALL ABOUT IT.  
AND -- BUT IN ADDITION, I WANT  
TO TELL YOU ABOUT THE GENIUS  
WHO FIGURED OUT WHAT -- HOW TO  
FIX ALL THIS.  
AND THIS GUY WAS OLIVER HEAVISIDE.

**Leo:** I LOVE THE NAME.

**Ray:** ISN'T THAT A NICE NAME?  
WELL, OLIVE WAS A REAL CHARACTER.  
HE HAD SCARLET FEVER AND WAS  
NEARLY DEAF, SO HE WAS A RECLUSE.

**Leo:** UH-HUH.

**Ray:** HE DROPPED OUT OF SCHOOL AT AGE 16.  
DIDN'T HAVE A LOT OF FORMAL EDUCATION.

[ Pop captions down ]

**Ray:** HE SIMPLIFIED MAXWELL'S EQUATIONS, WHICH WAS 20 EQUATIONS AND 20 UNKNOWNNS, INTO 4 EQUATIONS WHICH WE NOW KNOW AS MAXWELL'S EQUATIONS.

**Leo:** THAT'S AMAZING.

**Ray:** YEAH.

**Leo:** THAT'S AMAZING.

**Ray:** AND HE FIGURED OUT WHAT WAS WRONG WITH THE CABLE. HE SAID IT'S THE WRONG IMPEDANCE --

**Leo:** RIGHT.

**Ray:** -- AND IT'S TWO CAPACITY.

**Leo:** RIGHT.

**Ray:** AND WE NEED TO ADD INDUCTOR COILS ALONG THE WAY.

**Leo:** AH, CLEVER.

**Ray:** AND YOU WOULD THINK THAT WOULD SLOW IT DOWN, BUT IT DOESN'T, IT SPEEDS IT UP.

**Leo:** RIGHT.

**Ray:** AND SO, A FEW YEARS LATER THEY DID ALL THESE MODIFICATIONS TO THE NEXT CABLE THEY LAID AND THEY ENDED UP WITH 120 CHARACTERS PER SECOND.

**Leo:** A "LOT" BETTER.

**Ray:** A LOT BETTER.

NOW --

**Leo:** THAT'S A PRETTY BIG IMPROVEMENT.

**Ray:** -- ONE OTHER QUICK NOTE ON THIS --

**Leo:** MM-HMM.

**Ray:** -- WHICH IS A SAD NOTE IN A WAY.

BY THE WAY, HEAVISIDE ALSO  
PATENTED THE COAXIAL CABLE, A  
PROPERLY MADE ONE, OKAY.

**Leo:** RIGHT.

SO, WE STILL USE THAT --

**Ray:** RIGHT.

**Leo:** -- COAX TODAY.

**Ray:** INTERNET.

**Leo:** YEAH.

**Ray:** ALL OVER THE PLACE.

**Leo:** RUNS ON COAX IN MANY CASES.

**Ray:** YOU KNOW, FIBER, YEAH.

**Leo:** SO NOW WHEN THEY TELL  
ME I'M ON THE HEAVY SIDE --

**Ray:** (laughing)

**Leo:** -- I'M GONNA TAKE THAT AS A COMPLIMENT.

**Ray:** IT'S A COMPLIMENT.

**Leo:** OKAY.

**Ray:** THE GUY WAS BRILLIANT.

**Leo:** HE WAS BRILLIANT.

**Ray:** BUT AT&T WENT TO A  
GUY -- WENT TO HEAVISIDE AND HE  
SAID IT'S IN THE PUBLIC DOMAIN,  
I DIDN'T PATENT IT, YOU KNOW --

**Leo:** WOW, IMPRESSIVE.

**Ray:** -- TAKE A FLYING LEAP.

**Leo:** YEAH.

**Ray:** THEY HIRED ANOTHER GUY  
BY THE NAME OF PUPIN, P-U-P-I-N --

**Leo:** (laughing)

**Ray:** -- LOVE THESE NAMES AND  
HE -- HE PATENTED THE THING AND

THEY GAVE HIM \$10 MILLION FOR  
THE THING MAINLY TO MAKE THEIR  
INVESTORS KNOW THAT THIS THING WAS --

**Leo:** THIS IS GOOD.

**Ray:** -- REALLY A SUPER THING --

**Leo:** WE PAID A LOT FOR THIS.

**Ray:** -- BUT IT GAVE THEM A  
LOCK ON LONG LINES.

**Leo:** ISN'T THAT FUNNY BECAUSE --

**Ray:** ISN'T THAT AMAZING?

**Leo:** -- THAT'S WHY AT&T HAD  
THAT MONOPOLY --

**Ray:** YES.

**Leo:** -- IN THE LONG RUN ON LONG DISTANCE.

**Ray:** EXACTLY.

**Leo:** FASCINATING STUFF AND I  
LOVE THE ARTIFACTS OF THIS  
AMAZING GILDED AGE, THE 19th,  
MIDDLE OF THE 19th CENTURY.

[ Pop captions up ]

**Leo:** RAY MAXWELL IS ONLINE,  
maxwellmultimedia.com, BUT THIS  
STUFF YOU CAN'T SEE ANYWHERE  
UNLESS YOU'RE FRIENDS WITH DAN GELBART.

**Ray:** THAT'S RIGHT.

[ Pop captions down ]

**Leo:** AND WE THANK DAN SO  
MUCH FOR LETTING US PUT IT ON  
THE SHOW.

WHAT A BEAUTIFUL THING.

HE FOUND THIS IN AN ANTIQUE STORE.

**Ray:** HE FOUND IT IN AN  
ANTIQUE STORE IN CLOVERDALE,

HIS COUSIN -- NEPHEW.

**Leo:** NOBODY PAID ANY ATTENTION TO IT.

**Ray:** NO.

**Leo:** THEY DIDN'T REALIZE THE VALUE OF IT.

THANK YOU, RAY.

REALLY, REALLY COOL.

ALL RIGHT, WE'RE GOING TO TAKE A BREAK.

COMING UP, RYAN YEWELL IS GOING

TO SHOW YOU HOW TO USE THE Google.

SEE, HE'S DOING IT RIGHT THERE,

HE'S SAYING "THE Google. THE Google."

**Ray:** (laughing)

[ Pop captions up ]

**Leo:** BUT FIRST, A QUICK QUIZ

QUESTION OF THE DAY.

WHAT'S THE NAME OF THE UNIT

USED TO DENOTE THE SIZE OF THE

CAMERA'S APERTURE OPENING?

YOU KNOW THIS, RAY.

JUST BE QUIET.

IS IT FOCAL LENGTH, F-NUMBER,

ISO OR SHUTTER SPEED?

WE'LL TELL YA IN A LITTLE BIT

AS "THE LAB" CONTINUES.

[ Music ]

[ BLACK/COMMERCIAL ]

[ Pop captions down ]

(Theme music playing)

**Leo Laporte:** WELCOME BACK TO "THE LAB."

RAY ALSO LEFT THIS BEHIND.

THIS IS A BOOK, A NOVEL

WRITTEN BY THE VERY FAMOUS

MATHEMATICIAN NORBERT WIENER,

WHO IS THE FATHER OF  
CYBERNETICS, CALLED "THE TEMPTER."  
IT'S ACTUALLY SECRETLY THE  
STORY OF Mr. HEAVISIDE AND HIS  
INVENTION OF COAXIAL CABLE.  
WIENER WAS SO UPSET ABOUT  
THE FACT THAT HE DIDN'T GET ANY  
CREDIT THAT HE THOUGHT I'M  
GONNA WRITE A BOOK ABOUT THIS,  
BUT CHANGED ALL THE NAMES SO HE  
WOULDN'T GET SUED.

WOW, RAY'S GOT A LOT OF OLD STUFF.  
DO WE HAVE ANOTHER CALLER ON  
THE AIR HERE?

**Briana:** WE SHOULD.

**Leo:** WHAT DO YOU SAY?

**Briana:** THIS IS ARMAND,  
ARMAND, FRENCH OR ENGLISH,  
WHICHEVER YOU PREFER.

**Leo:** I'LL ASK HIM.

**Briana:** YEAH, AND HE'S FROM LILLOOET, B.C.

[ Pop captions up ]

**Leo:** OKAY.

IF HE'S FROM LILLOOET, IT MUST  
BE ARMAND.

HELLO, ARMAND.

[ Pop captions up ]

**Armand:** HELLO, LEO.

THANK YOU FOR TAKING MY CALL.

**Leo:** OH, THANKS FOR CALLING.

WHAT CAN I DO FOR YOU TODAY?

**Armand:** WELL, LEO, YOU KNOW,  
I WANT YOU TO KNOW THAT IT'S

BEEN GREAT WATCHING YOUR SHOW --

**Leo:** THANK YOU.

**Armand:** -- AND BUT THERE'S  
SOMETHING DID OCCUR TO ME.

**Leo:** YES.

**Armand:** YOU'VE BEEN  
HARPING - WELL, MAYBE HARPING  
ISN'T THE RIGHT WORD -

**Leo:** (laughing)

**Armand:** - YOU'VE BEEN ENCOURAGING US ALL TO BACKUP  
YOUR COMPUTERS.

**Leo:** HARPING IS THE RIGHT WORD.  
I AM HARPING.

**Armand:** (laughing) FOR SURE.

WELL, GUESS WHAT?

IT SEEMS THE MESSAGE IS GETTING THROUGH --

**Leo:** GOOD.

**Armand:** -- AND MORE AND MORE  
OF US ARE BUYING A LITTLE  
EXTERNAL HARD DRIVE --

**Leo:** EXCELLENT.

**Armand:** -- AND BACKING UP THE COMPUTER.

**Leo:** VERY GOOD IDEA.

**Armand:** BUT IT OCCURRED TO  
ME THAT THAT'S ALL WELL AND  
GOOD IF THE COMPUTER FAILS SO  
THAT YOU HAVE --

**Leo:** RIGHT.

**Armand:** -- A COPY.

BUT WHAT HAPPENS IF YOU HAVE A  
CATASTROPHIC FAILURE, FIRE,  
FLOOD, PESTILENTS OR WHATEVER,  
YOU KNOW, YOUR COMPUTER IS

GOING TO GO DOWN, YOUR BACKUP  
DRIVE IS GOING TO GO DOWN AND  
ALL THE STUFF THAT YOU HAVE  
COLLECTED IS GONE.

**Leo:** ARMAND, YOU'RE A GENIUS.  
YOU'RE ABSOLUTELY RIGHT.

[ Pop captions down ]

**Leo:** IN FACT, I CAN TELL YOU  
A TRUE STORY.  
THE GREAT DIRECTOR FRANCIS FORD  
COPPOLA THOUGHT HE WAS A VERY  
SMART GUY.

VERY RECENTLY HE WAS IN I THINK  
BRAZIL AND HAD ALL OF HIS STUFF  
ON HIS COMPUTER, ALL HIS  
SCRIPTS, 20 YEARS WORTH OF  
WORK, BUT, OH, I'M SMART, HE  
BACKED IT UP TO AN EXTERNAL  
HARD DRIVE.

THIEVES CAME AND STOLE THE  
COMPUTER AND THE HARD DRIVE.  
HE LOST EVERYTHING.

**Armand:** AND LO AND BEHOLD  
THERE'S THE RUB.

**Leo:** THERE'S THE RUB.  
IT'S NOT IN THE BACKUP IF IT'S ONSITE.

**Armand:** NO, EXACTLY.

**Leo:** SO, YOU NEED OFFSITE  
BACKUP, YOU'RE ABSOLUTELY RIGHT.

[ Pop captions up ]

**Armand:** SO, COULD YOU NOT  
SHARE WITH A BUDDY?

**Leo:** YES.

**Armand:** LIKE, I HAVE A HARD DRIVE.  
MY FRIEND DOWN THE STREET HAS A  
HARD DRIVE.

**Leo:** YES.

**Armand:** COULD I NOT BACKUP  
TO HIS AND HE TO MINE AND --

**Leo:** ABSOLUTELY AND SWAP THEM.

[ Pop captions down ]

**Armand:** SO, HOW CAN WE DO THAT?

**Leo:** WELL, THE EASY-- I'LL  
BE HONEST WITH YOU, YOU DON'T  
NEED A BUDDY TO DO THIS.

YOU NEED TWO BACKUP (laugh)  
DISCS, RIGHT, TWO EXTERNAL  
DRIVES, THEY'RE CHEAP ENOUGH  
NOW TO DO THIS, AND EVERY WEEK  
TAKE ONE TO WORK.

**Armand:** (laugh) THERE YOU GO.

**Leo:** THERE YOU GO.

AND THE WAY YOU BACKUP IS YOU  
JUST USE THE BACK-- WHATEVER  
BACKUP PROGRAM OF CHOICE.  
I PERSONALLY DON'T USE -- LIKE  
BACKUP SOFTWARE BECAUSE WHAT  
YOU GET IS A BIG BLOB, YOU  
DON'T KNOW WHAT IT IS AND YOU  
NEED TO RUN THE PROGRAM TO RECOVER IT.  
SO, I LIKE TO JUST MAKE SURE  
THE STUFF IS COPIED OVER.  
IF YOU WANT TO MAKE SURE  
EVERYTHING IS THERE, YOU CAN  
USE A SYNCHRONIZING PROGRAM  
LIKE Microsoft'S FREE SYNC TOY

CENTRED SYSTEM'S Second Copy,  
WHICH IS WHAT I USE.  
AND WHAT IT DOES IS IT COMPARES  
THE HARD DRIVE WITH THE FOLDERS  
YOU WANT TO BACKUP AND MAKES  
SURE THAT EVERYTHING THAT'S ON  
THE FOLDERS YOU WANT TO BACKUP  
IS ALSO ON THE HARD DRIVE.  
THAT'S NICE BECAUSE IT'S  
EFFICIENT, IT ONLY COPIES NEW STUFF.  
AND THEN EVERY WEEK TAKE IT TO  
WORK, LEAVE IT AT WORK.  
BRING THE ONE FROM WORK HOME.  
YOU'RE NEVER MORE THAN A WEEK  
OUT OF DATE.  
THERE'S ANOTHER WAY TO DO THIS  
THAT'S MORE AUTOMATIC, COSTS  
MONEY THOUGH, AND THAT'S TO USE  
ONLINE BACKUP.

**Armand:** YES, I HEARD THAT.

**Leo:** YEAH.

NOW, YOU HAVE TO HAVE  
HIGH-SPEED INTERNET FOR THIS TO  
MAKE ANY SENSE.  
IT IS A LITTLE SLOWER, BUT IT  
TRICKLES IT OUT.  
THERE ARE A NUMBER OF COMPANIES  
THAT DO THIS.

[ Pop captions up ]

**Leo:** mozy IS ONE, M-O-Z-Y .com.

THEY'RE Mac AND PC.

I USE THIS ONE THAT'S CALLED CARBONITE.  
IT'S Windows ONLY RIGHT NOW.

THEY'RE WORKING ON A Mac CLIENT.  
THE IDEA OF THESE PROGRAMS IS  
YOU JUST RIGHT CLICK THE FOLD--  
YOU RUN THE SOFTWARE, INSTALL  
IT, YOU RIGHT CLICK THE FOLDERS  
YOU WANT IT TO KEEP TRACK OF  
AND THEN IT JUST RUNS IN THE  
BACKGROUND ALL THE TIME.  
IT HAS TO, OTHERWISE IT  
WOULDN'T GET IT UPLOADED.  
AND THEN FOR DO-IT-YOURSELFERS,  
THIS IS ANOTHER ONE I USE.  
IT'S CALLED Jungle Disk.  
YOU SEE WE HAVE OUR Jungle Disk  
RIGHT HERE ON THE DESKTOP.

[ Pop captions down ]

**Leo:** IT IS -- THIS IS  
ACTUALLY, THIS DISK IS ACTUALLY  
AT Amazon'S WORLD HEADQUARTERS.  
IT'S ON S3 STORAGE.  
SO WHEN I BACKUP STUFF HERE, IT  
AUTOMATICALLY -- IT LOOKS LIKE  
IT'S ON MY COMPUTER, IT'S  
MOUNTED AS A DISK ON MY  
COMPUTER, BUT, IN FACT, IT'S NOT.  
SO IF SOMETHING SHOULD HAPPEN  
TO MY COMPUTER, IT WOULD -- IT  
WOULD BE BACKING IT UP.  
AND YOU CAN SEE I'M RUNNING IT  
ON Windows AS WELL, WHICH IS  
KIND OF COOL.  
YOU CAN RUN IT ON ALL THE  
DIFFERENT PROGRAMS.

[ Pop captions up ]

**Leo:** THAT'S A LITTLE MORE OF A TWEAK.  
YOU HAVE TO BE KIND OF A GEEK  
TO DO THIS, BUT I REALLY LIKE  
JUNGLE DISK, IT'S A REALLY  
USEFUL WAY TO DO THIS.

[ Pop captions down ]

**Leo:** IN FACT, I CAN SAY TO  
Jungle Disk, IT EVEN HAS A  
BACKUP, AUTOMATIC BACKUP  
PROCEDURE, SO IT WILL DO THE  
BACKUPS IN THE BACKGROUND, JUST  
LIKE mozy OR CARBONITE.  
IT'S JUST MORE OF A  
DO-IT-YOURSELF THING.  
A LITTLE BIT MORE EXPENSIVE  
BECAUSE YOU ONLY PAY FOR  
STORAGE YOU USE.  
mozy AND CARBONITE ARE VERY  
AFFORDABLE, \$50 A YEAR FOR  
UNLIMITED BACKUP.

**Armand:** SURE.

I HAVE A Mac WITH Time Machine ON IT.

**Leo:** Time Machine IS REALLY  
COOL, BUT YOU RAISE THE EXACT  
RIGHT POINT.

**Armand:** RIGHT.

**Leo:** IT'S BACKING UP TO THE  
DRIVE RIGHT NEXT TO THE COMPUTER.

**Armand:** I WAS HOPING THAT MY  
LITTLE OLD Time Machine WOULD  
NOT BACKUP HERE, WOULD BACKUP THERE.

**Leo:** YEAH.

NOW, Apple DOES HAVE dotMac --

**Armand:** RIGHT.

**Leo:** -- WHICH CAN BE USED THAT WAY.  
YOU CAN CREATE A LOCAL iDISK  
THAT AUTOMATICALLY COPIES TO  
dotMac, BUT IT'S LIMITED TO 10 GIGABYTES.  
IT'S NOT A LOT OF STORAGE.

**Armand:** TOO SMALL.

**Leo:** YEAH, IT'S TOO SMALL, I THINK.

**Armand:** RIGHT.

**Leo:** SO, I LIKE YOUR IDEA.  
IT'S FAST, IT'S EFFICIENT,  
COST PER MEGABYTE IS VERY LOW.  
JUST BUY A SECOND EXTERNAL DRIVE.  
GIVE IT TO A FRIEND.

**Armand:** SOUNDS GOOD TO ME.

**Leo:** HEY, THANKS SO MUCH.  
WHAT A GREAT -- YOU'RE A GENIUS!

**Armand:** HEY.

**Leo:** GREAT MINDS THINK ALIKE, THAT'S WHY.

**Armand:** THANKS A LOT, LEO.

**Leo:** THANKS FOR THE CALL.  
I REALLY APPRECIATE IT, ARMAND.

**Armand:** BYE-BYE.

**Leo:** TAKE CARE.  
NOW, LET'S TAKE A WALK.  
LET'S TAKE A WALK ON THE WILD SIDE.  
I'M TAKIN' MY NORBERT WIENER  
BOOK WITH ME.  
ISN'T THAT COOL?

**Sean:** THAT'S A GREAT LOOKIN' BOOK.

**Leo:** I JUST THINK IT'S SO COOL.  
HE -- RAY ALWAYS BRINGS SO MANY

FUN, INTERESTING THINGS.

**Sean:** I'LL BE SEARCHING FOR  
THAT ONE NOW TOO.

**Leo:** YEAH, NO KIDDIN'.

I KNOW, IT'S PROBABLY HARD TO FIND.  
BUT SEAN'S GOT SOMETHING  
INTERESTING FOR US THAT'S A SHINY.

**Sean:** IT IS SHINY.

**Leo:** AND I SEE IT'S A Zune.

**Sean:** YEAH, EVERYBODY IN THE  
STATES IS GOING, "BIG DEAL."  
YOU KNOW WHAT, THIS IS FINALLY  
COMING TO CANADA.

**Leo:** OH, YOU DIDN'T HAVE THIS?

**Sean:** NO, IT IS NOW OUT AS OF SPRING 2008.

[ Pop captions up ]

**Leo:** YOU KNOW, I'LL BE  
HONEST, I'VE NEVER SEEN ANYONE  
CARRY A Zune ANYWHERE, U.S. OR  
CANADA, SO.

**Sean:** YEAH, SO IT MIGHT BE A  
BIG DEAL ANYWAYS.

**Leo:** YOU AND I ARE THE ONLY  
ONES (laughing) WITH Zunes.  
YOU KNOW WHY I HAVE IT?  
BECAUSE SEE THAT WORD PODCASTS  
RIGHT THERE?  
IT HAS BUILT-IN SUPPORT FOR  
PODCASTING, WHICH I THINK IS  
REALLY GREAT.

**Sean:** YEAH, IT TOOK THEM A  
WHILE TO COME AROUND.  
THE FIRST GENERATION OF THIS

PRODUCT WAS REALLY A DISASTER  
FROM A LOT OF PERSPECTIVES.

[ Pop captions down ]

**Leo:** NOW, THIS IS THE BIG ONE.

THIS IS THE 80 GIG ONE WITH THE  
HARD DRIVE, YEAH?

**Sean:** THIS IS THE 80 GIG ONE.

THEY'VE GOT A 4 GIG AND AN 8 GIG --

**Leo:** RIGHT.

**Sean:** -- THAT USES FLASH

MEMORY THAT'S A BIT MORE COMPACT.

**Leo:** YEAH.

**Sean:** THEY WORK

THEORETICALLY THE SAME.

THEY'VE GOT WiFi BUILT IN.

**Leo:** MM-HMM.

**Sean:** CREATE A NETWORK WITH

OTHER Zunes IN THE

NEIGHBOURHOOD, SQUIRT SONGS TO

EACH OTHER AND --

**Leo:** I NEVER GOT THE POINT

OF THAT --

**Sean:** YEAH.

**Leo:** -- BUT CAN I DOWNLOAD

MUSIC VIA WiFi NOW?

**Sean:** YOU CANNOT DO THAT YET.

**Leo:** (laughing)

**Sean:** AND YOU CANNOT STILL

PLAY THE SONGS THAT YOU BOUGHT

ON THE OLD Windows STORES AT DRM.

**Leo:** THAT REALLY DRIVES ME CRAZY.

**Sean:** YOU CAN BUY IT FROM

Marketplace, STILL NOT IN

CANADA AS WE SPEAK AND --

**Leo:** WAIT A MINUTE, SO THE  
Zune Marketpla-- THEY SELL THE  
Zune HERE, BUT THEY DON'T HAVE  
THE Zune Marketplace, SO YOU  
CAN'T BUY ANY MUSIC FOR IT?

**Sean:** NOT ONLINE.

**Leo:** (laughing)

**Sean:** YOU CAN BUY -- YOU CAN  
PLAY IT FROM THE OTHER PLACES  
THAT WILL SELL YOU UNDRMED MP3s, SO.

**Leo:** RIGHT.

AND IT'S WORTH SAYING IF YOU  
BUY COPY PROTECTED MUSIC AT  
OTHER STORES, IT WON'T PLAY THERE.  
NOT JUST --

**Sean:** RIGHT.

**Leo:** -- iTunes, WHICH WON'T  
PLAY ON THERE, IT ONLY REQUIRES  
AN iPod, BUT EVEN OTHER --

**Sean:** RIGHT.

**Leo:** -- Windows-BASED MUSIC  
STORES, AS YOU MENTIONED, YOU  
HAVE TO BUY IF YOU'RE GOING TO  
GET COPY PROTECTED MUSIC.  
NOW, IF YOU BUY UNPROTECTED  
MUSIC OR MAKE YOUR OWN, IT'LL  
WORK FINE, YEAH.

**Sean:** IT'LL BE FINE.

YEAH.

SO, I THINK THEIR GOAL WAS JUST --

**Leo:** GET IT OUT.

**Sean:** -- GET IT INTO THE

CANADIAN MARKETPLACE, PEOPLE --

**Leo:** IT'S A NICE PLAYER.

**Sean:** YEAH, PEOPLE ARE  
RIPPING FROM THEIR CDs.

**Leo:** IF THE iPod DIDN'T  
EXIST, THIS WOULD BE HUGE.

**Sean:** AND YOU KNOW WHAT, I  
THINK THE THIRD GENERATION OF  
THIS WILL BE A LOT BETTER AS WELL.  
THERE'S STILL A FEW THINGS I  
DON'T LIKE ABOUT IT.

THIS ONE STILL OCCASIONALLY  
REBOOTS ON ME OCCASIONALLY --

**Leo:** RIGHT.

**Sean:** -- WHICH I DON'T LIKE.

**Leo:** PROS AND CONS.

**Sean:** SO, THERE WE GO, SO.

[ Pop captions up ]

**Leo:** YEAH, LET'S LOOK AT THE  
PROS AND CONS HERE.

LARGE SCREEN, I LIKE THAT.

**Sean:** IT IS GREAT.

**Leo:** I DO LIKE THE  
HEADPHONES IT COMES WITH.

**Sean:** THE HEADPHONES ARE  
AMAZING AND THEY'RE MAGNETIC,  
SO YOU CAN ACTUALLY LOOP THEM  
TOGETHER AND THEY DON'T JUST  
SORT OF WIGGLE EVERYWHERE.

**Leo:** THEY GO CLICK, YEAH.

**Sean:** AND THE WiFi I THINK  
IS -- IT'S A REALLY GREAT CONCEPT.  
IT DOESN'T WORK REALLY

STURDILY, BUT I THINK IT WILL  
BE REALLY GREAT ONCE THEY GET  
THAT DOWN.

**Leo:** THE NEGATIVES?

**Sean:** THE NEGATIVES, STILL NO Marketplace.

**Leo:** (blows raspberry)

**Sean:** WON'T PLAY THE OLD SONGS --

**Leo:** RIGHT.

**Sean:** -- THAT YOU BOUGHT ON  
THE OLD STORE.

**Leo:** CAN'T BUY OVER WiFi.

**Sean:** AND YOU DIDN'T BUY OVER WiFi.  
THAT'LL BE IN THE NEXT  
GENERATION IF THEY KNOW WHAT'S  
GOOD FOR THEM.

**Leo:** RIGHT.

**Sean:** AND FOR THIS ONE THE  
80 GIGABYTE HARD DRIVE, IT IS  
STILL MECHANICAL.  
SO IF YOU DROP THIS --

**Leo:** DON'T DROP IT.

**Sean:** -- YOU COULD DAMAGE IT.

**Leo:** THAT'S TRUE OF AN iPod  
TOO, DON'T DROP IT.

**Sean:** YEAH.

[ Pop captions down ]

**Leo:** JUST DON'T DROP IT.

ALL RIGHT, WE'RE GOING TO TAKE A BREAK.  
WHEN WE COME BACK, WE'LL LEARN  
ABOUT THE Google WITH THIS GUY,  
AND WE'RE GOING TO GIVE YOU A  
CHANCE TO ANSWER OUR QUIZ QUESTION.

[ Pop captions up ]

**Leo:** ONE MORE LOOK AT IT HERE.  
WHAT IS THE NAME OF THE UNIT  
USED TO DENOTE THE SIZE OF A  
CAMERA'S APERTURE OPENING?  
WOULD THAT BE THE FOCAL LENGTH,  
THE F-STOP, THE ISO OR THE  
SHUTTER SPEED?  
HMM, I DON'T KNOW.  
THINK ABOUT IT.  
WE'LL ANSWER WHEN "THE LAB"CONTINUES  
RIGHT AFTER THIS.

[ Music ]

[ BLACK/COMMERCIAL ]

[ Pop captions up ]

**Leo Laporte:** WELCOME BACK.  
BEFORE THE BREAK WE ASKED YOU  
WHAT'S THE NAME OF THE UNIT  
THAT DENOTES THE SIZE OF THE  
OPENING IN THE CAMERA LENS?  
THAT WOULD BE THE F-STOP, SO LIKE F2, F4, F16.  
YOU KNEW THAT.

[ Pop captions down ]

**Ryan:** UH, MAYBE.

**Leo:** RYAN YEWELL'S HERE.  
HE'S NORMALLY A JEWELLED KIND OF FELLOW --

**Ryan:** YES.

**Leo:** -- BUT TODAY WE'RE  
GOING TO GIVE YOU A WHOLE  
SEGMENT TO TALK ABOUT --

**Ryan:** THANK YOU.

**Leo:** -- THE Google.

**Ryan:** YES.

WELL, I - I USE Google A LOT.

[ Pop captions up ]

**Leo:** YOU DO?

**Ryan Yewell:** I DO.

I THINK MOST OF US HERE DO.

**Leo:** I DON'T THINK THERE'S ANYBODY HERE WHO DOESN'T.

**Ryan:** I KNOW, AND --

[ Pop captions down ]

**Leo:** I LOOK AT THOSE STAT-- THE SEARCH STATISTICS WHERE IT SAYS, YOU KNOW, OH, 65% OF THE WORLD USES Google --

**Ryan:** YEAH.

**Leo:** -- I'M THINKIN' WHAT ARE THE OTHER 35% USING, Yahoo!?

**Ryan:** I DON'T KNOW, BUT A LOT OF MY FRIENDS AND FAMILY, THEY ASK ME QUESTIONS, THEY THINK I'M A GENIUS.

I JUST Google IT.

**Leo:** YOU ARE THE --

(laughing)

**Ryan:** THAT'S WHAT I DO.

SO, LET'S GET INTO IT HERE.

FIRST THING ABOUT Google THAT I THINK PEOPLE SHOULD REALLY UNDERSTAND IS USING EXACT PHRASES.

SO, FOR INSTANCE, IF I WERE TO SEARCH FOR ryan yewel is, IT'S GOING TO COME BACK WITH 3,290 PAGES OF Ryan AND Yewel AND is IN IT.

**Leo:** NOT NECESSARILY ALL TOGETHER.

**Ryan:** EXACTLY.

SO NOW, IF I PUT QUOTES AROUND  
THIS, SO A QUOTE AT THE START,  
A QUOTE AT THE END, IT'S GONNA  
SEARCH FOR THAT EXACT PHRASE  
"ryan yewel is" AND NOW WE HAVE  
SEVEN RESULTS.

THERE'S ACTUALLY SEVEN PAGES --

**Leo:** THAT NARROWED IT RIGHT DOWN.

**Ryan:** -- THAT NARROWED IT RIGHT DOWN.

NOW, THE REA--

**Leo:** IT'S PRETTY SMART ABOUT NAMES.

IF YOU JUST TYPE RYAN YEWELL,  
IT GENERALLY SAYS THAT'S A  
NAME, I CAN TELL BECAUSE IT'S CAPITALIZED.

**Ryan:** YEAH.

**Leo:** IT'S ALMOST AS IF YOU  
PUT THE QUOTES IN.  
BUT ANYTHING MORE THAN A NAME --

**Ryan:** YEAH.

**Leo:** -- YOU WANT TO QUOTE IT.

**Ryan:** AND THE REASON THAT'S  
IMPORTANT IS BECAUSE WHEN I DO  
A LOT OF ERROR MESSAGE  
SEARCHING, SO IF LIKE --

**Leo:** RIGHT.

**Ryan:** -- SOMETHING'S NOT  
WORKING ON MY COMPUTER AND IT  
HAS AN ERROR MESSAGE, I  
ACTUALLY PUT PARTS OF THE ERROR  
MESSAGE IN QUOTES --

**Leo:** YES.

**Ryan:** -- SO THAT YOU CAN  
ACTUALLY FIND PEOPLE ON THE

INTERNET WHO HAVE WRITTEN DOWN  
THAT EXACT ERROR MESSAGE.

**Leo:** THAT ERROR MESSAGE.

**Ryan:** AND SOMEONE'S ANSWERED  
THEIR QUESTION.

SO, IT'S REALLY IMPORTANT TO  
UNDERSTAND THAT QUOTES CAN  
REALLY NARROW DOWN SEARCHES.

**Leo:** YEAH, YEAH.

THAT'S A VERY GOOD EXAMPLE  
WHERE YOU'RE TRYING TO FIND  
THAT EXACT ERROR MESSAGE --

**Ryan:** YEAH.

**Leo:** -- PHRASE, AND IT CAN BE ANY PART OF IT.

**Ryan:** EXACTLY.

**Leo:** AS LONG AS THERE'S SIX  
OR SEVEN WORDS, THERE'S --

**Ryan:** EXACTLY.

**Leo:** -- ONLY GOING TO BE  
PAGES THAT ARE MENTIONING THAT  
ERROR MESSAGE.

**Ryan:** EXACTLY.

AND ALONG THOSE LINES, IT'S  
REALLY IMPORTANT TO USE UNIQUE  
PHRASES WHEN YOU'RE Googling SO THAT --

**Leo:** AH, UNIQUE IS THE KEY, YEAH.

**Ryan:** UNIQUE IS THE KEY.

SO IF THERE'S AN ERROR MESSAGE  
THAT GIVES YOU SOME, YOU KNOW,  
A61924 OR SOMETHING --

**Leo:** THAT'S WHAT YOU WANT.

**Ryan:** -- THAT'S A VERY UNIQUE THING.

**Leo:** RIGHT.

**Ryan:** PUT THAT IN Google AND  
THEN PUT MAYBE "ERROR MESSAGE" AFTER IT --

**Leo:** RIGHT.

**Ryan:** -- AND LOOK FOR IT.

SO, THAT'S THE FIRST THING,  
YOU'VE GOT TO UNDERSTAND QUOTES.

THE NEXT THING IS YOU CAN  
ACTUALLY DO A SEARCH-- SO,  
RIGHT NOW LET'S JUST SEARCH FOR winfrey.

OKAY, WE'RE JUST GONNA SEARCH  
FOR winfrey AND WE'RE GOING TO  
GET QUITE A FEW RESULTS HERE.

SO, WE'VE GOT 9 MILLION HITS ON winfrey.

**Leo:** RIGHT.

**Ryan:** THAT'S PROBABLY  
BECAUSE OF OPRAH WINFREY, RIGHT?

**Leo:** RIGHT.

**Ryan:** WELL, WHAT IF WE'RE  
NOT SEARCHING FOR OPRAH  
WINFREY, WE'RE SEARCHING FOR  
SOMETHING ELSE?

IF I PUT -oprah, WHAT THAT'S  
GOING TO DO IS IT'S GONNA  
SEARCH FOR WINFREY AND THEN  
ANYTHING THAT HAS OPRAH IN IT,  
IT'S GONNA TAKE THAT OUT.

SO, WE'RE GONNA GO FROM  
9 MILLION HITS DOWN TO ABOUT,  
LET'S SEE HERE - OH, COME ON INTERNET.

**Leo:** CLICK THE Search.

I THINK IT DOES -- YOUR FOCUS IS WRONG.

**Ryan:** THERE WE GO.

**Leo:** YEAH.

**Ryan:** SO, 350,000.

**Leo:** NOW WE HAVE AMY WINFREY, WHICH IS WHAT WE'RE REALLY LOOKING FOR. (laughing)

**Ryan:** THERE YOU GO. BUT IT'S REALLY IMPORTANT BECAUSE A LOT OF TIMES, LIKE, IF YOU'RE --

**Leo:** OH, WINFREY'S FUDGE & CHOCOLATES, WE MIGHT ACTUALLY WANT THAT ONE.

**Ryan:** IF YOU'RE LOOKING FOR, LIKE, THE CARS AS THE GROUP --

**Leo:** YEAH.

**Ryan:** YOU KNOW, CARS IS A REAL --

**Leo:** THAT'S HARD TO FIND.

[ Pop captions up ]

**Ryan:** IT'S HARD TO FIND, BUT IF YOU, LIKE, MINUS FORD OR, YOU KNOW, JUST --

**Leo:** RIGHT.

**Ryan:** -- START MINUSING THINGS FROM IT, IT CAN REALLY NARROW DOWN YOUR SEARCH. SO, NO, I DON'T WANT TO SEE RESULTS FROM THIS TYPE OF WORD.

**Leo:** VERY USEFUL FOR SEARCHING FOR SOMETHING THAT'S A POPULAR WORD IN ANOTHER CONTEXT.

[ Pop captions down ]

**Ryan:** THERE YOU GO.

**Leo:** YEAH.

**Ryan:** SO, THOSE TWO THINGS

ARE HONESTLY ABOUT AS MUCH AS I  
WOULD SAY FOR NOW.

IF YOU UNDERSTAND THOSE TWO  
THINGS, YOU'RE GOOD.

NOW, THE NEXT THING IS IF YOU  
WANT TO GET TO YOUR RESULTS, I  
WANT TO TELL PEOPLE SPONSORED  
LINKS, OKAY, I'VE BEEN  
SEARCHING PROBABLY HUNDREDS OF  
THOUSANDS OF TIMES --

**Leo:** THAT'S THOSE THINGS ON  
THE RIGHT AND THE TOP THERE.

**Ryan:** ON THE TOP.

I DON'T THINK I CAN EVER  
REMEMBER ONCE CLICKING ON A  
SPONSORED LINK.

NOW, THAT'S MY PERSONAL PREFERENCE.  
I HONESTLY DON'T EVEN SEE THE  
SPONSORED LINKS.

**Leo:** RIGHT. RIGHT.

**Ryan:** BECAUSE PEOPLE HAVE TO  
UNDERSTAND THESE COMPANIES OR  
BUSINESSES ARE PAYING TO HAVE  
THOSE RESULTS AT THE TOP.

**Leo:** SO LET'S GET THAT CLEAR.  
SO WHEN IT'S IN THAT ORANGE AT THE TOP --

**Ryan:** THIS AREA RIGHT HERE.

**Leo:** -- OR DOWN THE SIDE --

**Ryan:** OR DOWN THE SIDE.

**Leo:** -- IT EVEN SAYS  
"SPONSORED LINKS" IN THOSE BOXES --

**Ryan:** IT SAYS "SPONSORED LINKS".

**Leo:** -- THOSE ARE ADS.

THEY'RE NOT SEARCH RESULTS.

**Ryan:** EXACTLY.

**Leo:** THEY'RE ADS WHERE THE  
PEOPLE PAID TO BE ON THE PAGE  
WHERE YOU GET SEARCH RESULTS --

**Ryan:** EXACTLY.

**Leo:** -- FOR A PARTICULAR TOPIC.

**Ryan:** THAT'S NOT VERY DEMOCRATIC.

IF Google IS ABOUT WHO HAS THE  
MOST LINKS TO THEIR PAGE --

**Leo:** WELL, THEY'VE GOT TO  
MAKE SOME MONEY --

**Ryan:** THEY DO.

**Leo:** -- COME ON.

**Ryan:** BUT I'M TELLING YOU,  
IF YOU START LOOKING THROUGH  
THOSE SPONSORED SITES, YOU  
MIGHT NOT FIND WHAT YOU'RE  
LOOKING FOR.

**Leo:** RIGHT.

**Ryan:** YOU PROBABLY WON'T.

**Leo:** RIGHT.

**Ryan:** SO, I WOULD SAY AVOID  
THE SPONSORED ADS IF YOU CAN,  
YOU KNOW.

**Leo:** OKAY.

**Ryan:** OR BEWARE IF YOU'RE  
GOING TO GO THERE.

**Leo:** WELL, IF YOU'RE  
SEARCHING FOR A CAMERA AND YOU  
SEE THE SPONSORED LINKS HAVE A  
CAMERA STORE WITH A GOOD PRICE,  
THERE'S NOTHING WRONG WITH THAT.

**Ryan:** THERE'S NOTHING WRONG WITH IT, BUT FROM MY -- JUST FOR WHAT I DO --

**Leo:** YOU'RE A COMMIE.  
YOU'RE A COMMIE. (laughing)

**Ryan:** I JUST, I DON'T LIKE SPONSORED LINKS.

**Leo:** I KNOW WHAT YOU MEAN.

**Ryan:** OKAY.

**Leo:** I KNOW WHAT YOU MEAN.

**Ryan:** NOW, THIS IS A GOOD TIP THAT I LIKE IS THAT EVEN WITH ALL THESE TIPS, THERE'S ALWAYS SO MANY SEARCH RESULTS, RIGHT. SO RIGHT NOW IF I TRY TO SEARCH FOR LET'S SAY A REALLY DANGEROUS SEARCH HERE, LET'S GO software serial crack, THAT'S GOING TO GIVE US A LOT OF WEBSITES --

**Leo:** OH, YOU DON'T WANT THAT.

**Ryan:** -- THAT...

**Leo:** DON'T GO TO THOSE SITES. THAT'S A WAY TO GET VIRUSES AND SPYWARE AND ALL SORT OF STUFF.

**Ryan:** NOW, YOU SEE I'M USING A PROGRAM CALLED McAfee SiteAdvisor AND YOU SEE ON -- THERE'S LIKE AN EXAMINATION MARK, A BIG X AROUND HERE.

**Leo:** OH, YEAH, I WAS WONDERING WHAT THAT WAS. THAT'S NOT FROM Google. THAT'S FROM A SEPARATE SOFTWARE.

**Ryan:** THAT'S NOT FROM Google.

THAT'S A FREE FILE I'VE SHOWN BEFORE --

**Leo:** RIGHT.

**Ryan:** -- CALLED McAfee SiteAdvisor AND IT'S JUST A  
QUICK VISUAL CUE --

**Leo:** AND YOU SEE ALL THOSE Xs?

**Ryan:** THE Xs --

**Leo:** DON'T GO THERE.

[ Pop captions up ]

**Ryan:** -- WHAT THEY'VE DONE  
IS THEY'VE GONE THERE, THEY'VE  
SEEN POP UPS, THEY'VE SEEN --

**Leo:** RIGHT.

**Ryan:** -- MAYBE DANGEROUS DOWNLOADS.

SO, IF YOU USE McAfee  
SiteAdvisor, IT'S A VISUAL WAY  
IN YOUR SEARCH RESULTS TO KIND  
OF MAKE SURE YOU'RE NOT  
CLICKING ON THOSE LINKS.

[ Pop captions down ]

**Leo:** NOW, WILL YOU DO ME A  
FAVOUR AND PUT ALL OF THESE ON  
THE WEBSITE --

**Ryan:** ABSOLUTELY.

**Leo:** -- SO WE CAN -- BECAUSE  
I KNOW THIS WENT A LITTLE  
QUICKLY, BUT JUST THOSE THINGS  
ALONE THAT YOU JUST SAW AND  
YOU'VE EVEN GOT SOME MORE WE'RE  
GOING TO PUT ON THE WEBSITE --

**Ryan:** ABSOLUTELY.

**Leo:** -- WILL TRANSFORM YOUR  
ABILITY TO FIND ANYTHING YOU

WANT (snaps fingers) RIGHT AWAY --

**Ryan:** EXACTLY.

**Leo:** -- ON THE INTERNET.

[ Pop captions up ]

**Leo:** labwithleo.com.

**Ryan:** labwithleo.com.

**Leo:** YEWELL'S Google TIPS.

**Ryan:** IT'S GOING TO ACTUALLY  
BE A SEGMENT.

IT'S NOT A YEWELL'S JEWEL.

WE'RE GONNA PUT THIS IN A SHOW.

**Leo:** YEWELL'S Google TIPS.

**Ryan:** IN THE EPISODES, YEAH.

**Leo:** NOW, COMIN' UP, HOW'S  
OUR WEB WORKSHOP GOING?

MARK WILL SHOW US HOW HE'S --

**Ryan:** OOH. THIS IS GOING TO BE COOL.

**Leo:** -- TRANSFORMING A SITE  
RIGHT AFTER THIS.

STAY HERE.

(Theme music playing)

[ BLACK/COMMERCIAL ]

[ Pop captions down ]

(Theme music playing)

**Leo Laporte:** WELCOME BACK TO "THE LAB."

SO, MARK HAS BEEN WORKING VERY HARD.

MARK YUASA IS THE CREATIVE  
DIRECTOR OF RAINCITY STUDIOS.

WE GAVE HIM A TASK.

HE VISITED A SITE ONE OF OUR  
VIEWERS SENT IN.

**Mark:** MM-HMM.

**Leo:** windows-xp-update.com.

**Mark:** windows DASH xp DASH update.com.

**Leo:** OKAY, AND THERE IT IS.

**Mark:** YEAH.

**Leo:** NOW, THAT'S THE ORIGINAL.

**Mark:** THAT'S RIGHT.

[ Pop captions up ]

**Leo:** AND, NOW, WE'VE-- MARK  
IS A REAL PRO.

SO, WITHIN-- YOU TOOK, LIKE, 45  
MINUTES TO DO THIS.

HE'S TOTALLY FIXED UP THIS SITE.

LET'S SEE WHAT YOU'VE DOWN AND WHY.

[ Pop captions down ]

**Mark:** ALL RIGHT.

HERE'S THE REVEAL.

**Leo:** OH, MAN.

NOW, YOU REALLY LIKE THESE  
GRADIENTS, DON'T YOU?

**Mark:** I DO.

**Leo:** COLOURS THAT KIND OF GO  
FROM DARK TO LIGHT.

**Mark:** YEAH, IT'S A WAY OF  
GIVING A LITTLE BIT OF DEPTH TO WEBSITES --

**Leo:** YEAH.

**Mark:** -- BECAUSE GENERALLY A  
LOT OF WEBSITES ARE QUITE FLAT.

**Leo:** IF YOU COMPARE THE TWO,  
THAT REALLY, IT DID, IT GAVE IT DEPTH.

**Mark:** RIGHT.

**Leo:** IT'S BEAUTIFUL, YEAH.

[ Pop captions up ]

**Mark Yuasa:** RIGHT, AND USED  
IN WITH -- WITH A BIT OF -- A

BIT OF THOUGHT, YOU KNOW,  
CAN BE REALLY NICE AND SUBTLE.

[ Pop captions down ]

**Leo:** SHOW US WHAT ELSE YOU DID.  
YOU SHRUNK THE LOGO A LITTLE  
BIT, WHICH I THINK IS A GOOD IDEA.

**Mark:** YEAH.

WHAT I DID ACTUALLY WAS THE  
LOGO WAS NOWHERE IN THE  
MASTHEAD OR ANYTHING THAT EXISTED.

**Leo:** RIGHT.

**Mark:** IT'S ACTUALLY ONLY  
HERE IN THE PAGE CONTENT --

**Leo:** YEAH.

**Mark:** -- ON THE SITE.

**Leo:** RIGHT.

**Mark:** NOW, WHAT I DID WAS I --

**Leo:** SO, YOU WANT IT TO BE  
ON EVERY PAGE.

**Mark:** YEAH, I WANT IT IN THE  
MASTHEAD SO THERE'S A CONSTANT BRAND.

**Leo:** YEAH.

**Mark:** AND IF I WAS SPENDING  
A LOT OF TIME WITH A LOGO, I  
WOULD HAVE TWEAKED THOSE MORE.  
BUT BASICALLY MY WHOLE --

**Leo:** WELL, YOU TURNED IT A  
LITTLE BIT, WHICH I THINK --

**Mark:** I TURNED IT.

**Leo:** -- JUST BY ITSELF HELPED A LOT.

**Mark:** WELL, IT MAKES IT MORE --

**Leo:** DYNAMIC, YEAH.

**Mark:** -- DYNAMIC BECAUSE

IT'S ON AN ANGLE.

**Leo:** YEAH.

**Mark:** AND THAT'S AN OLD --

**Leo:** IT'S MOVEMENT.

**Mark:** -- 2D DESIGN TRICK.

**Leo:** YEAH.

**Mark:** RIGHT, EXACTLY.

MY WHOLE THEORY WITH THIS SITE  
DESIGN WAS MAKE IT LOOK LIKE  
Windows XP, AS IN LET PEOPLE  
KNOW IMMEDIATELY WHAT THEY'RE  
GOING TO GET.

**Leo:** WELL, YOU DO AND YOU DID IT.  
WHEN YOU LOOK AT IT, THAT'S A  
Windows -- THIS IS ALL ABOUT Windows XP.

**Mark:** RIGHT.

IT'S BECAUSE I'VE PULLED SOME  
COLOURS, I PULLED SOME IMAGERY.

**Leo:** YOU USED THAT PALETTE  
TOOL TO FIND THE Windows XP PALETTES.

**Mark:** THAT'S RIGHT.

**Leo:** WE SHOWED YOU THAT AT THE BEGINNING.

**Mark:** YEAH, I USED Art  
Directors Toolkit AND I CAN  
SHOW YOU A LITTLE DEMO OF HOW  
THAT WORKED.

SO, YOU GO TO A SITE THAT  
HAS - HERE I RESEARCHED ABOUT  
THE Windows XP INTERFACE.  
SO, HERE'S A BUNCH OF EXAMPLES.

**Leo:** MM-HMM.

[ Pop captions up ]

**Mark:** I PULL UP Art Directors Toolkit.

LET ME JUST REAL QUICKLY RESET IT.

GRAB THIS COLOUR I LIKE.

**Leo:** SO, JUST TAKING PARTS

OF THE INTERFACE --

**Mark:** YEAH, GRAB THIS COLOUR I LIKE.

**Leo:** -- ADDING IT TO YOUR PALETTE.

**Mark:** EXACTLY, AND YOU APPLY

TO THAT DESIGN.

**Leo:** LOOK AT WHAT A NICE

DESIGN YOU DID.

HEY, WE'RE OUT OF TIME.

MARK IS THE BEST.

[raincitystudios.com](http://raincitystudios.com)

MAN, I WISH I CAN GET MY SITE

(laughing) REDESIGNED BY YOU, MARK.

I'M GOING TO HAVE TO CALL YOU.

**Mark:** TALK TO US.

**Leo:** IF YOU WANT TO BE ON

THE SHOW, JUST GO TO OUR

WEBSITE, [labwithleo.com](http://labwithleo.com).

WE'RE SO GLAD YOU WERE HERE.

HOPE YOU COME BACK SOON.

WE'LL SEE YOU NEXT TIME.

BYE-BYE.

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[ Pop captions down ]