>> IF EVERYONE WOULD TAKE THEIR
SEAT, WE'LL START IN JUST A
MINUTE.
ALL RIGHT, GOOD MORNING,
EVERYONE.
I THINK WE'LL GO AHEAD AND
START.
IF YOU CAN TAKE YOUR SEAT, AND
EVERYONE IN THE HALLWAY, COME ON IN.
... ALL RIGHT, I'M GOING TO GO
AHEAD AND GET STARTED.
GOOD MORNING, EVERYONE.
I'M DAVID LINCOM, AN ATTORNEY
HEE AT THE FTC'S DIVISION OF
PRIVACY.
I WANT TO THANK EVERYONE FOR
ATTENDING, HERE AND ON THE WEB
CAST.
THIS IS "THE BIG PICTURE" OR
WORKSHOP ON COMPREHENSIVE ONLINE
DATA COLLECTION.
I'M VERY EXCITED.
I THINK WE HAVE A GREAT PANEL
HERE AND EXCELLENT SPEAKERS.
WE'LL GET STARTED AS SOON AS WE
CAN.
I WANT TO TAKE CARE OF A LITTLE
HOUSEKEEPING BEFORE WE GET
STARTED.
FIRST, THERE'S A SECURITY BLURB
I NEED TO READ.
I'LL GO THROUGH THAT.
ANYONE WHO GOES OUTSIDE THE
BUILDING TODAY, OUT THROUGH
SECURITY, BEFORE YOU COME BACK
IN, YOU'RE GOING TO HAVE TO GO
THROUGH THE X-RAY AGAIN SO TAKE
THAT INTO ACCOUNT WITH TIMING
AND EVERYTHING.
IN THE EVENT OF A FIRE OR
EVACUATION OF THE BUILDING,
LEAVE THE BUILDING IN AN ORDERLY
FASHION.
AND THEN HEAD OUTSIDE THE
BUILDING TO THE GEORGE
WASHINGTON-- GEORGETOWN LAW
CENTER ACROSS THE HALL.
WE WANT TO BE IN THE RIGHT FRONT
SIDEWALK, AND LOOK FOR SOMEONE
CHECKING IN ALL OF THE
CONFERENCE CENTER FOLKS.
IF THE EVENT IN THE EVENT THAT
IT'S SAFER TO REMAIN INSIDE,
WE'LL TELL YOU WHERE TO GO
INSIDE THE BUILDING.
IF YOU SPOT SUSPICIOUS ACTION,
ALERT SECURITY.
THIS WEB CAST WILL BE RECORDED,
AND BY PARTICIPATE INNING, YOU
AGREE YOUR IMAGE AND ANYTHING
YOU SAY OR SUBMIT MAY BE POSTED
INDEFINITELY ON FTC.GOV, OR
SOCIAL MEDIA SITES.
WE ARE GOING TO HAVE FIRST
REMARKS FROM COMMISSIONER BRILL,
AND THEN A PRESENTATION BY
PROFESSOR DAN WALLACH, AND THEN
WE WILL HAVE THREE PANELS.
THE FIRST PANEL WILL BE ABOUT
KIND OF THE CURRENT LANDSCAPE OF
ONLINE DATA COLLECTION, AND THE
BENEFITS AND RISKS INVOLVED.
THEN WE WILL HAVE LUNCH.
AND THEN A SECOND PANEL ON
CONSUMER CHOICE AND ATTITUDES
TOWARDS COMPREHENSIVE ONLINE
DATA COLLECTION.
AND THEN FINALLY, WE WILL HAVE A
PANEL ON SORT OF NEXT STEPS,
WHAT THE INDUSTRY, CONSUMER
ADVOCATES, REGULATORS,
POLICYMAKE KERS DO IN THE FUTURE
TO PRESERVE THE BENEFITS OF DATA
COLLECTION WHILE MINIMIZING THE RISK TO CONSUMERS.
THROUGHOUT THE DAY, IF YOU HAVE ANY QUESTIONS FOR ANY OF THE PANELISTS, THERE ARE SEVERAL WAYS THAT YOU CAN SUBMIT THE QUESTIONS.
FOR THOSE OF YOU IN THE BUILDING, IN YOUR FOLDER, YOU SHOULD HAVE SOME QUESTION CARDS. JUST WRITE YOUR QUESTION ON THERE, RAISE YOUR HAND, AND ONE OF OUR PARALEGALS WILL COME BY AND PICK IT UP AND GET IT UP TO THE PANELIST.
ONLINE THERE ARE ALSO SEVERAL WAYS YOU CAN SUBMIT QUESTIONS. ON TWITTER WITH HASH TAG FTCPIER. OR SENDING AN E-MAIL TO DATACOLLECTION@FTC.GOV. ALL OF THAT SHOULD BE ON THE WEB CAST PAGE.
ALL RIGHT, SO WITH THAT, LET'S BEGIN.
AND I WOULD LIKE TO IT IT.
>> WHITE OF THESE MICRITICS IS ON.
IT'S REALLY GREAT TO BE HERE AND SEE HOME FAMILIAR FACES. I'VE MET WITH MANY OF YOU OVER MANY DIFFERENT ISSUES. I'M WAVING TO PEOPLE IN THE AUDIENCE. IT'S ALMOST LIKE OLD HOME WEEK HERE.
IT'S GREAT.
AND BEFORE WE'RE BEING WEBCAST TODAY I WANT TO SAY A SPECIAL GOOD MORNING AND WELCOME TO THOSE OF YOU WHO ARE PARTICIPATING HAVE A THE WEB. SO I'M HERE TO KICK OFF THIS WORKSHOP, WHICH IS DESIGNED TO HELP US DIVE INTO ISSUES
SURROUNDING PENCESSIVE DATA COLLECTION.
BEFORE I DO, I HAVE TO SAY A COUPLE OF THANK YOUs.
FIRST OF ALL, I'VE GOT TO THANK THE FTC STAFF WHO HAVE PUT SO MUCH EFFORT INTO PULLING THIS TOGETHER.
THIS WORKSHOP WAS ORGANIZED BY THE AGENCY'S DIVISION OF PRIVACY AND IDENTITY PROTECTION, SPEARHEADED BY DAVID LINCOM, WHO WAS JUST SPEAKING, WHO HAS REALLY SPENT THE BETTER PART PAST TWO MONTHS SPARING NO DETAIL FOR TODAY.
SO THANK YOU TO DAVID AND THANK YOU TO DPIP FOR THE ORGANIZATION TODAY.
I ALSO HAVE TO-- WHERE IS IT MIKE ZAHNIS.
THERE HE IS.
I THINK WE ALL-- MAYBE YOU MORE THAN ME-- MIKE ZAHNIS, A SPECIAL THANK YOU WHO DID NOT PURCHASE MY $25 STARBUCKS DRINK THIS MORNING BUT HELPED ME NAVIGATE THE LINE SO I COULD BE HERE ON TIME.
SO THANK YOU, MIKE.
SO WHAT I'D LIKE TO DO THIS MORNING IS TALK A BIT ABOUT WHAT PROMPTED THE AGENCY TO HOLD THIS WORKSHOP, AND THEN MENTION SOME OF MY THOUGHTS ABOUT THIS ISSUE.
WHICH I'M HOPEFUL CAN BECOME PART OF THE DISCUSSION TODAY.
SO TWO YEARS AGO, IN DECEMBER OF 2010, THE COMMISSION ISSUEDLY AS MANY OF YOU KNOW, A PRELIMINARY REPORT PROPOSING A NEW PRIVACY FRAMEWORK FOR BUSINESS AND POLICYMAKERS.
OUR PROPOSED FRAMEWORK WAS DESIGNED TO BALANCE CONSUMERS'
NEEDS TO PROTECT THEIR PRIVACY INTERESTS WITH INDUSTRY’S NEED TO INNOVATE, WHICH IN PART RELIES ON COLLECTION AND USE OF CONSUMERS’ INFORMATION.

NO OF NOW, WHEN WE PROPOSED THIS NEW FRAMEWORK, WE DISCUSSED THE CHALLENGES CONSUMERS FACE IN UNDERSTANDING THE NATURE AND EXTENT OF CURRENT COMMERCIAL DATA PRACTICES AND IN EXERCISING AVAILABLE CHOICES.

ONE OF THE DATA COLLECTION PRACTICES WE DISCUSSED, AMONG MANY OTHERS, WAS THE CAPABILITY OF INTERNET SERVICE PROVIDERS TO ENGAGE IN DEEP PACKET INSPECTION.

TO DATE, DEEP PACKET INSPECTION, OR DPI, HAS USED FOR NETWORK MANAGEMENT AND MALWARE PREVENTION.

BECAUSE IT D-PACT PREPARATION COULD BE USED TO AMASS INFORMATION ABOUT CONSUMERS’ EVERY MOVE ONLINE, WE REQUESTED COMMENTS ON HOW TO APPROPRIATE PROTECT CONSUMERS FROM THIS POTENTIALLY INTRUSIVE TECHNOLOGY.

IN PARTICULAR, WE POSEDDED THE QUESTION OF WHETHER DEEP-PACT INSPECTION WARRANTED HEIGHTENED RESTRICTION OR ENHANCED CONSENT.

THE AGENCY, NOT SURPRISINGLY, RECEIVED A SIGNIFICANT AMOUNT OF INPUT ON THIS ISSUE.

SOME CONSUMER GROUPS, THE CENTER FOR DIGITAL DEMOCRACY AND U.S. PERG, FOR INSTANCE, URGEDLY THE COMMISSION TO OPPOSE ANY USE OF DEEP-PACKET INSPECTION BY NETWORK OPERATORES, OTHER THAN NETWORK MANAGEMENT, FOR INSTANCE.

THEIR VIEW IS THE PROFILING
CAPABILITY OF THIS TECHNOLOGY SEVERELY THREATENS CONSUMER PRIVACY. THE CENTER FOR DEMOCRACY AND TECHNOLOGY SINGLED OUT DEEP-PACKET INSPECTION BECAUSE ISPs SERVE AS THE GATEWAY TO THE REST OF THE INTERNET AND THUS HAVE THE POTENTIAL TO CONDUCT PROFOUND AND COMPREHENSIVE SURVEILLANCE. HOWEVER, CDT BELIEVED THAT ANY OTHER TECHNOLOGY THAT COULD ALSO CAPTURE A SIMILARLY COMPREHENSIVE PICTURE OF A CONSUMER'S ACTIVITIES SHOULD BE HELD TO THE SAME STANDARD. SOME INDUSTRY COMMENTERS SAID DEEP-PACT INSPECTION IS NOT ONLY TECHNOLOGY THAT CAN TRACK NEARLY ALL OF USERS' ONLINE ACTIVITY. FOR EXAMPLE, WE HEARD FROM VERIZON THAT COOKIE-BASED TECHNOLS COULD COLLECT THE SAME, IF NOT MORE INFORMATION THAN COULD BE CAPTURED THROUGH DEEP-PACKET INSPECTION. THE INTERNET COMMERCE COALITION ARGUED THAT IF DEEP-PACKET INSPECTION TECHNOLOGY COLLECTS THE SAME INFORMATION AS A BEHAVIORAL ADVERTISING NETWORK, DEEP-PACKET INSPECTION SHOULD NOT WARRANT HEIGHTENED RESTRICTIONS. AND THE NATIONAL CABLE AND TELECOMMUNICATIONS ASSOCIATION BELIEVED IT WOULD BE COMPETITIVELY UNFAIR TO HOLD DEEP-PACKET INSPECTION TO A HIGHER STANDARD. INDEED, NUMEROUS TECHNOLOGIES CAN CAPTURE LARGE AMOUNTS OF INFORMATION ABOUT US ONLINE OR ON MOBILE DEVICES AS WE GO ABOUT OUR LIVES.
DEEP-PACKET INSPECTION, SOCIAL
PLUG-INS, HTP KEEKES, WEB
BEACONS, BROWSER CAPABILITIES,
AND OPERATING SYSTEM
TECHNOLOGIES ALL COLLECT
INFORMATION ABOUT OUR MANY
ONLINE AND MOBILE ACTIVITIES.
AFTER REVIEWING THE MANY
COMMENT THAT WE RECEIVED ON THIS
ISSUE, ONE THING BECAME CLEAR TO
US-- WE NEED TO FIND OUT MORE
ABOUT HOW TO DIFFERENTIATE THE
DATA COLLECTION CAPABILITIES OF
DIFFERENT TECHNOLOGIES.
OR WHETHER ANY DIFFERENTIZATION
APPROPRIATE.
WHICH BRINGS US TO TODAY.
WE'RE HERE TO LEARN MORE.
WHEN THE COMMISSION ISSUED THE
FINAL PRIVACY FRAMEWORK IN MARCH
OF 2012, WE IDENTIFIED
COMPREHENSIVE DATA COLLECTION AS
ONE OF THE AREA'S THAT REQUIRED
FURTHER STUDY.
WE COMMITTED TO HOLD A WORKSHOP
BEFORE THE END OF THE YEAR, AND
BY GOSH, I THINK WE HAVE MADE
IT.
EXCUSE ME.
DURING TODAY'S WORKSHOP, THERE
ARE SOME QUESTIONS THEY WILL BE
THINKING ABOUT AS WE LISTEN TO
THE PRESENTATIONS AND
DISCUSSIONS.
PERHAPS YOU'LL FIND THESE
QUESTIONS USEFUL AS WELL, SO I
WILL OFFER THEM UP TO YOU AS
FOOD FOR THOUGHT.
FIRST, WHEN WE ADDRESSED DATA
COLLECTION AND USE PRACTICES
THAT WARRANT CHOICE IN OUR
PRIVACY REPORT, WE PUT FORTH THE
FOLLOWING GUIDING PRINCIPLE--
CHOICE IS NOT REQUIRED FOR
COLLECTION AND USE OF
INFORMATION IT THAT IS
CONSISTENT WITH THE CONTEXT OF THE TRANSACTION OR THE COMPANY’S RELATIONSHIP WITH THE CONSUMER.
TODAY, AS WE CONSIDER THE ENTITIES THAT ARE ENGAGING IN COMPREHENSIVE DATA COLLECTION, LET’S CONSIDER WHETHER THESE NOTIONS OF THE CONTEXT OF THE TRANSACTION AND THE RELATIONSHIP WITH THE CONSUMER IF MIGHT SERVE AS USEFUL FRAMES FOR THINKING ABOUT DIFFERENT FORMS OF COMPREHENSIVE TRACKING.
SECOND, LET’S CONSIDER THE TRANSPARENCY OF DATA COLLECTION AND USE PRACTICES BY ENTITIES WITH WHOM THE CONSUMER HAS A RELATIONSHIP BUT IN SOME CASES, WITH WHOM CONSUMERS GENERALLY DO NOT INTERFACE.
THESE ARE ENTITIES THAT RUN IN THE BACKGROUND ON OUR ONLINE AND IN OUR MOBILE LIVES.
WOULD EXTENSIVE DATA COLLECTION AND USE BY SUCH ENTITIES BE CONSISTENT WITH THE CONTEXT OF THE TRANSACTION WITH THE CONSUMER?
IT AND IF SO, UNDER WHAT CIRCUMSTANCES?
SOME ARE ENTITIES THAT HISTORICALLY HAVE NOT BEEN COLLECTING INFORMATION ABOUT OUR ACTIVITIES ONLINE, OTHER THAN FOR NETWORK MANAGEMENT AND OTHER SIMILAR PURPOSES.
IF THEY WERE TO START TO DO SO, HOW SHOULD THEY COMMUNICATE THIS CHANGE IN THEIR PRACTICES TO CONSUMERS?
THIRD, WHAT SHOULD HAPPEN IN THE EVENT CONSUMERS HAVE AN OF INADEQUATE, COMPETITIVE ALTERNATIVES TO CHOOSE WHETHER TO USE THE SERVICES PROVIDED BY THESE ENTITIES OR IN THE EVENT
THAT THEY ARE LOCKED IN TO THEIR CURRENT SERVICE IN SOME WAY. FOURTH, LET'S THINK ABOUT WHETHER THE DIFFERENT TECHNOLOGIES USED TO COLLECT INFORMATION ABOUT THE CONSUMER RESULT IN STANDPOINTATIVELY TRACKING. WE'LL TALK TODAY ABOUT ISPs, OPERATING SYSTEMS, BROWSERS, AD NETWORKS, AS WELL AS SOME ADDITIONAL PLAYERS IN THE DATA COLLECTION ECHO SYSTEM. DO THESE TECHNOLOGIES FALL ON A CONTINUUM IN TERMS OF THEIR CURRENT OR POTENTIAL DATA COLLECTION ACTIVITIES? OR ARE THERE BRIGHT LINES THAT MIGHT SEPARATE SOME FROM OTHERS? A COUPLE OF OTHER POINTS TO CONSIDER AS WE LAUNCH INTO THESE DISCUSSIONS. WE KNOW THAT COMPREHENSIVE DATA COLLECTION ALLOWS FOR A GREATER PERSONALIZATION AND FOR OTHER BENEFITS FOR CONSUMERS. WE'LL HEAR MORE ABOUT THESE IMPORTANT BENEFITS AS THE DAY GOES ON. AND WE KNOW THERE ARE MANY CONTEXTS IN WHICH THIS GREATER PERSONALIZATION IS DESIRABLE. BUT THERE MAY BE OTHER CONTEXTS IN WHICH IT DOES NOT LEAD TO DESIRABLE RESULTS. IN AN INTERESTING ARTICLE THAT I'M SURE MANY OF YOU READ, WHICH APPEARED IN THIS PAST SUNDAY'S "NEW YORK TIMES" MAGAZINE SECTION, PROFESSOR JEFFREY ROSEN OF GEORGE WASHINGTON UNIVERSITY DESCRIBED TWO DISTINCT PROFILES THAT HE WAS ABLE TO CREATE FOR HIMSELF ONLINE-- DEMOCRATIC JEFF AND REPUBLICAN JEFF.
EACH OF THESE DISSENT PROFILES EXPERIENCED THE ONLINE WORLD IN A VERY DIFFERENT WAY. ROSEN NOTED WITH COMPREHENSIVE TRACKING THAT WILL SOON BE UBIQUITOUS, MOVING FROM OFFLINE TO ONLINE TO MOBILE TO DIGITAL TV, WE WILL SOON SEE SUCH GRANULAR PERSONALIZATION THAT EACH INDIVIDUAL’S DIGITAL EXPERIENCE MAY ESSENTIALLY BECOME ONE THAT IS CREATED ONLY FOR HIM OR FOR HER.

IS THIS A GOOD THING? OR IS THIS A BAD THING? IT ROSEN DOESN'T REALLY ANSWER THAT QUESTION. AND I SUSPECT THAT THERE ARE AS MANY DIFFERENT ANSWERS TO THOSE QUESTIONS AS THERE ARE PEOPLE IN THIS ROOM TODAY.

MORE INTERESTING TO ME IS THE QUESTION OF WHEN THIS WILL BEGIN. ROSEN DOES ANSWER THIS QUESTION. HE QUOTES THE FOUNDER OF ONE OF THE LEADING DATA AGIGATORS AS SAYING THAT THIS KIND OF SEAMLESS, MULTIFACETED TRACKING WILL BEGIN-- AND I QUOTE-- ONCE WE FIGURE OUT THE PRIVACY RULES.

MOVING TO A MORE FUNDAMENTAL AND CONCRETE HARMs THAT FALL MORE DIRECTLY IN THE FTC’S WHEELHOUSE, MANY OF YOU HAVE HEARD ME SPEAK BEFORE ABOUT MY CONCERNS REGARDING UBIQUITOUS DATA COLLECTION AND USE. I'M CONCERNED THAT THE RICH PROFILES BEING CREATED ABOUT CONSUMERS CAN BE USED TO HARM THEMSELVES AT WORK AND IN FINANCIAL LIVES. AND I'M EQUALLY CONCERNED THAT
CONSUMERS ARE UNAWARE OF THIS DATA COLLECTION AND USE ACTIVITY OR THE COMPANIES THAT ENGAGE IN IT, AND SO THEY HAVE VERY LITTLE OPPORTUNITY TO EXERCISE ANY CURRENT RIGHTS THAT THEY MAY HAVE TO OPT, OF OUT, FOR INSTANCE, OR ANY RIGHT THEY MAY HAVE TO ACCESS OR CORRECT INFORMATION ABOUT THEM. PAUL OHM, A PROFESSOR OF THE UNIVERSITY OF COLORADO AT BOLDER-- WHO BY THE WAY WE ARE DELIGHTED IS DOING A STINT HERE AT THE FTC, AND WILL BE MODERATING ONE OF TODAY'S SESSIONS LATER ON-- HAS POINTED OUT THE MASSIVE COMBINATION OF FACTS THAT COMPANIES CAN GATHER THROUGH COMPREHENSIVE TRACK CATEGORY LEAD TO WHAT HE CALLS DATABASES OF RUIN. DATABASES THAT MAKE IT HARD TO CONCEAL ASPECTS ABOUT OURSELVES THAT WE WOULD RATHER NOT BE BROUGHT OUT INTO THE OPEN. AND THAT CAN HARM US WITH RESPECT TO EMPLOYMENT, FINANCIAL OPPORTUNITIES, AND OUR REPUTATIONS. SO THAT'S IT FOR MY FOOD FOR THOUGHT TO HELP US START OFF THE DAY. SO LET'S BEGIN BECAUSE WE HAVE A REALLY GREAT PROGRAM AHEAD OF US. FIRST UP, IS DAN WALLACH, ASSOCIATE PROFESSOR IN THE DEPARTMENT OF COMPUTER SCIENCE AT RICE UNIVERSITY IN HOUSTON, TEXAS. PROFESSOR WALLACH WILL TALK ABOUT THE DIFFERENT TECHNOLOGIES THAT ARE CAPABLE OF COMPREHENSIVE TRACKING AND THE
TYPE OF INFORMATION EACH OF THESE TECHNOLS IS CAPABLE OF COLLECTING.
PROFESSOR WALLACH IS ALSO THE ASSOCIATE DIRECTOR OF THE NATIONAL SCIENCE FOUNDATION'S CENTER FOR-- AND I HOPE I GET THIS RIGHT-- CORRECT, USABLE, RELIABLE, AUDITABLE, AND TRANSPARENT ELECTIONS, MORE COMMONLY KNOWN AS ACCURATE. DID I GET THAT RIGHT?
I DON'T KNOW WHERE THE "A" COMES FROM.
>> "A" CENTER.
>> AH, "A" CENTER FOR CORRECT.
THANK YOU.
HIS RESEARCH INVOLVES COMPUTER SECURITY AND HAS TOUCHED ON ISSUES INCLUDING WEB BROWSERS AND SERVERS, FEAR-TO-PEER SYSTEMS, SMARTPHONES AND VOTING MACHINES.
SO I AM DELIGHTED TO TURN THIS OVER TO PROFESSOR WALLACH AND THANK YOU VERY MUCH.
\( APPLAUSE )
>> ALL RIGHT, THANK YOU VERY MUCH FOR HAVING ME HERE.
LET'S SEE, FOR THOSE OF YOU WHO ARE ON THE WEBCAST, YOU SHOULD SWITCH TO MY SLIDES WHICH ARE A PDF.
IT SHIPPED CALLED PRIVACY 2012.PDF.
AS I'M TALKING, FOR THOSE OF YOU WHO JUST HAVE THE VIDEO OF ME AND DON'T HAVE ANY IDEA WHAT SLIDE I'M ON I WILL HOPEFULLY SAY JUST ENOUGH TO CLUE YOU IN TO WHAT PAGE I MIGHT BE ON.
MEANWHILE, I'M GOING TO TRY TO FIGURE OUT HOW TO MAKE THIS THING FULL SCREEN.
VIEW... PAGE DISPLAY.
NO.
AH.
NO.
THERE.
JUST BECAUSE THEY GIVE YOU A
Ph.D. IN COMPUTER SCIENCE
DOESN'T MEAN YOU KNOW HOW TO
MAKE A COMPUTER WORK.
OKAY SO I'M GOING TO BE TALKING
TODAY ABOUT PRIVACY AND TRACKING
ON THE INTERNET.
THEY CHARGED ME WITH EXPLAINING
TO YOU HOW THESE DIFFERENT
TECHNOLOGIES WORK AND I'M GOING
TO TRY TO DO THAT IN A RELATIVE
POLICY-NEUTRAL WAY.
MY GOAL IS TO TELL YOU HOW
THINGS WORK, NOT WHETHER I THINK
THEY'RE GOOD OR BAD.
AND IN ORDER TO GIVE YOU A
WARM-UP, I'M GOING TO DRAW SOME
ANALOGIES FROM THE OFFLINE
WORLD, AND SINCE IT'S CHRISTMAS
SEASON, WE'RE GOING TO TALK
ABOUT SOME THINGS THAT WE'RE ALL
GETTING IN OUR MAIL THESE DAYS.
THESE ARE JUST A SELECTION OF
CATALOGS THAT ARRIVED IN A
SINGLE DAY IN OUR MAILBOX.
IF YOU LOOK ON THE BACK OF THESE
CATALOGES, YOU'LL SEE THERE ARE
ALL SORTS OF CENTERING DETAILS.
HERE'S A ZOOM-IN ON THE BACK OF
ONE OF THEM, AND YOU'LL SEE IT
HAS A CUSTOMER CODE, A MEDIA
CODE, AND A COUPON CODE.
ALL THESE NUMBERS THAT ARE
PRINTED THAT ARE PERSONALIZED TO
ME ON THIS CATALOG.
OF COURSE, THESE NUMBERS, IF I
BUY SOMETHING FROM THIS CATALOG
AND THEY ASK ME FOR THAT NUMBER,
THEN THEY CAN CONNECT ME TO THAT
PARTICULAR MAILING.
THEY CAN FIGURE OUT WHETHER I
GOT THE MAILING, WHETHER I
LOOKED AT IT.
SO I'M GOING TO CALL THIS A FIRST-PARTY IDENTIFIER.
AND THIS IS A DIRECT RELATIONSHIP BETWEEN MYSELF AND A VENDOR.
SO THERE ARE LOTS OF DIFFERENT IDENTIFIERS THAT ARE USED IN OUR DAILY LIVES TO CONNECT US TO THE
COMPANY'S WITH WHEN WHICH WE DO BUSINESS-- YOUR SUPERMARKET REWARDS CARD.
WHEN YOU SCAN THAT CARD, THEY KNOW IT'S YOU, AND THEY-- AND IN RETURN FOR GIVING UP A LITTLE
BIT OF YOUR PRIVACY, YOU GET A LITTLE BIT OF A SAVING ON PRODUCTS YOU BUY AT THE
SUPERMARKET.
LIKEWISE, IF YOU HAVE YOUR MACY'S CREDIT CARD, THEN NECESSARILY MACY'S KNOWS WHAT
YOU DO WITH IT.
GIFT CARDS ARE SIMILAR.
IF YOU LOOK ON MANY OF YOUR RENTHZ WHEN YOU BUY YOUR COFFEE AT STARBUCKS IN THE MORNING OR
SOMETHING, YOU'LL OFTEN SEE A NUMBER, A LONG NUMBER. THAT NUMBER SUNIQUE TO YOU, AND
THAT IDENTIFIES A TRANSACTION BETWEEN YOU AND THE VEND SO IF YOU GO TO RETURN IT LATER THEY
CAN FIND IT IN THEIR DATABASE, KEEP TRACK OF THEIR INVENTORY, ET CETERA.
NOW, I SAY CREDIT CARD NUMBERS AS WELL, BUT I PUT AN ASTERISK. THIS ISN'T REALLY A NUMBER
BETWEEN YOU AND A VENDER. THERE'S SOME OTHER COMPANY-- YOUR BANK-- THAT'S IN CHARGE OF
THIS NUMBER BUT NORTHEASTERN UNIVERSITY MANY COMPANIES WILL USE YOUR CREDIT NUMBERS TO TRACK
AND YOU THEY'LL REMEMBER WHAT YOU'VE BOUGHT OVER TIME CAN WITH
THAT CREDIT CARD NUMBER.
OF COURSE, THE TRICK IS ALL
THESE NUMBERS MAP TO YOU AN
ENTRY IN A DATABASE SOMEWHERE
THAT CAN TRACK YOUR PURCHASING
HISTORY, AND THEN THEY CAN TURN
AROUND AND TARGET WITH YOU
COUPONS OR ADVERTISING OR WHAT
HAVE YOU.
IT'S IMPORTANT TO POINT OUT WITH
ANOTHER AGGREGATION, THEY CAN
MAKE SOME VERY POWERFUL
INFERENCES.
THERE WAS AN ARTICLE EARLIER
THIS EUROPE IN THE "NEW YORK
TIMES" THAT EXPLAINED HOW
TARGET, A LARGE, YOU KNOW,
DEPARTMENT STORE, TARGET WAS
ABLE TO INFERENCE PREGNANCY BASED ON
CERTAIN PURCHASES THAT PEOPLE
TEND TO MAKE WHEN THEY GET
PREGNANT.
AND THE ARTICLE GOES INTO NICE
DETAIL ABOUT HOW SOME FATHER GOT
VERY ANGRY THAT HIS DAUGHTER WAS
BEING ADVERTISE TO.
AND HE THOUGHT SHE'S NOT
PREGNANT AND IN FACT SHE HADN'T
TOLD HIM YET.
THE ABILITY TO MAKE THESE KINDS
OF INFERENCES -- I THINK THE
LESSON TARGET FROM THIS WAS
DON'T BE CREEPY.
BUT PERHAPS THE LESSON-- WE CAN
TALK ABOUT WHETHER THAT'S
NECESSARY OR SUFFICIENT LATER.
SO HERE'S ANOTHER AD I GOT IN
THE MAIL AND IF WE LOOK AT THIS
AND ZOOM IN WE WILL SEE THIS
PARTICULAR BED, BATH, AND BEYOND
COUPON HAS A REALLY LONG NUMBER
ON A BARCODE.
THIS IS A UNIQUE NUMBER.
THAT MEANS EVERY BED, BATH, AND
BEYOND SHIPS OUT HAS A NUMBER
THAT UNIQUELY IDENTIFIES ME.
IF I USE THIS COUPON, THEY KNOW IT'S ME.
EVEN IF I PAY CASH, HERE IT'S MY WIFE'S NAME, BUT THEY'LL KNOW THIS SPECIFIC COUPON GOT USE BIDE THIS PARTICULAR PERSON.
SO IN RETURN FOR A $10 SAVINGS OR SOMETHING, YOU'RE GIVING UP A LITTLE BIT OF PRIVACY AND HELPING THEM PROFILE YOU.
I'M IN THE MIDDLE OF REFINANCING MY MORTGAGE RIGHT NOW-- LOW INTEREST RATES, GOTTA LOVE IT.
AND I GOT THIS YEARS LETTER IN THE MAIL, AND IT SAYS, "YOU'VE RECEIVED THIS LETTER AS A RESULT OF OUR RELATIONSHIP WITH THE NATIONAL CREDIT BUREAUS.
WE WERE NOTIFIED OF YOUR RECENT MORTGAGE INQUIRY."
AND LATER ON IT OFFERS ME THE CHANCE TO OPT OUT PIE WRITING TO EXPEERION.
WE'RE GOING TO CALL THIS A THIRD-PARTY RELATIONSHIP.
I WENT TO MY BANK, JPMORGAN CHASE, AND THEY DID A CREDIT CHECK ON ME WITH EXPEERION.
EXPEERION SOLD THAT FOCUS OF INFORMATION TO A COMPANY I HAD NEVER HEARD OF AND SUPPORT ME AN OFFER "WE'D LIKE TO HELP YOU REFINANCE, TOO."
NOW THAT I'VE TALKED ABOUT FIRST-PARTY VERSUS THIRD-PARTY RELATIONSHIPS -- HERE THEY LEARNED SOMETHING ABOUT ME, AND I NEVER HEARD OF THEM BEFORE, BUTS IN THE THEY LEARNED SOMETHING ABOUT ME AND THEY WERE ABLE TO ADVERTISE TO ME, LET'S TALK ABOUT HOW FIRST-PARTY AND THIRD-PARTY RELATIONSHIPS WORK ONLINE.
SO FIRST LET'S TALK ABOUT FIRST-PARTY ADVERTISEMENTS ON
THE WEB.
RIGHT.
SO THIS IS A SCREENSHOT OF THE "NEW YORK TIMES" BANNER FROM A COUPLE DAYS AGO.
AND YOU'LL SEE THERE'S AN ADVERTISEMENT FOR MARC JACOBS.
I HAVE NO IDEA WHO MARC JACOBS IS.
I THINK THEY SELL SOMETHING.
I PUT UP SOME OF THE HTML CODE FROM THE "NEW YORK TIMES" WEB SITE THAT DISPLAYS ADVERTISEMENT, AND I'VE USED HIGHLIGHTING-- SOME COLOR AND UNDERLINING TO POINT TO SOME OF THE INTERESTING PARTS HERE.
THE BLOCK OF STUFF ON TOP SAYS, "WHEN YOU CLICK ON THIS LINK YOU'RE GOING TO VISIT THE "NEW YORK TIMES" AGAIN, JUDGE THEN THE "NEW YORK TIMES" WILL DO SOMETHING FOR MARC JACOBS.
THE BOTTOM PART SAYS, "PLEASE DISPLAY THIS IMAGE SERVED UP BY A "NEW YORK TIMES" SERVER."
I WANT TO WALK YOU THROUGH WHAT HAPPENS AND A USERS CLICKS ON THIS LINK.
THE USER' BROWSER WILL GO BACK TO THE "NEW YORK TIMES" SERVER AND WILL REQUEST A FILE OF THIS LINK WAY BUNCH OF OTHER INFORMATION THAT WAS ON THE PREVIOUS SLIDE.
THEN THE "NEW YORK TIMES" SENDS BACK A MESSAGE THAT'S AN HTPP3-302.
THAT'S A REDIRECT.
THAT'S A WAY OF SAYING, "HEY, BROWSER, THIS PAGE HAS MOVED SOMEWHERE ELSE.
PLEASE GO THERE."
AND THEN THE BROWSER SAYS, "RIGHT, OKAY, OFF TO MARCJACOBS.COM."
AND YOU'LL SEE NOW THE USER ENDS UP AT THIS MARC JACOBS WEB SITE WHERE YOU'VE GONE.
AND YOU MIGHT MARKETPLACE THE REQUEST TO MARC JACOBS HAS A QUESTION MARK, UTN UNDERSCORE OF SCORE SOURCE EQUALS NYT.
MARC JACOBS IS TOLD YOU ARE VISITING THEM FROM THE "NEW YORK TIMES."
THERE IS A BILLING RELATIONSHIP.
MARC JACOBS PAID THE "NEW YORK TIMES" FOR THIS AND THIS LETS THEM COUNT HOW MANY CLICKS CAME THROUGH.
SO TARGETED ADVERTISING, THERE'S A LOT OF DIFFERENT WAYS THAT THERE ARE FIRST-PARTY RELATIONSHIP WHERE'S VENDORS WHO KNOW THINGS ABOUT YOU WILL CUSTOMIZE ADS TO YOU.
WANT SIMPLEST EXAMPLE IS A SEARCH ENGINE LIKE GOOGLE.
SO HERE I'VE TYPED THE NAME OF A CAMERA THAT I MIGHT BUY WITH--BECAUSE YOU KNOW MY CAMERA FROM LAST YEAR IS CLEARLY INSUFFICIENT.
I NEED TO HAVE THE LATEST AND GREATEST.
YAY.
IN THIS CASE, WHAT DOES GOOGLE KNOW ABOUT ME?
THEY KNOW I SEARCHED FOR IT AND MAYBE I WANT TO BUY IT AND THAT'S A GAMBLE THE COMPANIES
ARE WILLING TO TAKE. THEY PAY GOOGLE AND PUT THIS IN FRONT OF ME. DEPENDING ON THE RELATIONSHIP, THEY MIGHT PAY PER VIEW OR PAY PER CLICK. IT THERE IS ANOTHER KIND OF USER PROFILING THIS IS WHEN I LOG INTO AMAZON AND SCROLL DOWN TO THE BOTTOM OF MY AMAZON PAGE AND YOU'LL SEE AMAZON IS MAKING RECOMMENDATIONS FOR THINGS I MIGHT WANT TO BUY. I RECENTLY PURCHASED A KINDLE FOR MY AD SO THEY'RE OFFERING ME A TWO-YEAR WARRANTY AND POWER ADAPTER.

YAY! LIKEWISE, I'VE BEEN BUYING COCKTAIL-MAKING SUPPLIES, OF AND THEY'RE SAYING BOY, MAYBE YOU'D LIKE TO HAVE A NICE MEASURING CUP OR PERHAPS THIS WONDERFUL TRAINER SO THAT WAY YOU DON'T GET ICE IN YOUR COCKTAIL. IN THE MIDDLE, SINCE I'VE USED AMAZON'S APP STORE FOR MY ANDROID PHONE, THEY'RE OFFERING TO SELL ME AN APP, TOO.

WHAT'S GOING ON HERE? I BUY A LOT OF STUFF FROM AMAZON INGEC MANY PEOPLE IN THIS ROOM ALSO BUY A LOT OF STUFF FROM AMIS STRONG OVON? YEAH, HEADS NODDING. NO AMAZON CUSTOMERS HERE?

NOW THEIR HEADS ARE NODDING. THEY'RE TRYING TO DO THE ONLINE EQUIVALENT OF IMPULSE BUYS. GIVEN WHAT WE ABOUT YOU, YOU MIGHT WANT TO BUY THIS. I'M SURE MANY PEOPLE IN THIS ROOM MAY OR MAY NOT BE LOOKING TO PURCHASE THE ACCESSORIES I AM.

SO WHERE DO VENDORS GET
INFORMATION ABOUT THE USER?
SO ON THE RIGHT SIDE OF THIS SLIDE IS A SET OF ADVERTISEMENTS THAT FACEBOOK GENERATES FOR ME. I USE FACEBOOK. THAT’S HOW-- THAT’S HOW MY FAMILY SEES PICTURES OF MY DAUGHTER. IT’S HOW I GET TO ARGUE WITH FRIENDS ABOUT TV SHOWS THAT HAVEN’T BEEN ON THE AIR FOR TWO DECADES -- YOU NAME IT.
FACEBOOK LEARNS A LOT ABOUT ME IN ORDER TO GENERATE THESE SURPRISINGLY POORLY TAIRED ADVERTISEMENTS.  

( LAUGHTER ) 
SO FACEBOOK KNOWS WHO I AM. THEY KNOW MY EDUCATION BECAUSE I PUT IN MY COLLEGE. THEY KNOW WHO I’M MARRIED TO, BECAUSE I SAY THAT I’M MARRIED TO HER ON MY FACEBOOK PAGE. THEY KNOW WHAT I POST. THANE WHAT I LIKE. BECAUSE I SAY, "I LIKE LYLE LOVETT," A FAVORITE MUSICIAN OF MINE. SO THEY CAN FIGURE OUT, BOY, IF HE LIKES LYLE LOVETT MAYBE HE LIKES..." THEY CAN MAKE ALL SORTS OF INFERENCES, WHICH THEY SURPRISINGLY DON’T. 

( LAUGHTER ) 
LIKewise THEY CAN MEASURE A LOT OF THINGS ABOUT ME, NOT FACEBOOK BUT AMAZON MEASURES WHAT I BUY. THEY MIGHT BE ABLE TO VISIT WEBSITES THAT I VISIT. WE’LL GET TO THAT IN A MINUTE. THEY CAN TAKE MY IP ADDRESS AND LEARN WHERE I AM, WHICH IS TYPICALLY ACCURATE TO THE CITY YOU’RE IN IF NOT BETTER. ALTHOUGH IT’S SOMETIMES COMIC.
I was in Germany for a conference and Facebook was suddenly advertising to me in Gerald An. Again, not very well targeted since I've never once written a Facebook post in German. I might not understand German. But anyway, Facebook can-- in addition to things they tell them directly, they can infer things. They can infer things base pod my friends. If my comprehend like X, I might like X. Or my neighbors, et cetera. So that was all first-party information.

What about third party? What about parties who are-- there's me, there's the company I'm dealing with, then there's everybody else. What can everybody else learn in this game?

So let's say I'm car shopping so I visit AutoBlog.com, a popular car blog, and you see up at the top there's an advertisement for the all-new Nissan Altima. Okay.

So I put up the HTML code from the Auto Blog web site, and again you'll see there are two main pieces. The bracket A. That says what happens when you click on the link, and you'll see that it mentions three different things-- double click.net, at Walla.com, and chine of finally choosenissan.com. We'll get into though these companies are in just a second.
AND LIKEWISE THE IMAGE ARE SERVED UP BY 2 NDM.NET. THAT IS RELATED TO DOUBLE CLICK AND AT WALLA IS RELATED TO AMERICAN ONLINE WHO OWNS AUTO BLOG. THIS IS A LITTLE MORE COMPLICATED THAN THE "NEW YORK TIMES" EXAMPLE. FIRST, THE BROWSER WILL GO TO DOUBLECLICK.NET, WITH THAT WHOLE BIG LONG STRING SAYING PLEASE GET THIS IMAGE-- PLEASE, BROWSERRER, GO VISIT THIS NEXT PAGE. DOUBLE CLICK, SENDS BACK A REDIRECT AND SAYS PLEASE GO TO ATWALLA.COM, SO THEY'RE BOUNCING YOU BACK TO A DIFFERENT URL, BUT IT'S STILL PART OF THE AMERICA ONLINE FAMILY. AND SO ATWALLA GETS TO KNOW THAT YOU CLICKED ON THE LINK. AND FINALLY, THEY REDIRECT YOU AGAIN TO CHOOSENISSAN.COM. ALL OF THIS HAPPENS IT'S USER JUST CLICKS ON A LINK, AND ALL OF THESE TRANSACTIONS HAPPEN WITHOUT THE USER KNOWING, REALLY. FINALLY YOU END UP AT CHOOSE NISSAN. ALL OF THIS HAPPENS JUST BECAUSE YOU CLICK ON ONE LINK. THIS IS REASONABLY COMMON IN THE ONLINE ADVERTISING WORLD. SO WHAT'S GOING ON HERE? WHY ALL THESE BOUNCES? THIS IS ALL ABOUT MEASUREMENT. DOUBLE CLICK GETS TO MEASURE THAT YOU CLICKED. AND ATWALLA GETS TO MEASURE THAT YOU CLICKED. AND ALL OF THAT MEASUREMENT IN TURN AFFECTS HOW THE MONEY MOVES FOR PEOPLE PAYING FOR YOU
CLICKING ON THAT AD.
SO LET'S TALK A LITTLE BIT MORE
ABOUT HOW SOME OF THIS TRACKING
WORKS, AND ALSO I'M GOING TO
TALK A LITTLE MORE ABOUT
GEOLOCATION AS WELL, AND THE
MOBILE CASE IN PARTICULAR.
SO LET'S GO BACK TO THIS PAPER
EXAMPLE.
HERE'S THAT SAME ADVERTISEMENT
FROM BED, BATH, AND BEYOND.
AND LET'S SCROLL DOWN TO THE
BOTTOM OF THE AD, AND YOU SEE
THERE'S THIS YONIS ICE CREAM
TREAT MAKER.
OH, BOY.
AND THERE'S A TWO-DIMENSIONAL
BAR CODE SOMETIMES CALLED A
QR CODE.
WHAT HAPPENS IF YOU SCAN THAT
QR CODE?
I'M GOING TO USE THIS AS AN
EXAMPLE TO EXPLAIN HOW COOKIES
WORK BUT JUST FOR FUN, WE'RE
GOING TO USE THIS AS OUR
EXAMPLE.
SO IF YOU DECODE THAT QR CODE
WITH YOUR PHONE WHAT, IT GIVES
YOU IS A URL.
AND THE URL IN THIS CASE IS
BTQ.CO, A COMPANY CALLED "DUB"
CURIOUS.”
AT LEAST THAT'S HOW I ASSUME
THEY PRONOUNCE THEIR NAME.
AND BE CURIOUS IS SOMEBODY THAT
BED, BATH, AND BEYOND APPARENTLY
HIRIED TO PRODUCE THIS LITTLE
QR CODE.
SO WHAT HAPPENS WHEN YOU GO TO
THAT LINK?
THIS IS THE FULL RESPONSE THAT
YOU GET FROM THE BE CURIOUS
SERVER TO YOUR BROWSER.
I'M GOING TO BREAK THIS DOWN
INTO PIECES SO THAT WAY WE CAN
UNDERSTAND EVERYTHING THAT'S
THERE ARE TWO BROAD SECTIONS OF ANY WEB RESPONSE. THERE’S A SET OF HTTP HEADERS, AND THEN THERE’S A BODY WITH HTML AND JAVA SCRIPT AND ALL THAT. IN THE HEADER, THIS IS WHERE COOKIES HAPPEN. LOTS OF OTHER THINGS HAPPEN, TOO. BUT THE THING THAT WE’RE INTERESTED IN ARE THE COOKIES. AND THEN IN THE BODY, THE JAVA SCRIPT CAN ALSO DO SOME TRACKING BEHAVIOR AS WELL. SO FIRST LET’S TALK ABOUT THE COOKIES. IN THIS CASE FROM— SO WHAT IS A COOKIE? A COOKIE IS JUST A STRING OF LETTERS, OR DINGS STORED AS A SET OF KEY VALUE PAIRS IN YOUR BROWSER. SO A WEB SITE CAN SET A COOKIE, AND THEN WHEN YOU VISIT THAT WEB SITE AGAIN, IT WILL SEND THE KEEK BACK TO THEM. VERY SIMPLE. SO HERE’S THE PARTICULAR COOKIE THAT BE CURIOUS SETS IN MY BROWSER, AND SO I DON’T KNOW WHAT UNBQ STANDS FOR, BUT IT LOOKS LIKE AN IDENTIFIER THAT’S UNIQUE TO ME. AND NOTICE THE EXPIRATION DATE. THIS COOKIE WILL LIVE IN MY BROWSER FOR 10 YEARS. THEN IT WILL GO AWAY. SO ANY TIME IN THE NEXT 10 YEARS IF I SCAN ANOTHER BE CURIOUS QR CODE, THEN IT WILL-- THEY’LL KNOW THAT IT WAS ME. OR THEY’LL KNOW THAT IT WAS THE SAME PERSON WHO CLICKED ON THE LAST ONE.
THEY DON'T HAVE THE WORDS "DAN WALLACH" NOT NECESSARILY. BUT THEY DEFINITELY KNOW THAT THIS IS THE SAME BROWSER THAT WE SAW LAST TIME. THEY ALSO HAVE SOME JAVA SCRIPT CODE THAT CAN DO IT-- JAVA SCRIPT IS A GENERAL PURPOSE COMPUTER PROGRAMMING LANGUAGE THAT YOUR BROWSER RUNS. AND THEY HAVE-- SO THEIR JAVA SCRIPT EXECUTES THIS FUNCTION THAT THEY WROTE, TRACKING, AND THEN IT HAS THIS LONG STRING WHICH IS PROBABLY ANOTHER UNIQUE IDENTIFIER, UNIQUE TO ME, AND I IMAGINE IF I IT VISITED THEM LATER, I'D GET THE SAME STRING AGAIN.
LET'S LOOK AT THE CODE FOR THIS TRACKING FUNCTION. AND SO, I'M NOT EXPECTING YOU ALL TO BE ABLE TO READ JAVA SCRIPT, BUT I WOULD ENCOURAGE YOU TO HAVE A LOOK AT THE LEFT COLUMN OF NAMES THAT YOU SEE HERE. WHAT THEY'RE DOING IS THEY'RE ASKING MY BROWSER-- SINCE QR CODES ARE THINGS PEOPLE TYPICALLY SCAN WITH THEIR FOAMS, YOUR PHONE GENERALLY KNOW WHERE'S IT IS. THE PHONE CAN MEASURE ITS LOCATION WITH GPS. IT CAN MEASURE ITS LOCATIONS BY LOOKING AT THE BASE STATIONS, WHICH IS LESS ACCURATE BUT MORE AVAILABLE. OR IT CAN JUST IT IT GOOGLE AND DO TRICKS BY LOOKING AT THE NEARBY WIFI AXIS POINTS. THERE ARE SEVERAL DIFFERENT WAYS YOUR PHONE CAN FIGURE OUT WHERE IT IS WITH DIFFERENT DEGREES OF PRECISION.
WELL, THIS COMPANY BE CURIOUS IS ASKING FOR EVERYTHING THEY CAN GET-- POSTAL CODE, COUNTRY CODE, REGION, COUNTY, CITY, STREET, STREET NUMBER, LATITUDE, LONGITUDE, ALTITUDE, HEADING AND SPEED. IF IT'S THERE, THEY'RE TRYING TO GET IT. THEY WANT IT ALL. AND WHAT DO THEY DO? THEY SEND IT BACK. SO IT GETS NORED A DATABASE SOMEWHERE. SO NOW AS IT TURNS OUT, YOUR PHONE WILL POP UP A LITTLE MESSAGE THAT SAYS, "DO YOU WISH TO GIVE THIS INFORMATION, YES OR NO?" TO WHICH I TYPICALLY CLICK "NO." BUT SOME USERS WILL CLICK YES. AND THEN THEY WILL DIVULGE ALL THIS INFORMATION. IF THEY CLICK "NO," THEN IT ALL JUST COMES UP EMPTY. SO WHY IS BE CURIOUS-- AND FOR THAT MATTER, WHY IS EVERY COMPANY DOING THIS? I HAVE COPIED THIS FROM BE CURIOUS' WEB SITE. WHAT IS THEIR PITCH? THEIR PITCH IS WOULDN'T YOU LIKE TO KNOW HOW MANY USERS SCAN YOUR CODES? AND WOULDN'T YOU LIKE TO KNOW HOW MANY USERS DO IT MORE THAN ONCE? NOW YOU CAN. THAT'S THEIR PITCH. AND, YOU KNOW, THEY ALSO PROVIDE ALL METRICS AND DETAILED, YOU KNOW, INFORMATION TO HELP YOU, THE ADVERTISING MANAGER FOR BED, BATH, AND BEYOND, CONVINCE YOUR BOSS THAT
WANT MONEY YOU SPENT ON THIS ADVERTISING WAS WORTH IT. THEY'RE PROVIDING METRICS AND DETAILS AND GRAPHS AND CHARTS AND DATA TO HELP THEIR CUSTOMER, BED BATH AND BEYOND, UNDERSTAND THE VALUE OF THE ADVERTISING THEY PURCHASED. THIS IS IT A BIG DEAL IN THE ADVERTISING WORLD BECAUSE, YOU KNOW, IN TRADITIONAL TV OR NEWSPAPER ADVERTISING, YOU DON'T GET THESE KINDS OF FINE-GRAINED METRICS. YOU KNOW, YOU PUT AN ADVERTISEMENT IN THE PRINT "NEW YORK TIMES," YOU KNOW SOMETHING ABOUT WHO IS GOING TO LOOK AT IT, BUT YOU DON'T REALLY NECESSARILY KNOW HOW THEY'RE GOING TO RESPOND. SO THE ALL TH RESULTS THIS MIGHT BE A FAMILIAR LOOKING DIAGRAM, THEY DON'T SERVE UP THE CONTENT THEMSELVES. THEY REDIRECT ME TO A IT COMPANY CALLED NET BISCUITS, YOU KNOW, WHO-- WHAT THEY DO IS THEY ACTUALLY SERVE UP THE WEB PAGE, WHICH IS A LITTLE PICTURE, THEN I CAN CAN CLICK ON "PLAY" AND HAVE A VIDEO OF THIS HELPFUL PERSON EXPLAINING HOW TO USE THIS KITCHEN GADGET. AND SO THERE'S ALL THESE COMPANIES INVOLVED IN DEALING WITH A SIMPLE LITTLE QR CODE THAT I SCANNED OUT OF AN ADVERTISEMENT, AND I'VE USED BE CURIOUS JUST AS AN EXAMPLE, BUT REALLY, THIS IS HOW A LOT OF AD CLICKS WORK. SO COOKIES. EVERYBODY USES COOKIES. EVERYBODY WEB SITE YOU EVER VISIT IS GOING TO SET A COOKIE.
WHAT DO COOKIES-- HOW DO YOU ASSOCIATE MEANING WITH THESE COOKIES? WELL, IT'S EASY TO ASSOCIATE A COOKIE WITH WHERE YOU SAW AN ADVERTISEMENT. BECAUSE, YOU KNOW, THAT'S-- YOU GENERATE THE COOKIE FOR WHERE THE ADVERTISEMENT WENT, SO, THEREFORE, IF YOU GET IT BACK, IT'S VERY CLEAR YOU CAN DO THESE KINDS OF TRACKING. IT'S HARDER TO ASSOCIATE A COOKIE WITH YOUR GEOLOCATION. IN THE CASE BE CURIOUS, THEY ASK FOR YOUR GEOLOCATION. ALTHOUGH, WITH IP GEOLOCATION, JUST BY LOOKING AT YOUR IP ADDRESS THEY MIGHT BE ABLE TO FIGURE OUT SOMETHING ABOUT WHERE YOU ARE. JUST A FOOTNOTE, FROM MY HOME COMPUTER I WENT TO IPTODLOCATION.COM AND GAVE ME A SET OF COORDINATES IN DOWNTOWN HOUSTON AND SAID YOU'RE HERE. THEY WERE OFF BY ABOUT EIGHT MILES. SO MY IP ADDRESS FROM MY HOME COMPUTER, THEY WERE ABLE TO IDENTIFY MY LOCATION WITHIN ABOUT EIGHT MILES. THAT'S REASONABLY-- THAT'S NEITHER O UtRAGO USLY WRONG OR O UtRAGO USLY CORRECT. THAT'S WHAT YOU MIGHT EXPECT. NOW, IT'S HARDER TO ASSOCIATE A COOKIE WITH A REAL-WORLD IDENTITY. REGARDLESS, WEB SITES CAN EASILY STORE THE INFORMATION THEY GATHER AND AGGREGATE IT TOGETHER. SO EVEN IF A KEEK IS NEVER ATTACHED TO YOUR NAME OR YOUR ADDRESS, A COOKIE CAN STILL IT
BE ASSOCIATED WITH YOUR BEHAVIOR OVER TIME.
YOU KNOW, IF THERE'S A COOKIE THAT THE "NEW YORK TIMES" GIVES YOU, EVEN IF YOU'RE SURFING ANONYMOSLY, THEY CAN FIGURE OUT THAT THIS PARTICULAR ANONYMOUS PERSON HAS A HABIT OF READING THE SPORTS ARTICLES. OR THIS PARTICULAR IF ANONYMOUS PERSON HAS A HABIT OF READING THE TRAVEL ARTICLES AND THEY COULD PERHAPS USE THAT TO TARGET ADVERTISING.
SO WE HEARD MENTION THIS MORNING OF SOCIAL WIGITS, THAT VERY SAME "CHOOSE NISSAN" WEB SITE HAS THIS UP IN THE CORNER.
SO APPARENTLY THERE ARE 159 PEOPLE IN THE ENTIRE WORLD WHO LIKE NISSAN.
AND THEY-- SO NISSAN IS PUTTING THIS UP THERE.
WHY ARE THEY DOING THIS?
THERE WERE DIFFERENT VARIATIONS ON SOCIAL WIGITS.
SOME OF THEM WILL NAME YOUR FRIENDS-- "YOUR FRIEND BOB LIKES NISSAN."
AND THE THEORY IS-- "IF BOB LIKES NISSAN. I'LL GO OUT AND GET ONE."
I DON'T KNOW.
BUT THESE SOCIAL WIGITS ARE A LOT LIKE THOSE IMAGES. THEY HAVE JAVA SCRIPT OR IMAGES SERVED UP BY THIRD PARTIES THAT ARE DISPLAYED INSIDE SOME WEB SITE.
AND, YOU KNOW, THAT-- THAT 159 LIKES FROM FACEBOOK, THAT WAS GENERATEDLY BY FACEBOOK. THERE'S A LITTLE PIECE OF JAVA SCRIPT FROM FACEBOOK RUNNING INSIDE THIS NISSAN WEB SITE.
AND SO WHAT THAT MEANS IS THAT
FACEBOOK KNOWS NOW THAT YOU VISITED NISSAN. WHAT THEY CHOOSE TO DO WITH THAT INFORMATION I'M NOT SURE. BUT THEY'RE CAPTURE AGO THAT INFORMATION IS AVAILABLE TO THEM TO BE CAPTURED AND AGGREGATED. LIKewise, THERE'S SOMETHING CALLED WEB BUGS OR WEB BEACONS. SO wired.com SEEMS TO BE THE KING OF THIS. THEY HAVE 13 DIFFERENT WEB BUGS WHEN YOU VISIT THEIR HOME PAGE. THERE'S A WONDERFUL OPEN SOURCE-- NOT OPEN SOURCE BUT FREELY AVAILABLE IT TOOL CALLED GHOST READ THEY CAN USE WHICH BLOCKS ALL OF THESE THINGS BUT GIVES YOU A LIST OF THEM. FIRST OFF, WHAT IS A WEB BUG? A WEB BUG IS TYPICALLY A SINGLE PIXEL IMAGE, A 1X 1PIXEL IMAGE THAT IS TRANSPARENT AND THEY'LL BE PILED IN A CORNER WHERE YOU DON'T SEE THEM. IF YOU VISIT wired.com IF WILL LOAD AN IMAGE FROM GOOGLE ANALYTICS AND OTHER LITTLE COMPANIES AND EVERY ONE GETS A SHOT AT PUTTING A COOKY AND TRACK YOU. IN FACT, WEB BUGS CAN PERHAPS EVEN TRACK YOU IF YOU TURN COOKIES OFF. THAT'S A MORE TECHNICAL I'M NOT GOING TO HAVE RIGHT NOW. THEY'RE EFFECTIVELY JUST LIKE ADVERTISEMENTS EXCEPT THEY'RE INVISIBLE. THEY CAN MEASURE WHERE YOU REQUEST AND AGGREGATE BEHAVIOR ABOUT YOU, NOT NECESSARILY DAN WALLACH, BUT WHOEVER IT WAS WHO WENT THERE, ALSO WENT THERE. AND AGAIN, THROUGH THAT
AGGREGATION THEY CAN LEARN
THINGS ABOUT YOU AND CREATE A
PROFILE.
EVEN THIRD-PARTY PAYMENT
SERVICES CAN LEARN A LOT ABOUT
YOU.
SO, YOU KNOW, IF I WENT TO GO
AND BUY THAT CAMERA, MAYBE I
WOULD GO TO BNH PHOTO IN NEW
YORK, WHICH I LIKE DOING
BUSINESS WITH.
AND I GO TO CHECK OUT AT BNH,
THEY SAY YOU CAN GIVE US YOUR
CREDIT CARD NUMBER OPENER BUY
WITH GOOGLE WALLET OR CHECK OUT
WITH PAYPAL.
THESE ARE SERVICES THAT A LOT OF
CONSUMERES, MYSELF INCLUDED,
REALLY LIKE, BECAUSE I DON’T
HAVE TO GIVE ME CREDIT CARD
NUMBER TO A VENDOR WHO I DON’T
TRUST.
SEVERAL YEARS AGO I BOUGHT A
LITTLE BLUETOOTH CONTRAPTION.
>> AND BOUGHT IT THERE WHOEVER
HAD THE LOWEST PRICE I COULD
FINDER SO I SPENT $5ULOSIS MY
LITTLE BLUETOOTH CONTRAPTION,
AND A COUPLE WEEKS LATER, THERE
WAS A $500 FRAUDULENT CHARGE TO
MY CREDIT CARD FROM SOME COMPANY
THAT SELLS CELL PHONE
EQUIPMENT.
I'M LIKE AH, HM... SO I HAD TO
GET A NEW CREDIT CARD NUMBER,
BLAH, BLAH, BLA REAL PAIN.
WHEREAS IF I COULD DEAL WITH A
COMPANY LIKE THAT INDIRECTLY
THROUGH A PAYMENT SERVICE LIKE
THIS, THEN THERE'S NO CREDIT
CARD NUMBER FOR THEM TO STEAL.
IN RETURN FOR THIS EXTRA USER
PRIVACY I GIVE UP A LITTLE
SOMETHING.
NOW PAYPAL POUR GOOGLE WALLET
LEARNS ABOUT WHO I'M DOING
BUSINESS WITH AND WHAT I'M BUYING THERE.
AND GOOGLE KNOWS A LOT ABOUT ME FOR OTHER REASONS BECAUSE THEY KNOW WHAT I'M SEARCHING FOR, ET CETERA.
THERE'S A TRADEOFF HERE.
I'M GETTING A LITTLE BIT BETTER SECURITY AGAINST CREDIT CARD FRAUD, AND IN RETURN, SOMEBODY IS LEARNING A LITTLE BIT MORE, AGGREGATING A LITTLE BIT MORE ABOUT ME.
SO ONCE THESE COMPANIES HAVE BUILT UP A USER PROFILE, WHICH MAY OR MAY NOT HAVE YOUR NAME, WHAT CAN THEY DO WITH THAT USER PROFILE?
HOW CAN I MONETIZE ALL THIS INFORMATION I HAVE ABOUT YOU?
WELL, USER VISITS A WEB SITE.
THE WEB SITE WANTS TO SHOW AN ADVERTISEMENT TO YOU.
BASED ON ALL OF THIS INFORMATION THAT'S BEEN COLLECTED, THAT PROFILE OF YOU IN SOME CASES IS PUT UP FOR AUCTION.
"I'VE GOT AN AD-- I'VE GOT THE OPPORTUNITY TO DISPLAY AN AD TO A USER WHO HAS THE FOLLOWING ATTRIBUTES-- HE LIKES CAMERAS. HE LIKES CARS. HE RESIDENT THE "NEW YORK TIMES." MAYBE HE'S RICH. GO FOR IT!"
NOW I MIGHT BE MORE ATTRACTIVE TO A HIGH-END CAR VEND RATHER THAN A LOW-END CAR VEND.
WHO KNOWS?
ANYWAY, THEY ACTUALLY HAVE A LITTLE AUCTION.
AND THIS AUCTION HAPPENS IN THE SPACE MILISECONDS.
AND AT THE END, WHOEVER WINS THE AUCTION GETS TO DISEPARATE
DISPLAY THE AD TO ME.
IT'S AMAZING.
THE ARTICLE THAT JUST HAPPENED
OVER THE WEEKS IN "NEW YORK
TIMES" MAGAZINE EXPLAINS IN
LOVELY DETAIL HOW THIS MARKET
WORKS.
THERE ARE A LOT OF PLAYERS IN
THE ADVERTISING MARKET.
I LOVE THIS DIAGRAM.
THIS CAME OUT ROUGHLY TWO YEARS
AGO.
BUT IT TELLS YOU JUST HOW FINE
GRAINED THIS MARKET IS WITH LOTS
OF LITTLE COMPANIES SELLING ALL
KINDS OF LITTLE SERVICES.
THIS IS A TWO-YEAR-OLD DIAGRAM.
I'D LOVE TO HAVE A MORE CURRENT
ONE.
IF ANY OF YOU HAVE A MORE
CURRENT VERSION OF THIS DIAGRAM,
PLEASE CALL ME.
OKAY, ANYWAY.
FOR THOSE OF you ONLINE, YOU CAN
LOOK THROUGH THIS THING WITH A
MAGNIFYING GLASS.
IT'S JUST A FANTASTIC LITTLE
DIAGRAM.
ALL RIGHT.
IN THE TIME THAT'S LEFT, I WANT
TO GO OVER A HAND FULL OF LITTLE
TRICKS AND DETAILS AND OTHER
LITTLE BITS OF PIECES THAT ARE
RELEVANT TO OUR DISCUSSION.
FIRST, WHAT ABOUT YOUR OPERATING
SYSTEM VENDOR?
WHAT ABOUT THE COMPANY THAT
CONTROLS THE PHONE OR THE
COMPUTER OPERATING SYSTEM THAT
YOU'RE USING?
WELL, THE PLATFORM HAS A LOT OF
CONTROL OVER HOW PEOPLE USE IT.
PROBABLY THE MOST NOTABLE
EXAMPLE IS APPLE WHO VERY
STRICTLY REGULATES WHAT IS AND
IS NOT ALLOWED IN THE APPLE
APP STORE.
THERE WAS A CASE ROUGHLY TWO
YEARS AGO WHERE THEY TRIED TO
CRANK DOWN ON WHAT ADVERTISING
WAS ALLOWED TO COLLECT.
NOW, YOU COULD ARGUE THAT THIS
IS A PRO PRIVACY THING.
APPLE WAS RESTRICTING ADS'
ABILITY TO DO ANALYTICS.
BUT THERE'S THIS WONDERFUL QUOTE
HERE, "ADS DON'T EXIST WITHOUT
ANALYTICS" SAYS A MOBILE AD
EXECUTIVE.
CAN'T MEASURE IT.
CAN'T BILL IT.
SO-- AND OF COURSE APPLE WAS
OFFERING THEIR OWN AD SIADS, AS
AN ALTERNATIVE.
YOU CAN LOOK AT THEM IN A LOT OF
DIFFERENT WAYS.
THIS MORNING THE COMMISSIONER
MENTIONED ISPs.
ISPs, OR FOR THAT MATTER, YOUR
CORPORATE IT DEPARTMENT,
CONTROLS YOUR PIPE FROM YOUR 10
OR COMPUTER TO THE INTERNET.
WHAT CAN THEY DO?
BROADLY SPEAKING, THEY CAN DO
TWO DIFFERENT CLASSES OF
SURVEILLANCE.
THEY CAN DO PASSIVE
SURVEILLANCE, WHICH GOES BY THE
NAME DEEP-PACKET INSPECTION.
IF YOUR TRAFFIC IS UNENCRYPTED,
THEY CAN SEE IT.
AND, OF COURSE, YOUR ISP KNOWS
EXACTLY WHO YOU ARE AND WHERE
YOU LIVE BECAUSE THEY HAVE A
BUSINESS RELATIONSHIP WITH YOU.
ISPs HAVE THE ABILITY TO DO
LOGGING, TO SAVE THINGS, WHICH
CAN BE USEDLY FOR LAW
ENFORCEMENT OPENER FORENSIC
PURPOSES.
TO PICK ONE EXAMPLE, A LARGE OIL
COMPANY IN HOUSTON, WHICH I
WON'T NAME, STORES EVERY PACKET THAT GOES OVER THEIR INTERNET GATEWAY FOR A MONTH, EVERY SINGLE NETWORK PACK OAT THEIR ENTIRE INTERNET GATEWAY FOR A SIGNIFICANT-SIZED OIL COMPANY THEY SAVE FOR ONE MONTH. NOW, WHY DO THEY DOLL THIS? MOSTLY FOR FORENSIC PURPOSES. THAT WAY IF SOME MACHINE IS COMPROMISED, THEY CAN GO BACK AND FIGURE OUT HOW AND WHY. YOU CAN IMAGINE THIS BEING USED FOR ALL KINDS OF OTHER PURPOSES.

IT'S TECHNICALLY FEASIBLE TO SAVE A HUGE AMOUNT OF DATA. HARD DRIVES ARE BIG AND CHEAP. THE OTHER CLALSZ OF SURVEILLANCE, OR THURING CLASS OF ISP ENGAGEMENT-- I'M GOING TO USE THE TERM "ACTIVE ENGAGE." THIS COULD INCLUDE BLACKLISTING. AN ISP MIGHT BLACKLIST A SET OF WEB SITES SAY PIRATE BAY. WE DON'T WANT YOU TO GO TO PIRATE BAY. OPENER THEY MIGHT BLACKLIST AN ENTIRE PROTOCOL, LIKE BIT TARD. THERE ARE EXAMPLES OF BOTH. PERHAPS LESS INVASIVE, MANY ISPs DO WHAT'S CALL TRANSPARENT PROXY CACHING WHICH IS A FANCY WAY OF SAYING YOU'RE ASKING FOR THAT IMAGE OVER THERE?

I ALREADY HAVE IT SAVED. HERE, I'LL GIVE YOU MY COPY. THIS IS A PERFORMANCE OPT MISSATION THAT MANY ISPS AND COMPANIES USE TO SAVE BANDWIDTH. COMPLETELY LEGITIMATE AND THERE'S A LOT OF INFRASTRUCTURE NOW TO DEAL WITH IT.
PARTICULARLY COLLEGE CAMPUSES, THERE'S GONE BANDWIDTH TRACKING. YOU'RE A BANDWIDTH HOG AND WE'RE GOING TO SLOW YOU DOWN. AND TRAFFIC SHAPING CAN BE DONE IN A RELATIVELY AGNOSTIC WAY-- I DON'T CARE WHAT YOU'RE DOING. YOU'RE GENERATING A LOT OF PACKETS SO I'LL SLOW YOU DOWN. OPENER IT CAN BE DONE A MORE FORECASTED WAY. YOU'RE ALLOWED TO HOG PACKETS TO THERE BUT NOT THERE. MANY COMPANIES WILL DO THIS TRICK IF YOU MAKE AN ENCRYPTED CONNECTION TO SOME WEB SITE, THEY ACTUALLY TERMINATE THE ENCRYPTION AT THE GATEWAY AND REENCRYPT IS BACK AT YOUR BROWSER SO THEY CAN OBSERVE ALL OF YOUR ENCRYPTED TRAFFIC. THAT MIGHT SOUND INVASIVE, BUT, YOU KNOW, IF YOU ARE THE AFORM MENTIONED UNMENTION LARGE OIL COMPANY, THIS IS A WAY OF MONITORING IT WHAT'S GOING ON. THEY SEE IT AS A WAY OF PROTECTING THEIR USERS FROM A SECURITY COMPROMISE. AGAIN, YOU COULD SEE IT FOR OTHER ISSUES. AND IN SOME CASES, WE'VE SEEN ACTIVE ENGAGEMENT WHERE SOMEBODY TRIES TO ATTACK A WEB SITE. A PARTICULARLY NOTABLE EXAMPLE WAS PREREVOLUTIONARY-- AND I MEAN THE RECENT ARAB SPRING REVOLUTION IN TUNISIA-- THE TUNISIAN GOVERNMENT WAS TRYING TO GET IN BETWEEN THE TUNISIAN PEOPLE AND FACEBOOK BECAUSE THEY WERE USING FACEBOOK FOR ORGANIZING, AND THE TUNISIAN GOVERNMENT WAS TRYING TO CAPTURE ALL THE FACEBOOK USER NAMES AND
PASS WORDS AS A METHOD OF SURVEILLING THEIR POPULOUS.
PERHAPS MOST FAMOUSLY, THERE WAS A NOW-DEFUNCT COUPLE CALLED NECKUE AD, AND NECKUE AD HAD A RELATIONSHIP WITH CHARTER COMMUNICATIONES, A CABLE COMPANY/ISP.
AND THEIR DEEP-PACKET INSPECTION TECHNOLOGY WAS SOPHISTICATE ENOUGH TO BE ABLE TO SAY, "THERE’S A WEB SITE GOING BY. I’M GOING TO INSERT MY OWN ADVERTISEMENT IN IT."
SO, YOU KNOW, THE-- THERE’S AN AD APPEARING IN THE MIDDLE OF A WEB SITE THAT THE WEB SITE DIDN’T PUT THERE.
THAT WAS-- THERE WERE LAWSUIT, ET CETERA.
NEBUAD WENT OUT OF BUSINESS.
THIS.
>> IN THE WORD OF ADVERTISEMENT FRAUD IS A BIG DEAL.
IF I CAN PUT UP YOUR WEBSITE AND GENERATE FAKE VIEWS OR FAKE QUICKS THEN I CAN MAKE MONEY FROM YOU.
I CAN STEAL YOUR MONEY WITH TKPRAUD AOU LENT ADVERTISING CLICKS OR FRAUDULENT ADVERTISING VIEWS.
FIRST OFF THERE IS A SIDE COMPANIES TO HELP PEOPLE GENERATE ACCURATE MEASURE PHEPBTS IN THE FACE OF THIS SORT OF FRAUD.
GENERALLY SPEAKING THERE ARE TWO DIFFERENT KAEOUPBSDZ OF SECURITY MEMBER TPHEUFPLZ PEOPLE RELY ON. EITHER BROWSER BEHAVIORS THAT DISTINGUISH A FROM A FRAUDULENT TRICK.
THE OTHER TRICK ARE BIG DATA ANALYTICS ON THE SERVING SIDE.
ONE OF MY FORMER GRAD STUDENTS
WORKS AT GOGGLE.
THROUGH THE LIBERAL APPLICATION
OF BEER I HAVE LEARNED JUST HOW
THEY DO IT.
THEY DON'T PAY RIGHT AWAY.
THEY INSTEAD COLLECT A LOT OF
DATA ABOUT THE CLICKS.
THEN IN BULK THEY CAN SAY THIS
PATTERN LOOKS FRAUDULENT.
THIS LOOKS LEGITIMATE.
THE DETAILS ARE HUSH, HUSH
SECRET.
IF GOOGLE WAS TO PUBLISH HOW
THEY DO IT THEN THE ADVERTISERS
AND CLICK FRAUDERS WOULD ADJUST
THEIR BEHAVIOR.
IT'S VERY MUCH A LEAP FROGGING
SITUATION.
THERE ARE A LOT OF TECHNOLOGY
AVAILABLE TODAY TO USERS WHO
WISH TO GRAB KROLL BACK FROM
THEIR OWN ADVERTISING.
I RUN AD BLOCK PLUS.
IT'S ABOUT DELETING ADS, YOUR
BROWSER NEVER USES THEM.
AND GHOSTERY FOCUSES ON THE WEB
BUGS.
THEY WORK BY KEEPING A BLACKLIST
LIFT IN THE BROWSER.
THE BROWSER WON'T GO THERE AT
ALL.
THIS HAS NOISE PRIVATE SEE
PROTECT EUGS FOR ME AND IT MAKES
THE WEB GO FASTER.
IT'S A NICE BENEFIT IF YOU'RE ON
A SLOW CONNECTION.
SOMETHING WE'RE TALKING MORE
ABOUT IS THE STANDARD, DO NOT
TRACK.
IT'S AN OPTIONAL MESSAGE SENT BY
THE BROWSER THAT SAYS, PLEASE
DON'T TRACK ME.
THEN WHAT DOES THAT MEAN, GOOD
QUESTION.
THERE ARE A FAMILY OF
TECHNOLOGIES PROTECTING YOUR
PRIVACY.
-- USES A ONION GRAPHING
TECHNIQUE.
IT ALLOWS TO ROUTE YOU THROUGH
MULTI IMMEDIATE.
>>> POPS,
SO THE FINAL DESTINATION DOES
THE KNOW WHO YOU ARE OR WHERE
YOU'RE GOING.
IT'S GOOD FOR PRIVACY USED IN
PLACES LIKE INSIDE CHINA OR IRAN
TO GET OUT WITHOUT THE GREAT
FIREWALL OF CHINA BEING ABLE TO
TELL WHERE YOU'RE GOING.
IN RAOURP THERE ARE NEW COOKIE
RULES THAT REQUIRE WEB SITES TO
GIVE NOTICE OF USERS OF VARIOUS
KINDS.
I HAVE INCLUDED ONE OF THOSE
NOTICES AT THE BOTTOM OF THE
SCREEN.
TO MOST THIS IS A COLLECTION OF
GREEK LETTERS THAT THEY DON'T
UNDERSTAND.
WHAT IS THIS THING, GET THIS OUT
OF MY FACE.
USERS ARE BAD AS UNDERSTANDING
THE MESSAGES.
WHATEVER, GO AWAY, LEAVE ME
ALONE.
THERE ARE REGULATORY TEETH
BEHIND THIS WHICH IS CAUSING --
IF YOU VISIT EUROPEAN FOCUSED
WEB SITES YOU SEE THESE THINGS
INCREASINGLY.
I HAVE LINKED TO A WEBSITE TO
LEARN MORE ABOUT THE EURO COOKIE
RULES.
I HAVE POINTED OUT A ROEPBY.
IF YOU WANT THE USER TO SAY "NO
DON'T SET THIS, LEAVE ME ALONE"
YOU MAY REMEMBER THAT BY SETTING
A COOKIE THAT SAYS "LEAVE ME
ALONE."
THE WAY TO DENY COOKIES MAY
REQUIRE A COOKIE IN THE
PREFERENCES.
COOKIES ARE A GENERAL PURPOSE MECHANISM.
THEY WERE INVENTED TO "FIX THE STATE LESS NATURE OF THE HTTP WEB PROTOCOL."
THIS IS HOW AMAZON REMEMBERS IT'S YOU.
AS I CLICK AROUND AMAZON I WANT AMAZON TO KNOW IT'S ME ADDING THOSE THINGS TO THE SHOPPING CART.
THAT WAY IN THE END THE SHOPPING CART HAS EVERYTHING I BOUGHT.
NO COOKIES, NO SHOPPING CART.
THE TECHNOLOGY GOES ARE FUNDAMENTAL TO THE WAY ALL KINDS OF WEB SYSTEMS WORK.
YOU CAN'T JUST BAND COOKIES.
WHAT MAKES THEM A PRIVATE SEE CONCERN IS WHEN THEY HAVE A LONG LIFE LINE LIKE TEN YEARS FROM BEING CURIOUS.
WHO KNOWS WHAT THEY'RE MEASURING ABOUT ME.
AND PARTICULARLY IF THEY'RE SENSITIVE INFORMATION THAT THEY'RE LEARNING.
MAYBE I HAVE A MEDICAL CONDITION.
I'M READING A WEBSITE TO LEARN ABOUT THAT MEDICAL CONDITION.
THAT'S A INFERENCE I DON'T NECESSARILY WANT PEOPLE TO MAKE ABOUT ME.
I MIGHT CREDIT THAT TO BE PRIVATE.
>> A LOT OF MY CURRENT RESEARCH IS FOCUSED ON SMART PHONES.
I WILL GIVE A ONE SLIDE PITCH FOR.
THIS MOST PHONE APPS USE THE WEB INSIDE OF THEM.
SO, THERE IS A CONVERGENCE GOING ON.
A PHONE APP AND WEBPAGE ARE
ALMOST BUT NOT QUITE THE SAME THING.
THERE ARE INTERESTING DIFFERENCES.
THERE ARE, THERE ARE MORE COMPLICATED Permissions GOING ON.
YOUR PHONE ASKS YOU FOR PERMISSIONS TO DO THINGS THAT ARE SENSITIVE.
THAT'S GOING TO HAPPEN ON THE WEB AS WELL.
LIKEWISE ADVERTISING IN YOUR PHONE IS USED WITH MANY OF THE SAME MECHANISMS.
I'M GOING TO SKIP AHEAD AND MENTION THE EXTRA PERMISSIONS IN THE PHONE CAN LEAD TO SURPRISING RESULTS.
FOR EXAMPLE PATH GOT IN HOT WATER WHEN THEY UP LOADED YOUR ADDRESS BOOK.
YOUR ENTIRE CONTACTS LIST THROUGH THE SERVER.
THERE IS A WONDERFUL QUOTE FROM THE CEO.
HOW COME YOU DIDN'T ASK FOR PERMISSION BEFORE UP LOADING THE USERS ADDRESS BOOK.
THIS IS THE INDUSTRIES BEST PRACTICE AND IT WASN'T DISCUSSED.
SO, NOBODY TOLD US THIS WAS BAD, SO WHAT THE HECK.
THEY GOT INTO A LOST HOT WATER FOR THIS.
SO, MY LAST POINT, IF YOU WANT TO DO A REGULATION YOU SHOULD REGULATE BEHAVIOR NOT MECHANISM.
ONE EXAMPLE, YOUR PHONE HAS WHAT IS SCALED AN IMEI NUMBER.
THAT'S THE UNIQUES NUMBER IDENTIFYING YOUR PHONE TO YOUR CAREER.
THERE ARE OTHER UNIQUE NUMBERS IN THE PHONE AS WELL.
IF YOU REGULATE BASE ON MECHANISMS TECHNOLOGY PEOPLE WILL FIND OTHER MECHANISMS. INSTEAD IF YOU REGULATE INFORMATION FLOWS YOU CAN TALK ABOUT FIRST PARTY VERSUS THIRD PARTY INFORMATION. SHORT VERSUS LONG TERM. -- ETCETERA.

IF YOU'RE GOING TO REGULATE THAT'S HOW YOU WANT TO PHRASE YOUR REGULATIONS.

WHATEVER YOU DO PLEASE DON'T ASK THE WEB SITES TO BOTHER THE USER. THAT'S JUST A LOSING STRATEGY.

INSTEAD COME UP WITH GOOD DEFAULTS THAT PEOPLE CAN IMPLEMENT TO MAKE SENSE.

A BIG IMPORTANT QUESTION IS OPT IN VERSUS OPT OUT BUSINESS.

HISTORICAL NOTE.

I'M OVERTIME AND DON'T HAVE MUCH TIME TO TALK ABOUT THIS.

THERE IS A LONG EFFORT TO DO THE PLATFORM FOR PRIVACY PREFERENCES.

THIS LARGELY FAILED BECAUSE THERE WERE NO REGULATORY TEETH BEHIND IT.

LORI CRANER IS IN THE ROOM.

WHERE DID LORI GO.

THERE SHE IS.

HI, LORI.

SINCE I'M LATE ON TIME I WILL SAY READ HER BLOG PIECE SHE WROTE A COUPLE OF DAYS AGO. IT'S AWESOME.

SUMMING THINGS UP I WILL SAY AS A GENERAL RULE YOU SHOULD FOCUS ON, ON BEING AGNOSTIC ABOUT TECHNOLOGIES.

TALK ABOUT INFORMATION FLOWS AND OH, BY THE WAY, IF YOU'RE CAREFUL ABOUT WHAT YOU'RE DOING YOU MAY HAVE BENEFIT TO
CONSUMERS IN THE OFF-LINE WORLD. ALL OF THE SAME THINGS WHETHER IT'S CONSUMER PROFILING, CREDIT RATING, FINANCIAL RECORDS, MEDICAL RECORDS, CRIMINAL RECORDS. IN THE OFF-LINE WORLD THERE ISN'T MUCH DIFFERENCE. THE LINE BETWEEN THE OFF-LINE AND ON-LINE WORLDS IS BLURRING. TRACKING IS TRACKING NO MATTER HOW IT'S DONE. YOU MIGHT AS BE CONSISTENT ON HOW YOU TREAT THE WHOLE BUSINESS. THANK YOU, VERY MUCH. [ APPLAUSE ] >> WE WILL START BACK HERE AT 10:25. THANK YOU, VERY MUCH.