

The Empire Club Presents

AMANDA LANG, JONATHAN ROSENTHAL & ERIC SCHMIDT

HOW GOOGLE WORKS

October 1, 2014

HEAD TABLE:

Distinguished Guest Speakers:

Ms. Amanda Lang, Canadian Journalist & Senior Business Correspondent,
CBC News

Mr. Jonathan Rosenberg, Senior Vice President, Google

Mr. Eric Schmidt, Executive Chairman, Google

Guests:

Mr. Noble Chummar, Partner, Cassels Brock and Blackwell LLP; Past President,
Empire Club of Canada

Dr. Chris Culligan, Co-Founder, The Quiet Coach

Mr. Rob Dickson, Vice Chairman, Engagement Labs Inc.

Ms. Joan Fischer, President, Fischer Business Services; Business Manager,
RamsayTalks

Mr. Ajit Manocha, Executive Vice Chairman, POET Technologies Inc

Mr. Christopher Morgan, Partner, Skadden, Arps, Slate, Meagher & Flom
LLPMr. G. Scott Paterson, Chairman, Engagement Labs Inc.

Mr. Sam Sebastian, Managing Director, Google Canada

Mr. Amar Varma, General Manager, Mobile, Pivotal Labs; Founder & CEO,
Xtreme Labs

Mr. Mike White, President & CEO, IBK Capital Corp.

Ms. Andrea Wood, Senior Vice President, Legal Services, TELUS; President,
Empire Club of Canada

Welcome Address by Andrea Wood, President, Empire Club of Canada

It is now my great privilege to introduce today's speakers. In 1998, two young Stanford grads had an idea. They wanted to organize the world's information. The company they formed went on to become one of the biggest and most innovative of our time. Think Edison. Think Ford. Think Google. Today a mere 16 years later, Google is an internet giant. It employs over 40,000 people, has a market cap of about \$400 billion, offers a wide range of products, including its overwhelmingly popular search engine, YouTube, Chrome, Gmail, Android, smart glasses. The list goes on and on. It is a company. It is a search engine, and I expect it is the first brand name to be recognized as a verb by the American Dialect Society. Google is changing the way we think and the way we access and digest information all while famously refusing to be evil.

Our speakers today have been key participants in the growth of this business titan and have written a book, *How Google Works*, describing the lessons they learned along the way. Today, they will share with you some of the insights described in their book and give us an understanding of how they managed to deliver such extraordinary growth while maintaining a culture of innovation.

Eric Schmidt is the Executive Chairman of Google. He started with Google in 2001 as its CEO and now is responsible

for all external matters for the company, including building partnerships and broader business relationships, government outreach and technology thought leadership. Eric is a member of the President's Council of Advisors on Science and Technology and the Prime Minister's Advisory Council in the U.K.

Jonathan Rosenberg joined Google in 2002 and managed the design and development of the company's consumer, advertising and partner products for several years. He is currently an advisor to Google CEO, Larry Page.

Finally, serving as moderator today is Amanda Lang. Amanda is the Senior Business Correspondent for CBC News. She also anchors *The Lang and O'Leary Exchange* on CBC News Network. Thank you for joining us today. Over to you, Eric, Jonathan, and Amanda.

Eric Schmidt, Jonathan Rosenberg & Amanda Lang

AL: Thank you, Andrea. Eric, maybe before you sit down, I am just going to ask you to show the room what is in your pocket.

ES: My Android phone.

AL: No, the other one.

ES: My BlackBerry.

AL: Yes.

ES: Can we say, by the way, we love Canadians? And they have made us feel very much at home. We have

hockey in San Jose, and I hear that national anthem about 12 times a year.

JR: I think they are very impressive because they managed to avoid the 2008 financial crisis completely.

ES: That was a good strategy.

AL: You know what my role is here, right?

ES: All I can tell you is it is like seriously impressive.

AL: There are a lot of people here who want to hear from you, and I was joking, and I will say it again because I already offended the Empire Club with this line, but this is a particularly young and hip crowd for one of these lunches. Hands up, who in the room secretly wants a job at Google?

You wrote the book. You describe in the book getting to Google. You were sort of the adult in the room with these two founders and learning that everything you knew about leadership and management you had to toss out. What was the most important thing you wanted to share? In other words, why did you feel that this is a book that needed to be written?

ES: When we talked about it, Jonathan had done this strategy work and actually written sort of how we actually operated, and then, one day, we realized that this was actually just completely abnormal, and my first year, in the first month, I had a little tiny office. I was the CEO, and one day I walked in, and I had an officemate, and his name is Amit. And he was sitting

right next to my desk, and I said, “Hello.” And he said, “Hello, I’m Amit.” I said, “Well, like, why are you here?” And he said, “Well, my office is next door, and there were five people in the office, and you’re never here, so I just moved in.” At this moment, you have one of those moments when you have no idea what to say. Anything you say now is career-limiting, right? Like, “Get out,” or “Who are you?” or whatever.

AL: Right.

ES: So we became best of friends in my office space.

JR: My first year was actually harder than Eric’s because his problems were with an employee. My problems were with the founder, Larry. I was hired to run Product Management, and I had spent 25 years learning how to do product management, right, and I thought that was what I was hired for.

So I spent the first three months writing the mother of all product plans, and it had Gantt charts and Pert charts and financial spreadsheets and, you know, all that stuff that they are supposed to have. I dumped it on Larry’s desk, and he sort of paged through the table of contents, and he was like, “Noooo.” And he asked me, “Have you ever produced a plan like this where the engineers put features in that weren’t in your plan?” And I said, “No, they don’t do that.” And he said, “Well, have they ever built the products faster than in that pretty, pretty Gantt chart?” And I said,

“No.” He said, “Well, then it’s stupid.”

ES: I have got to tell you this story. So I decided to have an offsite because, you know, companies have off-site meetings, so we had an off-site around the corner from the company, and it started at ten o’clock because we start meetings late, and everyone showed up, including, Larry. Sergey came up an hour late rollerblading to the meeting, which I thought was indicative of—and we had a nice presentation of what everyone was doing and about which they were largely uninterested in because I think they already knew it. And then, ultimately, I asked them to present their vision of the company, and they said, “We just want to be a big company.” I said, “Well, how big?” They said, “\$100 billion.” And I said, “\$100 billion of what? Market value or revenue?” And they said, “What’s the difference?” And I said, “I can’t take this anymore.” I found out later that that was their standard joke to torture people, and they very well understood the difference.

Another day, I walked into their office because they had an office together, and I said, “What are we going to talk about today?” And they said, “We’re going to talk about new manufacturing.” I said, “What kind of manufacturing?”

“Refrigerators.” So, we spent 20 minutes talking about getting into the manufacturing of refrigerators and the

benefit of automatic control of refrigerators, and, at the end, I figured out it was an entire practical joke played on me. So this is what our book is about.

AL: You know, when they founded the company, the vision for this company was—as you say in the book—one that came from a technical insight rather than some kind of product view. The vision was to organize the world’s information, which is a pretty lofty goal. You have gone beyond that. I said this to you earlier, and you said, “Oh, no, we want to do more than that.” I had to kind of keep from laughing because “more than that” sounds impossible.

ES: Well, I mean, self-driving cars.

AL: What you say in the book is, given enough data and the ability to crunch it, we could solve virtually all of the problems that human beings face.

ES: An example: I was doing some research for this year. In 1964, Isaac Asimov at the New York World’s Fair wrote his description of a fictional 2014 World’s Fair, and it includes a one-paragraph description of autonomous, self-driving vehicles, so people do imagine the future if you listen carefully enough. We just have to figure where to build it. Now, to build a self-driving car you have to have integrated circuits. You have to have knowledge. You have to have mapped all the roads. You have to have incredibly accurate lasers and very good and very well debugged

software, which we have.

JR: And if you want to continue to hire great people, you need to give them bigger and bigger problems to solve, and that is what we talk in the book about the potential for the power of information and the power of data because, as you have more data, and you can crunch it, you can come up with all sorts of insights that we previously have not had.

Just imagine as we all move to wearable devices, the opportunities in healthcare, where we are longitudinally tracking physiological information about people—not only about individuals which they can share with their doctor but groups of people that we can use to assess broader healthcare trends and implications.

AL: In fact, it is easy to get distracted and think you guys are creating cool, new products, the driverless car, Google Glass. What you are actually doing is creating a bunch of things that manage data in different ways. You stay pretty true to the idea that what you will do is organize data so that we can use it in some way that we find useful.

ES: There is an explosion in data, and there are many estimates, but it is rough summaries. In a couple of days we produced as much data now as was produced between the dawn of civilization and roughly the 1960s. So this explosion is very, very real. Everyone in this room will be affected by this in lots of ways—

the businesses, the way you live, the way you operate, and it can be used to make things much, much better.

JR: Yes, and I think that explosion has big career implications. Bill Gates says that he went into software because he realized that the price of computing was coming down. Similarly, as data becomes ubiquitous and free, the complimentary scarce resources, an economist would say, is the ability to analyze the data. So, from a career standpoint, I would become a statistician if I were coming out of school today.

AL: The dark side of that beautiful thing, of all the great stuff you are going to help us do, is that all of the stuff you will know about us, and everything that you put in front of us and every new iteration to your algorithm actually takes you deeper and deeper right down to artificial intelligence into what we want, what we think. At the end of the day, you use that to make money. You sell ads. Is there a sinister side to that?

ES: We are careful to state what we do, and we are also careful to give you the tools to delete that information, and we are careful to protect ourselves from the attacks by people like the NSA and the Chinese by using complicated and powerful encryption. So I can tell you right now that the safest place to put your data is in Google.

AL: And you will not use this information against us in any way at any time?

ES: The answer is we will not.

JR: The goal is to help you use information to help you make better decisions, to help you live a better life. Look at some of the modest things that we do with Google now already today. Google now has warned me of traffic implications for some of the events that we have been going to. It is proactively telling me things that I would not have otherwise known to ask.

ES: In a few years, you will be in bed, and you will be woken up by one of these REM sleepers that figures out the correct time of your REM sleep to wake you with the most alertness, and you will look at the wall, and you will say, "Do I need to get up?" And the wall is going to look back and say, "No!" And the reason it says, "No," is that your boss is 15 minutes late and does not really care. There is no crisis today, and, in any case, the transit will be faster, and if you leave in exactly 21 minutes, you will get there at the same time. Will you use that product? You betcha. You want the sleep.

AL: Does Google want to replace our brain?

ES: No.

JR: I think Google wants...

ES: The answer is no. Please, continue.

JR: Well, now, I am stuck. How am I going to enhance the brain? I guess the example that I would give is, you know, if you look at...

ES: She said “replace.”

JR: Well, I am going to say—you taught me that you can change the question a little bit and then give a different answer. You just did that yesterday on live TV, and I blew it.

ES: It has been like this for 13 years. Do not worry.

JR: We had a book party in New York yesterday, and I was talking to Garry Kasparov, and one of the things that I think is fascinating is we all thought chess was going to be boring because ten years ago, Deep Blue and computers got better at chess, and it seemed like the game was dead. Turns out that we have run some tests, and humans guiding three mediocre chess programs can actually beat the best supercomputer playing a chess program. So I think the implications that we see there are opportunities for software and Google and computers in general to enhance our brains.

ES: So one way to understand what Google has done is we have made the world collectively more intelligent because the world collectively has more access to information that used to be harder to get. The question is *How far can we take that? How much additional can we make your reasoning? How much smarter can we make you?* Part of our goal is to go from just answering the query to being able to actually answer the question *What is a better choice, A or B?* What is the history here? What should I really be worried about

here? We are getting close to that over the next five or ten years, and one of the most interesting things about Canada is that two of the leading centres for this kind of general intelligence are in Toronto and Montréal.

AL: That stuff is very cool, and you can understand why people that work in your world are fascinated with machine learning and neural networks, and you can see the potential for it to do great things, but, to an extent, that technology is already making us stupid: There is a whole generation that cannot spell.

ES: I disagree with this.

AL: I worry that if I rely on my phone to tell me whether I should go on vacation in Hawaii or San Francisco, I am losing something as a human being.

ES: Well, I mean we can always appeal to the romantic past, but the fact of the matter is remember the whole bowling alone thing. About 20 years ago, everyone was going to be bowling alone, and would all be isolated. Completely false, right? What do people do today? Text, text, text, text, text, text, text, pictures of themselves, text, text, text, text, pictures of their friends, text, text, text, text: “What are we doing for dinner?” Right? That is called “communications,” right? And a word might be misspelled but, frankly, the spell check is pretty good. So we are communicative, experiential, social animals. The collective intelligence that has been brought by this connectivity is of enormous value

to the humans.

JR: I think it also depends on how you define “intelligence.” If you define “intelligence” as the ability to spell or the ability to do rote learning or the ability to memorize things, then I think we may be getting dumber, but if you define it as the ability to do a better job in an interview, I am sure you are much better prepared to be here with us today because of Google than you would have been 20 years ago.

ES: When I was in high school...

JR: She agrees with me. She is nodding. Eric is shaking his head, but she is nodding.

AL: I once had to do a story about Google being down, and I sat down at my computer and the first thing I did was try to Google it. That was a long time ago.

ES: When I was in middle school in Virginia, one of the requirements was that we memorized the names of the 50 counties of Virginia. Now, that was a complete waste of time. It would be much better to today learn how to reason, think, search, and use these tools. We are not going to go back in time to no access to this kind of information, and, in fact, one of the major challenges I think for societies—Canada, the United States, and so forth—is what does the educational system look like to produce the kind of people that will ultimately work at Google? One of the things that we talk about at some length is who those people are, why

are they important, and why they rare. All right, so part of our goal is to make sure the people are organizing their human systems to generate these people.

AL: There is, though, a growing awareness, thanks, to Julian Assange and Edward Snowden, that information, our information, our data, does not seem particularly private, can be used against us in a variety of ways. It struck me thinking about how powerful Google is and the amount of information you have. You could probably fight terrorism better than the NSA. So why do you not?

ES: It is illegal. There are many, many laws in the United States and elsewhere that limit what we can do. We are served by legitimate subpoenas as opposed to random walks through our servers which we do honour, and that is probably all I should say about it.

AL: All right.

ES: Turns out I discovered when we were first attacked I discovered that it is illegal for American firms to fight foreign governments. It is a reasonable rule, by the way.

AL: Where do you see your company going and I guess, by that I mean, you are thinking artificial intelligence. You are thinking mobile-dominated—how deep into our lives can Google get?

JR: Well, I think it is pretty fascinating when you just think about what these smartphones can do today. You

know, I used to have a Rolodex. I used to have an address book. I used to have an answering machine. I used to check the YellowPages. I used to check the weather—all of these things. I used to have a camera. All of these things have been replaced by my smartphone, and the fascinating thing is I had access to all of these things. If you think about the rate at which people are adopting mobile phones and that the prices of phones are falling, in the next five years we will have 2.5 billion additional people in the third world using smartphones and imagine how different their experience is going to be. Many of them may have never had access to a library. They may have never had access to the information that their government shares. These people are going to be running a completely new set of searches—how to build a well, symptoms related to healthcare, sending pictures to doctors. So I think we are going to see a huge transition as we move to phones moving to other places throughout the world. And we are going to connect all of them. We have got this balloon project with Google X in the third world. We have got faster connectivity to homes in the first world. So, fundamentally, everyone is going to get connected. Everyone is going to participate, and most of them are going to do it on mobile devices.

AL: You did an event this morning that I witnessed with some kids, and I think a nine-year-old asked you

this question, which I thought was a pretty great question—I am going to get the phrasing right, I hope: What is the most super-secret thing you are working on?

JR: Putting me in his pocket. Do you have the little thing?

ES: This nine-year-old produced on a 3-D imager, 3-D reality, a little picture of me, right? It is just shocking how smart these nine-year-old Canadians are.

AL: I am about to open it up to questions. If you want to ask a question, please, stand so that the mic runners can see you. What is the company you worry most about from a competitive point of view?

ES: I have said for years that there are four sort of major platform companies in the world today: Apple, Google, Facebook, and Amazon, each of which are large global platforms. They are well-funded. They have strong cultures, strong brands, happy customers, et cetera, et cetera. In our industry, we have never seen four running as hard as those four are, and I think the competitiveness between them is the roughest I have ever seen, and that competition benefits all of you in terms of incredibly rapidly declining phone prices, especially, free services of one kind of another.

We always worry about a new start-up, but I think we worry about the sort of scale of those platforms because they are moving so quickly, and the scale with which these new platforms can emerge. So it is a tough but

incredibly dynamic business.

AL: Anything to add?

JR: I continue to differ on some things, but I would—

ES: Would you agree with me or—?

JR: I agree with you about those companies, but I would say it is the kids we met today holding a copy of—

ES: Thank goodness, they are only nine.

JR: —in a dorm. Some of the counselors were older.

ES: They were employed teaching the kids, thank goodness.

JR: Yes, but they are sitting there reading our book. They are in a dorm room. They are in a garage somewhere.

ES: Actually, the last paragraph of the book says that these questions are always framed as a fear of the garage. We welcome it.

JR: Yes. Right.

AL: We have got a question out here, but I just want to ask: You wrote the book. It is about employees. It is true that you think that if you get the people right, everything else follows?

JR: True.

AL: Just give me a quick insight into how somebody who does not run a high-tech firm, who cannot have smart creatives, who cannot give people 20% of their time to go freebase ideas, who runs a manufacturing shop—what can they learn from you?

ES: They could start hiring better tomorrow. I think hiring is something that we talk a lot in the book about. Many

managers do not spend the time they should on hiring. They delegate hiring to recruiting. They get an open head count, and then, suddenly, urgency of filling the head count seems more important than making sure they get the right person right. So I think that is easy to fix. We talk a lot in the book about how to run a good decision-making process, much of which I think can be copied.

JR: We have the nine rules for e-mail and the ten rules—

ES: We did not number them, but everybody seems to turn the things that we produce into ten ways to make your life better; ten ways to run a meeting according to Eric Schmidt; ten ways to do your e-mail. You can certainly follow that advice, but the biggest area that I think most companies can do is, even if you do not think you are hiring the smartest desk creatives, be much more transparent about the information that you share with them. You are not going to find the junior person who has a brilliant idea if you are not engaged with them and if you are not sharing the information and the big problems of the company with them, and, today, that is easy.

JR: I would make it even stronger. I think the vast majority of businesses are hiring lots of people because there is natural turnover. They need to communicate more. They need to make crisper decision-making. They need to have five-year strategies, and they need to be

battle-tested in terms of the quality of their strategies. All of those are applicable to every business—and, by the way, to every government and every institution.

Questions & Answers

Q: I have got a question about the effect of Google on the Canadian media ecosystem. With your tremendous growth, we have now reached a stage in Canada where virtually every traditional media channel, newspaper, radio, television is seeing year over year revenue declines as you have grown to be such a large share of the advertising pie. In Canada, we tax media companies twice: One, we tell them how much money they should be spending on Canadian content, and, two, we have transparency in terms of the corporate income tax. Could you just address the question about the reinvestment in our community with the advertising dollars that you are now taking from it?

AL: You are to blame apparently.

ES: We have at least 700 employees in Canada, and we fund an ecosystem of at least 100,000 small and medium businesses that use our services in various interesting ways. If you add up all of that amount of money, it is a very large amount of money which is not the same thing as the kind of money that you are asking about. So the benefit to Canada Google I would argue is quite significant.

I am very sensitive to this issue because we need the non-Google broadcasting and media industries to be

successful, and we spent quite a bit of time trying to build tools that will help monetize as consumers move to the web. So we have product after product that allows you to monetize, whether it is a subscription service or whether it is a free advertising service. And that is, ultimately, I think the best solution which is to help those partners make money, and I think the money can be made.

AL: Because you need it to continue to survive for some of your products to work.

ES: Well, we need the media to survive because it is an essential part of democracy. I have now spent lots of time in countries that do not have this, and, trust me, we *really* need these people.

AL: As annoying as we are.

Q: I was just wondering: Looking into the future with the hiring of Ray Kurzweil, you mentioned that a human can beat a computer at chess with help from a computer. Is singularity on the product roadmap for Google, and, if so, when can we expect it?

ES: In which year, Jonathan?

JR: Well, you have always told me that I cannot imagine the unimaginable more than five years in advance, but I underestimate everything that can be done in the long run and overestimate everything that can be done in the short run, so I am going to say five years because you cannot prove that that is wrong.

ES: The question was when will the singularity occur, and you are saying five years?

JR: How about before we die?

ES: That is a better answer.

AL: But artificial intelligence is very much on your roadmap?

ES: Yes. The serious answer about Ray is that Ray is working on some new, very innovative products. Google is not planning to have the singularity occur any time soon.

AL: Do we have any questions? Yes.

Q: Now that Apple has played some of its cards in the payment space, what is Google's plan for payments and then, specifically, Checkout, Wallet, HCE?

ES: I think we have had all those products in Android for a year roughly.

JR: We have, and I think we are going to continue to see people consummating transactions on phones. I think that is probably the most significant shift that we are going to see in the next several years. The main reason that phones have not been monetizing as well from a cost-per-click standpoint is because there is not as much commerce being done on them, so I think that, as people start adopting phones more and as it becomes easier to buy things on phones, we are going to see a lot more commerce on phones. So we will both be offering services in that area.

ES: I think we all benefit from the transition to more immediate purchasing, so Android phones have had NFC support, which is the actual way in which these things signal to each other around for at least four years.

JR: Four years.

ES: Because I remember announcing it, and so we had to suffer for a while. I think Apple's move will accelerate that transformation, and, from your perspective as consumers, it means that when you walk into a store, the whole thing is seamless. One of the sort of fantasies is, eventually, you know, you are driving down the street, and I say to the phone, "I need a new pair of jeans," and it says, "I already know your size, and the one of the left is the brand you like, and the one on the right is for sale. Which one do you want to do?" And when I turn left or right, the pants are already ready, and they are ready for them to hand me, which I then purchase. The velocity of that transaction both increases the size of the market which is, obviously, of interest to the merchants, but it also gives you free time to spend frankly less time pant shopping.

AL: Cyber security is a growing issue, and I know you guys are thinking a lot about it— optimizing search results based on the security of the site, et cetera. But is that kind of a serious R&D piece of the puzzle, because one impediment to that speed of transaction is that we

may be wary of actually putting our data out there?

JR: Again, with respect to the examples that you use, none of them involve Google. We have worked very, very hard—

AL: Are you not planning to optimize search results based on the security of the page? Did I make that up?

ES: Yes, that is not quite what we are doing.

AL: Okay.

JR: We definitely warn people when we know that there is malware or something of a pop-up.

ES: There is the negative side. There is a negative side which is if there is any malware nearby, we now detect that and warn you which is why people should be using a Chrome browser, which is, by the way, free so we are clear. But Chrome really does help solve that problem. There are a lot of conversations about the use of HTTPS versus HTTP, and those aspects which are somewhat technical, but, fundamentally, we are pushing hard to make the entire transaction encrypted and secure after it leaves the Google premises. The Google stuff is already very secure.

AL: We have a question out here.

Q: How long until autonomous cars become the dominant form of transportation, in your opinion?

JR: Five years. I have been in one of these cars, and I would say I have driven one, but that really is not true. I have been driven by one, and, for about the first 20 minutes,

you find yourself sitting in the passenger seat pushing the imaginary brake that you pushed when you taught your 15-year-old to drive, and then after 20 minutes, you kind of just get used to it, and you realize that the laser of the car can see better than you and can react faster than you. So I think at this point the challenge is less in the technology. The technology actually works really well, and it is more in the regulations, in the issues of these cars interacting with human drivers which is actually more problematic than the cars interacting with robot drivers. But we are definitely going to be doing tests this year and in the next several years. In something like five-plus years, I think you will see more scenarios where these get deployed.

Q: How will the unions fare in a universe that tends to encourage creative thinking?

ES: Which kind of unions?

Q: Well, generally.

ES: Government unions, public unions, private unions, corporate unions. You are referring to the union structures that I am familiar with?

Q: Unions tend to accept the thinking of the leadership.

ES: General observation about unions is that the leaders of the unions tend to respond, at least in the American model that I am familiar with, to the current concerns of the current union members because they are elected. So they run, and they are elected, at least as I understand

it, by plebiscite, majority vote and so forth. So they are going to optimize the interest of that particular set of workers, and so the conflict occurs when something disruptive comes along which is not in the specific interest of the workers, and we have seen this in numerous cases in America. I am not as familiar with it in Canada, but, certainly, with education where there are new modalities and the unions resist their adoption, and I do not think that is good.

AL: We have a question on this side of the room. Yes.

Q: Actually, I have a question about education. You were talking about some of the things that were taught to you when you were a student in middle school that really were not very relevant, and you were also talking about looking for certain qualities in people that you hire to work at Google. In your opinion, what would be the most important reform that could be made, not at the university level, but the pre-university level in education to make the young people coming out of the education system, not just better Google employees, but also better citizens?

JR: Help them have more fun. Do not torture them like Eric was tortured with rote memorizing. Give them tasks like the kind of things that we saw this morning. Tasks that are more creative. Tasks that kids will get passionate about. I would argue that a kid getting

passionate about anything is good. I was passionate about baseball cards. That is how I actually learned to memorize stuff when I was a kid. My parents were worried about it. I think I turned out okay. So I would focus on getting them excited about learning in a less rote-oriented way.

AL: Okay.

Q: Leave it at that. I agree with that.

AL: I think our last question is out here.

Q: Thank you for joining us this afternoon. Despite all the accolades for Canada's business climate, a whole host of indices and metrics have shown that we are lagging behind other G-7 and G-20 countries in terms of innovation. So my question to you is how do you continue to justify Google X's focus on shoot-the-moon solutions with risk-averse shareholders, and what lessons can the Canadian businesses learn from Google?

JR: From what I have seen what is impressive about the Canadian opportunity is that you are much better connected than most other well-developed nations. You have got great broadband connectivity. Three out of four Canadians have a smartphone. Some 90% of them access the internet on a daily basis from their phones, so I think the good news for you guys is that you have the infrastructure. What is surprising when you look at the Canadian data is that, with all that

infrastructure, the level of e-commerce that you have is relatively low for the connectivity that you have. So what you could learn from the Google model, I would suggest, is this notion of thinking 10 X, this notion of making it okay to fail, this notion of a much more engineering-driven mentality of iterating much, much more quickly and focusing on the kind of dynamics of setting big goals and making it okay if you miss them and accepting the things that you learn from them because you have the infrastructure, and you certainly have talented engineers and talented people.

ES: I agree with all that. I think that Canada is, if anything, undershooting the opportunity that Canada has. You have the people; you have the connectivity. I think you have the funding coming now. It is right in front of you if you focus on it.

On your questions of the shareholders, I will tell you a story that illustrates this. We do a number of things in Google X, but one is we developed a contact lens, and this is a contact lens that has a computer chip inside the lens with a tiny battery. And this little computer detects changes in your vitreous—essentially, the part of your eye that indicates your insulin level—and it changes colour in such a way that people who have diabetes or near diabetes can use this rather than doing the pin prick. This single invention will improve the lives of hundreds of millions of people for decades and

will produce an enormous amount of royalty out of a 20% engineering team. So the way we have organized Google X is, every once in a while, we are going to hit a multi-billion dollar business that happens make the world better for billions of people. We are very proud of it.

JR: I have a quick story on that which sort of gets to some of these moon shots and just how Google thinks about adding shareholder value. When we first looked at Keyhole, which is actually the company that became Google Earth, I went over there with one of our senior VPs, Jeff Huber, and we saw this first version of Google Earth like eight, nine years ago. And it was really exciting, and I thought, “Well, I need to go back to Google and get somebody excited about it,” so we went back to Google, and we took Sergey over, and Sergey went, and he saw Google Earth, and he was like, “Well, this looks really cool. We need to buy this company.” So I advocated with Sergey to buy the company, and Eric did want he was supposed to do. He said, “Well, we need the board to give us approval.” So we got buying Keyhole on to the next board meeting presentation. We got in the meeting, and I was sort of excited to talk about Keyhole, but Sergey decided he was going to talk about it because he had seen it, and he wanted to be the advocate for it. He explained how cool this is, and he demoed it, and

everybody was, like, “Yeah, it’s really cool.”

So then one of the board members said, “Okay, well, maybe we should approve this, but how are we going to make money?” And I had been drinking the Google Kool-Aid. I had had my lecture from Larry a year earlier, like, you know, and we did not project all of that stuff, so I was not sure what to say, and Sergey said, “Well, Jonathan’s the business person.” And, so then I was sitting there in front of the board; I had no idea what to say, and Eric kind of charitably bailed me out. I was like a deer in headlights, and he said, “This is a founder-led decision on this acquisition.” And I was like, yes, you are right. So we bought Keyhole, and now that is Google Maps.

ES: And, by the way, I did not even bother to visit these guys because I did not think it was that important. Today, that acquisition is the basis of Google Maps and everything we do—multi-billion dollar business for Google.

AL: And you could not do the Google car without it, right?

ES: Of course.

JR: We could not, sure.

AL: So my last question is for Eric. Are you still sharing your office with Amit?

ES: No, in fact, Amit retired. I think he was tired of listening in on my conversations.

AL: Please, join me in thanking Jonathan and Eric.

ES: Thank you, all. Thank you.

**Note of Appreciation by Noble Chummar,
Partner, Cassels Brock and Blackwell LLP;
Director, Empire Club of Canada**

Thank you, Andrea, and, thank you, Eric and Jonathan. On behalf of the Empire Club of Canada we would like to present you with our iconic *Red Book*. Every one of our speeches over the past 111 years have been transcribed and put into a book and sent to every library and every consulate, Canadian embassy around the world. So, if you Google yourselves tomorrow, you will be able find yourselves on our website as well. And also I am pleased to present you with the new CD of our singer this afternoon, Shane Philips. He is looking for funding.

Finally, on every book tour, if you are trying to make a billionaire happy, it is not very easy financially, but I am pleased to let you know that IBK Capital has purchased all the books in this room, and I just heard that Amar Varma from Pivotal Labs is going to purchase today 300 more books for everyone at Pivotal Labs.

ES: Thank you all. Every book counts. We are busy selling books. Thank you so much.

Concluding Remarks by Andrea Wood

I will now present our door prize. Our winner today will be one of the first in Canada to have a Samsung Gear Live. I would like to ask Jenna Hay to bring the box of business cards to the stage, and I will draw the winner without looking. It is Mihnea Modoveanu at Desautels Centre for Integrative Thinking at the Rotman School of Management. Please, see Jenna, and she will give you your prize. Jenna is the Public Relations and Events Manager of the Empire Club, and this week is her last week with us. We are going to miss her terribly, so Jenna, on behalf of the board, I just want to say thank you for your hard work and your dedication to the Empire Club.

Thank you very much to our generous sponsors. You have heard that IBK Capital has purchased some books. They are also our event sponsor today. Engagement Labs, thank you. Pivotal Labs, thank you. Our VIP reception sponsor is Skadden, Arps, Slate, Meagher & Flom LLP. Thank you. I would also like to thank the *National Post* as our print media sponsor and Van Valkenberg for providing our AV. You can follow us on Twitter at @Empire_Club and visit us online at www.empireclub.org.

Thank you all for coming. We hope to see you again soon at some of the exciting upcoming events described in the brochure at your table. On October 15th, the president of the first bit coin currency exchange in Canada will be

speaking, so, please, enjoy your lunch, and, thank you, for coming.