Verisk Analytics

Verisk Analytics Investor Day 2016

December 8, 2016 at 8:30 a.m. Eastern

CORPORATE PARTICIPANTS

David Cohen – *Director of Investor Relations*

Scott Stephenson –*President, Chairman, Chief Executive Officer*

Mark Anquillare – *Chief Operating Officer*

Beth Fitzgerald – *President, ISO Solutions*

Bill Raichle – *President, Verisk Insurance Solutions, Claims*

Rich Della Rocca – *President, ISO Claims Analytics*

Mike Fulton – *President, Xactware Solutions*

Bill Churney – *President, AIR Worldwide*

Neil Spector – *President, Underwriting Solutions*

Stephen Halliday – *Group President, Verisk Analytics*

Nana Banerjee – *Group President, Verisk Analytics*

Eva Huston – *Chief Financial Officer*

PRESENTATION

David Cohen
Good morning. We're going to go ahead and get started as we have an exciting and full day. I'm David Cohen, Verisk Analytics Director of Investor Relations. Thank you, everybody, for coming and to those of you who are listening to the webcast, everybody's favorite part.

Please note the disclaimer on the screens and the webcast. Some statements today may relate to future events or the future financial performance that involve known and unknown risks, uncertainties, and other factors that may cause our actual results, levels of activity, performance, or achievements to be materially different from any future results, levels of activity, performance, or achievements expressed or implied by these forward-looking statements. Other factors that could materially affect actual results, levels of activity, performance, or achievements can be found in Verisk's periodic reports filed with the SEC. In addition, you can find reconciliations for certain non-GAAP financial measures in the investor relations section of our website, Verisk.com.

Our objective for today is to give you a deeper understanding of our strategy and what makes our solutions distinctive. We want you to understand why we are excited about the long-term outlook and the opportunities before us. You will hear from our chairman, president, and chief executive officer, Scott Stephenson, on a broad range of topics that I'm sure you will find interesting.

Our chief operating officer, Mark Anquillare, will speak about our insurance businesses. After a break, group president, Steve Halliday, will talk about natural resources, and group president, Nana Banerjee, will discuss our financial services business.

You'll have a chance to grab a boxed lunch at that point. Then, at the end of the day, when our chief financial officer, Eva Huston, discusses Verisk's financials, we hope you will appreciate that our solutions, delivering value to our customers through the hard work of our people, are what generate the strong revenue growth, profitability, and free cash flow that you see.

A few quick administrative notes. We have solution demonstration kiosks outside the presentation room representing all three of our primary verticals: insurance, natural resources, and financial services. We think the demos will help you better visualize and conceptualize the value we provide to our customers. The kiosks will be open throughout the day and for about 45 minutes after we conclude this afternoon.

For those of you who need Wi-Fi access, there are codes posted around the room, and we've made a PDF version of today's slides available in the investor relations section of the Verisk website. The PDF also includes bios for our presenters today.

Finally, you will find at your seat, or you may have been given it as you came in, a survey asking for your feedback on Investor Day. Please take a few minutes to complete this survey and drop it off at the back of the room before you leave. We take your input seriously, and we've try to make adjustments to our Investor Day so it's most useful to you. So, thank you for being here. We're listening.

At this time, I'd like to welcome Verisk's CEO, Scott Stephenson

Scott Stephenson
Thank you, David. Good morning, everybody. Thank you for coming. We really appreciate your interest, and I welcome you on behalf of my 6,500 colleagues at Verisk. We really are excited to tell

our story here today. I know there are many familiar faces in the room, and you've heard us talk before. I think you're going to hear a lot of consistency in terms of theme, but one of the things that I hope I can do in my opening remarks here is just to give you a little bit more of a sense of what's happening right now inside of the company. What are the things that we're most focused on?

A number of the things that I'm going to be sharing with you today actually are taken pretty directly from a two-day strategy session we had with our board last month. That's something that we do each year. So, you're sort of getting it straight from the boardroom into this room here. There are a few ideas that really define who we are at Verisk, and they're pretty enduring ideas, I think.

So, that's actually where I'm going to start but then progressively work through some of the issues of the day basically. You've heard us define ourselves as a vertically-oriented big data company. Being defined like that, there are some things that we have to give particular attention to. There's a few interesting debates that go on inside of the world of data analytics, so I'm going to actually point at a couple of those and then just talk a little bit about where we come out as we think about all those issues.

Why don't I just dive in? We talk all the time about our four distinctives at Verisk. We're a little bit of broken record on this point, but I can just report that the company that I joined 16 years ago now was not even publicly traded, let alone an S&P 500 company. It was not a highly-innovative company. It probably was not a great place to work, although I think it was a good place to work. There was a lot of room for development and for growth.

When I think about where the company has come from and where we sit right now and what is it that has been a part of that journey, I would really say there are two things above all else. One is some very explicit efforts at culture-building, which have really tried to account for the kind of environment we need to be in order for it to be a place where the kind of people we need to have as a part of our company want to work. We have a lot of very bright people working at Verisk, a lot of analytically-minded people.

I was actually having this conversation at the back of the room before we got started. When you're trying to hire somebody who's a domain expert and particularly a data scientist, they're certainly interested in what are you going to pay them. Absolutely. But, generally the first question they ask is what am I going to be working on? They really want to do good work. They want to do interesting work.

So, we've tried to really apply ourselves in terms of thinking about what kind of an environment do we need to be in order for the kind of people that can really advance our business, wanting to be with us. What sort of environment do we need to be?

The other thing that I think has really been a part of the march has been sticking close to the four things that we think make us distinct, which are first of all having access to some extremely unique data and content, which is really a product of the fact that we are vertically-oriented. It's in the verticals, actually the first two of these distinctives grow up: unique data and also subject matter expertise, deep domain expertise. It's only through deep connections with the market that you're serving.

When you're a solutions provider like we are, it's only through that deep, deep domain expertise and intimate relationship that you're really going to understand what's the next turn of the wheel, and hopefully get out in front of our customers in order to be able to be serving them up solutions that they need when they become needed. It's also in the verticals that unique proprietary content grows up.

There are a lot of what I would call horizontally-oriented data analytic companies in the world, and there are some old-form kinds of companies, and there are some new-form kinds of companies, but two of the things that they always aspire to is more depth in verticals, and increasingly they are also interested in having access to content. We were sort of born that way, basically. The predecessor company, which was formed in 1971 actually was born with those two features.

We also believe very strongly in the importance of being the first mover in order to be the one that brings innovation into the market. I'm going to talk a little bit about machine learning today, which is a theme inside of our business.

One of the things that's true is that if you are first to market, and you acquire and accumulate more experience than anybody else, then your algorithm is going to get more trained than anybody else's, which probably means that your analysis is more precise. It also probably means that the market will assume that your analysis is more precise and more valuable. So, there's really an advantage, particularly when you're analytically grounded in being the first mover.

Lastly, being deeply embedded in customer workflows, which for us really means a lot of machine-to-machine interaction fundamentally and ultimately. It's machines talking to machines. Customer machines sending us their unique transaction granular data; our machines turning it into a data set and analyzing it and sending it back towards decision-support software where they can pull our data and analysis into their workflows.

That's essentially what we do, and that's what we have been doing, and the closer we stick to that, we generally find that what we do is more unique and more valuable for our customers. We tend to grow faster and be more profitable. So, when we sit down and talk, for example, about a new project we might take on, or we talk about a company that we might acquire, we're really putting things through that filter.

Against that backdrop then, how do we think about what it is that are the marks of success for a company like ours? The number one thing, the boldest font on this slide, is that we're in pursuit of growth, and especially organic top-line growth. We believe that that's the single greatest mark of our vitality as an organization and so many good things happen when we grow organically: more opportunities for people inside of our company, we're adding more value for our customers, we create surplus, and we can reinvest in the business, etc.

There are two things that sort of attach pretty strongly to that organic growth theme for us. One is we just want to provide exceptional value to our customers and to our colleagues, and those two things really go together. If our colleagues are well prepared to do the work they're doing, if we have supported them in their own growth and development, given them great tools, given them access to great intellectual property, then they're going to be able to do an even better job for our customers.

When we recite what it is to be a leader at Verisk, the kind of leadership we're looking for, we actually make seven statements. This is found in the Verisk Way, which you can actually get to. It's on a public website, Verisk.com/VeriskWay. You can also get to it through our corporate website.

Basically, the first two statements we make under the leadership section are both about customers, and the very first statement is do not consider yourself successful unless your customer is successful. So, it's ultimately about value for customers, and we have to be an environment and a set of people that are really focused on that.

Then, we also care very much about efficiently using capital. So, our track record has been good with

respect to organic growth. We've generally grown several hundred basis points faster on an annual basis than the companies with whom we get peered. With respect to value for our customers, we've seen very steady increases in the way that the customers evaluate us, the way that customers grade us in terms of what we're doing for them. Generally, the rates of return on the program of acquisition, the program of buying back shares, and the internal investments we make inside for the company have all been really quite strong.

Some of the things which are a part of our model which underlie that kind of performance would be with respect to organic growth, we are invested-minded. Among our peer group, we're kind of the higher CapEx form of what we do, and I'll actually share a little data on that.

An important thing about our organic growth is that we feel very strongly that when we're innovating, we don't want to go into the development lab by ourselves. We want a customer to come in with us. We don't want ten. We want one, maybe two, that will really dig in with us in the process. Happily, we're capitalized at a level that all of our ambitions and all of our creative thought, we are able to fund and pursue.

With respect to being valuable to our customers, I go back again to the notion of being vertical. That's just such an important part of our view of how to be successful. We do have distinctive intellectual property.

By my own horseback estimate, we probably have one of the 100 largest private data sets in the world. When I say private, I'm excluding governments because any entity which taxes its people is going to accumulate an awful lot of data. But, I'm saying in the world of non-government, we probably have one of the 100 largest and one of the most unique data sets in the world. We're a highly-skilled team, and I'll share a little bit of data with you on that as well.

With respect to efficiently using capital, two things that have always been a part of what we've done. One is our products are generally scalable. We like to say build it once, sell it a thousand times. I think many of you know that about 80% of our revenue is derived from subscriptions, and those subscription-oriented products are the ones where you should think of it as an industry-standard solution that essentially all customers are more or less using the same solution without very much modification, basically. So, that is part of our efficiency in terms of how we make use of capital.

I'll also say that we have been, from the beginning, as we have engaged the program of M&A we've been very proactive about it. So, we're not sitting back and reading books that come over the [indiscernible], we're really walking the halls of our customer organizations. One of the things that we like to say is everybody is on the M&A team. We want anybody who's touching a customer to be really sensitive to are there other companies, third parties, that are making a difference for them with data analytics and doing things which maybe are related to the kinds of things that we do because we believe one of the sources of value that we can bring to shareholders is simply to be aware of what is going on out there.

In the world of data analytics, you can have a beautiful category-killing kind of solution, and it can be $15 million of revenue, depending upon which vertical and the exact nature of the solution. So, we really want to be alert to that. Most folks, most investors just are not going to be able to see those kinds of emerging situations, but we're walking the halls daily, so being proactive and relating what we're seeing out there to our strategy is actually an important part of what it is that we do.

Having said all of that, having kind of characterized our model that way, there are actually a couple things that we don't give a lot of thought to when we're formulating strategy. One of those would be we

don't really sell solutions to consumers, and by the way, both of these statements I'm not trying to make forever and ever kinds of statements. I'm just sharing with you how we think about it right now. Or, maybe one way to hear what I'm saying here is we don't feel the need to flex our business model in the two ways that are there on the bottom of the slide in order to grow at this time.

So, one of the things we don't do very much is direct-to-consumer kinds of work. The other is that we've pretty consciously actually chosen to make the transaction-oriented part of what we do relatively constrained. It's about 20% of what we do, and that's good.

We do need to have a degree of service orientation in what it is that we do because it keeps us really in touch with our customers. It means that we're helping them to find more value in the solutions that they are subscribing to. So, we have to do some of it, but we want to stay in this very balanced place. So, we don't see transactions and transaction-oriented solutions as really taking over in the mix of what it is we do.

I made a couple points about where we're at, so one of them with respect to investing. What you're looking at here is the progression over time of our CapEx spending, and you can see there was a big knee in the curve in 2013, and along the bottom you're tracking what fraction of our revenue does CapEx spending represent. So, obviously we popped up there to a much higher level in 2013. To me, that is representative of a combination of the big data revolution really kicking in plus the software intensity of several of our solutions increasing.

Those two things are actually kind of related. The software intensity is really creating more opportunity for more workflow and more embedding inside of the customer environments. Then, the big data revolution is simply the total amount of data, which is available and needs to be processed, so you need more compute capacity, etc., more network capacity in order to be able to deal with it.

To me, this progression is actually both sensible and encouraging because one way that I interpret this is we're very far away from being out of ideas in terms of how to grow what it is we do and how to expand. You can see that actually the greatest part of the increase has been putting up our own development efforts on the balance sheet, so when we code basically, we can actually recognize that as an asset on the balance sheet, and we're doing more of that than we ever did.

We've already said, and I'll just repeat here that on a go-forward basis, as the company grows overall, I think the percentage, which CapEx represents inside of our revenue stack, is going to level out. We don't see it going up more, but we did feel that there was a moment in time when we could really re-platform a number of our products and really get in line with the big data revolution.

One last point about that would be, and I'm going to talk about this more a little bit later, is one of the things that we see coming is the refactoring of technology infrastructure more towards the public cloud, and when you're in that environment, you're actually buying less, and you're renting more. So, somehow that will also influence the CapEx intensity of the business going forward, meaning down. It will take down the CapEx intensity of the business.

I also talked about our people. So, here you're looking at over a five-year period what happened with respect to some of the categories that are really meaningful for us in terms of folks inside of our mix. The light blue bar there on top would be essentially technology-oriented folks, database administrators, coders, etc., where that population inside of our company almost doubled, didn't quite double, over the course of the five years. Then, you have other people with advanced degrees. You have people that are fellows of the Casualty Actuarial Society.

You have MS, and a lot of that is in data science, and in fact, that's probably the fastest growing category inside of our company would be people with data analytic, data science backgrounds. That revolution only started a few years ago. Five years ago it was hard to find any major university that was granting an MS in data science or data analytics. Now, you're seeing quite a few of those actually. That's a good thing for us. So, the supply is increasing, and that's helpful.

So, here's a perspective about our company, and that is if we just sort of mark the last four years, and that's kind of arbitrary. We could have stated this at any point. This assessment, this look, didn't have to start in 2013, but there's a few things that we've done to try to tune up our business.

So, one of them has been this increased spend on CapEx. We already looked at those data. Another is we've just put even more emphasis on engaging well with our customers and with our own teams, and to me those are just the two sides of the same coin, basically. Another thing that we've done is we've actually put a lot of energy into trying to treat our data assets as enterprise assets.

Just a word about that. The way that a lot of our solutions got built, the data related to the solution are very purpose-built, and in fact, in many cases the agreement through which a customer is licensing one of our solutions is literally the same agreement. The signature at the end of the agreement is also the enabling of us to make use of their data. It's all kind of in the same agreement.

The way our company grew up, you could think of it as somewhat siloed data. One of the opportunities that we see is to simply add more value to the data that the customers are already giving us. So, I don't have the exact number in mind, but we have many, many different data sets which have observations related to claims in the P&C world, for example.

One of the things that's of interest to us is to say well, how does data set A, which has observations about claims and data set B and data set C, how might they all relate to one another? Is there any gain? You literally create new data when you take data set A and data set B, and they have overlapping data elements, and now you relate the two, you've literally created new data. So, we're always interested to ask the question what kind of new data could we create, and would it be useful to our customers. That's what that enterprise data asset—we call that activity the joint development environment. That's something that we've started to do much more of in the recent years.

So, think of those as investments. These are investments we've been making inside of Verisk. At the same time, when you look at some of our outcomes like the percentage of what we do that is subscription-based or our EBITDA margins, they've actually moved in the direction that we would like to see them move.

Now, obviously we've also done some things with respect to our portfolio, bringing in Wood Mackenzie. We stepped out of the healthcare business, as you know, and those portfolio moves also play a role. But, we find ourselves 2016 year-to-date, our EBITDA margins are a little above 50%. Our subscriptions are a couple points above 80% of the mix. So, that feels good. That's the direction that we would choose to see things move anyway.

So, we've been investing, we're getting better, we're becoming more capable. The published performance metrics have actually moved in the right direction also, so really the question is so what do you do with this company at this point to make it go further and faster and higher? So, that's essentially what I would like to talk about for the rest of my time with you this morning.

With a company which—by the way, I don't mean to say that we're perfect. We are so far from perfect, but I do think that the outlines of our business, we have a pretty well-designed company, basically. So,

what can you do to make it better?

Well, fundamentally, what we believe is that if we can live at the intersection of speed and focus, even more than we already do, and those two things go together, you can speed up if you narrow what it is that you're working on. You could argue that it's maybe only if you get focused that you can speed up, certainly without sacrificing quality or precision. This is really day-to-day, moment-to-moment, meeting-to-meeting, this is where we're trying to live even more.

I'm not trying to say that we haven't been fast and that we haven't been focused, but even more we'll be an important part of the journey going forward. There are a few places inside of our business and our business model where these themes of speed and focus will be particularly important.

The first will be in the development and commercialization of breakout solutions. So, across the whole enterprise, we have about 20 projects, 20 development activities that are unusual in terms of the amount of impact they could have if everything is developed well, if we have hit the market where the market is, etc. So, these will play an important part in our growth and progression from where we are today.

One of the things that's just true is if you're making investments times zero, obviously if you can pull forward the revenue streams, then the whole project just becomes much more economic, basically. So, we're asking ourselves how do we make that happen.

A fair amount of it we think hinges maybe not surprisingly upon having great, great leadership, 24/7 dedicated to making this new thing happen, and we're actually asking ourselves are there yet more creative ways that we can incent folks where it's not going to feel exactly like you have started a company, but your opportunity for an unusual outcome personally is greater than it would be if you were just sort of paid in the normal course. So, we're thinking through and working through on that right now.

A second place where speed and focus matter a lot is with respect to the execution of major technology and platform projects. I'm going to talk here in just a moment about continuous development, and that's very important. It's also, we think, just in the modern world we're just becoming intolerant of the 12 to 18-month project, just mistrustful of those. Why does it have to take that long? Your scope is going to change three times if you wait that long, and how do you know that you're on the market? So, agility with respect to development is a very important thing.

Talent development and acquisition, and I would simply also add pruning. So, you looked at that mounting stack of highly-trained and capable people. In order to have those 50+% margins, one of the things we always have to be alert to is has the mix of capability that's required to run our business, has it changed so much that not only do we have to be thinking about additions with respect to data science or domain expertise, but are there things we should stop doing, basically. That may sound very much like blocking and tackling, and it is, but the degree to which the skills mix needs to change is sufficiently great that we have to be thinking about it on both ends.

Lastly, enhanced sensitivity to our customers. As much as we do care about our customers, if you had a network diagram, they are sending so many signals at us through so many different channels, and the thing that we're trying to apply ourselves to is are we capturing all those? Are we turning them into a genuine understanding of what it is that our customers need and want? Then, returning to them in a way that first of all they really feel heard, and then beyond that even, they understand what it is we're doing and why we're doing it.

So, I find myself in a lot of meetings where our great team will have a great idea, and they'll come forward, and you just love to hear it because it's customer-driven, and customers are development partners, and everything just sounds great. Then you get to the last slide of the presentation which is here's how long it's going to take. I just find myself more and more in meetings basically saying what would it take to do that in half the time that you just laid out. It's not always possible to compress the development times, but we live in a dynamic world. I'm saying Verisk and our customers are living in dynamic worlds, and we need to be fast.

What I'd like to talk about now for a couple moments is a topic that actually seems to come up routinely when I'm talking about Verisk or when I get in front of folks that are in the data analytic world. You hear lots of different words to try to get at this. You hear people talk about content. You hear people talk about connections, etc.

I was passing through the airport in Hyderabad, India about three weeks ago. We have about 150 people there, and I was there to be with them. We're developing business in India, etc.

Walking through the bookstore in the airport, and I saw a book on the shelf called *The Content Trap*, and I pick it up. It's written by a Harvard business professor, and what he's sort of trying to say in so many words is content really isn't what it's about anymore. What he's trying to say is above all else, what you want to do is create connectivity within some network of people or businesses that could or should have common cause, and what you do is you establish that connection, and then the content is always changing. It's the connection itself that carries value.

You hear other people talk about portals or distribution or the distribution versus content question. Lots of people are using different words, but fundamentally what they're trying to get at is this. What they're trying to get at is on the one hand isn't everything connected with everything? Literally, every node in the world whether it's a human being, it's a device, it's a company. Isn't everything connected with everything, which carries with it the implication all data at every node in the network, which is the world, all data is available to every other point in the network. So, that's one point of view.

The other point of view is essentially around machine learning. If the machine is so good at dealing with both structured and unstructured data, and all the content is available anyway, then is there any content which is proprietary? Is there any advantage associated with content? Or, is it the case instead that all that matters really is that everything is wired up, and machines are very smart now? So, basically work on connecting and work on machine-learned methods.

I was making a speech a couple months ago in London to essentially peer CEOs of information businesses, and the emcee of the event, after I finished my remarks because, by the way, let me give you the punch line which is content does still matter a lot. I'll actually develop that argument for you. But, basically walking in from the wings saying you know I hear you saying that content really matters a lot, but is that really the case? We really think the distribution is kind—

I said let me just stop you right now. Literally, I got the guy to stop as he was walking across the stage. I said let me ask you a question. Do you think that societal norms plus lawmakers together will uphold the notion of the ownership of data? In other words, the category which is the ownership of data, is that a stable definition inside of the modern and emerging economy. The guy thought about it for a minute, and he said well yes, I do. I said I do, too. That's why I think content will remain an advantage.

It's soft thinking to assume that the whole world works like 14-year-olds do in social media land. Fourteen-year-olds are not protecting their otherwise potentially personal and proprietary data, and it does seem to go everywhere. But, to assume that that's the way the whole world works is a big flaw in

my view because first of all, and importantly, we are vertically-oriented.

I'm saying Verisk. We are vertically-oriented in a B2B world. All of our customers completely understand the value of their own data. That's why we have to work so hard to maintain their confidence in what it is that we do. As trusted as we are, when we make a call for additional data, it does not come quickly. We have to stay on it for a long time. I'm looking at Neil Spector over here. He's been in pursuit of commercial claims histories for years, basically, and we're making progress, but it doesn't happen quickly.

So, to assume that simply because everything is potentially communicating with everything, to go from that to therefore data are available to whoever wants to get at it is just very flawed thinking. That is absolutely not the case and especially in the business-to-business world.

Secondly, with respect to machine learning, yes the machine can learn meaning that the machine can generate and improve models based on the way that the environment has structured rather than as a function of specific programming done by somebody who's interacting with the model. So, yes all of that is true, but you still need human beings.

There's one thing that the machine cannot do and that is assign value. It's only a human being that can say that analysis is useful or that recommendation is one that in the round meets our goals and our interests. So, yes machine learning is powerful, and what I'd actually like to do now on the next several slides is that we participate in both of those movements, but not because we think that these movements represent a melting of the iceberg underneath us with respect to the value of the proprietary content inside of the verticals that we serve.

We absolutely do not see it that way, and in fact, our daily experiences, if anything our customers are becoming more persuaded of the importance and the value of content. I think we actually become even more important to them, and it's even more the case that access to unique content is a privilege and a preference and represents a competitive advantage.

So, just as you interact with the thought of Verisk as a data analytic company, realize that there are actually many different kinds of data analytic companies out there. I really believe that the pivot point on which a lot of this turns essentially does the stuff in the middle of this picture continue to have value. I think very definitely it does.

But, just to talk about these topics for a moment. Essentially, to make the point to you that we're harnessing both of these movements in the data analytic world and putting them to work inside of what we do. So, first of all just to make sure that we're clear on what we're talking about here.

There's been a progression where we started talking about AI. Essentially, what's happening through this progression through time is it's not that the math is really getting more complicated; it's that the essence of machine learning is that you have training sets of data, and essentially the models improve with the machine doing the work without a lot of human intervention because you have a lot of sophisticated pattern matching going on in the background such that the machine knows how to work on improving the model as you present it more and more content.

So, what's happened through this time period basically, it's not that the math has gotten more complicated, it's that the volumes of data and the velocity of the data has basically gone up. So, just like with a child, the more that you talk to a child, the faster the child acquires language. The more that you talk to the algorithm, the algorithm becomes smarter faster, and what's happening in the world is that you can present a lot more raw material to the algorithm than you used to be able to.

That's effectively what's going on. So, as you go from the earliest notions of AI to what's now called deep learning, mostly what's happening actually is that you have a volume and a velocity of data supported by Moore's Law, which my children wear shoes because of Moore's Law, basically. The cost of computing capacity has just so steadily gone down, which has enabled the volume and velocity of the data to go up. That's effectively what's going on here.

So, when you hear all this highfalutin machine learning, deep machine learning, essentially it's the semi-conductors have gotten better, which means that we've had a data explosion. You harness essentially the same math, but you're able to train the models much better than you used to be able to because you can do a lot more of it in a short period of time.

These are real use cases that we're working on right now, and a number of these are being done by our advanced team which is under the leadership of Nana Banerjee over here to the left. You'll hear Nana when we talk about Argus, but certainly feel free to ask him about this during a break.

Basically, some of the use cases that are meaningful for us today as we're trying to advance our business would include taking two-dimensional images and figuring out exactly what is in the image. It's computer vision. Literally, the machine being able to essentially read a two-dimensional image. That allows you to classify what's in the image, so now essentially you're taking pixels and you're turning them into data packets.

That's really helpful with things like if you're trying to dimension a roof. That would be one example. Some other cases would be essentially figuring out whether images have been altered or not. So, fraud is a big problem in a couple of the domains that we serve. Literally, to be able to look at an image and determine well actually that is not the right, original image. That's a meaningful use case inside of some of the things we do, and that can be with respect to text on a piece of paper.

That can also be with respect to the image, for example, of a dented fender. One for the things that's happening in the insurance world, and I'm sure Mark and panel will get into this more a little bit later today, is our customers would like to make it that their insureds can engage in more self-service in the claims process, partly because of efficiency, partly because it makes people happier basically to feel like they're in control of what's happening in the claims process.

Well, in order to do that, one of the things that a lot of our customers will want is a degree of verification of what's going on. One of the ways to verify is with an image, but then you get into the question is that image actually accurate or not? Is it literally a realistic portrayal of the assets and what has happened to it? So, the ability to know that image has actually been changed, and that's not accurate. That's valuable.

The whole thing that's going on, basically, is that our customers simultaneously want their analytics to be more precise. In other words, they want their decisions to be even better than they are today. They want fewer false positives and fewer false negatives. But, at the same time, they want to go faster, and usually speed would be the enemy of precision, or more precision would cause you to slow down.

They want to say no, we want to deny that tradeoff. We want it all. We want faster and more precise. Well, the way that you're going to do that essentially is by being able to assemble data more quickly and more precisely. That's what our methods are aimed at. So, we're great with machine learning, and we don't think it tips over our boat at all.

Then, on the other side of this hyperconnectivity. On the left what you have here is just the progression

in the growth of Amazon Web Services, which as you know, is order of magnitude 80% of all the public cloud computing that is going on today. On the righty, you have month-over-month progression of our spending on public cloud.

Basically, these are deeply-inflecting curves, basically. I believe, and I'm actually going to almost end on this point this morning, is I believe that a much more of a cloud basis in our technical infrastructure at Verisk will be very helpful to us essentially as we try to be a more globally effective company, as we try to do more new things. The unit economics are very good, and the flexibility is remarkable.

Just a very brief story. In a new country, we got started serving the retail banks with what we do in the analysis of credit cards. This is a country that has very strict privacy laws that say data must psychically reside here. Any data generated here must remain here.

So, we got a majority of the banks to say yes, we'd like to do the Verisk thing. So, yes, great. Now, you have to be able to actually do the work. So, you need computing capacity. So, you really have three options. We could go build a datacenter of our own in this country. We could go find some co-lo, or we could use public cloud capability, and we chose to do the third.

By the way, there's an interesting conversation, and maybe we can get into this a little bit later today, but my over-under is I think about two years from now, more or less, you're average CEO is going to be saying oh yes, cloud. Yes. We're really good with that.

Your early warning on that is when their CIOs are showing up in the technical journals related to their industries, and they're going to use language like heterogeneous computing environments or hybrid computing environments. They'll talk about development activities being done on the cloud, but what that's really saying is an industrial-strength CIO who in days past at least might have worked at IBM and they moved out and moved into the industry, etc., is saying the basis of our technical infrastructure is changing.

I make the rounds with the CEOs of our largest customers, and it's coming. A lot of people will say is it really secure, and etc. The unit economics are really compelling. I'm not here to make an advertisement for Amazon Web Services.

So, we had this session the other day. The fellow who actually did the project for us in this new country, this Asian country, he said let me just show you something. He went into the AWS environment. He went to our secure site, and then he went to literally where you could see the five servers spinning away in this country. He said watch this. He just turned them off for a second because it was night there, and then he turned them right back on. Didn't give anybody a heart attack. I think in the course of the same meeting, he actually ordered a sixth one.

Not long ago, I was meeting with the CIO of Amazon, and he said it in a way, and I'd had that experience in our office. Basically, what's going on is that the use cases for Amazon Web Services are a product of what Amazon.com is trying to do because how did they get into this business.

They built all this capacity to the peak, then Werner Vogels went to Jeff Bezos and said you know I have all this capacity that we're at most points in the day not using. I think I can rent it to other people. Are you okay with that? Yes, go ahead. A multi-multi-billion dollar business is born, basically.

What I heard him say the other day was that most of the use cases for Amazon Web Services are derived from Amazon.com, and that was exactly the experience of sitting with our colleague over in our headquarters. Buying computing capacity on AWS is as close to buying a book on Amazon.com as it

gets. Fundamentally, that's really what's going on, and it's compelling. So, I think it's coming.

If I net all of that out, I've sort of talked about our model. Very vertically-oriented. It is big data, machine learned, well connected, the four distinctives, and asking the question is there anything that's happening in the environment that is fundamentally disruptive of that business model.

Our conclusion is, if you haven't read this book, it's short, and it's really fun. But, basically Federer was being interviewed before a French Open final. The interviewer was really loading up the question. Well, you're about to play Rafael Nadal, the King of Clay. You're about to play on clay, which is your worst surface. He's lefty, which is the hardest for you. How do you feel about this match right here?

Basically, this is what he said. He said, I always feel like it's more on my racquet than anyone else's. Basically, if I play up to my ability, I'm going to win this match. That's the way he always felt going into his matches. That's really how we feel.

These forces are out there in the environment. They sort of swirl around our company a little bit, but we feel that if we do our thing, which is a vertical, big data, close to our customers, solution-oriented, that it's on us. If we have the right people, we remain investment-minded, then we will bring new sources of value to our customers and continue to perform the way we have in the past. That's our fundamental conclusion about our business.

So, maybe to just tie it all together, a few things that we're going to be paying particular attention to in '17. One is I've been talking about the technical basis of our infrastructure, and that will be modifying. You've heard the speed and focus theme, and I think that that particularly applies whenever we're in a development activity where there's a software basis.

One of the things in this hyperconnected world that we think is a really great opportunity for us is to sit in the middle between many and many, and there will be data types that haven't really been used that much in the world that will be used broadly. We intend to sit in the center and be the logical place where the data go get transformed, get analyzed, and put back into the world in useful form.

We're going to drive even harder to be intimate with our customers, and you've heard us talk about the fact that we're above 20% now in terms of the mix of our revenue, which is global. We would like to see that percentage go up and not because we think the US is going to slow down, but rather we just would like to see our growth rates in the rest of the world be even greater than our growth rates in the United States.

So, those are some things we're working on. Just talking about technical infrastructure for a moment. A few of things that we can do. One is we can use technology to be in touch with our customers in an omnichannel way. Maybe this will come up when Mark, for example, is talking about insurance. We have to re-architect our applications so that they can be cloud-served in a very easy way.

We're always applying ourselves to security. For us, half of it is with respect to the robustness of our systems. Basically, how strong are the walls around the castle and the castle moat? But, half of it is what are our data methods such that if a bad guy did get inside, is there anything there that's of value to them.

We want to make it that there's nothing in there that's really of value to them. That has to do with methods of encryption and tokenization so that whatever is at rest is essentially only interpretable and usable if you have all the keys, and the keys aren't even in the castle, just to extend the metaphor a little bit. So, those are some things with respect to technical infrastructure that are top of mind for us.

I talked about speeding up software development where you hear a lot of talk about Agile, and in an always changing world, Agile is almost passé now also—almost. Really, what we're onto now is continuous development like that software, that code base is getting changed every day, maybe multiple times every day.

That's really the way to think about it, and if you want to delight your customers, one of the things that you do for them is just to always have them moving in the right direction, so you can release once a year, you can release twice a year, but they actually feel the difference on a weekly basis or a daily basis, all else equal, it's just that much better.

The notion of the exchanges and us sitting in the middle is basically a function of the fact that telemetry data is really entering the world in a volume with a meaning that didn't really used to be there. So, essentially anything can send off a signal now. It could be your coffee pot. It's already your car, or it probably is your car, wearable devices, etc.

The view is that 50 million things in just a couple years will be sending signals. Not all the signals will be useful for the use cases that we can imagine for our customers inside of the verticals that we serve, but a fair fraction of them probably will be. Part of our value add is to pick through all of that and to figure out which of the signals are the really useful ones, and then figure out what to do with them in order to make them useful for our customers.

This also relates to technical infrastructure because the number of signals that we're going to be processing is just going to go up and go up a lot, actually. Fortunately, Moore's Law is still at work. So, we have that going for us as we try to cope with all of this.

So, as I said before, we see ourselves as standing in the middle. A lot of different things that will potentially be sending off signals and a lot of potential users of the transformed interpretation of those signals. One of the things that we're trying to say here is that this really is global. Of all the things we're talking about a device is a device. Part of what's exciting to us about this is it gives us yet another basis for talking to parties outside of the United States and trying to begin to or expand the work that we're doing with them.

I mentioned before that customer intimacy really matters a lot. We use a Net Promoter Score methodology. Maybe most of you are familiar with that. It's kind of customer feedback, and you grade yourself on a very hard curve. I've been very encouraged at the way in which we've made progress over the last several years.

An interesting reference point is that 10,000 individually, separately, 10,000 unique users if you want to think of it that way, provided us feedback in 2016 with respect to this NPS initiative. So, we get signals not only in terms of their absolute level of pleasure with us, but also specifically what are they reacting to and what is it that we can do better. So, we take this very seriously. I think of it as a somewhat blunt instrument in the sense that it's a single number basically.

But, I have a great deal of confidence that if it moves in the right direction through time, then we're probably doing the right things. I do think it's a good indicator of whether we're in the right place and moving in the right direction where our customers are concerned.

With respect to customer experience, basically what we're really sharing here is that you can do it the old-fashioned way with is lower left, and you can do it in a much more technically-enabled way, which is upper right. We care about all of that, basically. I would say that our company, probably more than

most, has had really just the blessing of longstanding, deep, and highly-trusted relationships for a long time. Happily, I don't think that's making our people lazy or complacent. I think that we realize first of all, every one of those points is essentially some information that our customers are potentially trying to send to us.

We still have opportunities to improve in terms of hearing all of that and pulling it into a point of view, out of which we will then act. The other thing, as much as we are intimate with our customers, that I think we can do even more of is when they send us signals, to acknowledge the signals, basically. We're not always going to do precisely, anyway, what any given customer is maybe saying. But, they need to know that they're influential in the way that we think. So, I think we can get even better at signaling back to them. Yes, we heard you, etc.

That may sound very obvious to you. The reason why it's a challenge is that the volume of communication we have with our customers is so great. There are a number of people. Any company which is a customer of ours will be dealing with a variety of people from our company, so just getting it all organized and synthesized is work. I think we do a good job today, and I think we can do a better job in the future.

I mentioned trying to work on being operationally excellent, and what I like about what this is communicating, and this is inside of particularly the insurance part of what it is that we do, is that among some of the most impactful opportunities that we have to try to improve operationally, there are several. So, it's really the blue circles here that relate to customer experience.

That's when it gets most exciting to me is we can really improve operationally, but we can see how it directly influences the customer experience. So, this is actually one part of what we do in insurance, and to have this many opportunities is, to me, exciting. It means that we can get better, and we will get better.

We are trying to accelerate our effectiveness at being commercial around the world outside of North America. What you have in the arrows on the bottom are some of the themes that we think travel across national boundaries best. So, Imagery Analytics we think are very location in specific. Telematics & IoT, I was mentioning that before. So, we're going to try to use some of those themes especially as the foot in the door with companies that are not our customers today in economies outside of North America.

We'll do the same three things that we've always done as we try to move into new spaces. We will invest organically, which is always the first question that we ask. We will do tuck-ins, and there are some parts of the world where it's just almost a necessity to work with a local partner in order to really get your footing. So, we're making use of all three of those mechanisms as we try to grow the business globally.

Just by way of conclusion, we have what we call our one-page strategy statement on which we make statements of purpose. We actually describe our business model, our distinctives. We talk about our people, who they need to be, what our core capabilities are, things like large-scale data integration and making content consumable with a heavy emphasis on visualization. Then we talk about who we need to be as people, so our behaviors.

We've rendered performance goals. We have, I think, 16 of them in these four categories of the growth we want to see in our people, the growth in our relationships with our customers, innovative things that we want to get done, and bottom-line performance that would ultimately result in shareholder value.

The reason I wanted to put this up, so we're not giving you the statement, but we actually have all of that on one page, and we've made that available to all of our people. We're trying to make sure that from employee 1 to employee 6,500 however, you think of that, that everybody is essentially operating on the same set of ideas.

Also, by way of summary, the Verisk that we'll all be looking at say five years from now, ten years from now, is going to be thematically consistent with the Verisk we've always been. I talked about how technology will relate to what it is we do, but it doesn't fundamentally change what we do.

When you look at the company five or ten years from now, I think the most observable differences that you'll see will be number one, the technical basis of our computing, I believe, will have changed, probably pretty substantially. The other is that we will be a yet more global company. I think those will be the two observable phenomena from the outside that above all you would see when you look at our company.

Lastly, I thought I would just share with you a few things that I've committed to. I actually shared this list with our board, things that I personally will spending time on in '17. This year I think I visited about 30 CEOs of our larger customers. I think that's really good, and I'm going to keep doing that. We will benefit from more international advisors, so whether it becomes a formal advisory board or more advisory relationships, but in '17, I would like to cultivate some of those relationships. The acceleration to cloud computing, spending time with the champions of those 20-odd breakout solutions that I mentioned.

There's a few ways where I think that our senior team, who do a great job, can just help further the development of the culture of our company and the performance of our teams. I think the three things that I would put there would be to just emphasize the role that each of us can play in terms of coaching the people with whom we work directly to higher performance. Be design thinkers, which I think is really helpful when you try to live in solution space, and then to be this lean, agile, fast and focused kind of company.

Lastly, I talked about security. I only pointed at it when I talked about our technical infrastructure, and here I am thinking mostly of our data methods. So, it's not so much the castle wall. It's what's inside the castle, basically. How does it sit when it's at rest? We have some excellent, excellent methods, and essentially what we need to do is just make sure that they're applied fully across the entire organization. So, those are a few things I feel like I can help support that I think will be very important for our company in '17 and beyond.

So, that's what I was hoping to share with you this morning. We're going to have time at the end of day. I'd be happy to take your questions. We'll do that then. So, thank you.

I think, Mark, I'm just going to hand it off directly to you at this point.

Mark Anquillare
Good morning, and thank you for the support over the years. What I'd like to do is spend a little time talking about the insurance operations. A lot happening in insurance. You don't hear me say that too often. You don't hear people say that too often, but there's a lot happening in insurance, and there's a lot happening in Verisk.

So, as a result, we'll try to take you through one, a little bit about industry trends. We'll spend some time on our solutions. We'll focus in on some disruptive innovation, and with that some path towards growth. Let me jump in and provide you with a little bit of an overview.

First of all, we've been fortunate to be able to grow at about 8.4% over this period beginning in 2005. At the same time, the industry as a whole grew at a little bit less than 2%. So, we have demonstrated across all of Verisk, but certainly within insurance, the ability to grow faster than the end markets. What we're trying to do is help our customers be more profitable, pick risks better, pay claims in a reasonable, thoughtful way without fraud, and helping their bottom line.

The thing that has always been prominent inside the insurance business model is the fact that it is a very predictable, a very recurring set of customers, high retention, To the extent you think about that subscription revenue of about 83%, in most cases, our customers are paying us either a quarter or a full year in advance. So, very stable financials.

From an insurance perspective, broadly in the United States, biggest insurance market, and about $600 billion, a little bit more commercial than personal. On the cost of goods of the claim side of things, this is representative of 2015, about 67% we'll call $400 billion is paid out in claims and claim settlement expenses. So, thematically, it's been a softer type of market recently, and that's both from an insurance and reinsurance perspective.

When we talk about softer it means growth of underlying rates have been a little bit softer, a little bit slower-growing, and what you see is in 2015 rates have gone up or premiums have gone up about 4% and into '16, what we're seeing in the first half is a little bit softer, probably close to 3%.

Personal lines, there's actually been a lot more severity, and for the most part, frequency of accidents. I think some of the frequency is because of social media. Everyone's texting when they shouldn't be, and all the semi-autonomous features in cars are more costly to repair. So, actually rates and premiums are going up a little faster there, whereas commercial is growing a little bit slower.

Finally, from a reinsurance perspective, there's a lot of capital out there. People are coming into and capital is coming into an industry that creates capacity, and as a result it's soft prices. You've seen probably some reinsurers consolidating as a result.

These are the themes that we like to talk about. These are the themes that resonate with our customers, what they're on, what they're focused on. First of all, you've heard it. There's a lot of data out there, so big data, predictive analytics is on everyone's mind. In some cases, they've hired their own teams. In some cases, they're smaller, and they're looking to make sure they don't get caught behind what is a lot of bad risk that they can be forced to take and underwrite without knowledge.

So, we have been on that theme. I think we've been helping them in some cases. They, for the most part, buy our solutions in whole. In some cases we work hand-in-glove with bigger insurers because they need that information that they don't have access to.

What I always like to make the point of, and this is a general theme, is that if I turned it into an equation, if I took some great data, some unique and propriety data and added it to what is a good model, that will be more predictive than that great model with just average data. So, if I'm an insurer and I'm looking at my own information and my own data, and I have some of the greatest models in the world, it's tough to be as accurate and as have as much acuity in the model than if had access to the entire industry and be able to model off that whole industry data. That's, I think, where Verisk really does help them in a very significant way.

Second major theme: automation. There is a general move towards automation, whether it's I want to flow business. What we talk about with flow business is I have a personal automobile policy, and to the

extent that I'm looking to, for the most part, automate it in a way that I can generate a quote without anyone touching it. They're looking to move that into what I'll refer to as commercial flow business, smaller commercial.

They're also looking to do things from a purely automated way. I think everyone's driving towards paying a claim. It may be smaller ones, but paying a claim with as little intervention as possible. Quicker payment, happier customers.

Remote imagery is another way to do that. Taking information from above, whether it's from adjudicating a claim, a repair cost estimate, or underwriting, all ways to be more automated. Remember, the challenge inside the insurance industry is really a graying a workforce. So, there's a lot less experts there, so they need to find a way to more focus those experts on the bigger underwriting decisions and on the bigger claims. So, automation is big.

They're also focused on trying to become more accurate, so automation does that. These expert systems are wonderful, and let's be honest, it's also a way to take out cost. So, all of that plays very heavily into it. There's a lot of technology change that's going on as a result of that.

Finally, Amazon has changed the way people think about insurance. It is just wonderful where I can go on the internet here before the holidays and get my package on my doorstep the next morning nicely wrapped up in the color, in the size, and the way I want it. That's how people expect to buy insurance. They want it to be easy, they want to be able to quote it across a lot of different players, and to the extent that there's a claim, they want it that simple. What we're trying to do is be on the forefront to help our customers better interact and better digitally engage with their policyholders. So, all of that.

By the way, the theme that you can see in the things that I'm talking about really come forth in what you see as a lot of investment in the industry. So, InsureTech, newest trend and theme is around investment in all of insurance, technology generally. You can see just a dramatic increase from 2014 to 2015, and that number continues up in 2016.

That just doesn't take the form of third-party investors. That's big insurers investing in smaller companies. So what we see is an opportunity here where insurers are trying to automate, and the insurers are trying to change their underlying policies, min systems or claims systems. It gives them an opportunity to really try to automate and rethink their entire processes, and we want to be their third partners. We're there to help them, and we have a lot of technology and solutions that make that real and vibrant for them.

Let's go to a little bit about Verisk, and we'll start from the beginning. A humble beginning starting in ISO beginning in 1971, a lot of rating bureaus across the country looking at risks. They are helping what is an underwriter in Cook County, Illinois understand a building. They're also aggregating information because what we ultimately want to do from a compliance perspective is to understand and make sure that what is being charged from a premium perspective is fair and accurate.

So, these rating bureaus came together. All the processing came together. All this information came together because the insurers were really trying to save some money back in 1971. It's true, Moore's Law as Scott highlighted, the efficiency of what we've done here, we used to have probably 6,000 people doing what is probably done by less than 1,000 today.

So, a success, and that consortium data. That information became ISO in 1971. Then, what we did was we started to expand. So, the first thing is we said let's get into claims, and the claims focus was really on fighting fraud. We brought together a couple different data bases, now with claims search.

That was in 1997 to 2000.

Continuing through, we were looking at improving some of our loss costs. The way we went about defining those, one of the big components is the big Cat losses. How do you factor that into property? We started to use AIR, and we said boy, this is just a better answer and a better solution, and ultimately in 2002 AIR became a part of the family.

Extending through and continuing on with a focus on claims, in 2006 repair cost estimating Xactware became a part of the Verisk family. So, extending out to help our customers across the value chain, and ultimately what we're trying to do is bring those brands together under what is the Verisk insurance solutions brand, which started in 2010.

More recently, we have become much more focused globally. Scott highlighted it. It's been an active part of all of our conversations. One, we've reorganized, we've aligned all of our, I'll call it business development and sales teams under one leader so that we have country leads internationally as it relates to facing our customers.

We've done a lot of work around products, customizing and localizing our products, primarily on the claims side. The Xactware solutions, our claim outcome advisor solutions, and we do some great things here in the United States as it relates to properties and buildings, and we think we have some real opportunity as it relates to what we refer to as our building underwriting report, understanding, and assessing risk in buildings around the world. So, those are organic opportunities from a global perspective.

On the slide, what we tried to do is quickly highlight what I'll refer to as the insurance value chain staring with product development, product management. This is what do I underwrite? What's my program look like? What are the opportunities there? How big is it?

Moving through to some actuarial analysis, which is really trying to understand pricing and how I'm going to price an underlying class risk. Underwriting both on the personal and commercial line side. I get into claims management both from fighting fraud, estimating the claim, and continuing on through to compliance. Providing information to regulators in a very complex world so that you are filed and active and ready to roll in various states.

Finally, it's about understanding the portfolio, that enterprise risk, and transferring that risk to the extent that you have too much concentration to various third parties and reinsurers. What I attempted to do here is put the logos of the various parts of Verisk insurance solutions and where they primarily sit.

We have hundreds of products. We try to focus on all of those, but this is the most prominent place where those logos are focused.

Let's now move across the value chain. We're going to get into actuarial analysis. As I mentioned to you, all that information, that information utility came together initially for compliance purposes, very complex state-regulated world of insurance trying to make sure that what you are getting from a rate perspective is fair. What we do is, to the extent that you wanted to start an insurer tomorrow, if you had some capital—I know people in the audience do—and you had a distribution channel, a little more difficult. A lot of people go direct now on the internet.

You can be in business tomorrow with, for the most part, the ISO solution. You can go pick 23 lines, you can pick the states, and you're in business. So, we took all that information, and what we do is build out loss costs. We build out these filed programs, this contract language so that you can be in

business.

So, loss cost. That's the costs to goods sold. One of the strangest and different industries, you don't know costs to goods sold in insurance until after the fact. We help you understand those costs to good sold, and what we'll do today is spend a little time in the auto space, but that information that we do we go across lines of insurance, and we provide quite a bit of granularity around thousands of classes of risks in a lot of various territories and geographies.

The other thing I'll highlight, not to diminish in any way, is you receive a policy, and that coverage what you're being quoted from various carriers usually has very similar coverage. What we do is we provide core-tested, time-tested, legislative-approved/legislative-responded-to language that is fair and consistent, so that you know when you're getting a quote from various carriers, you're getting the same level of coverage.

Very important industry standard, and if you were to think about what we estimate is to be about $250 million policies throughout the United States. Our IP, our language, is used in about 200 million. You should see our logo, it's supposed to be every page. I know our general counsel is here somewhere. Usually you see on the first or last page, but you'll see ISO properties.

Let's just talk a little bit about auto and how actuaries talk about rating variables and what happens. Here's an auto. I'll use two good examples. We have the red car up there we'll call that the Porsche Carrera for those people who have ambitions or maybe thinking about one. These are what we refer to as a country-wide average. It's kind of like Illinois if you would think. Inside of rating variables, the vehicle you're driving, the geography, your location meaning where you drive, where you're garaged, where you are living. A little bit about the usage, miles are big, and the behavior.

So, first of all, I'll start with the vehicle. These are natural, but think about all the detail we have to go about understanding what these loss costs are. You would take this loss cost, you'd add an expense load, you'd add some profit. This is the premium you're going to get quoted.

So, you can see about $1,600 for this red sports car. You have the compact car. That's a 2006 Beetle, as an example, and a very drastic difference.

What we're trying to do from an analytics perspective is we're trying to take what has historically been about 300, I'll refer to it as series of vehicles, and we're trying to drive it down to incredible granularity pulling what we refer to as the Monroney sticker off the side of a car that's the invoice so we know what the features on it are, what semi-autonomous driving features, what safety features are, relating it back to losses so that we're really trying to drive this solution down to the vehicle level. You know, 260 million cars in the United States each has its story. We're looking to quantify that.

Continuing through, pricing an automobile policy. Historically, where are you living? Where are you working? Where's it garaged? That's the type of thing that is important. So, you can see New York City, much more expensive than Des Moines; $2,200 compared to $1,200. Location is important.

What we're trying to do from an analytics perspective, we're trying to take these territories, and literally they're called ISO rating territories, form about 1,500 down to the census block level, 220,000 census blocks. That's the level of granularity as we think about some of the analytics that we're driving here.

Then, finally, behavior and usage. Miles are very predictive, however they're tough to gather. Behavior highly variable, but a little bit tough to quantify when you have things like after the fact. Have you had a moving violation? Have you had an accident? What's your credit look like? Those are the type of

things.

So, you can see. Look how dramatically different. You have this very experienced driver. I'll refer to her as the good driver, relative to the bad driver, that worse driver there. A very dramatic difference between $1,100 and $4,100. So, those are the nature of what we're doing.

So, now what I'd like to just do is look into the future and talk to you about things that we're focused on. If I was to really want to understand about rating a policy, and I'm interested in some of the characteristics, the telematics vehicle exchange that we're describing here provides information that it has never before had in the level of the detail.

So, what we're gathering is, in the middle, all the information coming off of the car. You know and you're familiar with the partnership we have with GM. We have miles. You have where the car has been from a location perspective, not just information about where people are living and working, but literally where they're traveling.

You understand behavior. Are they braking? Are they speeding? Are they turning in ways that are unsafe? When are they driving? All those are very big and very considerable in the underwriting decision.

I also want to make sure that you don't underestimate the challenges of the many-to-many relationship here. So, OEMs, which are our 18 major auto makers on the left. About 300 auto insurers on the right. That's 5,400 interfaces. How do I interpret the data? What's it look like? What am I going to use?

All of that is flowing into our exchange. What we're doing is we're providing insights. We're filing it so once again you can go to market immediately. Hopefully, they appreciate the [indiscernible] stewardship that we have created over the years, and we can help them with either just aggregating and gathering the information up or actually doing predictive models that are already filed to understand how that can involve and influence your rate-making.

So, obviously we have the connections to all the insurers on the right already. On the left-hand side, we have worked with many big manufacturers. They are exclusive to us, and we hope very soon we'll be able to announce something that looks like about 40% of the industry from an automaker perspective working with us. So, big opportunity, big insight, and we expect to extend that into fleets, into homes, into buildings, and this is just the underwriting side that is exciting. Claims has an equally fun outcome, which I'll describe in a bit.

So, now you're underwriting. From an auto perspective, you have typically gone online or you called your agent. You're going to get a quote. That quote is probably in a traditional sense going to be quoted based upon you're a very good driver. You have no moving violations. You have no prior history with regard to accidents. That quote, in many cases, is changed once they actually go and underwrite the policy.

So, what we're doing here is we're helping them underwrite the policy. So, we are getting probably about 300 million bits of our ask for data. We analyze about 300 million transactions every single month, and what we're doing is we're helping them with motor vehicle reports in various states, moving violations, odometer readings from a mileage perspective.

If you have a new 17-year-old on the policy that's undisclosed. What kind of loss history do you have from a claims perspective? Coverages, cars covered, all of that is what we've provide, and we're interacting directly with our customers to provide that information.

So, once again, you come online, you're quoted, and probably about 35% of the time, that rate is going to change as you go to underwrite it. So, think about today. There's a famous insurer that says give me 15 minutes, and we'll save you 15%. That's at the top there.

So, you have probably 12 to 40 questions. Many, many people who get online they give up after a while or they're calling the agent. They give up, and ultimately that leads to somewhere in the neighborhood of about 480,000 qualified leads. There is almost more than a third where those rates change from quote to the time you're underwritten before the binding, and new sales end up at about 70,000.

Our view, our approach is to take all of that analytics and all that data and move it to point of quote. We're trying to bring an analytic that makes this thing dramatically different. Because of the information we have, we can take your name, your address, and date of birth, and in 15 seconds not 30, we can really drive what is an answer here. That is significantly better.

So, new sales from the standpoint of for the same spend you get much more qualified leads, but this would represent a very significant 50,000 new customers. On average, $1,200 per the $72 million and a customer base that is much happier. You didn't have that rate change on you, and you're much quicker. You're on the phone. It's very interactive.

Moving back to what we do. I've been focused on the world of auto. I just want to make sure that we don't run by the things that we do on the commercial side. So, from an underwriting perspective, very similar to what I just described, from an auto perspective we have wonderful information to underwrite big commercial risks.

So, think of it as we've always had these almost four million buildings and all the [indiscernible] information, the construction. What's it made of? The occupancy, who's in it. If you have some folks who are kind of passing information and doing investment analysis much different form someone who's building fireworks on the bottom floor and has open fire.

Protection. What are the sprinklers like? What are the various systems in the building like? Then, the exposure. Who's around it? You may be sitting around thinking this is great? I'm sitting here on the 17th floor, but if there's no fire hydrants down below, or to the extent that the water flow down below only reaches up to the 15th floor, we're not always happy. Those are the type of things that we help with, and we focus on the fire suppression capabilities in the country throughout the 47,000 different fire protection districts throughout the United States.

Highlighting here though, we've extended beyond those buildings to really look at the businesses. So, we now have information on 26 million businesses, and we focus here on the fleets. If you wanted to understand a little bit about, once again, commercial auto where we're very prominent in the industry. The number of vehicles in the fleet, the territory, all of the garaging information, a full spectrum of information as it relates to commercial underwriting.

I now move to claims. As you notice the orange box at the bottom. We talked a lot about underwriting and the pricing. We're going to now jump over to the claims side of things, and one of the most impressive tools inside of the industry is probably that 85% of 90% of all personal property claims in the industry is handled by our Xactware solution.

So, you have a contractor that shows up at your house after some damage. The tool that they pull out, whether it's on their tablet or PC, they're going to take 100 million price points. They're using these

AutoCAD diagrams. They're doing the estimates. They know local code, and with all that information, they're developing a repair cost estimate for you as a policyholder.

The beauty of it, this information is shared across the whole ecosystem of the insurance department. It goes from policyholder, to contractor, to independent adjustor, to the claims department. The resolution of that claim, the estimate of that claim, both from the structural outside to the contents inside can all be handled by Xactware.

We are doing some exciting things that helps the claims departments think about weather from an analytics perspective. I talked about remote imagery before, doing estimates from the sky quicker, cheaper, more accurately, and certainly safer. We don't need to send some someone out to put him on the roof.

So, all of things, very important. You can see a couple customer quotes where we save very significant dollars both from the standpoint of efficiency and time across the industry. A very noteworthy, very important solution.

At the same time, in the claims side of the world, we're focused on the claims management and fighting fraud. Fraud is probably a $50 billion annual problem in insurance. That's $50 billion, and we're at the heart of that. We're trying to solve that problem for our industry customers.

We have over a billion claims, historical claims. Remember, we have a lot of detail behind the claims. It's looking to find schemes. It's looking to find telephone numbers. It's looking to find people who have had a large, consistent set of historic [audio disruption]. You have a contractor that continuously has the same type of claim. It is looking across a large bit of information around medical providers.

All of that is a part of the solution. Very innovative, and we get over 90% of the industry claims. Everything's coming in, self-insured.

So think of it this way. High severity claims, if you find them sooner, we reduce spend. These are real closed claim type of studies. So, people go back and look at what has already happened. We reduced indemnity spend by 10%, very huge, very big, very significant number.

Remember, I talked to you about claims. Out of $600 billion claims, claims are about $400 billion. Medical billing. We focus on medical billing, suspicious claims. We found about 71% savings as it relates to medical billing and looking at providers.

Finally, 60% improvement in general damage. So, across the board, we can really talk to ROI from this type of solution and a very powerful solution for the industry.

So, from a claims perspective, here's the problem. There's the significant side of this. From both a personal and commercial side of things, there's about $133 billion of auto insurance losses. That was 2015. Look at the numbers as it relates to what is fraud anywhere between $6 billion to $8 billion, and most of them very much inflated.

Common fraud, you have staged accidents, you have medical provider fraud, fake/exaggerated injuries, arson that's staged. All these things happen with far too much consistency, and it's simply handled by very bright people unfortunately using their skills in the wrong way, putting together what is a fraud ringer, fraud scheme. It's a very prominent problem.

Here's what we see, and here's where we're headed, once again from a disruptive perspective.

Coming back to where we are. It starts with an event happens. Whether it's off of a car from a telematics perspective or from a connected home. We send emergency response. At the same time, we start that first notification. We initiate that claim inside the claim department.

There's policyholder collaboration. Everyone wants to digitally engage with their customers. So, we have your iPhone. You're taking a video of the claim, whether it's a video of your home damage or your car damage, and we can desk top adjust inside of the tools. So, it's all automated. That is making it much more efficient. It's lowering the overall cost and time. Customer is happy.

What we're doing behind the scenes is we're running all these analytics. So, we're fighting fraud. We're running it through the claims database. We have loss forensics. We talked about image analytics. We're making sure that the pictures they submitted are actual, true, and accurate.

We're talking about image forensics, machine learning. We can tell if it's a total loss on a car, and maybe you should just not even deal with all the rigmarole of what is repair cost estimate. Let's make it go away.
If it's something that is from a property perspective, we can almost do some estimates upfront and quickly pay that claim. So, what we have is very much increased customer satisfaction and real time analytics all creating what is a very automated and very streamlined approach to the claims process as we look forward.

Our customers love some of the analytics that we provide. What this represents is Hurricane Matthew just to give you a feel of what's new and what's real. Obviously, Matthew hit. This is a visualization of the days between October 5th and October 9th. To the extent that you look along the coast, you are seeing basically the claims that occurred, physical damage claims. These are all personal.

Auto, by the way, is in yellow. Water damage is in orange. Other claims are in green. The height of the bars represent the magnitude.

Inside of the world of catastrophes anything that's more than $25 million is considered a Cat, and the reinsurance treaties kick in. That estimate, that calculation is done by property claims services. That's the PCS unit of Verisk Insurance Solutions. So, it's all a part of the family. Nonetheless, our estimate is about $2.7 billion. That's the claim here for Hurricane Matthew still being developed, and the $300 million of the claim amount is related to personal automobile.

We're on the world of Cats. Let's spend a little bit of time as to how I think the industry has evolved and improved over time. So, catastrophes. Things have evolved quite nicely since 1992. That's Hurricane Andrew. At the time, I think AIR had some early stage models doing a wonderful job.

There was estimate to say that this type of event could happen, but people looked back and said it really hasn't happened that prominently, and as a result, Hurricane Andrew hits, $16 billion worth of claims hit, and 12 companies are insolvent. Very significant, very chaotic, very difficult. Tough to get insurance. People aren't paying claims, and for the most part, you are getting very large rate increases.

So, now we'll fast forward. Twenty years later, the world of risk management, the world of how the industry uses Cat models has improved. So, the United States had about $26 billion worth of claims as it relates to thunderstorms. New Zealand had a big earthquake. Japan and Tohoku both hit in Japan, and then the tsunami came across. Hits Thailand, and in 2011, we have about $108 billion worth of claims and only one insolvency to a small company in New Zealand.

Obviously improvement, improvement in the models, improvement in risk management, and at the heart of all that is AIR. The Cat models that we have, just as an example, provide both a look at how to underwrite a particular account and ultimately an overview of the solution, so you understand what you want to hold and what you want to potentially see to transfer risk.

So, here we are, an example. You have a new account from a big franchise that wants some insurance. It comes into the AIR Cat model. You take a look from the visual perspective to understand the account makeup, and of course, nothing's easy. Everything is sitting along the coast. As you probably know, in America everybody likes to build nice homes along the most risky parts of the United States, and in this case, this is more of a commercial look at things, but we have along the coast.

So, you do a quick triaging. Looking at your underwriting guidelines, and you see distance to the coast. That thing's looking kind of close to the coast, but in your guidelines, in your criteria three out of five you pass. You have the green bars as opposed to the orange and yellow. You want to then run the models. So, you're able to run the models as it relates to this account, and this is the type for information you would come out.

You would see, in essence, an average annual loss. That's the AAL. You're trying to look some of the exceedance probabilities just to understand how it's going to eat up some of your surplus, and for the most part here, we'd say that you have to factor in about $25 million worth of losses and from a capital perspective, you're looking at around 1%. You are probably going to be thinking of surplus in the neighborhood of $125 million. All of that account is then brought into the portfolio so you can understand how that affects your overall portfolio.

So, now we'll spend a little bit more time digging into that portfolio. This is the tool that we have. This is a pretty big book. It has about 300,000 locations. It's a commercial portfolio, and there's about $200 billion of worldwide value. Same visual. You can drill into that to see the risks specifically, understand where they are, but the notion of what our customers want is changing every day. They want comprehensive information. They want real time information, so for the most part, we can take this very big book and for the most part price it and analyze it over the course of about three hours.

We're running all these risks through all the models, and you can understand a little bit about hurricane and earthquake, those are the green and orange. What we do, and no one else does, is we actually provide those all-perils. That's the blue column primarily, in this case, US flood that we have that no one else has, and all this is done uniquely by AIR in the blue in about three hours. Very powerful from an enterprise risk management perspective.

So, here's where we are. We've walked through the solutions. I always like to highlight and emphasize the fact that we have some very unique competitive advantage. It starts with the data. So, five petabytes of information as it relates to that industry database that is part of the ISS solutions or industry standard programs. We have this very comprehensive database of commercial buildings as it relates to commercial underwriting, and I mentioned all of the personal information for underwriting purposes.

The world of decision analytics we have a billion record claim database, a billion records and a billion claims in the database around claim search. We have 100 million price points as a way to say exactly what are very unique, very differentiated offerings.

On the right-hand side, some competitors as it relates to some of the point solutions, but no one provides the breadth and the scope of solutions that we do. We have the ability to provide an overall solution, bring things together for our customers in a way that no one else can.

So, what that leads to is very high retention, and what we've been able to achieve over the years is something that looks and feels like 98%, 99% from the standpoint of retention, and we continue to look for ways to extend and expand that scope.

In the slide here, this is across insurance, what we did was we looked at 2013 and 2016. As I mentioned to you, we have probably about 300 different products, so we broke them down into about 27 different product categories, and we then took the top customers based upon Verisk revenue and grouped them together. The groupings represent between 20% and 30% of revenue, and you can see what has happened over this timeframe is some very nice cross-sell.

I would say to you that from the standpoint of the top players, they like the innovation that we started to share with you today. They're always excited to be a part of some of the, I'll refer to it as product development, that we're doing.

When we go and we start to develop new products, what we're most interested in is getting customers to be development partners with us. So, we have active dialog. We don't spend a whole lot of money upfront because we're trying to work with them to build what we refer to as an MVP, a minimal viable product, and then start to commercialize it once we have their thoughts, their input, and hopefully a couple of stable customers.

At the same time, how we continue the path forward is we are addressing what we see in the industry as themes. Clearly we talked about the industrywide focus that resonates with our customers helping them with those problems and those themes are very helpful. We've talked about many of the new solutions and the new customer sets, but there's a couple that I do want to highlight here that I have not yet talked to.

First of all, I'll mention the world of remote imagery. We continue to believe that the way that both claims and the underwriting departments in the future will operate is much more focused on remote imagery. Whether it's information from satellites, planes, mowing the sky, gathering information, and drones.

Our view is the most relevant and cheapest way to aggregate that today is through planes and aerial imageries and with that information, we can provide very, very precise data. It's not about the pictures; they're nice, but it's really about the data that we can ascertain. It's about pitch of roofs. It's about real dimensions that are easier and more accurate than actually getting on the roof, and we can build repair cost estimates from that. We can do underwriting from that much better than some of the information that's provided out there as it relates to property characteristics. So, again, big opportunity.

Continuing down the page, I want to highlight cyber. Cyber is a very big risk. If you were to think about cyber in our world, I think there was about 177 million records that were breached in 2015. On average, they cost about $154 per breach, per record. Huge number. We see cyber from an insurance perspective jumping. It went from $2.5 billion estimated in 2015 to probably about $7.5 billion in 2020 and growing.

We want to be incredibly relevant there led by some of the models we have, some of the coverage we have, and some of the tools. So, cyber factors heavily into our future.

Then, if I moved over to the customer sets. I highlighted before the focus on global and international, the things that we're doing from a claims perspective, from an underwriting perspective. Our team here who's in the corner, I can talk to anybody in the UK pretty much weekly these days. We seem to be

much more traveled, but that's good and that's going to be very promising for us.

Two of the things I'll highlight is marketing departments. So, one, we did an acquisition recently called MarketStance. That helps us marketing departments. We're also working closely with our team at Argus to look at marketing and advertising effectiveness as it looks to and as it feels using and leveraging some of the work that we have done in Argus. So, helping marketing departments, a feature customer set as we look forward.

In addition, working closely with Mac. They have some very unique data. We have some very unique insights to underwriting. So, we think energy underwriting is a nice and very exciting opportunity as well, and you can see, for the most part, how that lays out across the various parts of the value chain.

Acquisitions. I just want to make sure we pull this together. I think one of things we've been very excited about is we've been finding some nice pieces, some tuck-ins that really fit well into the strategy I described. So, Risk Intelligence Ireland, nicely embodies what ISO does. It's a combination of information for purposes of underwriting and pricing as well as focusing on claims and claims fraud. It nicely fits into what we do with both international claims and underwriting.

GeoInformation. I mentioned to you earlier we have some very big ambitions around helping with properties and understanding and assessing properties, big buildings across the world. They have some great information as it relates to both residential properties and commercial properties in the UK, and we hope to leverage that in, what I'll refer to as, our building underwriting reports for the UK and other places.

MarketStance. Into marketing departments, helping them assess how big a market is and targeting different businesses to go after.

Finally, Analyze Re. I mentioned to you the need our customers have about doing portfolio assessment. Analyze Re really helps and has a lot of great features and functionality to the AIR suite of products.

What do we want to do? Here's what we're focused on. We're trying to be our customers' preferred partner. We want to be in the door thinking about the future with them. I think we're making great strides, great success there. Scott talked about the Net Promoter Score. We've had some tremendous success over the last couple years with that dedicated to all the folks across Verisk that has done that.

We are also very much focused on trying to help them celebrate their own innovation, help them accelerate their own operational excellence, and helping them grow profitably through the insights we provide and the analytics we provide.

Exciting time for the insurance industry. Exciting time for Verisk. The insurance industry is under change, and I think we're going to help change the industry.

I talked about, and I continue to emphasize the great depth we have, the domain expertise we have, so what I'd like to try to do is bring our team to the stage, and we'll take a few questions, spend a little time just talking about our path to growth and anything you'd like to do about our solutions.

I think there's some mics around. We'll take some questions from those people who are in the audience. We are going to try to organize ourselves so that you can understand who everybody is.

Starting at the left over here is Neil Spector, who heads up all of the Underwriting Solutions both on the personal and commercial line side. ISO Solutions and loss, customers, and forms, Beth Fitzgerald. For all intents and purposes, these two have what we refer to as risk assessment from an insurance perspective. Everybody is decision analytics. Some of them we'll refer to as new solutions.

Bill Raichle heads all for the Claims from the VIS perspective. Mike Fulton, Xactware. Claims Analytics, Rich Della Rocca, and AIR headed by Bill Churney.

Very happy to and looking forward to taking the questions. Please raise your hand and we'll get you a microphone, and we'll kick it off.

QUESTIONS AND ANSWERS

Oscar Turner
Thanks. Oscar Turner from Suntrust. You and Scott both talked a bit about the increased usage of big data by insurers. I'm just wondering which ending do you think insurers are in with regards to this shift.

Mark Anquillare
Good. So, big data. Beth actually speaks on this topic frequently. I'm sure everyone has their views, but maybe you can lead us off there, Beth.

Beth Fitzgerald
Sure. I think in the personal lines, Mark, the use of analytics and big data probably started with the use of credit score and rating several years ago. I'd say just about every personal line insurer is likely using some version of big data and analytics. I think what we've seen over the past few years is a movement into the commercial side with probably not all the insurance yet using analytics in commercial, but as they try and move into flow business, as we talked this morning, they really need the analytics along with the flow business.

I think the use of our analytics, this is where you're getting more refined data. You talk about taking those 1,500 territories down to 220,000 territories, that's the use of other data other than insurance. Using what the local business is.

Is there a shopping mall? Is there some other gathering that's bringing people together? What's the traffic flow for that area? Those are all the kind of big data that we're bringing into the analytics.

Mark Anquillare
Bill, maybe from a claims perspective, maybe you can comment a little bit as well.

Bill Raichle
Well, I'll start off and I'll pass along to my colleagues over here. We talked a little bit about IOT and telematics, and there's a tremendous amount of device data that's being accessed at this point in time. The interesting thing is when new data comes available to us, our staff and management almost intuitively understand what to do with it.

So, just to give you an example, right now, insurance companies provide us information about first notice of loss. In the very near future, we will be providing them with information about first notice of loss, and to be able to do that within seconds or minutes gives them control over the process. When they can hire the rental company, when they can hire the tow truck, they save many hundreds of dollars per claim.

I'll ask Rich to cover a little bit more of that.

Rich Della Rocca
Thanks, Bill. I think when we think about big data in the insurance industry, it's important to recognize that the insurance industry was always based on big data. It's fundamentally based on the law of large numbers, so when we think about big data, we think about first of all what are those new data sources, and as Bill points out, internet of things and telematics.

The explosion of new data sets to be applied to insurance is critical, and Bill just pointed to one specific use case where we can provide the insurance company notice that one of their policyholders was in an accident, and that gives them a tremendous advantage to delight the customer, which is important to them, and to really reduce cycle time for their claims processing, and reduce cost as well.

So, there's multiple benefits to the insurer just having that really first notice of loss as early in the process as possible. Thanks.

Mark Anquillare
We have a couple. Yes.

W
Hi. I guess I'm going back to Scott's comment regarding the strategic shift to global and cloud. I guess one is that on global, how has that affected the way of how you run your each divisions? You're maybe more shifting towards a global. Two, is I guess on cloud, how would you compare your level of transitioning to cloud versus your competitors out there?

Mark Anquillare
Let's do something similar. We're going to start with some of the global solutions, and then we'll maybe transition back to cloud. Mike, I think Xactware has been at the forefront of trying to localize and change the way some for the local economies are using Verisk tools.

Mike Fulton
Sure, and going with Scott's comment earlier on, our model has always been build it once, sell it many times. I think that that works very well. What we see in our expansion globally is that somewhat different from what we have in the US, we have a very sophisticated insurance claims market here. They're very used to the use of big data. They're used to the use of automation. They have, in some cases, very sophisticated workflows.

You see quite a lot of differences in different markets internationally. Very simplistic workflows. Less degrees of maturity. So, as we approach those markets, we're having to simplify our product set a little bit, number one. Number two, take a much more consultative approach to clients to help them to understand how these products can help them to become more efficient.

Our products service not just the insurance carrier community, but also the supply chains. So, the contractor market, independent advisory market, which as you can imagine different degrees of maturity within those folks as well. So, a huge effort for us is in the localization of those products, making sure that they're simplified enough that they can be marketed towards any type of use within those markets, and then ensuring that we have the data to feed those products on the front end.

Mark Anquillare
Bill, I know that AIR is in about 104 countries. Maybe just talk to us a little bit about how you think about expansion there.

Bill Churney
Sure. We have models obviously around the world. If you think about one of our clients as the reinsurance market, that's a global industry anyway. So, the models for many decades really now have been used around the world. So, that's nothing new for us in that we have the same models Mike talked about: Build it once, sell it many times.

What we're seeing those is we've been in China for over ten years. We've been in India for quite some time. Take those two markets. Companies are really trying to go up the curve very quickly to get to a more sophisticated level of analytics. Take the models, use them in underwriting, and so on.

That's still at a very emerging phase, but some of the same things apply. How do you maybe simplify the workflows a bit and get maybe some more simplified analytics? Then, help people move up that curve.

One of the things we looked at that's very optimistic for our business is when you look at catastrophe risk in Asia, in particular, a very small percentage is insured. I would say maybe 10% of the catastrophe risk in Asia today is insured. In fact, if you come to the US, it's actually about 40%, so it's not like it's a huge difference.

So, there's a lot of opportunity there, especially as incomes rise. You tend to see people start to leverage insurance more for property and other goods, so that's a positive trend, I think, for us.

Mark Anquillare
Do you want talk a little bit about global birth, if you don't mind?

M
Yes, sure.

M
I think one of the things I'd say is that the US market is fairly sophisticated, and many other insurance markets are open to want innovations and what's available here and how they can leverage it in their market. We've been able to take other data sources that we've been able to get in other countries and take some of the methods that we have here in the US and turn that into valuable underwriting information for our customers, and so we just recently launched a product in the UK. We've identified several new markets for 2017, and I think Scott talked a lot about innovating with customers. These are solutions that we've been working with very specific global insurers on what the needs are, what the data is that they're looking for, and really refining the product.

I'll transition a little bit to the cloud question where I can't really comment on the competition. I will say it's easier for us to go to the cloud with new solutions, and so the global building underwriting information that we just built in the UK, that is a cloud-based solution because it's brand new. We built it. Scott talked about the need in many countries to have data within the countries, so it just made sense for this global solution to use cloud. I think it's always easier when you're doing something new from the ground up to start, and that's where we're focused.

Mark Anquillare
I agree. I'll just kind of wrap with the cloud comment. I think it's much more efficient and effective to turn on a server and get started in a new country or with a new customer. At the same time, we pride ourselves on being stewards of the data we have, so we won't get in front of our customers as it relates to some of the big data stores we have here in the United States.

We want to make sure our customers are comfortable before we migrate anything to the cloud as it relates to some of the big data that we have today, but it doesn't mean that we can't move the application to the cloud and have it point to a repository that sits in kind of a data center or more traditional on-premise data center. We think it'll be more effective, quicker to market, and less expensive.

Bill, do you want to talk a little bit about kind of the AIR, data hosting, and the way we've kind of gone about it with customers? I think it's kind of emblematic.

Bill Churney
I think it echoes some of the comments that Scott and Mark made about this, how fast things are changing. We brought out Touchstone, our new platform, back in 2013. We didn't have a cloud-based offering. In fact, when we talked to surveyed clients, it was like 80% of insurance companies were like we're not touching this. We want our data in house.

You can see that evolved. We now have a cloud-based hosting offering, and it's amazing to see how many clients who back then were the past people we thought would embrace this, now are actively looking at and investigating whether they want to do that. I think there's also this migration to using, as you talk about public cloud services, it does help you especially as you move internationally to get up and not have to worry so much about where do you put your data center because if you work with Amazon, you can overcome these privacy restrictions much more quickly. It helps you address latency issues and so on, so I think especially as you start to move into helping smaller insurers in emerging markets, it's going to be key to have that offering. They don't want to think about infrastructure, and then that gets you to market a lot faster.

Mark Anquillare
Good points. Thank you. Several questions out there.

Jeff Silber
It's Jeff Silver with BMO Capital Markets. In theory, the US is about to enter an environment of rising interest rates. Hopefully, that'll be good for your insurance customers. They can focus more on growth and not on cost management. I'm just curious in your different business units how they've done in prior periods of rising interest rates and if things would be different at all this time.

Mark Anquillare
Let me start, and then I'll turn it over to our group here. I think one of the things that happens is inside of a rising interest rate market, our insurance customers have the ability to get more on their investments. All of a sudden the investment income becomes more prominent, so more income helps them from the standpoint of having more flexibility to buy things. It gives them a little more room on the bottom line.

Low interest rates have been a challenge over the years, and I think that's hurt them. It has moved a little bit less from what I refer to as looking at combined ratio and the way you perform on your book to having a little bit of flexibility because of investment income now. That does tend to help them maybe buy a little bit.

I want to just emphasis, we sit up front, and we do talk a lot about the premium in the industry giving everyone a bit of a perspective. Our solutions don't have this direct tie to premiums that they once did. We've kind of move to multiyear contracts. We've move to what I refer to as kind of value-based pricing, so that linkage between premium and all of our solutions is a little less pronounced and

probably very distant from what you probably heard from us many years ago.

Beth, you want to add?

Beth Fitzgerald
I can add a comment. I think the challenge to our customers of the low interest rates means they're challenged on their balance sheet, so they are looking for operational efficiencies to kind of bring their costs down. There's an opportunity for us if we can help them with that.

The other opportunity we see is they're looking for new markets to grow their business, so if their traditional businesses aren't growing premiums and they've kind of gotten their market share, we're seeing personal lines carriers looking to grow into the small business and really looking for opportunities. If they haven't traditionally written that, well, they tend to come to us to see what the industry experience is and what kind of tools do we have to help them get set up.

Mark talked before about getting up your licenses and capital and setting up business. Well, that could also be setting up a new type of business or a new state or a new region, and they come to us. I do think we can help our insurers through the low interest rate periods.

Mark Anquillare
Bill, claims comment?

Bill Raichle
Just a thought on that too. There were some things that don't switch off when interest rates rise, so over the last five or six years, carriers have had to be internally focused especially in the US. How do we drive more efficiencies? And on the claims side of the fence, I think they looked around and they realized that underwriting and rating had done the job already and they hadn't.

To some extent, they were living in more of a traditional world where you had experts making a lot of the decisions. You would provide information to experts who then would synthesize this and make decisions about how to adjust a claim. Over the last five or six years, insurers have really looked to make changes to that, so they're looking for us to help them drive analytics that push their workflow along. And so they developed procedures and approaches that are more consistent within the claims department.

That is not going to change. That's producing new products from us, and that is not going to change because of rising interest rates. They have the fever on change at this point in time. That'll just continue.

Mark Anquillare
Questions? Several out there.

Alex Tran
Alex Tran [ph], UBS. Just want to come back to the cross-selling chart that you put up for [audio disruption] the last three years. A few questions, one, can you talk about how much M&A played a role in this? I mean how much of that increase of your customers just bought products, and therefore, the numbers have gone up? Any common themes over the last three years in terms of what's been resonating, what's been selling, I guess, and how you think when you put this up in three year again how that might look different? Are you going to focus more on the small end of the spectrum? Are you still going to go back to the biggest guys? What's going to be different in the next three years when we look at this slide again?

Mark Anquillare
Let me first tell you that slide was an organic look at things, so acquisitions did not factor in it. It's really about cross-sell across the solutions. I think there's a lot of innovation. I think the portfolio of innovation we have is as exciting as waver.

Let's start with maybe the underwriting side of things. We have a lot of solutions there.

Neil Spector
I think one of the big things we did was we reorganized the way we face our customer from a sales and business development standpoint. We used to be very siloed, and what we did is we integrated our teams, created much more of a direct relationship with the customer across all of our products. And so I think by doing that you naturally had more solution-oriented discussions across all of the Verisk products, and I think that resulted in a lot more cross-selling.

I think that we've done a better job of integrating the products together, so today, when you're looking at your underwriting, you're looking at solutions for my group, or you're also looking at AIR products. Bill's team and my team are engaged directly with the customer, and therefore, they're really looking for an underwriting solution versus points solutions within everything that we provide.

And so I think we've just done a good job of better integration of the product, better messaging to the customer, and so we've made it easier. I think the trend that we've seen over the last couple years even in our sales pipelines is most of our sales with a particular insurer are bundles of products together that solve a problem where many years ago it was selling this product and selling that product. I think that's changed fairly dramatically over this last three or four years.

Mark Anquillare
Bill, please.

Bill Churney
I was going to build off Neil's comments and echo those, and one of the exciting things we see is we've been working with some smaller, more nimble companies or units within companies. They're not encumbered by legacy procedures and systems, and they come to us and say, because a lot of our stuff is build off of API's, let me just integrate and get valuation, let me get claims history, let me get lost cause, let me cap modeling results. Nobody touches the workflow except for exceptions, and that's really exciting. I think we're uniquely positioned to do that, and so I think hopefully we'll see more and more of that coming to bear.

Mark Anquillare
Rich, Mike, quick claims view of new products and response?

M
From our perspective, we are seeing a shift in the industry that's been going on for probably the last five or six years. If you think of it, data is the key for us from an estimating perspective. Historically, the data gold has been what is the cost to repair the drywall? What's the cost to replace the carpet or to replace the roof and everything in between? To utilize that data it requires someone who has some sort of construction savvy. They have to be able to go out and stretch out a tape measure and recognize that it's this type of drywall versus this type of shingle.

Now you have a changing demographic in the adjustor workflow and even in the policyholder who need greater automation. They got less savvy from that construction expertise, so the need for data goes up.

You have to be able to realize that it is drywall from some sort of imagery, recognize that it has this type of texture on it or whether it's two coats of paint or three coats of paint.

We saw in the slide the diagram of the roof, so rather than sending someone out there to crawl around a roof with a tape measure and then draw a diagram, how can you draw that diagram from an aerial image? That's where we're getting to today, and from an insurance carrier's perspective, they're interested in two things.

Scott mentioned speed and focus from our internal perspective, but carriers are interested in efficiency. They're also interest in policyholder service, increasing that satisfaction, and where those two things intersect is creating tools that allow that policyholder to have a much greater level of participation in the claim and then providing the predictive analytics that will even build that scope for them, have the data on the front in so that it knows what is on that home. It recognizes the type of materials and the surface area measurements and so on, and either creates that estimate for them or at the very least audits an estimate that they might create.

That's the shift that we're seeing is greater and greater automation within that workflow.

Mark Anquillare
Thanks. We have time for one question. I will tell you in the world of speed and focus, I think there's no lack of ideas. We have to actually figure out which ones we want to focus on. It's a creative group which I'm always excited about.

M
If you look at your biggest insurance customers, I assume they're doing a fair amount of this big data analysis internally and perhaps using their own data. Can you give us some idea of the trends that are occurring inside the insurance companies? Are they migrating more outsourcing? Are they giving up on just using their own data and going to you get sort of massive data or is it that they're building their departments and looking to have an in-house capability?

Mark Anquillare
Very good question. Beth, you want to lead off on that one?

Beth Fitzgerald
Yes, I'll start. Certainly, the larger customers we're seeing all have data science teams and data analytics teams, and quite honestly, they're hungry for data. I think they are looking a lot at their own internal data and trying to map it all together, but at the same time, they're hungry for what else they can add in.

I think as you get down in the customer size, they're not as sophisticated. They may not have teams, and they are looking to use their own data, but also looking for us to see what tools we have that we can add to that. They're a little more reliant I think on outsourcing.

Mark Anquillare
I think the way our customers consume that analytics is also interesting. Maybe just talk about the claims approach to the objects if we don't mind.

M
I'll kick it off and pass it down too, but one thing we do find that happens with large insurers is they want to develop their own models. From an analytics perspective, this is not new. This is decades of experience with this sort of thing, but they're hungry for data. What we can do in our model

development process, models that we might be selling to mid-size carriers and the smaller ones, we create predictive data elements.

On the claim's side, we call it smart features. I think Beth was calling it smart variables or database remodelers, but we manufacture data that is highly predictive of what they're looking for. Your customer then becomes the analyst within the large companies, and you're selling predictive data elements to them that they then use to build their own models.

It's just a different approach to selling. I don't know if anybody wants to add to that.

Mark Anquillare
What I wanted to add is I think Verisk and ISO have always enabled competition within the property and casualty insurance industry. What we've done with our loss cause early on enables smaller companies to compete with the larger companies, and I think the same is true on the analytics side.

Yes, the large carriers all have their own data science teams. The small and mid-size carriers know that they need to have more analytics firepower in order to compete with the larger carriers, and so we provide both those analytic modules to the large insurers as well as provide full analytics solution sets to the small or mid-size carriers so that they can better compete in the marketplace.

Bill, 30 seconds. I know we always have this some of our former employees are our best customers. Maybe you can just respond to the question.

Bill Churney
I think it essentially echoes these same comments. We have one large client, and we came to him and said, hey, we're going to give you this ability to bring your own model into the software. The funny thing was they're like, we don't want that. We want you to give us more insight into your model as the base. We'll take maybe our claims data where we have an advantage, and then we want to adjust it and tweak it and improve it in those areas.

Don't get us wrong, what you do in their minds couldn't be necessarily replaced. They wanted to have that, so I think it's more about helping them tune that model to their own experience. Where there's gaps they want capabilities in the platform to bring some of the tools they've built in-house, and that's what we see.

It's just some more intensive interaction we have, and they're ripping the bottles apart and asking us all sorts of hard questions. It makes us better.

Mark Anquillare
Thank you, everybody. I think we're out of time. Very much appreciate the questions and the time today.

David Cohen
We're going to take a break, and let's resume promptly at 11:00 a.m. Thank you.

[BREAK]

David Cohen
Good morning, again. If I can ask folks to please find their seats, we can resume our program. Next up I'd like to welcome Steve Halliday, Group President. He's going to speak about natural resources and what we do there with a special focus on Wood Mackenzie.

Stephen Halliday
Good morning, everyone. The first thing I can say is that this room is contributing to the demand for gas because it's so cold. Like I said, what I was going to do this morning was just to give you a little bit of an update on what's been going on at Wood Mackenzie over the last 12 months and in particular how we're seeing the future and where the opportunities lie for future growth.

One of the things I always sort of do with the people at Wood Mackenzie and in general with our clients is the key aim for us quite frankly is to make a difference with the analysis we produce. Looking at the press even this morning where Rosneft has sold part of its business to Qatar and to Glencore, and Wood Mackenzie's straight out there with really high quality analysis. We're on *Bloomberg*. We're on the *Financial Times.* We're in *The Wallstreet Journal.*

Our aim fundamentally is to really provide high quality analysis that makes a difference, and I'm also going to tell you a little bit more about the consulting side. We absolutely are an 80/20 business, but it's important just to give you a little bit more color about the real edge that the analysis we do provides.

One of the things, this has been a long-held view that when you're looking across natural resources that to analyze any single element you have to cover the whole area. If you want to be an expert in coal, you have to understand oil. If you want to understand gas, you have to understand power. I'll come back to this in more detail, but over the last 18 months we have used the disruption of the current environment to make the moves we wanted to make. This is a time where you make the moves. Yes, it's difficult. Yes, it's cyclical. Yes, it's challenging, but it's a perfect time to act.

The latest addition to the Wood Mackenzie world is solar. We're hydrocarbon. We've moved into metals and mining, but we really needed to make a decisive move into renewables. We were able to do that in the summer with the acquisition of Greentech Media, a great business based in US, but absolutely capable of taking their analysis global.

One of the key messages for today is we are now active on all fronts. We're good to go. We now need to follow through and execute well in our plans.

Now, some key messages for today—really, what you're looking at this is a cyclical business, and I think, Scott, you've talked about it. It's a little bit different from the insurance cycle. Energy goes through some more profound moves, and we've seen that. If you go back to February of this year, the oil price was half the level it is today. The US gas price was less than half the level it is today. Wood Mackenzie's not dependent on commodity prices per se, but it's showing that the extent of this cycle really is very profound. You're seeing really quite dramatic changes within the industries we serve.

However, because of the business model we have, because of the customer relationships which are very deep, and because of the great people, we are keeping very engaged with our customer base, and we're seeing that really against the overall environment and the world that our customers are experiencing we are outperforming.

Organic grow was really how Wood Mackenzie grew. You've seen over the last 18 months quite a few tuck-in deals and may be wondering is that the way it's going to be? Is that what Wood Mackenzie is? Well, no actually. We're an organic growth business that uses M&A to accelerate something we would want to do organically, and that's the way we look at that situation. Fundamentally organic, and really having made the moves we've made, we're going back to really assessing our business in that way.

Again, the use of disruption. When I stood here and talked to you just about a year ago, we had under

1,000 subscription clients. Speaking to you today, we have over 2,000, and a fair question is yes, just over 1,000 of those have come from acquisition and yes, their average size is smaller, but what it does is it sets us up to then develop those relationships through cross-sell and really taking them to different levels. We're really pleased about that increase in the number of subscription clients we serve.

Moving to the last point and I'll finish this and the talk today as we have multiple avenues for growth, and in particular from a content perspective, and you've seen examples of Wood Mac's content outside, we're looking at subsurface, which I'll go into a little bit more detail; cost analysis which is very topical for the [audio disruption] environment; decarbonization, and I'll explain what I mean by that; and finally chemicals—so many avenues for growth.

Again, this just reemphasizes that point. Our history, organic growth, we have done tuck-ins in the past. In fact, before last year, the last one was 2008. We have done that, but we're very, very careful and considerate when we do move. We have some great businesses. I should respond. These were all targeted. These were not responding to inbound, have a look at this business as an interest. These were relationships that we built up or goals that we had.

Infield and Quest are focused on cost analysis and really sets us well for oil field services and for servicing needs to clients. PCI is a group of clients focusing on chemicals, and finally GTM, I've talked about, which is solar. Now we bring them together. Now we really consolidate and make sure that they're really working in sync. With a business like Wood Mac, if we kept going at that pace, you'd just have to be a little bit careful that you're not disrupting that homogeneous business.

Just in terms of scale, I always say about Wood Mac and actually of course Verisk, we are naturally a global business. With all of the offices out there, we are now positioned to flex whichever way the customers take us. Whenever we expand actually, we never go out and say, well, we think Rio will be so many people or Singapore so many people. It's all about the clients, but that map of the world means that you're there. You're part of their communities. You're paying them respect by being part of their communities. We have critical mass, and we're now positioned to adapt whichever way we go. I should say 1,100 people, but we're focused on those people really working well together.

Before I get into the meat of it, this business model, Wood Mac's, has been the same since 1988 which has integrated subscriptions and services bound together by a really strong account management and marketing operation with clients at the center. It has not changed since '88, and for me, it's this model that's actually led to a natural 80/20, whereby you're using your consulting to really be at the vanguard of needs, and that can produce ideation that then becomes part of your research business.

I'm just going to go into a little bit more detail about services or consulting over the next couple of slides. So, same model, actually, it's one that needs constant attention to make sure that everything is in sync, but it's very simple and very effective.

This is a bit of a map of the world. On the services side, again, because of the 80/20 rule, it's a natural part of business. In fact, if I go back to '89-'90, our services came out of the unanswered questions from the research. It was those things. Well, that's great. I have your fundamental research, but my issue is this: How can you help?

Out of that grew what is really quick an effective practice, and I've just put a little bit of scale for you. In the last 5 years, we've carried out around 2,000 projects to 800 clients globally, and it's a full range. It's right across the spectrum of the things that we do. It ranges now, and I'll go into a bit more detail, from really small pieces of work for our core clients to really substantial pieces of strategic work where we really are working side by side with our clients. What we're doing is we're drawing on the services

team, but as well we're drawing on the expertise of the research folks.

Just a little bit of color, and by demonstrating this, what I'm trying to get to a little bit more is the essence of what do we do. I think it's a question that David gets quite a lot. Can you let me visualize a little bit, what does Wood Mackenzie do?

What we have there, you have the classic business environment. What is going on in oil and gas? What is going on in cooper? What is going on in refining contextually? What's happening to the markets, supply/demand price? What's happening in M&A? How do I benchmark? How efficient am I? Is my cooper mine as effective as it could be?

You have a lot of things in there, business environment, transaction support. I mean if you go way back in the DNA of Wood Mac, we were part of a stock broker, and then we were part of an investment bank until we gained our freedom. That's my last *Braveheart* conversation I'm going to have today. The point is that we are used to playing on the transaction line, but we are not going to get involved in M&A per se. We're going to provide very commercial advice.

The other thing I would say around this that links all of these hexagons, dollars, value, and how can I make money. That is the core question which lies at the heart of Wood Mackenzie's analysis, and commercial advisory, strategic, and critical for today's environment is business improvement. In this current environment, how do I benchmark? How does my industrial operation contrast and compare with the rest of the market?

We're used to working side by side with our clients. Some of the work we do is public domain, for example, advising the Ecuadorian government on the design of fiscal terms for metals and mining, helping the Mexicans with their recent licensing round, helping companies decide where am I going to place that refinery and what's going to be the impact of the hinterland market. These are very actionable, granular value-based pieces of work, and that's the way to think about Wood Mackenzie.

On the people side, everybody would say this, but the point I wanted to make with this slide is that Wood Mac has great people. One of the key things for me is that in Verisk we found a fantastic home with strongly matching values, so we are spending time and working with the rest of Verisk to really project to our people this is a great place to be. We're going to spend time to develop you as people.

When you pass from sort of private equity house to private equity house, it might be great fun, but they arrive, they're full of enthusiasm, and then they go into the waiting room to leave. This is a great home for Wood Mackenzie. We're really working to invest in our people, and there's this real nice harmony between Wood Mac and Verisk. Actually, some people might be listening to the webcast, so I really want to thank them this year. A challenging environment, and they work tremendously hard to stay engaged with their clients.

This, I think you've seen before. It's just the nature of what we do. If you look the scale of what's just happened, for example, with Rosneft, a $9 billion transaction, big scale, complex, dynamic. These are big movements of capital. What's actually happened is yes, there's a commodity cycle, and it has resulted in the reduction in the industry workforce. Around 350,000 people have come out of oil and gas, and actually, there's a crew change as it's described in the industry. That's putting real pressure on them, so they're going to need good analysis. They're really going to need it.

You're starting to see the cycle start to move, and I'll come back to that. They're going to need the best analysis and access to the best people, and some of the millennials that are leaving the industry, they're not coming back. They're going to need talent, and Wood Mackenzie can play a role in

providing advice in the pickup of the cycle.

All of the industries we cover have these characteristics, whether it be chemicals, metals and mining, oil and gas, all the same. At the client side, and actually, I could probably make this a little more red when it comes to some of those, but what we're saying is if you look at this chart, that's the stock market. This is the Wood Mackenzie client space in the energy side. This has been tough, and I'm sure some of you will have colleagues who are riding that rollercoaster on investing in V&Ps or in the industry.

It's not homogeneous, so of course, E&P and integrated, tough across the board. What happened in February was really quite a shock to the system, and they needed to react. Metals and mining actually, I always look at it. They're 18 months further down the cycle than energy. They're further through this, and you're actually seeing that already with coal prices, iron ore, steel is starting to respond. You're starting to see movement and the more advanced repair of balance sheets.

Just on the financials, arguably, I could've had EMEARC on the financial side not quite green because there's still some pain going through the system particularly when it comes to exposure to lending to oil and gas and metals and mining. What we have is this varied picture. What's been their fate? Surprise, surprise, it's been cost cutting and budget scrutiny, and that's the mode they've been in for a while. They had to respond. They have dropped their break-evens quite dramatically, but that's the mood at the moment. That's resulted in tougher negotiations.

My stance on that is that our response to our clients is we are here for the long term. I always use the expression we are part of the industries we serve, so at times, we're not going to be pushovers, but we are going to sway with the clients, and we're going to work with them through times like this to maintain that client relationship.

Finally, we're going to adapt. We've gone from just under 1,000 subscription clients to over 2,000, so we're going to just flow. We're going to look for where the commercial value sits and where most activity resides, but it's certainly been a pretty interesting ride for a while.

This actually shows the subscription numbers, and actually, I suspect if I'd showed you this last year you'd have said well, that's some aspiration. This is reality, and this is what's actually happened. I'm very positive about it. We're good to go, and I actually think that number of great than 2,000 has really significant upside. It's for us to go and get that because of the number of fronts we're active on.

On the right-hand side, you have the end user mix, E&Ps, NOCs and governments, financials, and other has areas like chemicals, metals and mining, advisory businesses, and the rest. It's really quite a range as opposed to that pie chart showing its E&P integrators [indiscernible]. It's not that. It's really quite a spread of types of client, and if you look there, 24% on the top ten, less than 4% of our top clients. Really a nice diversity there which is clearly important when we're going through this cycle.

Just a couple of slides on oil and gas, and of course, this is the stuff that I really love. What this shows is actually the global upstream spend from 2010 with our projections through to 2020, and what you can see is what happened was it peaked in '14. Bang, we really hit the downside, and we're going to start to see the recovery coming out. That's what our analysis is showing that you're going to start to see a tick up in cap ex and a tick up in activity, as was put actually on a Wood Mac note that went out yesterday which is a muted return to growth in the cycle.

Now, there's an interesting effect of this which is what this does, and I'm not going to spend too much time on it, is on the left-hand side is oil demand. That's the blue bar, and demand's relatively an elastic in this timeframe through to 2026. We're going to burn more oil. We're just going to.

And then what you have is you actually have the reality of demand growth, and you have the decline from oil fields. They decline. They're not static. What that means is you need to invest to go again which is the red bar. By 2026, 22 million barrels a day has to come from somewhere. Now, in oil and gas planning terms, that's close. That's really close.

What we've show on the right is the economic, where the oil price needs to be to justify the development of the reserves, and what you're seeing there is you very quickly get to levels that are significantly above the oil price. I'd put it this way is there has to be a price signal to the industry, and the price signal has not arrived yet.

I stress that Wood Mac doesn't need price X, Y or Z. What I'm saying is there needs to be a signal to really kick activity, and it's going to come. [Audio disruption] quite how it's going to come, what the level is, but just to say this says the need for people like Wood Mac, that's not going away.

Just on the addressable market, just an overall view. What we have here is a whole range of activities, and I should point to the chemicals market that's available to us now and renewables which I could see growing. As has been referred to, I think you've seen some of the note is we're really interested in the market around commercial and technical and where that interaction. If you look at that $4 billion compared to the Wood Mac heartland, it's very substantial, so we're very interested in exploring that boundary going forward. A large addressable market remains in place.

We live in a competitive world, and you'd expect that. What we've mapped here are a range of competitors in different areas. Our stance has always been be very aware, but do not let competitors define what you do. That's the balance that we're trying to strike with our strategy here.

Clearly, and some of you cover them in stocks, IHS is the one that we're competing with in most areas. There actually are a number of competitors across the range of activities that Wood Mackenzie undertakes.

Just a few slides which is about trying to give you a feel for the research, and actually. Hopefully you've enjoyed the presentations from Andrew and from Graham outside which hopefully gave that feel for actually both using intense amounts of data and the combining information that's public with our analysis with great tools that allow the visualization. What you have there for us, the overall portal is the window to Wood Mac.

I should add actually, and we'll come to this at the end, the thing we're excited about being part of Verisk is, and you heard that from the insurance discussion there, all of those techniques, and you'll hear more from Nana, we're really interested and excited to get those into Wood Mackenzie's business, to let more value come out of the latent assets that we have.

The portal itself, that's where clients would go to look at analysis right across all the range of activities, and what would they do? Well, they'd evaluate. Remember that thing, dollars. They'd evaluate, they screen growth opportunities and trends. They'd look at the fundamentals in all of the markets that we cover, supply/demand price. They'd look at the competition. They'd look at assets. They'd look at what Shell's selling in the North Sea, and they'd go here. They'd say, what sort of value is that? Let me get a feel for how that fits in the Shell portfolio. That all fits within the portal.

At PetroView, and it's always dangerous. Graham's probably in the room for me to even talk about that because hopefully you got a sense of just the depth of that product—extremely exciting. Wood Mackenzie's heritage, just to cover that, really has been around business development, M&A strategy,

touching on the exploration world.

PetroView really takes us firmly into exploration which starts to take you into that boundary between commercial and technical. PetroView is the embodiment of that, and this is a product that new venture groups and exploration would use. Graham's going to mark my score card on what I'm saying here in a moment. Very intense, very exciting, and what we're looking to do is to really develop the depth of information together with constant improvements to the visualization creating flexibility for the clients to take this into their work flows.

Actually, as an aside, I completely agree with the depiction of Wood Mac. We have more work to do to become embedded, and you talked, I think, Scott, about insurance machine to machine. Wood Mac's been less about machine to machine, although, there's a significant element of that. We can do more to really get into the workings of the way our clients work. PetroView's a classic example of a very exciting product where that is possible, and that's in fact happening I'm sure, Graham, as we go from here.

At solar, this was a really important move for Wood Mac. The last thing, with what's happening in the world, solar is capable of really substantial growth, and the whole aspect around carbon is here to stay. Irrespective of the politics at the moment, this is now on. What you're going to see is you have opportunities to invest in solar. You have implications for large oil and gas companies about their carbon activities, and you're going to see more activity here. In fact, you're hearing oil and gas companies talk about the need to go back into renewables, and that's a natural move from our perspective.

GTM, a brilliant company, fundamentally in the US, but capable of going global, and they provide analysis of solar power, electric grid, and battery technology. What they're looking at is the global solar supply chain. They will tell you the cost of photovoltaics. They will tell you trends and the cost of those voltaics. They will tell you the level of activity in the US. They will tell you who's participating. Very granular, and it's a very fast-moving market.

People would develop market entry strategies. They'd stay on top of legislation at a state-by-state level, and this is a fast-moving area. We're really looking forward to supporting the guys and GTM to really take this to a different level, an extremely important move for us to complete that whole front of activity.

Chemicals, unbelievably complicated. If you have the time, go and look up the infographic on PCI Wood Mackenzie's website. It's quite phenomenal because what you have in chemicals is actually a very complex business where you go from the actual feedstocks all the way through to end product, and it's really very complex.

What we did here was Wood Mackenzie had really started getting going in chemicals about four years ago, but we realized we needed to move to critical mass. That's where the PCI acquisition came in. You have this real depth now, and as an aside, chemicals demand going forward is looking very strong.

What would they do? They'd look at commercial strategies. They'd look for supply/demand price. They'd look for where they could invest a whole range of commercial activities. Remember dollars, the flow of dollars.

As we come towards the end, we're going through a really challenging cycle, and I can tell you that the Wood Mackenzie people are looking forward to the holidays because they've really been going through this cycle with their clients. Because remember, we're part of the industries we serve, but what we're

left as we get to the end of 2016 is multiple avenues to get going and to grow.

On the left, we talked about it, content areas, spend management, Wood Mac's heritage analysis working with Infield, working with Quest, and we have other ideas. We really think that's a significant addressable market.

Moving to chemicals, we've talked about that, and demand for chemicals is growing. It's just going to grow sustainably. There's much more for us to do there.

Subsurface, we've talked about, that's really at this interface between commercial and technical with Graham and the PetroView team really playing a really important role. If you did get the demonstration from Graham, you'd have gone into some technical attributes of the exploration activities that you see.

Finally decarbonization's a very broad term. Actually, what we're meaning is renewables plus the impact of Paris and the different agreements on the industries we serve—Datoil [ph], Total, BP, the making announcements about going into renewables. And, actually, what's interesting a lot of you are in the fund management business is it actually might be you that drives change as you place more emphasis on ESG and the need for the big oil and gas companies to respond. That's something that we really need to work on.

Interfaces, again, this is where we're really talking about working well with Verisk and with the skills and insurance and in financial services around visualization, so user interfaces. Contour is something that's active on the lower 48. Fusion is actually a product to bring together all of our metals analysis to really make it sing, and we're interested in creating new evaluation platforms. So, there's a lot to be done there.

Finally, in terms of the engagement model, my sense is given the subjects we cover, which is global energy, global metals and mining, global chemicals, on and on, we don't have enough clients actually. And that's my fundamental philosophy. So, we are really interested in finding different ways that we can engage on their terms.

That can be through partnerships which links actually with data as a service. They just might want cuts of the data as opposed to the packaging we put in place. E-commerce in another way of our clients engaging, so multiple avenues for organic growth.

So, our challenge isn't finding what those are. It's just making decisions about how we prioritize and what we go after. But, as we roll forward, I would look for that number of subscription clients to grow and our impact to get greater.

So, last slide, which is really more just what are the take-aways, well, commodity cycles, I've been through a few, they're not static. They're very dynamic, and you've actually seen that even over the last month or so, and light is emerging. What you're seeing there is that clients tend to say is now the time to engage again? Is now the time to be active? Because what I can tell you will happen is they will not react enough and then they'll really come in and react later.

We've used the disruption. Those were moves we wanted to make. Some of those companies I'd known for years and wanted to get together with, years, very patient. But we've been able to use this environment to make them. We're active on all fronts.

And then, this is a general thing, distinctives, values, approach, and capabilities from a Wood Mackenzie perspective we found a great home. We're very positive about being part of Verisk. And we're looking to really tap into that and leverage off that for our customers.

And finally, it's a large total addressable market. These are big subjects I'm describing that really, really impact the global economy. They're not minor peripheral activities, and there's a lot to go forward.

With that, I hope you understood all of that, with my accent, I'm happy to take whatever questions you may have.

QUESTIONS AND ANSWERS

M
Can you help us better understand the 500 or so clients you've added organically, like what channels are they coming from, do they tend to be bucketed in terms of specific parts of the pie chart, the financial services versus some other areas [audio disruption]? Help us in any detail you can give us on the increased client count?

Stephen Halliday
Yes, the historic core, if you look at that 7%, that CAGR that happened before this recent this recent bout of M&A, it's fundamentally been an account management model of growing the sales team, developing relationships, bringing them on. In terms of sectors, you saw that spread from the pie chart, it's really quite extensive, so in the last while you've had a whole range of clients have come on, in particular the [audio disruption], and that's been a developing theme over the last two or three years.

But, I would say actually, it's largely all been by osmosis. It's really go and make that relationship as opposed to advanced digital techniques to bring them in. We're really intrigued about actually that acting as an accelerator of our plan. It's fundamentally very traditional account management relationships step by step.

Obviously there's not going to be new BPs invented every year. So, you have your big heritage relationships. But then think about the sectors we serve and the number of participants who are interested in that commercially. It's a significant number, and in fact, I think I put a chart up a year ago to show that it could be significantly higher. So, I hope that answers your question. It's fundamental account management, but we're looking to use the acquisitions and the digital techniques to accelerate that.

W
Thank you. I have two questions. Number one is that it sounds like the tuck-in acquisition is really exciting like you basically double your client counts. What's the reason Wood Mac had not been engaged in those bolt-on acquisitions before Verisk? And, number two is you talk about light is emerging, so when do you expect to see positive growth, and like how is the revenue growth in Wood Mac going to lag the pick-up in oil price and all those cap ex activities?

Stephen Halliday
Sure, all right, so dealing with the first one, let's say, when the living is easy, everybody continues on. Some of those companies, we've been monitoring for some time, but they simply weren't available. We had relationships, but they weren't there. Then, I meant it when I said you hit disruption in you're in Infield or you're in Quest. It's a tough market. Maybe it's now the time to think about what we're doing.

So, it's not that, because we were backed by Prime Equity for it, it's not that we didn't have access to capital, but sometimes you have to have the opportunity and you have to create the opportunity. As an aside, actually those companies, they're like clients. You've developed them. You get close. Then, what I would say is Verisk is super supportive of saying, well, those are good moves. Let's set the distinctives, yes, we're going to support you.

I would say that it's really the cycle, I think, that's produced the activity rather than anything else. On the element, I don't know if it's clearly we're not, and I don't think that's part of today to talk about our forward view, okay? What we're saying is that we're seeing increased activity, and then we'll see. We'll let that flow through, and we'll work through our planning for '17 to see what the impact of that is. But, if you look at it compared to February 2016, it's lighter than it was in terms of the situation.

Hamzah Mazari
Thank you. It's Hamzah Mazari from Macquarie Capital. Could you just touch on some of the renewal cycle, any color around that? You mentioned tougher negotiations with customers. The business is pretty late cycle because of your multiyear contracts. So, just give us a sense of where you think we are in terms of how late innings we are in terms of your business seeing sort of a trough, you mentioned cyclical trough. Thanks.

Stephen Halliday
Yes, I think for us we have, similar to the other Verisk businesses, there's this ongoing renewal cycle. I always think about this. When you're dealing with corporations and the setting of budgets, you don't suddenly flick a switch and everything's back on again, because calendar year '16 overall has been a very challenging one. So, what I would expect to see is the need is there, and what you start to see as companies become more proactive, the desire to get going again and to educate the fewer people actually that they have left starts to emerge.

I would say this whole cycle is going to develop over the next while. It's not going to be suddenly one world to the next. The living is not suddenly going to become easy. And so what we're going to have to do is stay very, very engaged with our customers, stay very close to them, and work with them as they come through the cycle. As I say, if you look at that cap ex chart, what we're seeing is we're seeing a muted return to growth. We're not seeing a V. We're seeing something that's going to come off and then it's going to start to go again.

So, I'm not obviously going to go into specific contracts or whatever else, but this is going to be a process, to use that term as we come out of this.

Tim McHugh
Hi, Tim McHugh with William Blair. Just, I guess as we start to see more light, I guess, in the tunnel and you start to sell these broader products, thinking about the leverage potential in the business, where are you at in terms of needing to reinvest, I guess, in people, in building out further? You talked about your four priority areas. How built out are those as you start to sell those? I guess, any thought on how leverageable the business should be over the next couple years from this point?

Stephen Halliday
Well, I think Scott referred to the fact that there's a whole number of what are called breakthrough areas, and, actually, those are some of them. The interesting thing with the Wood Mackenzie business is we're actually started in all those areas already. So this is not greenfield. To use the term, this is brownfield. Now, the good thing about what we've been doing is we've been consistent in investment. What we've done with Verisk support is to keep going, investing in the business, developing that because I think there's nothing worse than a start-stop attitude to that.

So, I think that the four different areas, for example, are really quite different. Decarbonization, actually, what we're really going to do is build on GTM at the core, but there's plenty more to do. At subsurface, we're already active, and so in terms of pace, we're looking at that, but I think it's important just to really stress then that we haven't stopped investing.

We're still investing, and our strategy has been to invest through the cycle on our organic business together with tuck-in M&A because the last thing we should do is wait for the recovery and then suddenly get active. Now's the time. Now is the time. In fact, through '16 has been the time to invest, and we've been doing that.

As to the shape of the leverage, let's see.

Oscar Turner
Oscar Turner from SunTrust. Can you talk about the timeline for expansion in the technical space? And then, how much future growth do you think comes from taking share from competitors as opposed to developing new products for what's effectively an underserved market?

Stephen Halliday
Yes, so just to be clear on the question, so it's the timeline to get going in the subsurface?

Oscar Turner
Yes.

Stephen Halliday
We already have. So, we're already active. So this isn't something where you have this fixed demarcation line between commercial and technical. And in fact actually, whether it be PetroView or our expiration service, or NoWatt [ph] which you saw demoed outside, you could argue that some of those are technical attributes, to be honest. So, it's not a fixed line. It's not black and white. So, the bottom line is we're active already.

I think it's an interesting play there, isn't it? Because when you look at the application of commercial to technical, I always think with a business like Wood Mac, and actually Verisk, is it's actually the creation of new markets. That's that healthy situation is you're using your imagination too, you're staying very close to your clients, and I love the fact with Verisk, the mantra is get development of clients and customers on board. Develop it with them.

I would say if you go way back in Wood Mac's history, we would sort of do the 80/20 rule, and I'm talking 20 years ago, and we would say, here's this product, aren't we clever? And then, you'd hope that you were right. We're not doing that now. We're adopting the Verisk philosophy of getting involved with our clients, developing it.

Obviously, you look at that competitive chart, it's a competitive world. But, I would say fundamentally, it's about the creation of new need and helping clients make better business decisions. That's the fundamental. At the margin, there's going to be competition, but that's life.

Alex Tran
Thanks, Alex Tran, UBS. Just following up on Hamzah's question earlier, maybe a little bit more specific, if you think about the next 12 months in considering your like long-term contracts, is there still a large percentage of contracts that are coming due that you worry about like customers that are struggling that have been still in part of your contracts that are now maybe decide to not renew, or what

kind of color can you give us?

Stephen Halliday
Yes, I think to be honest it's a little bit of a repeat of the answer I gave. Because what you have, again, this is all about, I'm talking these are long-term cap ex intense businesses, but they are living in a public world as well, so they have to respond and they have to react. And what happens through the cycle on this is even though they need the analysis, everything gets caught up in that whole mantra of become more efficient.

That takes time to unwind. And so the environment that I referred to when I put up the map of the world and the clients, that's our view today, so it's red on there. And so you have to really work at it to get through it. I'm not going to be any more specific than that, but that's a depiction of where we're seeing some of the pain.

And as I say, the one thing, there's different parts of the industry that are flexing at different times. Interestingly, just as a point, in metals, and I was at a work called London Metals Week, two or three weeks ago. If I'd been there in October/November of 2015, that was pretty down. That was a tough situation. I was there a few weeks ago, and the balance sheets are repairing quickly. They're getting into position where they're seeing gaps is supply/demand in metals like zinc and they're getting active. It was a completely different feel.

Actually predicting how the recovery looks and feels is actually quite hard to do. Then, you have to say, well, okay the way I put it is the brain switches on before the wallet, and the brains are starting to switch on. That's more constructive at that point. These are long-term clients, and you have really got to stay with them through the cycle. So, I can't be particularly any more specific that, but that's the way it is.

Jeff Goldstein
Hi, Jeff Goldstein, Morgan Stanley. I know you'd mentioned in your presentation that you expect a lot of your growth to come organically where that's going to be your focus. Just in terms of the different verticals, is there somewhere you could see more M&A both-on acquisitions than others, maybe in the solar space? Just any color there would be helpful.

Stephen Halliday
Not so much, I mean, I really meant it when I said we're active now. The preferred stance is organic, but we will look at tuck-ins. And if you look at solar, for example, I actually think the GTM methodology's entirely capable of going global fast organically. And so when I look at the strategy at Wood Mac, I'm not seeing a dependency on M&A. I'm saying this is within our gift or to use the phrase, it's on our racket. I like that phrase because that's the way it is.

So, if I look at, for example, some of those moves, they were needed, critical mass in chemicals, the move into solar, and we'd been trying to get deeper into costs [ph] for ten years. Those were really important. Now we're good. Now we invest organically. So, I really see this when I say that it's fundamentally an organic story.

Last one because David's giving me a big garrote.

M
At the risk of me asking the same question in another way, if you all had to renegotiate all of your contracts based on where the cycle is today, presumably as some contracts are kind of in the money in that they were negotiated in much better times, maybe some that might be out of the money in that they were negotiated at worse times, such as January. If you were to renegotiate all of them today, could

you just give us some color on what kind of and impact that would have? Would your revenue be down 2%, down 10%?

Stephen Halliday
Are you seriously looking for an answer to that question?

M
Well, I'm just trying to get some kind of a sense of essentially is it something—

Stephen Halliday
I think what's important, let me be constructive, sorry I'm having a bit of fun with that, okay? When you have Wood Mac, we have these progressive situations, and we have multiple sectors. This is very hard to come up with a generic, and I'm clearly not going to give you a number. But it's hard to come up with a generic because if you're dealing with oil and gas companies, metals and mining, institutional investors, investment banks, governments, national oil companies, that's not homogeneous. You can't say it's X, Y, or Z.

Then what you have, when you come to renewal, well you know that's the push and pull of a long-term relationship. Good contracts, you have ones where—but you have to create a situation where the contracts feel robust for both. I am not going to go into specifics on it, but you look at it and I've been at Wood Mac since '89, and in fact, people like Shell or BP, they've been clients for 40 years. So, it ebbs and it flows a little bit in terms of where we're going.

So, I look at it now, and I'm looking forward, and I'm saying, there's more balance coming into this now. If I go back to February/March, very tough times, and it's emerging. And what I've said, if I go back to the fundamentals, the world needs oil and gas. The commodity prices have doubled since February, doubled. I mean not just minor movements, and that's coming through, the same in zinc, the same in coal. And so if you'd asked me that question in March, I still wouldn't have answered it, but I'd have thought a different number, and now I'm thinking a different number. So, it's very dynamic.

So, what I'd like to do—thanks, everybody for the time and listening, and I'd like to introduce wherever he is, Nana Banerjee, who's the Group President of Financial Services. So, thanks for listening.

PRESENTATION

Nana Banerjee
Thank you, Steve. Good morning, delighted to have the chance of talking to you about Verisk financial services. If you see me shivering through the presentation, hopefully you'll understand and also appreciate that if you gene pool adjust, what you feel is 60 degrees is actually 50 to me.

So, as you know, we have described Argus, and hopefully within the communities that you all belong to have heard about Argus as a genuine leader in information analytic solutions for banks, regulators, and in fact, a broader ecosystem that we serve together. Our distinctives are what Scott described earlier today as being the true Verisk distinctives.

We have unique and proprietary consortia data sets that have a special in with the clients we serve. We have a deep domain expertise in both analytics and consumer banking as evidenced by a huge chunk of our management team that are former bankers themselves. We have a steady stream of first-to-market solutions, and I will talk about some of them today.

And then, the litmus test of being embedded in your customers' workflows, that creates a stickiness and allows us to serve them for a long, long time and improve ourselves in the process of serving them. The broad areas that we serve our clients in include regulation, product design and implementation, pricing of those products, technology and technology platform solutions, risk and fraud mitigation, advertising, efficiency, and in strategy planning, so it's the gamut.

A little bit of the history of Argus, I have presented a slide in a platform like this before, so I'm not going to go back all the way to 1997 when we were founded with seed capital from MasterCard, but more about what has happened since the acquisition of Argus by Verisk in 2012. And most recently, in fact, some flagship milestones for us just this past year has been an advisory board that we set up with eight of our major clients in the US.

That advisory board has allowed us to forge a relationship that proactively engages these clients with new things that we get to do together. And that really allows us to test the boundaries of what would be comfortable for us as a broad steward group of the data set that we've built together, and what could we do with them to solve current and relevant problems, and then picking and choosing which problems would move the needle the most.

We also have gone into new markets, Mexico and Malaysia. We're serving new clients in alternate lending space, alternate payment space. We have several new partners, and I will talk about them a little bit.

Then, kind of the year before and since we presented last, we have new offices in Sydney and Melbourne. We've launched a new study in personal loans. And clearly we continue to do business in more and more new markets.

What does Argus do? A reminder, if you will. We now describe what Argus does in four broad groups instead of three. Benchmarking studies was and is and will probably continue to be our flagship product. It is a consortia-based study where the banks give us highly granular account and customer level consumer banking data that covers credit cards, deposits, checking, money markets, etc.

These studies tend to be customized for each bank but templated in a way that kind of allows us to create those custom solutions for each bank in a very productionalized way. And these tend to be evergreen subscriptions.

Moving to product solutions, these are the specific types of solutions that are typically embedded in our customers' workflows. They manifest themselves in the form of either large data management solutions, reporting systems, statistical algorithms or machine learning algorithms, and typically are priced as licensing fees with an installation component at the beginning when we are embedding these solutions into our customers' workflows.

Analytical services, these would be kind of more project based or retainer based services where we leverage our colleagues and banking specializing team to mine the data sets we have and meet bespoke needs of our client banks. These are usually aimed at serving strategic insights, planning, and execution support of our clients. Even though these are service-oriented solutions, often lead to cross-sell and upsell of our products, subscriptions, and more repetitive-natured solutions.

Media effectiveness which kind of used to find itself in product solutions area now is big enough and growing fast enough that we want to call it out as a separate solution set itself. It specializes in partnering with large media focused entities that have access to consumer consumption of media whether it's television, radio, print subscriptions, or online forms of media and connecting that with what

do people buy as a consequence of that, as they're exposed to and can recreate that feedback loop associated with what are people watching and then what do people end up buying. Is there a relationship between the influence of the ads to their behaviors? So, we fill a part of that puzzle that used to go unsolved, but it's clearly something we do with partners and not ourselves.

So, just a few product spotlights to give you a better feel for what we do. I'll start with our data management solutions which has quickly become an industry standard for regulatory submissions and analytical data warehouse requirements, so meeting the analytical data warehouse requirement. So, what's special about that, or what's the secret sauce of Argus relative to kind of what could be construed as just a large data aggregation exercise is really kind of an ability to, in a very efficient way, suck in very broad formats of data. That can come in the form of the client's own internal data, Argus's data, partner data, digital media data, or the vendor data that the bank takes on such as credit reporting agencies, and to be able to suck it all in in a highly proprietary data model, and that's kind of the Argus IP, and set it up for very efficient access, reporting, and modeling use.

So, it's really the engine in the middle that is productized in the form of ETLs and data models. The data models consist of what are those tabular structures both in a technology sense, i.e., the tech stacks, the physical architecture, and then the logical architecture which is how do these data sets fit within a database for an optimal end use.

It has been a very good growth engine. Even though it has doubled in the number of clients, doesn't exactly do justice to how important it has been because most of the new clients we've been adding in the last two to three years are the multimillion dollar clients and engagements and contracts that have really sped up the growth of this sector for us.

We are expanding these solutions to international markets. We have started to bring these kind of capabilities to the insurance vertical and most recently to the retail vertical as well.

I'm kind of shifting gears a little bit, but still in the theme of what does Argus do, and how is it's solutions kind of coming to bear with our clients, this an example where we help a bank focus on a specific strangest issue and then led to a cross-sell of one of our most productized algorithms. On the left side, the focus was the bank wanted to know what incentives did its customers that were leaving the bank have or resulting in their less engagement with the bank itself. So, there was something happening to its client base that was leading it to hemorrhage the engagement with its own customers. It's obviously a consumer bank.

What we found, looking through our database, that a good three-fourths of the customers that were getting less engaged, we could actually have an opinion, firm opinion as to why were they less engaged. That is looking through our database, that ability to tie all these different account data sets that we get from all our major clients in a given market into a customer's wallet. We could literally look at a customer's wallet and look at the five different payment instruments in my wallet and say, okay, it went from bank A, to bank B. The reasons it went form bank A to bank B are X, Y, Z, and the reasons for X, Y, Z are literally because it can be connected to preferences of views and the types of views.

In this case, the 45,000 customers it lost in a period of time, we could identify a good 55% were leaving because they had a better value proposition. They were probably more attracted to the rewards feature relative to others. Another 30% went for a lower-priced product, and then 15% went for a higher credit line. Therefore, the recommendation to the bank was well, we need to identify who is leaving for what and then in a very targeted way give them the promotions that would essentially keep them to you or get them back to you.

How do you give them those targeted promotions without offering everyone everything, which is obviously a money loser? That's where the Argus targeting algorithms come in. Given that we had the answer key, we can create statistical algorithms to go literally person by person and have a recommended action to give to that customer or prospect as to how do you win their wallet, if you will.

This is an eye chart, and clearly the intent is not to walk you through it but an example on our consumer deposit space and how are we helping our clients. Often what is missed, and hopefully some of you had a chance to look at our booth demo presented by Nabeel Azar as to how we've digitized a lot of our consortia studies, making the data more accessible and at fingertips for our clients. What it means is a level of granularity which this data has provided and why are these syndicated studies, why are they so important, and why are they so unique?

You can't really get a lot of these answers by doing samples, or surveys of 5,000, 10,000, 100,000, 1 million, 2 million people. We literally drill down to a region or a county, and then within a county, within a very local region of competing banks, and then be able to tell bank A what is its share of that local region that it's in relative to its peer group, and what are the reasons that it may be underpenetrating or over penetrating, and how does it protect or grow its share. It's really to demonstrate to you an ability to drill down into the wallet of the consumer in a very micro region and be able to tell what are the inflows, what are the outflows of deposits in a customer's wallet that's driving their behaviors in a very actionable sense.

Just another comment, this area has been very popular in the last month and a half since one bank got into a little bit of trouble with respect to a large number of its new customers being described as not attributable to their own choice of becoming new customers. This analysis now is very popular because pretty much every bank now is being asked by the OCC, what are you doing to insure you don't have this problem and just don't know about it? Because frankly, that was the case. Many in the bank at the more senior level just didn't realize that this was happening.

So, shifting gears a little bit, what makes the Argus data unique and kind of Argus in its broader sense? Probably a thematic way of describing it is we try not to compete. In fact, we don't know of any know competitor that we are going head to head against. Often, if we find some data set, or a partner who has a data set that could make us more complete, our first plan is come of board. Let's find ways of working together. So, it's kind of the one home superset of all these unique data sets that are out in the market which is why we feel good about solving the problems we take on.

But, even in spite of saying that, let me take on a few areas that are often asked as follow-on questions, so we just wanted to take on some of them proactively. Thematically, we are a company that's taking on and has a view, just in the US alone, and we have seven markets we cover, data on millions of merchants, in the tens of millions of merchants, billions of accounts that we track on a monthly basis, and trillions of transactions, and hundreds of trillions of transaction dollars that the Argus data sets have built up, just to give you a feel for the depth and the comprehensiveness of what we're tracking and measuring.

And our data sets include point of sale and online transactions that are literally made in the hundreds of millions on a daily basis, gets batch filed to us at the end of the day. We are looking at payment instruments, whether it's a credit card, debit card, checks written, money market accounts. We look at the product attributes which is not just whether it's a check or a debit card, it's literally what is the value proposition associated with it? What's the rewards feature? What is the pricing on that product? What are the fees that are attributable? What is the exposure that the banks willing to take on these instruments?

We also look at the performance which is literally what is the finance charge? What are the fees? What are the contra revenues and the revenue elements? What are the other operating costs that might be allocated to that product that enables us to calculate a full P&L, and so on? The consumer behavior, the consumers that have and are using these payment instruments, they have their own behaviors as to what shops are they buying things at, how much, how frequently and how are they skewed? What clubs are they members of? Who else are they making their payments to? It's just a nexus of payments and payments data that makes it really cool and valuable and allows us to answer some really important questions.

How do we differ from the other entities? The chart is somewhat self-descriptive, but at a thematic level, we are different from the credit reporting agencies because we are an analytical shop. We don't report on individual names and addresses. We don't aspire to be that in the world of Argus. The credit reporting agencies specialize in that. They have a very good complete view on loans and exposures. We have that, but we have a lot more, including product detail.

Payment networks specialize in transaction data. They don't have any information on loans, pricing, exposures, anything like that. And most networks have data that's flowing through just their networks. And the Argus data set would cover all the networks, not just any one of the major networks, so that's the value.

And then, payment processors usually have a subset of merchants, but they only have a subset of merchants, not the comprehensive full suite of merchants. So, what we have found is often there may be slivers of information that any one of these other entities have that we don't, and partnering with them has proven to be really beneficial for both sides.

We continue to believe there's a massive runway relative to where we are, and of course, we're bringing in new solutions that allow us to broaden our TAM regardless. Assuming a bottom-up approach, which is literally going by the market we're in, and the data sets we have, and the number of clients we see, and if we sold to a full penetration level, what do we think that the revenue associated with that could be? So, this is very much a ground-up level TAM, and we find that to be a little north of $2 billion. Still a significant chunk of that comes from North America, followed by Asia Pacific and UK and Western Europe.

So, our strategic priorities, and I'll focus on some of the key themes both on the revenue side and then on the margin side. I go into the details on the following pages. Our number one focus on when we think of revenue growth is in retention of what we do best, and arming smart, and then driving client intimacy. It manifests itself in the form of delivering what we do better. That's what we call improved solutions.

You've seen an example of what Nabeel's presenting in the kiosk out there is a digital binder. That's clearly certainly not an easy effort even though you might think why could it be hard? And there are elements to insuring the confidentiality of the donor banks in an automated way when you're giving out the data in a portal sense. There are actually tough mathematical problems to take on.

We're taking on small business wallets across deposits and credit. We are making our regulatory reporting much more turnkey. We are also working on our retail-centric solutions and providing a prioritization of alerts that used to be just point of sale theft alerts and now we have the ability to prioritize them. And, we are also focused on building solutions that would allow our retail clients to be able to score theft and the store itself with respect to the risk it poses.

We're building in new studies across a range of new markets and new types of loans and products. We

are driving a greater client intimacy in the form of pricing, contract extensions, more frequent delivery of what we do. And then, Scott did refer to the annual CEO visits that have proven to be very popular. I also talked about advisory board being a very important component to creating that intimacy.

We are looking at new markets, new partners, and new clients. And in new markets, the country that Scott was describing as our cloud-based experiment is Singapore. They do have a very strong local market requirement that the data does not leave the shores, and this was an easy way for us to take on that market.

We are entering Malaysia. We are looking at a cluster between Vietnam, Korea, Taiwan, and Hong Kong, and it's actively being worked on. India, again, is something that we're now actively working on. And then, we are looking at some other countries as well in that region.

I talked about partners. In the past, I've described partners as a fusion opportunity. This time, we'll describe it as an alchemy opportunity, but the basic concept being they have some data sets we don't, we have some data sets they don't, and together we can create a completeness to a solution set that an important problem needs solving. The new clients across markets and within the markets we're looking at, there's a whole roster of entities we're signing up and in the process of doing more of that.

Our innovation ventures, there are three big ones on this slide, and I'll talk to each of them in a bit more detail. There are several others on the following page. Market indices, this is an area that we've been interested in in having an opinion on that we have built up an expertise and an ability to understand what those transaction data mean for merchants and the broader economy. There is a value to mining that data set if, it was available for that use, for understanding market performance and performance of entities that constitute a sector such as retail or online retailers, etc.

We have now found some really good partners to be able to source these data sets and then apply our algorithms, data-mining techniques, and expertise to those data sets and have opinions on sectors and merchants that previously was not available at the level of comprehensiveness and detail and precision that we believe we can bring to the market. So, this is something we're actively working on and super excited about.

Digital marketing is clearly a space where a lot of big banks, consumer banks, have always been very proficient at prospecting new customers, keeping the ones that they have. But most of those channels are well established and the kind of channels of telemarketing, direct marketing, and so on, branch-based marketing are rusty, and they're no longer as relevant as they used to be.

Taking that journey through DMPs and dynamic offering is an important, and a good opportunity for us, and kind of critical for us to do. But these are all new big opportunities for us and obviously serving a very important relevant need for our clients, and it's again something that we're actively working on.

And the third area is the increased focus on cost. Banks are focused on it. Government clients are focused on it, and it kind of behooves any smarter analytically focused entity to do so. We feel this is again an area that we're well-positioned to apply the methodologies and the techniques, and the capabilities we have to again serve the clients we serve better and something we have actively taken on.

There's a whole roster of other areas that we are working on on our pipeline, including retail brokerage benchmarking solutions. In the retail analytic space, we talked a little bit about fraud modeling, small business wallets through our PRA partners, billboard, and mobile, and digital ads, something we've already started to work on, and then on the fraud side, transaction scoring.

In cognitive analytics space, or AI and machine learning, something that Scott actually started to talk to, we're working on identifying store theft using video feeds, text analytics, fraudulent checks, image tokenization that has Homeland Security implications, and just really interesting and important things that we feel we have something new, and unique, and powerful to contribute.

On the margin side, we are migrating to the cloud. Our process is instead of just gutting out everything we have and then transplanting everything to the cloud which would not make sense and would also be very disruptive, we are slowly and steadily migrating any new installations towards the cloud with a goal of being mostly to the cloud over some period of time. We haven't really estimated what period of time that would be, but we see that a lot of that's really going to be how fast we're signing up new clients who are open to being on the cloud. And more and more of our clients, including the bigger banks are now ready and see the benefits and the security benefits associated with the cloud.

We have an emphasis on globalization and the outsourcing benefits of those, particularly with respect to kind of the BAU nature of some of our cloud efforts. And then, reorganization, and I don't mean to imply anything massively surgical, but it's recognizing if we don't reorganize constantly and dynamically, it essentially means we are atrophying towards something that's not dynamic and something that's not as vital and reactive to the current needs and most recent needs of our clients. So, we just recognize that, and we're continuously looking to build our teams and rebuild our teams as and when necessary in every little pocket. And we take that part very seriously. That includes keeping our employee morale good and high through that exercise.

Our success in the past has been a combination of doing many things right. It is not really any one area that has taken us through to the good journey that we've had in the last several years including the pre-Verisk world. Of course, the Verisk world started in 2012.

About 75% to 80% of what we do and we expect to continue being subscription focused. And that 20%, 25% that's not, we don't really expect that to increase in percentages or dollar sense, maybe decrease in percentage sense over longer period of time, but we like it. And we don't want it to go away.

The reason we like it is it creates a real customer intimacy that invites us, Argus, into their shops, and they want to talk to us about what their issues are of the day, and we get an opportunity to solve a problem that's relevant to them uniquely on a given day. And then we leverage the experience curve. Once we take that on, and we believe we have solved that problem in more broader kind of thematic sense, chances are those same problems are useful to a broader class of banks across the world.

We like that 20%, 25% of engagement based work, and we just want to make sure that the 80% just naturally keeps humming and gives us a platform to keep the intimacy and keep ourselves relevant.

QUESTIONS AND ANSWERS

I'm happy to take questions.

M
Quick question, it seems that the co-op structure of your business could be somewhat limiting to your revenue. So, as I understand it, the only potential customers and revenues you can have are from those financial institutions that contribute data. When I think about the granularity and the depth of your data, you could have, I don't know, hundreds of potential customers in your structure today, but your data could be relevant to hundreds of thousands or millions of potential customers out there. So, how

do you monetize and get greater sales effectiveness out of that data with those structures?

Nana Banerjee
Yes, fair question, in fact, we ask that question of ourselves, which is how do you protect what you have? Understanding two things: The consortia data sets or the contributory data sets we have are entirely voluntary. There's not a law that requires our clients to give us their data, and because it's voluntary, we don't want to mess with it. We don't want to do something that has taps be turned up.

Data, similar to many other things, has a half-life. If those taps get turned up, the value of the data is very short-lived. Maybe we can keep using it for 6, 12 months, but not too much beyond it. So, it's important to keep those sources coming along.

What we've found over time, and it's a genuine principle for us now, is we really like the contributory nature because it creates an evenness and a safety net for the contributors and an evenness by which I mean there is never the risk of any one entity abusing its access to highly proprietary and really important data sets. And yet, your question's very relevant, is how do you then make kind of growth, make greater users which clearly we all see as potentially powerful beyond this system that is not contributing.

I think the answer to that question is we want to broaden that ecosystem, and the way to broaden that ecosystem is having outside entities that are not necessarily banks, but are of interest to banks, also bring data sets along so that ecosystem of contributors is bigger. An example of that is some of the larger retailers, they have important payments data. They have skew data, and if they're willing to play ball, and bring their data sets in, and that data set is very insightful to the banks, for example, cash payments, and who's making the cash payments for what, and the one that that all banks and payment players would be willing to agree is there is a war against cash. The government is definitely interested in that. And so, having that retailer data set join the ecosystem with an agreement to what is the benefits and the value associated with this participation opens up new avenues, and to the extent the banks feel that it's acceptable, it's good.

Now, how did we get to a forum where the banks would say yes, I like that, was through our advisory board. An important objective for us to have the advisory board was let us find new opportunities to broaden our ecosystems, of retailers, of data exposure companies. Let's invite them into our ecosystem, and then let's solve broad classes of problems together. So far, it's actually been going pretty well, maybe not as fast as we would have liked, but it's also something we have to be careful about.

M
Just first to follow up on that last one, how many retailers are contributing data today to you? And then second, can you just talk through why there's a focus on margins in the business? I think your returns on capital and margins are already great, then you have those massive opportunities, so I guess why as much focus is there, as Stephen called attention to it in the slides?

Nana Banerjee
Right, right, so two questions, and I'll separately, there is retailers in the ecosystem, and then there's retailers that we work with. There are many retailers we work with. We have a Verisk retail business. It's a business center that reports into me, and we solve, and it found a couple of bullet points in my presentation today.

The specific class of problems we are helping solve retailers for is point of sale theft and using retailer data to identify what are the specific clerks in a given kind of—think of a Macy's. There are many

clerks, and there might be specific instances of cashiers where merchandise has been stolen by store employees. This actually happens more often than you think. It's the second largest area of fraud risk and abuse for merchants, about 600 to 700 basis points of sales.

And so, we have algorithms based on those data sets to solve it, and we work with over 100 retailers, and it's a growing business. One of our objectives is how do we kind of bring it all together. We are working with retailers and we have some, in the tens, single digit numbers.

The second question, why focus on margins when it's not an issue? It's a fair question. We also feel that keeping it at a level that continues to give the Verisk teams a good place to invite shareholder money and give back in opportunities to use those free cash flows either in new opportunities for tuck-in or larger, they're all important initiatives that we're thinking of and want to make use of. So, margins is a way of showing we keep the discipline with which we've operated and allows us to not lose our DNA which is both top line and bottom line. Does that answer your question? Okay.

Tim McHugh
Hi, Tim McHugh with William Blair. I guess two questions. One, maybe not in detail, but just at a high level, if we go back I think a year and a half ago at the investor day in March of '15, the addressable market was $500 million that you had on the slides for you back then. Now it's more than $2 billion which is a fair amount of increase. So, what would be the biggest change in assumptions?

And then maybe a second question is I know you were probably talking broader Verisk, but do acquisitions make sense? Given everything you have going on, you just laid out a broad series of opportunities that in a big addressable market just based on what you're doing culturally and I guess as you think about the data sets, and so forth. How would acquisitions fit in, or do they fit into how you think about the future for Argus?

Nana Banerjee
Yes, good questions. The first one, the TAM has increased. I didn't remember the numbers. Somehow the number $1.2 billion was in my head, but maybe you're right, and I'm remembering an incorrect number. But the TAM has grown, and we want it to keep growing. The two big areas that I can think of off the top of my head that has contributed to the growth is many more markets; and two, our GRC solutions, the government regulatory and compliance solutions, just promise a bigger market and for two reasons.

One, that market itself has exploded as the need of the banks to take it head on and the urgency associated with taking it head on has gone, I think, six, seven-fold in the last five years, and we are in that stream, and it promises a very important area of growth. We have also achieved a good level of confidence in taking on the media effectiveness solutions to a broader class of entities that could take benefit from those solutions. As a result, it kind of has bolstered our confidence. We could do this. We do this really well in the US. Let's take it to the UK and Australia. We are actively talking to partners, and that gives us a greater runway to do so.

Your second question with respect to acquisitions, I think I'm not saying anything out of line here, it really needs to make sense, and right now, we see a lot of opportunities that look attractive, but when you look at it closer, there are things that are associated usually with the discipline of running the business, going back to my first question, that makes us wonder, is this the right place or the wrong place for us to kind of put in our investment dollars.

But it is an area that I would be very interested in, especially if it gives us access to a new market, a better mousetrap in terms of, we don't believe all the code written at Verisk is the best code, and

anything written elsewhere is worse. We definitely don't believe it, and if we can convince ourselves that there are better mousetraps out there, we want to be interested and consider that. Access to proprietary data would be another area, and a class of data that we would otherwise not have, but we feel when melted, or the chemistry of our data sets with theirs together could solve a broader class of problems, that interests us.

Then, ultimately, can we bring something to that team, or can they bring something to us as a management team that would make us a bigger and better whole? We do have a strong culture, and therefore culture is an important consideration. Those would be the four key things.

Well, thank you. I will take a break.

David Cohen
Just before we go to the break, I do want to take a moment to thank all the hard work of the teams that have made today's event possible. I'm not going to name all the names because I know you want to get something to eat, and I want to keep us on time. But, a lot of work goes on within the business units to support the preparation of the content. Our events team, financial team, the marketing teams, they all do a great job. I really appreciate the work that they do. Thank you to all of them.

We're going to take a break now. There's a box lunch available. Please some back. We're going to resume at 12:50. Thank you.

[BREAK]

David Cohen
Okay. Welcome back. Hopefully everyone has had a chance to grab lunch as we continue on with our program. Next up to discuss the financials, I'd like to welcome our Chief Financial Officer, Eva Huston.

Eva Huston
Great. Thank you, David. I almost feel like this the anticlimactic part of the day because you've all clearly seen the financial results. But I may share a few tidbits that might be of interest to you.

I think a lot of people here know us well, and those who aren't currently investors are probably here because of this, the attractive business model that we have. One of the things that was interesting actually as we were preparing for this day, I went back and I pulled up our investor day presentations from 2010 which was actually our first investor day ever, so this is our seventh. If anyone has been here for seven years, we have a special pin for you outside. No, I'm just kidding. We don't, but I'll give you my Verisk pin if you'd like.

The thing is this slide is actually the same. Now, maybe that's sort of obvious that it would be. I think one of the enduring things about Verisk is that we do have such a great business model. Many of you heard me say that when I joined Verisk Analytics I had been a banker for many years before I joined just at the cusp of the ITO. This was one of the best business models that I had ever seen, and I still very much feel that way.

When you think about the recurring revenue stream and you've heard it across all of the business units today that subscription revenue stream, that long-term revenue embedded in customer workflows, meaning that we have really high customer retention, and all of that built on analytics and again, built on those unique datasets that Scott referenced upfront, having that proprietary data is really important to us, and that's what leads to that revenue stream that you see a lot of consistency in and those high barriers to entry.

What then that flows down from the revenue is really that strong free cash flow generation, build it once, sell it many times, high incremental margins on our existing businesses which gives us actually, and I'll talk about this a little bit later, but the opportunity to invest. We're really not service or capital intensive. You've heard a few references today two parts of the business where we do some consulting with our clients. That is really important to us, but it's not a huge amount of our business, and it creates other opportunities for us which is why it's important.

Then finally, if you think about the diversity both in the customer base and the revenue contribution, we have three primary verticals, as you've heard today: insurance, financial services, natural resources. Our largest customer, and this is looking at Verisk as a whole, about 2% of revenue. While all of our customers are incredibly important to us from a financial standpoint, one individual customer does not make or break our company, and top ten customer is about 17% of revenue.

This is a little snapshot of historical performance. Scott referenced earlier some of the materials he shared were straight from the boardroom. This is another one of those. We do look at the historical financial performance. You'll note here that we look at it in two groups of five-year periods, and that is intentional. The reason for that is we are a company that manages our business for the long term. We look at individual years. We do look at quarters as well. But, really, when we say are we being successful or not, we're going to look at a five-year period.

What you can see from this is many of the metrics that are important to us we continue to get better—revenue growth, CAGR of almost 13% over the 2011 to 2015 period. Underlying that, the organic revenue growth, as Scott referenced, that's really important. It's a measure of our vitality, almost 8% on average, subscription revenue over 80%, EBITDA CAGR of 14%, and on average a 50% margin over that five-year period. All that sort of flows down to adjusted EPS, a 15% growth rate in the last five-year period.

The previous period had some years in which we were not a public company so that's why you don't have the comparison there. Cap ex as a percent of revenue has increased as Scott referenced earlier, but that's really important as we think about how we drive growth. When you think about cash flow, EBITDA less cap ex as sort of a proxy for free cash flow. That's really important to us, and to grow that at a 12% CAGR we think is very strong, and we want to continue to focus on that as a growth point.

Then finally, as we referenced earlier, our people are really important to us. The productivity that comes out of our people that comes from the skillsets that you saw Scott display up there has been enhanced over the years. All of these things are leading to us continuing to drive better performance over the years as we move forward.

Just to dive in a little bit more, if you want to take a look at the total revenue, what you would see here is you see some variation. In the most recent five years, obviously the total revenue growth is higher. That has been set both by organic and acquisition growth. You will see across the years you see some variation, and I think it's important to note because one of the challenges I think for a company like ours in the public markets, there a lot of very good things about it, but there tends to be a focus on the shorter term period as companies are public, and for a variety of reasons—we can talk about that why—we're very lucky to have a shareholder base that understands that this is what we're managing to.

Then when you go a layer deeper in terms of the organic revenue growth, again, what you see is in the last five years an average of about 8% organic revenue growth, higher than that in some years and lower than that in some years. But I think as we look at our performance, and we certainly have talked

to you as we go through quarters and you have questions about specific growth rates, what we're looking at is on an underlying basis, are we aiming to deliver an organic growth that is consistent with our past history. That is always our ambition. So, when any moment in time it's different than that exact number, we're always looking to say are we doing the right things underneath to continue pushing forward in terms of that organic revenue growth.

Global platform, you've heard us talk about this today. I think one thing that's really interesting when you look at this is now today Verisk has over 20% of its revenue internationally. We do expect that that will continue to grow. Certainly Wood Mac has been a big boost to that, but we've also started to do things both organically and through acquisition in other areas of our business. Mark referenced a couple of acquisitions that we've done in insurance that are international. While those are not strong contributors at the moment in terms of that 20% we do expect that they will seed future growth.

This is important to us, again, as Scott observed earlier, we think the United States is great. We have a very strong presence here, and we really do believe we have the opportunity to grow here. But we also, in addition to that, we have opportunities to grow internationally. And now we really are platformed in a way that will allow us to take advantage of that.

Subscription revenue, again, you saw this earlier. I like this a lot, so I thought I'd put it up again. When you think about this and you think about what's important, you could look and say okay 80% subscription. The transactional component I would actually break into two parts for you. There's a portion of that that while it's not subscription it's really more pay by the drink. We often talk about in the data analytics world that when you first invent something and a customer starts using it, they may just want to use it in part of their workflow. They may not want to fully commit until they really understand the value of that. So part of that transactional revenue that's labeled here would be that type of revenue.

Now, the great thing is when you start to get embedded in the customer's workflow, that type of revenue tends to be I'm going to do 100, I'm going to do 110 or I'm going to do 90, not 0 or 100. There is another portion of that which as we discussed is that consulting revenue that allows us to be both close to our customers, do important work for them. We do get good margin on that, but it also seeds the opportunity for us as we go forward to create new subscription industry standard products because we have gotten so close to the thinking of our customers and generally we can generalize that across the industry.

EBITDA, we talk about EBITDA a lot. It is one of the important components when we get down to free cash flow, which is what we think really drives the value of our company. As you can see, over the years, we have increased our growth of EBITDA. We also have expanded our margins. There was a question in the last presentation for Nana in terms of margin and focus there. One of the things I would say is one important thing to me about margin is it's a hallmark of the type of business we're running, and I think that's what Nana was alluding to when he talks about the discipline that we have. You can grow your business on the topline and do that with margins that are much lower than this.

So, there's not a magic number I would say in terms of margin that makes the business great. But I think when we're in this range we feel like we are doing things that are adding significant value, repeatable, build it. This is sort of the amalgamation of all the things that we talked about that makes our business a Verisk-like business. So, we have seen margin expansion over the years. We certainly, when we can, do it and grow. We think that's great. So we'll talk about that a little bit later, but important to us to continue to grow EBITDA.

Adjusted EPS, if you were to look at that over the past five years, you've also seen a 15% growth rate

there. Again you'll see sort of a trend line where it dips down and it comes back up. I would point that in 2013 and '14, that's really the impact of some of the capital investment that we've been making, so that does it through the depreciation and amortization flow through to the bottom line. It also clearly flows through free cash flow, but we make those investments because we do believe that we are able to drive growth out of those over longer periods of time.

You saw this chart earlier in capital expenditures when Scott spoke. I did want to make a couple of points here. I think one of the things as we think about our business is we do think that we've gone through a period of sort of a step-up in investment that will normalize in terms of a percent of capital expenditures to our revenue. But also, I think it is important to say that what we will see is we will continue to see internally developed software. That's really been a great opportunity for us to add value to our solutions. Whenever we're adding value to our solutions, that gives us the opportunity to either build something new for a customer or to enhance the value of something they're already receiving.

One of the demos that is out there that many of you probably saw and you've heard me talk about this before is Touchstone. We have many other examples internally. I just think that's a great one because actually, again, I don't know why I'm reflecting so much on seven years of investor days, but if you went back to our first investor day and looked at the predecessor product to Touchstone and then you saw what we have today, you would really be able to notice a differencing in the platforming, the visualization. On the one hand you might say well, that just looks better, but the reality is it actually makes it more usable for our customers. When things have better usability or broader bases within the customers, when they're able to use them, we're able to pull more value out of that. So, when you think about our capital expenditures and how this is going to evolve, you can expect to continue to see us invest in that internally developed software because that really is an important part.

I would also add as we talked about cloud the hardware and third-party software, that may be an element that comes down as we think about sort of the balance between that and cloud over time. I think it's still early days for us, and certainly as that shifts in terms of the P&L versus capital expenditures impact, we'll certainly dimension that for you. But, again, when you're managing to free cash flow at the end of the day, what that allows you to do is make the right decision and not really worry exactly whether it is a P&L expense or whether it's a capital expenditure.

I talked earlier about the diversity of our revenue streams. Just to have the numbers in front of you, if you think about insurance business, Mark and the team who was up here talking about that earlier, that's about 70% of our revenue. As we all know, that was how we were born. But what we've been able to do over time is bring in the additional groups, energy and specialize, which largely is the natural resources business that Steve Halliday runs, financial services that Nana Banerjee runs.

What that does is it provides as balance across the revenue streams for our company. I think it also creates further opportunity for us to grow. When you think about the opportunities and some of the things that could go cross vertical, that's interesting as well. So we feel like we have a good balance across our company in terms of where our opportunities sit. We'll talk about that in terms of TAM a little bit later on, but that diversity is important to us.

One of the things that's interesting when you hear us talk about Verisk is we always like to have multiple avenues to grow, whether it's through verticals, whether if you think about what drives our revenue growth, a mixture of price, cross-sell, new customers and innovation. When you think about capital allocation as well, as we'll talk about, having multiple paths but not too many is always good because it gives you a chance to say what's my best opportunity today. I probably shouldn't have put up the pie on subscription base again because I just did that, but I like that so much that I hope you

don't mind.

Speaking of, after we go through driving revenue, driving that down to EBITDA, and free cash flow in our business, the great new is we're left with a lot of cash. We generate material free cash flow every year, and so our challenge is how do we deploy that and that do we deploy that in a way that generates value for our shareholders. The way we do that is we're disciplined about the capital allocation. We basically look at two buckets of opportunity for us. One is acquisitions, and one is share repurchase.

The way I always think about that is all things being equal, which whenever you start with that, all things are never equal, but all things being equal we would like to buy companies because what do companies do? They bring in new skillsets to us. They bring in new solutions for our customers. They generate cash flow which we can then invest again. And so, if we could every day find the business that looked just like a Verisk business, we would love to buy those businesses.

The reality is when you think about it, one, we have a pretty special model, and so it's not like companies that fit our model walk in the door every single day. That's why we're active out looking for them. And second of all, even when they do walk in, we do have to be disciplined about price. So, just because it's a Verisk business doesn't mean that we'll pay any price for it, and we have to be thoughtful about that.

The other opportunity we have in terms of investing our capital is we can buy our shares. What you can see is that over time we've actually been relatively balanced about it—a little more tilted towards M&A, 60% in this timeframe as we brought in Wood Mackenzie in 2015, but relatively balanced. You'll also see when you look at the time graph here that in some years we do more M&A, and some years we do more buyback. And, again, I think that provides flexibility to make sure that as we're thinking about that cash that we generate that we don't feel like there's only one option to invest it.

I will make a quick note because I do get questions about this on dividend. It's something that we think about. I would say it's not strongly on the table and certainly always interested in people's views. But I think to date this has been a pretty effective way through our share repurchase of returning capital to shareholders.

So, M&A, we talk about being disciplined, and what do we mean by that? We mean that we are looking at the return that our M&A is going to generate, and then we're going back and actually measuring what it did generate. If you were to look at the transactions from 2002 to 2015, this does exclude Wood Mackenzie because I think we're a little early in terms of trying to measure an IRR on that investment, but certainly we will talk about that over time. You'd see an annualized return of 19%.

Now, a caveat to that is that that's measured at a ten times EBITDA multiple. So, the math that we're doing here is we're saying, okay, if we bought something for X dollars, that's an outflow. We generate free cash flow from that business over the period of ownership. Then the terminal value even though we continue to own the business, we would apply a ten times multiple to EBITDA. That's clearly a lower multiple than the multiple at which we trade. The reason we did that as a methodological approach here is just to show that the way we are generating value is through the generation of free cash flow. I think if I were to apply a Verisk EBITDA multiple to that, the annualized return is probably pushing up into the mid-20s over that period of time. But, you know, 19% would be pretty good too.

Then when you think about repurchase, and this is maybe where we're a little bit different than some other public companies. The way we think about repurchase is we also think about that in a similar way. What is the IRR on a repurchase? If we were to buy a share today at $82 a share or $83, wherever we are this morning, we would look at what's the value of that share going to be over a

multiyear period. It's very much the same way you would look at it. Then we would look at that return and we would compare it to our M&A opportunities and also compare it to our cost of capital.

What that means is there are moments in time where we may not be I the market. We also may not be in the market because we really don't want to crowd out that M&A because remember, I said all things being equal that would be our preference. Nonetheless, we have been active in buying our shares and returning capital to shareholders. You may have seen as you were walking in the door this morning we just announced another reauthorization, $500 million. This is a regular process we go through just to make sure that we have that capacity available to us should the market conditions and should our cash flows in relation to our other opportunities deem that to be an appropriate use of cash, over time a 15% IRR on our buybacks.

Another thing that we talk about is I gave you the general numbers in terms of M&A returns. We also look at individual key deals and how have they performed. This is a list here on the left of deals over $50 million that we've purchased since 2002, over 50, including earn-outs that may have been associated with them. What we looked at is that was a total of total purchase price of about $1.6 billion. On average for those acquisitions we paid about nine times year one EBITDA. That's defined as the first full year we owned the business, so if we bought it in a half year, we would look at the following year.

We also looked at the revenue growth. We talk about revenue growth being important to us—15% CAGR through year three for these acquisitions in aggregate. We looked at the EBITDA, actually EBITDA CAGR of 25%. So one of the theses we have when we go into businesses and we're buying them, perhaps when they're not at their full maturity is that if we're buying a business that looks like a Verisk business, buy it and build it once, sell it many times, the margins will expand. Well, that certainly helps drive your EBITDA CAGR.

Then finally, we also take a look at return on invested capital. The way we measure that is our purchase price, and this is in a year-three basis. We use that because it's an additional measure in addition to running the IRR expected over the life of the company in a longer term basis. This is kind of a shorter view in terms of what kind of cash are we going to generate out of the business. So, I think as we review our M&A, I think our program has been very effective. We continue to focus on the distinctives as we're buying businesses to make sure the businesses are good fits with the things we are good at.

With that, this is a summary of the acquisitions we've done this year. As we noted, these are all tuck-ins. These are all under $50 million. They are seated in US and internationally. These are both in our insurance and in our energy businesses. Year-to-date, Steve and Mark spoke about these, so I won't go into a lot of detail, but what I would say is that we have found this to be an effective program. We have capacity to do M&A, and I'll talk about that a little bit more. But what we're really starting with is what's going to drive our business, and these have been some very good acquisitions that we've found and we're excited to have them as a part of the Verisk family.

When we think about capital allocation, when we think about the success that we've had, the real question comes, okay, so how do we think about it going forward? How do we keep up our success? I would say there's are a couple of pretty simple ideas that we have in front of us, but it's really important that you continue to have them in front of you; otherwise, you can get enamored with doing a deal or buying your stock. For M&A, it's simply reasonable prices for good businesses.

Now, I will say reasonable can mean a lot of things to a lot of people. I would say we tend to buy businesses that are high-quality businesses, so reasonable may not mean cheap, but it does mean

reasonable in relation to what they're going to generate. We want those businesses to fit our strategy, to have cash flow growth. We also want them to have sticky subscription revenue. I think as we look through our transactions and the ones that have been more successful have been the ones that have more of that sticky subscription revenue going back to the 80% that we have within Verisk today.

We also do think looking at that ROIC provides an additional measure. Again, it's not the only measure, but it kind of says, okay, when we think about an acquisition, if the ROIC is stronger, that tells us that in terms of the opportunity to generate return, there's more of it I will say sort of in the bag or near in the bag versus the longer term. Again, we are a long-term company. We are looking over multiple years in terms of the investment opportunities, but I think it's good to have a balance.

Then with regards to buyback, we want to remain disciplined. I think we've done that over the years. We look at our buyback, and we have volume and price targets whenever we're in the market. We look at share reduction as really a secondary outcome. As I've said to many people, we don't think about it on the accretion dilution basis, because it's kind of all accretive. We have either cash on the balance sheet or we can borrow debt for relatively low rates. It's all going to be accretive. So I think the methodology we approach which is similar to what an investor would look like is what has created the success there. And at the end of the day, when we think about that, that balance strategy I think creates flexibility, flexibility to make sure that you're making the best decision that you can at the moment and not just being forced into one path or deployment of capital.

Speaking of that, I mentioned we do have capacity in terms of M&A. Currently we're at a debt to EBITDA ratio to 2.1 times. That is below both our covenant level within our bank agreement but also our long-term target which is 2.5 times. That's really a reference point for us. And we have gone above that particularly with the Wood Mackenzie transaction. Because of the free cash flow, we delever relatively quickly, so we feel very comfortable, and we feel like we have a stable business model that can certainly easily support that and perhaps more leverage. Our investment grade ratings are something that's important to us, and we've been able to maintain those over the years. We appreciate the support of our debt investors as well.

Addressable market, this is always everybody's favorite slide, and I'm sure I'll have about 100 questions about this after the fact. I'll just make some brief comments. It's important to observe we do have a large addressable market. I think if you were to look at this $16 billion, and we can talk in more detail, you would actually see it's composed of a number of different components. I think you saw the details behind financial and the natural resources from Nana and Steve. And with regards to the property and casualty, if you were to think of the six leaders who were sitting up there, I'd say that's relatively well dispersed across the different parts of the business.

Another way I looked at this is I looked at how much of this is direct competition, i.e., we need to go pull a dollar out of the customer that we're spending with a competitor. How much of it is for solutions that we have or are very close to having or a small derivative from where we are, and how much of that is really we're building new markets that may not fully exist today? I would say among those three categories, it's probably about 10% direct head-to-head competition in this. I would say the next 45% is things that we have or are close to having and can extrapolate into market, and the other 45% are things that are maybe not sitting directly in front of us but are things that we think we can easily expand from.

So, you can think about TAMs a lot of different ways. Sometimes they seem like big numbers. This might seem like a small number compared to what some people put up there. But we tend to be very thoughtful about this. This is a bottoms-up build. Each of our business units and our business areas are asked as part of their five-year strategic plan to think about the addressable market in a very

granular way. What is the solution? What is the customer opportunity? How much would we charge? And that aggregates up into what may look like a simple pie but is really a very thoughtful exercise not just for presenting this to you but really for running our businesses and determining how we're going to drive growth going forward.

Innovation, this is important; you've heard this theme from us a lot. Scott referenced it in his presentation as well. I think when we think about innovation, I've started talking about it in two ways. There's the "big I" innovation, and those are the things that are the discrete programs that are going to generate material revenue out in year five. They have a 24/7 champion, and we love those, and we love to fund those. Those are things that are really important to the success of our future.

But, what's also important to us is what I call "little i" innovation which is taking what you have and making it incrementally better. And why that's important is one of the questions we get a lot is how much do you get in price? We always talk about being modest on price, trying to be thoughtful, not wanting to walk into a customer and just say you know what, you have our stuff, you're going to continue to buy it. Just pay us more.

That's where that little i innovation becomes really important because what that does is when we put that in an existing solution, that makes it a little less about price, and it's really more about the value we're delivering to the customers. Sometimes those little i innovations can turn into big I innovations. You might think you have a little idea, and it might turn into something bigger. It's really important as we think about innovation to think about it in both ways to make sure we're doing both of those things in our business.

Corporate objectives, when we go to the board we talk about our corporate objectives not just in the bottom right corner in terms of performance, financials. You're all very familiar with all of those, but I wanted to emphasize that we're actually looking at what's the game plan to deliver that. The financials are really the outcome of all of the work of our people, and so we have a number of metrics that we talk to, including retention as top performers, that we talk to the board about and we track and we measure, because if we have top performers and we're not retaining them, we're not going to be the best company that we can be. In terms of customers, Scott mentioned the MPS, and we certainly track that. We track a number of things about our customers. Again, customers are the people who pay the bills, and we have to make sure that our people are delivering solutions that bring value to them.

Innovation, I mentioned that earlier. We track innovation from revenue from new products and solutions, from investment in those as well because that revenue only comes out after you invest in things. When you think about the score card that we have for ourselves, how we track this both for the next fiscal year but also for the next five years, these are all things that are on our agenda, and I just thought it would be important to make sure that as you think about it you understand the financials at the end of all of these good things that all of our teams are working on.

So, with that, I just wanted to conclude and make a statement. We've talked about this before. What is our outlook? As you know, we don't give specific guidance, but we do have objectives for ourselves and things that we want to share with you. Organic revenue growth consistent with our long-term historical performance, that continues to be an objective of ours.

Measured margin expansion, not in any one moment, but over time I think we've seen the opportunity to do that. We want to make sure though that we're only doing that in a way that is not cutting off investment opportunities that we could be doing to drive growth on the top line. Really the combination of those two is what drives free cash flow. If you have growth on the top line and some margin expansion, you're able to grow free cash flow. We think that's really ultimate driver of shareholder

value. That's what we focus on. Then we're also focused on that long-term compounding of growth through the revenue, through the free cash flow, reinvesting in the business. Really, those are the four simple measures that we have to make sure that we're driving value in the company and supporting your support of us as a company that can deliver returns to our shareholders.

With that, that concludes our formal presentations. I was going to invite Scott and Mark to join me up here, and we also have Nana and Steve nearby in the audience in case you didn't get enough questions out to them earlier. We'd be happy to take your questions from here.

QUESTIONS AND ANSWERS

Toni
You just mentioned paying potentially a dividend or it's on the table. I just wanted to ask about in the past you've went more towards M&A and buybacks, a little bit more flexibility there. What I'd ask is what would make you more likely to adopt even a small token dividend? Thanks.

Eva Huston
Thanks, Toni. Just to be clear, I think I said it was not strongly on the table, but what I wanted to send is a message because we get the question. We do think about it. It's not just that we've said categorically we've never do that. I think what we see in our business is that the flexibility to deploy capital and M&A is incredibly important. It creates that nice cycle of you buy something, it generates more cash, you have more cash. So for that reason, the buyback which can be a little more episodic, gives us that flexibility.

I think that as you look at it, the two reasons people will usually put a dividend in place is one, because they think it institutes discipline. I think that we've instituted our discipline in ways that have been effective without that today. The other reason which is really not my favorite reason is while everyone else does it. I was always told as a child that wasn't a good reason to do things, but it's something that we'll continue to evaluate. I think certainly as companies get to a certain size, they tend to find that more attractive, but I just wanted to let you know we have thought about it. But right now we're happy with the balance we have between those two investment opportunities.

Bill Warmington
Bill Warmington from Wells Fargo. A couple of questions. First, on the buyback, the $500 million increase in the authorization, why do a traditional program as opposed to an accelerated one like you did back in 2015? Then on the second question, on Wood Mac, if you would give us a bit of a cross-sell update in terms of walk us through what you think are the key cross-sell opportunities now versus when you first acquired the company and whether the cross-selling has started to help the organic growth and how you'd size that opportunity.

Scott Stephenson
Yes. So, maybe I'll take the second one first. I think we're just as the cusp of finding those opportunities between particularly energy and insurance. They're more real to us now than they were before. The energy world is underinsured, and one of the reasons is why it's underinsured because there are not enough data analytic tools available to underwriters, and so it's much more art than science today.

It's an area that we're very interested in. We believe that some of the data assets that we have on the energy side are going to be specifically relevant to insurance companies. We've been characterizing the opportunity, and I think we're now at the point where we're going to move more strongly into it. I would not credit that idea with having added to our organic growth to date, and I think in '17 it would be

a small effect as well. But I think in the end it can actually be pretty powerful.

With regard to your question about the traditional approach to buybacks, we feel very interested in our M&A pipeline right now. As Eva was just saying, we just like having the flexibility.

Hamzah Mazari
Thanks. Hamzah Mazari from Macquarie. You guys have made two large portfolio changes recently with energy and then healthcare. Cap ex intensity is going up in the business as well. Is it fair to say the current portfolio's going to be pretty consistent or should investors expect another vertical five years from now given current leverage on the balance sheet and M&A pipeline? Thanks.

Scott Stephenson
Yes. We don't walk around feeling like our current portfolio is inadequate in any sense. We really like the categories we're in as well as the particular assets that we have. You've heard a lot today about things we can do to try to grow, but we don't start out thinking where's the fourth leg underneath the stool. That is not a thought we have. Every year we spend a lot of time going through our five-year strategy view. We actually just completed that process. We don't kick off that process by saying, okay, what's the fourth vertical? That's not a pillar in our thinking as we go through it.

You referenced some of the portfolio work that we've done, and I'll just say the two things we did were completely independent decisions, meaning the decisioning around moving out of the healthcare space was very much a function of our view of what was happening in the healthcare environment, and our decision to move in to Wood Mackenzie was really a view of the virtue of that business, our feelings about the long-term prospects for the segment, the way that energy relates to some of the things we're good at like climate science and the global quality of the business.

Whereas, insurance and diversified financial services tend to be much more market by market, the energy business is, particularly oil and gas, is just inherently global. If you're considering an asset underneath the sea bed in the South China Sea, you have to understand what's going on in the Permian Basin in North America because the hydrocarbons will end up competing. That's not true of a primary insurer in Germany versus a primary insurer in the United States that's generally not true of a retail bank in China versus a retail bank in the United States. We really like the inherently global quality of oil and gas, metals and mining analytics.

Jeff Silber
It's Jeff Silber with BMO Capital Markets. We have a new president coming in in about six weeks or so.

Scott Stephenson
I heard something about that. Yes.

Jeff Silber
I know there's been a lot of things floated out there. Nobody knows what's going to happen, but is there anything from a policy perspective, whether it's him or that's been proposed by the incoming Congress that might make you rethink any parts of your business? I'm specifically interested in the proposal to limit interest expense deductibility on your capital structure and allocation. Thanks.

Scott Stephenson
Yes. Of course, we're watching just like everybody else, and handicapping what our incoming president is going to do is hard. But I will say that in the most general sense, one of the things that we like about our business is that we're not actually that sensitive to federal policy I guess is the way that I would put it. I don't mean to say that there's no impact, but in general. First of all, I hope everybody

knows, but just to really be very clear about this, our customers are for-profit entities. We don't really do very much business with the federal government or for that matter state and local governments. That's not a big part of what we do.

Insurance, the regulatory environment seems to be very stable, don't really see a whole lot on that horizon. It could be that if Dodd-Frank gets a really close look, then it could be that some of the ways that data analytics apply in the banking sector maybe you would modify a little bit, but there's still a good deal of regulatory requirement there. Oil and gas is really subject to market forces.

But then any rules that come up where companies are responding to the tax regime, for example, or the balance between being offshore versus inshore, I mean, I don't see why those effects would be particularly differential for us. Most of our tax paying is still in the United States, so we would be influenced by whatever was done there. We're not sitting here running scenarios where the starting point is, boy, this is a real sensitivity point inside of our company relative to where policy might go.

Eva Huston
Jeff, I would add, usually people center on tax and how does that help you. The last analysis I saw were four different policy proposals that were floating around, and they were all positive to us in sort of the round from the analysis we could do, ranging from small amounts to very large amounts. Obviously we'll continue to watch that and understand how that might impact us. But I think sort of the early read is for a company that pays a lot of taxes in the US, all of those current proposals that are being floated would only be positive for us.

M
Are there needle mover initiatives or potential needle mover initiatives? Can you just help size up the needle mover initiatives, the 20 that you referenced? In terms of revenue, like what is a big—what would one of those products have to be to qualify for that bucket? And then, how does that 20 roughly compare to a few years ago and how much of that is a function of how you're managing the innovation portfolio versus market forces or market opportunity?

Scott Stephenson
Do you want to start with any of that?

Eva Huston
Yes. I would say that those ideas would be out near five, tens of millions of dollars. I think it would vary. I would say that in relation to things we've been doing, I think we have greater emphasis on, and it kind of goes back to the comment I was making about big I and little i innovations, making sure that we understand those are differential, and little i innovation is often accomplished within the business, and big I innovation requires some of the comments that Scott made around 24/7 champions, etc. Maybe that's if you wanted to draw distinction. We've always done these things, but I think we're now looking more specifically at which category they fall into because I think each of those gets treated a little bit differently in terms of how you make them successful.

Scott Stephenson
Yes. It's interesting, if you look at data analytic companies, freestanding data analytic companies and you look at them from the moment that they were founded, the norm is that it takes between 12 and 15 years for a startup data analytic company to get to $20 million of revenue. Now, the interesting thing is that once you get to that point, then you've established category leadership, you very frequently see a four or five X increase in revenue over the following five-plus years.

If you think about some of the really great parts of our mix at Verisk, for example, AIR was 14-year

getting to $20 million to revenue, and now it's this wonderful scaled business, roughly with exact actually. You have to be a little bit patient in our world, but it's definitely worth the trip when you get there.

Judah Sokel
Hi. Judah Sokel at JP Morgan. Just a few questions. The first one is about Argus, and globalization is clearly a theme across the company. When it comes to financial services, can you give us some idea of what percentage of Argus is currently international and how much runway there is for Argus to grow in Europe over time?

The second question relates to organic growth. One of the outlooks over time is for organic revenue growth to be consistent with the long-term historical performance. There was a slide up there which was very helpful and showed us that it was around 7% for the five years prior to 2010, and after that it was closer to 8%. I was just wondering which of those, 7% or 8% ,is the long-term historical performance that we're targeting?

Then the last one is on the measure and margin expansion point. I'm just wondering if there's anything you'd want to call out for 2017 that might be a typical and could be impacting margins without quantifying and giving guidance, but how we should be thinking about modeling 2017 margins. We had already talent realignment in the past—something like that? Thank you.

Scott Stephenson
Why don't you take the last part of that? Can we get a mic to Nana so that he can—oh, you have a mic. That's good.

Eva Huston
Perfect. Alright. Maybe I'll start with the last, and then hopefully I didn't forget any in between, but I'm sure you'll remind me if I did.

Scott Stephenson
There were 18 questions in there.

Eva Huston
I know. I didn't have a notepad here. Maybe just starting with the question on margin for 2017, I think as we think about our business, I don't think there's anything unusual that we see in 2017 as impacting margins. I think the real decision and how we run the business will be the investment that we put into the business. As Scott has identified, we have a lot of opportunities out there. We have always invested through the P&L as well as cap ex, and we'll continue to do that. I guess, no news on margin for 2017.

In terms of thinking about organic growth rate as we think about the business, I would say that I think we've improved our business and as we've moved forward, and maybe that's if you wanted to parse the numbers, between about 7% and about 8%. I'm most sure I would get overly hung up on either one of those. I think that we look more like our recent self than our past self, but fundamentally we're just looking to drive organic revenue growth, and I think either of those metrics over long periods of time are pretty excellent for a company of our type.

Then maybe I'll just give the quick what we said about our Argus international revenue and then turn it over Nana to talk more about the specifics. When we acquired the business, we said it was about 20% to 25% international, and I think the business has continued to grow both domestically and internationally, so I wouldn't call out anything materially shifted from that. So, Nana, maybe you want to

talk about the specific opportunities?

Nana Banerjee
Yes. What I wouldn't suggest is the percentage has radically changed, but I would highlight two things. One of those was the slide I presented on TAM by country that we still see 55% to 60% of the TAM for Argus to be international. We're definitely adding many more new clients. We're planting more flags in new markets at a rate that we've never had. It is an area of focus, investment and excitement for us.

Those opportunities are coming not in some markets to syndicated studies, most other markets and I would the norm is engagement focused, leading to products. Data management solutions is how we're building up, and then comes the subscription studies. There's a slightly different order. And we do expect to make more investments, both organic and inorganic, with the focus to international. It's a very important area, and it's a very exciting area. We totally commit to that.

Eva Huston
We get all of them, Judah? All right.

M
If you guys did buy a company in new vertical and added that, another leg to the stool, would it make sense to go into a more volatile end market like you did with energy as somewhat of a counterbalance of it to what you have with Wood Mac? Your underlying insurance business is amazingly resilient. Any kind of thoughts on swing for the fences a little bit more? Having balance, maybe one is down, the other one is up, or—?

Scott Stephenson
That's not really the way we think about it. I'll go back to my prior comment which is we're just not spending a lot of energy thinking about an entirely distinct fourth vertical. There are things which naturally grow out of the places we already are. For example, I know there's a lot of excitement about the media effectiveness work which is a product of what we do with Argus and by degrees looks different but relates strongly to the work that we do with the banks. So, is it an entirely separate vertical? We don't think of it that way, and it's very integral.

With Argus supply chain thinking sits very close to what we do inside of Wood Mackenzie would be another example. We don't really talk about it as the fourth vertical, but it's kind of new business in a way but a sort of a wholly different set of customers. We don't really spend a lot of time thinking about that, but if we ever did, the first filter would not be the criteria that you were on. The first filter would be the four distinctives that I talked about right upfront in the day because we think those are the strongest guarantors of Verisk-like performance basically, meaning you grow, and you have good margins, and you are defensible, etc. So actually that's the way we would observe anything that was just kind of completely new business.

W
I think like on the step-up investment has been mentioned a few times in today's session. I have two related questions. How should we think about the revenue impact from the step-up investments? You mentioned it takes like 10 years to get to like $20 million revenue? Are we talking about like very long-term revenue impact from those investments or is there like more medium term? Two, is what is like the impact on free cash flow? Obviously the cap ex has put some downward pressure on free cash flow. Over the long run, do you expect your free cash flow to grow in line with your revenue? Thank you.

Scott Stephenson

Maybe your last point first. Yes. Actually, we would expect free cash flow to grow faster than revenue with time because of the scalability characteristics that Eva talked about. At any given moment, basically what's in the balance is how many of these beyond opportunities are we investing in, but they're not monolithic, and actually we're right in the middle of this exercise right now. Some of these things which are exciting and new even in the first year are cash flow positive. Then there are others which in the first year are deeply negative from a cash flow perspective in the first year. So, it's not like they all look the same, and basically the decisioning that we're going through literally right now as it relates to 2017 is what mix and how much are we going to go through. Some of them are contributors in the first 12 months, and others aren't.

M
The five-year that we would normally think about [audio disruption] probably provides some more risk.

Scott Stephenson
Eva summarized a lot when she said tens of millions when she was responding to the question. Some of them would be more like low double-digits. But others within a five-year-plus period could be many, many, many tens of millions. Actually part of our job is to make sure that they get to that level of performance rather than the former.

M
Thank you. You mentioned price, cross-sell, new customers, and innovation as what drives revenue growth. As you look forward, do you have to lean more heavily on one of those as compared to the others to get the revenue growth that you're targeting? I'm just trying to think, does the combination of those four things looking forward change as compared to what drove revenue growth historically?

Eva Huston
Yes. Thanks for the question, and that's exactly the thing that we're thinking about and observing on because I think simply put, and this will sound like a familiar theme across many of the areas where we run our business, we're looking for balance. And, so as we're driving the car, I guess to use an analogy, even though all cars are going to be driverless one day, we're looking at the dashboard and saying okay, wait, are we driving too much on this side or that side? Because if you're not balanced, so, for example, if you don't see enough coming from innovation, that's sort of a signal to say we need to make sure that we're pushing this enough so that we have those opportunities that are going to be out 35 years contributing to our revenue.

On the other hand, if you're looking and saying, wow, if we have to lean too heavily on price to drive growth, which would be sort of a consequence of not having enough innovation, then that sort of puts us in an oppositional position with our customers which we never want to be in. We should get price. We should be able to be paid more every year, and we are, but we want to make sure that that doesn't become our sole driver of growth. And then in between those two, cross-sell to customers, so customers are buying things from us and we can sell them something new. That's the great thing about having a great customer relationship which is built on those bookends, which is being thoughtful about how you price your products and also innovating. Then, the new customers, hopefully they start to see the things our existing customers are seeing.

So, simply put, we want to try to remain balance across those. I would say at any one moment in time, one maybe slightly larger than the other, but we're trying to keep our eye on it so we don't end up in a situation where we say, oh wow, the only way we're going to grow is because we have to have 20 new innovation ideas, and they all have to deliver $20 million of revenue next year, because that's just not how the cycle works.

Scott Stephenson
Yes, we should just also say, by the way, the price is not the equivalent of extracting economic rents. In other words, most of the things we do we are very substantially the share leader in what we do. You heard that throughout the day today. But we're not like somebody that's publishing *Moby Dick*, and this year's *Moby Dick* and next year's *Moby Dick* are exactly the same words and more or less the same cover. When customers are licensing our product in year one and then again in year two, that product has been infused with probably new analytic methods, definitely with new data. It's dynamic. And the customers understand this. So I just wouldn't want you to walk away with the impression that price equals economic rents because it's just not the case, and our customers know that.

M
I wonder if you could speak to sort of the replatforming and the cloud which you talked about at the beginning. You spoke about it being a hybrid sort of architecture for a while. I'm wondering how much of that is your clients, your customers being still not 100% with having that data moving back and forth, how much of that is sort of turning depreciation which goes over three to five years into year one expenses? Then, sort of a third element to that is your lack of development resources in terms of modern programming languages and the sort, because I wonder how much time Verisk would be spending on activities like hooking up IoT or machine learning when Amazon, Azure and Google are spending far more money on that than you can possibly.

Scott Stephenson
I don't agree with your last point because yes, they're spending a lot of money to create availability, but that's not same as the use cases that we're building inside the verticals as it relates to IoT data. You sort of slipped into that. If you want to talk about that we can, but I don't agree with your characterization. But, your question more generally, actually you were well on your way to answering your own question because it is partly a function of our customers' willingness to see the data that they've contributed to us physically resides somewhere different. It is partly a function of we do have investment in our current data centers, and it is partly a function of you need to actually rewrite your applications to be served in that way.

However, in reverse order, I don't think of the third one as a constraint. It is a factor that we have to take account of, but bear in mind that anytime that you open up an existing application and rewrite it, one of the opportunities you have is to make it better. You have encoded something, and now you have the opportunity to recode, and when you do that you can almost always make it better. So, whatever cost we have as we move applications to the cloud. I actually don't think of it as just cost. I don't think of it as just sort of this is a friction which is associated with moving from one world to the other. I do believe actually that as we do it, our solutions will actually get better, and that's not the constraint. We can resource that as we want to go.

I really don't think of the customers as a constraint, but it's very important how they feel about it. One of the things I was trying to say in my comments upfront is I believe all of this is changing faster than most people actually acknowledge. What's becoming normative is, yes, actually their ability, whoever they are, AWS or Microsoft or whoever, their ability to keep a datacenter secure might be better than my own. I really actually think that the frontier on that one is moving pretty quickly, but we will be very deliberate in asking our customers are you okay with this?

It's not going to be just a hey, get ready because February the 1st we're just cutting over. Bill Churney talked about this a little bit. In our catastrophe modeling business, they have really bent over backwards to say the customers how do you want to do it—public cloud, private cloud? You still want to be on-premise? It's like we're okay with all those. I think that's kind of the way that it'll be for a while.

So then you get to the middle of your three points which was just, yes, we have datacenters and equipment. We'll just want to be smart about how we do it. I would add one other thing which is that we have a very heterogeneous computing environment. We actually still do a fair amount of stuff on mainframes, and the mainframe is kind of like the hardest thing to serve in the cloud. It could be that different chunks of what we do will migrate at different rates.

CONCLUSION

Eva Huston
Okay. I think we're at the end of our time. We thank everybody for joining us. We hope that you'll come out and finish seeing the product demos. I actually think they're the stars of the day and helps you understand our business better. And certainly if you have any questions or followup, please reach out to me or David Cohen, and we'd be happy to do so.