Corporate Participants

Benoit Fouilland  Criteo S.A. - CFO
Edouard Lassalle  Criteo S.A. - VP & Head of IR
Jean-Baptiste Rudelle  Criteo S.A. - Co-Founder, Executive Chairman, CEO & Member of Advisory Board

Conference Call Participants

Andrew Rex Hargreaves  KeyBanc Capital Markets Inc., Research Division - Senior Research Analyst
Brian Patrick Fitzgerald  Jefferies LLC, Research Division - MD & Senior Equity Research Analyst
Douglas Till Anmuth  JP Morgan Chase & Co, Research Division - MD
Heath Patrick Terry  Goldman Sachs Group Inc., Research Division - MD
Matthew Corey Thornton  SunTrust Robinson Humphrey, Inc., Research Division - VP
Nicholas Freeman Jones  Citigroup Inc, Research Division - Assistant VP & Senior Associate
Richard Alan Kramer  Arete Research Services LLP - Senior Analyst
Seth Andrew Gilbert  Deutsche Bank AG, Research Division - Research Associate

Presentation

Operator

Good morning, and welcome to the Criteo Fourth Quarter and Fiscal Year 2018 Conference Call. (Operator Instructions) Please note this event is being recorded. I would now like to turn the conference over to Edouard Lassalle, Vice President of Investor Relations. Please go ahead.

Edouard Lassalle  Criteo S.A. - VP & Head of IR

Thank you, Ed, and good morning, everyone. Overall, I'm pleased with our Q4 results showing encouraging improvement as compared to Q3 and marking an inflection point in our revenue ex TAC trajectory. With our growth turning positive again, we feel good about the direction of Criteo.

Jean-Baptiste Rudelle  Criteo S.A. - Co-Founder, Executive Chairman, CEO & Member of Advisory Board

Thank you, Ed, and good morning, everyone. Overall, I'm pleased with our Q4 results showing encouraging improvement as compared to Q3 and marking an inflection point in our revenue ex TAC trajectory. With our growth turning positive again, we feel good about the direction of Criteo.
While this past year certainly presented its specific challenges, 2018 also demonstrated the recurring nature of our business. In my discussions with clients, what I mostly commonly hear is they view our technology solutions as core to their success. Thanks to a unique commerce audience data, best-in-class artificial intelligence technology and powerful software tools, our platform has become mission-critical in the planning and execution of our client marketing operation. Overall, this gives us further confidence in the resilience of our future cash flows.

Over the course of 2018, you've heard us talk a lot about self-service. Leveraging the strong relationships we have built with our clients, our focus is indeed on migrating as many accounts as possible to our new self-service platform. And actually when we talk about self-service, there are 2 complementary aspects: the first one is a platform that allows our mid-market sales team to both greatly reduce friction in the process of signing up new clients and significantly increase the productivity of our operation teams in managing existing accounts. In this respect, we plan to release a new fully automated onboarding module by the end of the second quarter. This important step will allow us to significantly accelerate the sign-up and onboarding of small and medium clients, hopefully resulting in accelerated momentum in our mid-market net clients addition in the second half of the year and beyond. The second and probably less obvious aspect around self-service is the powerful tools we are providing to all our clients across the board to configure and monitor their campaigns. By making such tools available on a self-service basis and letting marketers to turn the dials, offer clients and agencies more control over their marketing operation, and we expect this to greatly increase the control and new business opportunities and to further improve retention. As a matter of fact, we are seeing a growing appetite, particularly in the U.S., from large agencies to work with our solutions.

Overall, we believe both aspects of our self-service platform will meaningfully drive our traction in the future. I would now like to say a few words on Criteo retail media, our retailer-facing technology platform that allows retailers to monetize the inventory and audiences with brand. This platform integrates sponsored products and commerce display into a broader offering that covers all monetization scenarios relevant to a retailer. As you know, most large retailers now realize they can massively boost their bottom line by monetizing the consumer assets with brand. In this context, our retail media offering gained significant traction in 2018, and this, in particular, in the U.S. and overall growing by close to 30% on a revenue ex TAC basis. And we believe, this sets a solid foundation for 2019.

In addition, an important trend specific to retail media is the rapid evolution of our business model. With large retailer, in particular, we're increasingly switching from selling on a cost-per-click model to a transactional software-as-a-service model. This new pricing model is growing much faster than the rest of the retail media business and could at some point represent the majority of our revenue for the product line. As a matter of fact, if you are interested to learn more about retail media, we've published a brief presentation on our investor website.

Moving to Q4 results. We generated revenue ex TAC and adjusted EBITDA both $12 million above the high end of our guidance at constant currency. This good performance was primarily driven by our record holiday season in the U.S., but also in Western Europe, where we have observed an increasing seasonal peak. This was combined with strong sales execution, both on our large clients and mid-market divisions, all during this critical period. Given the tough comparison that the record 2017 holiday season presented, this achievement was notable. Last, but not least, our performance was well balanced across solutions. In Q4, our new solutions grew 54%, representing more than 13% on a revenue ex TAC basis, compared to less than 9%, excluding discontinued products in Q4 last year. This said, some of these solutions are highly seasonal in nature and I would caution against extrapolating too aggressively the Q4 mix into future quarters. Nevertheless, this is certainly an encouraging trend.

Turning now to some of our strategic initiatives. We continue to make progress in adapting our go-to-market approach. As we've said in the past, this means evolving and training our commercial teams to sell a broader range of solutions, while scaling the mid-market organization to both our existing telesales approach and our upcoming automated onboarding process. We take the time and resources invested in those projects very seriously and are overall confident our investments will show positive returns in the midterm. On the people front, although we have not fully tackled attrition yet, which, by nature, is a lagging indicator, I'm convinced that things are moving in the right direction. I'm excited to see the renewed level of energy across the whole company. We continue to improve the pace of hiring with a focus on the right talent quality. We expect to meet our hiring cadence in 2019 and to see these investments starting to yield positive results and positive returns in the second half of the year.

In 2019, we're keenly focused on executing on 4 priorities: first, growing mid-market clients in a scalable and profitable way through the deployment of our self-service platform; second, further increase adoption of our self-service platform to all our clients including large ones for them to consume...
our solution increasingly on their own terms; third, continue to grow our mobile app business; and fourth, accelerate the growth of our consideration solutions as part of the full-funnel marketing solution strategy to help our clients win new customers.

Based on our current expectations, we anticipate accelerating growth momentum in 2019 driven by healthy business fundamentals and the results of our investments in key areas, such as our mobile app business and new solutions to drive global marketing goals for our clients, the adoption of our self-service platform and talent acquisition. While such investments should drive short-term dilution in our adjusted EBITDA margins in 2019, we expect them to see the rebound in growth in 2020 and beyond.

As I said, we feel confident about our business. The completion of our $80 million share buyback and my personal purchase of Criteo shares in Q4 are signals of this confidence. In closing, I feel good about our progress, I feel good about the inflection point in our trajectory and I feel good about the positive momentum ahead of us. Our long-term opportunity is massive and our 2019 goal is to focus on executing along those plans.

With that, I'd like to turn the call over to Benoit to discuss our performance and guidance in detail. Benoit?

**Benoit Fouilland - Criteo S.A. - CFO**

Thank you, JB, and good morning, everyone. As usual, I will walk you through our performance for the quarter of the year and share guidance for Q1 of fiscal 2019.

Revenue was $670 million in Q4 and $2.3 billion for the full year 2018. Revenue ex TAC, the key metric we focus on to monitor the business, increased 0.1% at constant currency to $272 million in Q4 and grew 2% at constant currency $966 million in 2018. The Q4 growth was largely driven by a record holiday season the U.S. and in Europe, and was well-balanced between our existing and new clients despite continued headwinds. In term of currency impact, foreign exchange changes in Q4 cost us $5 million versus last year and about $2 million more than what we had anticipated in our last outlook. This translates into a revenue ex TAC overachievement of $12 million above the high end of our guidance for Q4.

Looking at the Q4 operating highlights. We improved same clients revenue ex TAC, which turned flat compared to a 5% decline in Q3. We grew the number of clients by 7%, roughly in line with expectations, while maintaining retention at close to 90% for all our solutions combined. This brings the number of clients to about 19,500. We continue to expect an acceleration in net client addition starting in the second half of 2019, once the onboarding module of our self-service platform is fully rolled out at the end of Q2.

Even a full year after their launch, Criteo Customer Acquisition and Criteo Audience Match, part of our full-funnel marketing solutions, grew strong triple digit. Our app revenue ex TAC continues to see strong traction growing 54% year-over-year. And we now access close to 3,500 large publishers through Criteo Direct Bidder compared with 2,600 in Q3, adding new premium partners like NBC, Mediavine and The Washington Post.

Turning to the Q4 regional performance. In the Americas, revenue ex TAC grew by 1% at constant currency, including 4% in the U.S., driven by a strong holiday season, continued solid performance with our retail media technology platform and strong app business. EMEA revenue ex TAC decreased 4% at constant currency, improving from Q3 and in line with expectations. We observed an increasing seasonal peak in many European markets resulting in the strong performance around Black Friday. We also saw good improvement in the mid-market and strong traction with Middle East clients offset by softness in the U.K.

In line with expectations, GDPR impacted the region’s revenue ex TAC by about $5 million. And in APAC, revenue ex TAC grew 6% at constant currency or 8 points above Q3, driven by strength in our large client business in Japan and Korea and healthy improvement in our mid-market operation in the region. Revenue ex TAC margin declined 50 basis points to 41% in Q4, in line with our previously discussed expectations that margin will normalize at a lower level compared to recent peaks. Revenue ex TAC margin for 2018 improved 1 point to 42%, mainly driven by higher margin levels in apps over the first three quarters of the year. Shifting to expenses. Other cost of revenue increased 22% in 2018, reflecting flat headcount over the period and lower equity awards compensation expenses.

Headcount-related expenses represented 72% of GAAP OpEx in Q4 and 74% in 2018, both down 1 point compared to the prior year period. We ended the year with over 2,700 employees, down 1% year-over-year and flat relative to Q3. We have implemented several programs to reduce...
attrition and accelerate our hiring cadence, in particular in our sales organization. On a non-GAAP basis, operating expenses increased 6% to $149 million in Q4 and 2% to $581 million in 2018. On a non-GAAP basis, by function, R&D expenses increased 2% in Q4 and 6% in 2018, partially driven by non-people cost and despite the 4% reduction in headcount to over 670 R&D and product engineers. We expect to grow R&D investment by just over 10% in 2019. Sales and operation OpEx increased 1% in Q4 but declined 1% in 2018, driven by a 1% decrease in headcount to close to 1,600 in line with expectations.

Quota-carrying employees declined 2% year-over-year to more than 730, but grew 4% compared to Q3. We expect sales and operations non-GAAP expenses to grow by around 10% in 2019.

And G&A expenses increased 27% in Q4, mostly explained by onetime item and 8% in 2018 driven by a 6% increase in headcount to close to 500 employees, including transferred teams from other groups as well as one-off bonus adjustment and severance expenses in Q4.

Moving to profitability. Adjusted EBITDA declined 12% at constant currency to $105 million in Q4, driven by the 6% increase in non-GAAP OpEx and the revenue ex TAC performance. Our Q4 expenses were in line with expectations translating into a 100% flow-through of the top line beat into adjusted EBITDA.

In 2018, adjusted EBITDA was flat at constant currency at $321 million. From a margin standpoint, we saw a 480 basis point decline in the Q4 margin to 38.5% of revenue ex TAC, in line with expectations. And a 30 basis point improvement in our 2018 adjusted EBITDA margin to 33% or 1 point above the higher end of our full year guidance.

Depreciation and amortization expenses increased 25% in Q4, driven by higher hosting equipment depreciation and depreciation of intangible assets due to recent acquisitions. In 2018, depreciation and amortization grew by 14%. Equity award compensation expense decreased 50% in Q4 and 7% in 2018, driven by the stock price performance over the period and equity forfeitures, in particular, in Q4. Excluding equity grants made in the context of the HookLogic, Storetail and Manage acquisitions, equity award compensation represented less than 6% of revenue ex TAC in 2018, below our original estimates of 6% to 7% provided early 2018.

Financial expense declined 21% in Q4 and 47% in 2018, largely driven by discontinuing our hedging transactions on long-term loans to our U.S. and Brazilian entities. Our effective tax rate was 30% in Q4 and 32% in 2018, in line with our 32% projected tax rate for 2018. As a result of the U.S. BEAT tax and lower net discrete items over both periods, provision for income taxes increased 15% and 46% in Q4 and 2018, respectively. Net income for Q4 decreased 20% to $42 million, driven by a 12% decrease in income from operations and the higher tax expense.

In 2018, net income decreased only 1% to $96 million, as a significant increase in taxes offset a 7% increase in income from operation and the much lower financial expense over the period. As a result, adjusted net income per diluted share decreased 31% to $0.84 in Q4 and 8% in 2018 to $2.49.

Cash flows from operations increased 8% to $86 million in Q4, driven by favorable changes in working capital and lower income taxes paid due to timing effects and grew 6% in 2018 to $261 million. Our transformation of adjusted EBITDA into operating cash flow was consistent in both periods reaching 82% and 81% in Q4 and 2018, respectively. CapEx increased 78% in Q4, driven by the phasing effect in the cash out of data center equipment as well as capitalization of development costs for internal IT projects. In 2018, total CapEx was $125 million, growing 16% and representing about 5% of revenues in line with plan. As a result, free cash flow decreased 25% to $40 million in Q4 and only 1% in 2018 to $135 million, representing 42% of adjusted EBITDA, in line with our 3-year historical average.

Finally, cash and cash equivalents declined $50 million year-over-year to $364 million. This is a net result of our free cash flow generation over the period, offset by our acquisitions of Storetail and Manage, the completion of our $80 million share buyback program and a $21 million negative currency impact on the cash position over the period.

In Q4, we completed our $80 million buyback program approved in October and repurchased 3.5 million shares at an average price of $22.86. Early February, we cancelled approximately 50% of the repurchased shares and plan to limit future dilution to shareholders during the next 15 months approximately, by allocating the remaining 50% shares to satisfy equity obligation to employees in lieu of issuing new shares. We are open to
considering further opportunity to buy back shares in the future if conditions are right. In fact, we expect to request an authorization to increase our flexibility to buyback and subsequently cancel shares at our next Annual Shareholder Meeting to be held in Q2.

I will now provide our guidance for the first quarter and fiscal year 2019. The following forward-looking statements reflect our expectation as of today, February 13, 2019.

In Q1 2019, we expect revenue ex TAC between $233 million and $235 million on a reported basis. This implies constant currency growth of 1% to 2%. We expect year-over-year ForEx changes to be a headwind to reported growth of about $10 million or 400 basis points. With regard to the full year 2019, we expect to grow revenue ex TAC between 3% and 6% at constant currency. Using our ForEx assumption, this means revenue ex TAC of approximately $981 million to $1,010,000,000. Compared to 2018, we see ForEx changes having a negative impact of approximately $14 million or 150 basis points of reported growth. We expect accelerating momentum throughout the year. While we had previously signaled our ambition to grow double-digit in the second half of 2019 and are clearly confident about the direction of the business, our $12 million beat in Q4 creates a more challenging comparison of approximately 500 basis points of Q4 2019 -- for Q4 2019. As a result, we think it is prudent to reflect this in our guidance and suggest we will grow in the 6% to 8% range on a year-over-year growth basis at constant currency, as we exit 2019.

With this commentary, we are not signaling any incremental weakness, rather the opposite. We feel good about our momentum and are simply adjusting our outlook to reflect our stronger Q4. On the profitability side, we expect Q1 2019 adjusted EBITDA between $59 million and $61 million, impacted by stronger hiring as well as our global internal 2019 kick-off event in January. For 2019, we expect adjusted EBITDA margin of approximately 30% of revenue ex TAC, as we resume higher levels of investment to feed a rebound in growth and profitability in 2020. As usual, FX assumptions supporting our guidance for the first quarter and fiscal 2019 are included in our earnings release.

In closing, I'm pleased with the inflection points in our trajectory and the positive momentum we see for the year and the midterm. We have large and exciting opportunities ahead of us and we feel we have the right assets to capture them.

With that, let me now turn to your questions.

QUESTIONS AND ANSWERS

Operator
(Operator Instructions) And our first question will come from Doug Anmuth of JP Morgan.

Douglas Till Anmuth - JP Morgan Chase & Co, Research Division - MD

I have 2. Just first on the new solutions, you talked about representing 13% of revenue, I think revenue ex TAC. Can you just talk about what's in there beyond the Criteo Retail Media business? And then how you think about the trajectory going forward? Do you still expect that to reach 30% of the business from the time you laid out -- 3 years from when you laid out that initial target? And then secondly, can you just comment on how you think about Chrome risk and any potential changes that Google may make around the browser going forward?

Jean-Baptiste Rudelle - Criteo S.A. - Co-Founder, Executive Chairman, CEO & Member of Advisory Board

This is JB. So our new solution. So you're right, there is a component, which is retail media. And the rest of it is, I would say, broadly speaking, all our consideration solution. So the ability to help our clients go after the full-funnel opportunity, especially the upper funnel. So in the mobile app world, this translates into mobile app installs. As you know, we acquired Manage last year, and we are doubling down on this app install opportunity, which is a very big market. And we have a similar strategy in the web where our familiar product called CCA, Criteo Customer Acquisition, is also getting a good traction. So when we combine all of this together, including the retail media, this is where we are at 13%. So as we said, we have a
goal and aspiration to get to a 30% in 3 years. And we feel good, we're on track with that. We realize we have a long way to go. But as of today, those different product lines are showing very solid velocity.

Second question, Chrome. So I know it's tempting to draw an analogy between Chrome and Safari. But Google and Apple are in very different situations. As you know, Google is a leader in the ad supported internet ecosystem, unlike Apple. Google controls more than 60% of the browser market and has an even more dominant position in the digital advertising market. As you know also, Google is under a high level of scrutiny regarding their business practices, both in the U.S. and in Europe. Given all of this and although we cannot guarantee, of course, that they will not replicate an exact ITP-like feature, we believe it's highly unlikely that Google will take advantage of its control over Chrome to restrict the ability of other digital advertising players to compete in this market. As a matter of fact, we believe that any change promoted by Google in the way data is collected and processed will not only maintain, but hopefully improve the ability of all players in the ecosystem to compete in a fair way. And all in all, we'll be extremely vigilant, of course, to ensure this fairness is maintained.

Operator

Our next question comes from Richard Kramer of Arete Research.

Richard Alan Kramer - Arete Research Services LLP - Senior Analyst

I guess, I'd like first-off to understand or hear your thoughts on the rising TAC and the overall take rate heading back towards 40%. What's really driving that? Has it been a competitive decision or a newer product having a lower take rates? Or is somehow inventory getting more scarce or expensive? Certainly, it was noticeable that the rise in TAC was most pronounced in Europe. And I guess, as a second question, more broadly for the business, with the shift towards the multiproduct offering, are you going to have a sales force that's selling different solutions? Or you're moving more towards an account management structure across your sales force? It's been something you've talked about a lot in the past and it's been something that certainly has been a challenge for many other companies in the transitions. So I'd love to understand how you balance the sales between the CPC and outcome-driven sales force and the solution sales force.

Benoit Fouilland - Criteo S.A. - CFO

So maybe let me -- Benoit speaking. Let me take the first one and I'll let JB answer the second one. On the first one, I would not call it a situation of the rising TAC. I mean, if you remember what I've said in prior calls, I mean, we are the -- our revenue ex TAC margin, in fact, had reached some peak. We were more in the 42% -- or slightly above 42%, between 42% and 43%. And I had indicated that we had the intention to normalize the margin. And what we have seen in Q4 is just this normalization process. The peak was -- and that was discussed, the peak was primarily driven by the fact that we've been generating, especially in the first three quarters of the year 2018, slightly higher margins than anticipated on the app inventory and our intention is to normalize. So what you see now is a much more normalized level.

Jean-Baptiste Rudelle - Criteo S.A. - Co-Founder, Executive Chairman, CEO & Member of Advisory Board

Okay. So on the sales organization regarding the multiproduct. Obviously, this is a very good question, and it's not something where we're going to reinvent the wheel that, I guess, thousands of companies have been going through this transition. And we are implementing, I would say, what is the best practice in the industry with basically 2 sales team. One is the main one, the account strategists, which is the vast majority of our sales team and these map their clients. So an account strategist has a portfolio of clients and this has to sell the whole suite of products. And we are training them to be able to do this. So those account strategists are supported by sales experts that are specialized in specific new product lines. And so what's going to happen in practice is you have the clients, we're pitching a new products, so the first time the account strategist is coming to -- with the sales experts. The second time, you're doing the same thing, listening to another pitch and how the sales expert is selling this. And the third time you expect the account strategist to do it on its own. At some point, people need to be trained. And if some people are not trainable to sell the whole product suite, we'll take the appropriate actions for this. So this is a very classic way to do this where you have sales specialists that are supporting and training on specific accounts, the vast majority of our commercial force, which are account-driven per clients.
Operator
Our next question comes from Brian Fitzgerald of Jefferies.

Brian Patrick Fitzgerald - Jefferies LLC, Research Division - MD & Senior Equity Research Analyst
A couple of questions. You've still a lot of cash on the balance sheet, $400 million. You're generating $100 million plus in free cash flow now. So anything that you're looking to use capital on to continue to diversify the revenue base? And then a quick question on the app install business. Good growth there, 54%. Any notable dynamics to call out there with respect to handset shipments and app installs? Is there a disconnect you're seeing between less handset renewal rates? Do app developers have to work harder to get installs? And so they are advertising more. Any comment around that would be great.

Benoit Fouilland - Criteo S.A. - CFO
Yes. I can take this first one on the capital allocation. Yes, you're right, we have significant flexibility in terms of cash on the balance sheet. Even after having executed our share repurchase program, we had more than $360 million of cash on the balance sheet. I think with respect to capital allocation, clearly, we have made a small shift in our capital allocation view in executing our share buyback with the announcement that we have canceled 50% of the shares. So meaning that all the shares that have been purchased during the last share buyback are going to ultimately benefit -- from a shareholders’ standpoint, are going to benefit to the EPS on one hand for the canceled shares, on the other hand with respect to shares that are going to be used to satisfy future equity obligations. That being said, we have still significant flexibility with cash on the balance sheet to be opportunistic on M&A. And our intention is to be, obviously, very disciplined in the way we look at M&A, look at high quality of assets, but still having the opportunity to seize opportunities in the market that could make sense to accelerate our growth.

Jean-Baptiste Rudelle - Criteo S.A. - Co-Founder, Executive Chairman, CEO & Member of Advisory Board
So regarding the app business. There is indeed a macro trend, we have slowing renewal rates of hardware handsets. It doesn't really impact the app market on -- at all. It just means that people are very well equipped and the usage in-app is still growing very nicely. And the -- I would say, there is still this big trend of people spending, relatively speaking, more and more time in-apps versus in the browser, and I think this was a big wake-up call for a lot of our clients in the last 12 months. They realized that they need to invest a lot in apps more than before where for a long time they placed pretty much all the investments on the web with the exception of a few app players. And now you can see that, especially our large accounts, they cannot afford to renew in apps. So if you don't renew apps, so you're just going to die. And it's very clear that the ones they have been investing the more in the apps are seeing the best growth. So this is, obviously, a very good tailwind for our mobile app business. As you know, it's an era we like particularly, because not only it's fast growing, but it's a cookie-less ecosystem, so very clean one. And we intend to keep investing there heavily in the upcoming years.

Operator
Our next question comes from Matthew Thornton of SunTrust.

Matthew Corey Thornton - SunTrust Robinson Humphrey, Inc., Research Division - VP
You talked a little bit about the Chrome browser earlier. Maybe you can just kind of walk us through your latest thinking just on how their module of Firefox data privacy settings are impacting the business if at all? Latest thoughts on just GDPR and ePrivacy, California Data Privacy. Again, just some of the other headwinds or disruptions that could come about here? And then just secondly, a couple of points of clarification. I think you alluded to the expectation that margins will rebound in 2020 and thereafter. I just want to make sure I heard that right. And then also I think you
Jean-Baptiste Rudelle - Criteo S.A. - Co-Founder, Executive Chairman, CEO & Member of Advisory Board

Okay. This is a lot of questions, so we're going to try to address them one by one. So we've already addressed the, especially Chrome question. So we will go into Firefox. So Firefox, there is indeed potentially some change that Mozilla is going to be implementing at the end of Q1. We have factored those changes into our guidance, both for Q1 and the full year. And just for information, I think, we've already mentioned this last quarter, but just repeating this, Firefox represents only 4% of our revenue ex TAC and less than 1% in mobile. So it's a very small chunk of our business. And we're adapting and reinforcing our Identity solution to address this particular case. Regarding GDPR, so I think there is nothing really new there compared to what we said in the past quarters. We don't see this as anything existential for us. It's rather the opposite. I think GDPR has provided some more trust into the ecosystem for the end user, and this is a good thing. And globally, the negative -- the small negative friction that we've seen was smaller than what we expected, less than 2% of our revenue ex TAC. And overall, I think, it's a net positive by having a more sustainable and more trustful ecosystem as a whole. Obviously, we keep on educating our partners to implement GDPR in the right way, in a way, which is the guidelines of the privacy agencies. And there are still a few outliers who tend to implement this in a way, which is not user-friendly, that more and more we see this converging into the right direction. Well, you mentioned also ePrivacy. And there is not a really significant update in this area. I think it's still in the mix. So nothing I think, that we think -- collectively and likely that anything material is going to happen before the May election in Europe. And overall, we believe that companies that have been compliant with GDPR should be better prepared and well prepared for ePrivacy that's going to more or less implement the GDPR spirit in the digital economy.

Benoit Fouilland - Criteo S.A. - CFO

So maybe I'll cover the margin one?

Jean-Baptiste Rudelle - Criteo S.A. - Co-Founder, Executive Chairman, CEO & Member of Advisory Board

Yes, great event.

Operator

Our next question comes from Lloyd Walmsley of Deutsche Bank.
Seth Andrew Gilbert - Deutsche Bank AG, Research Division - Research Associate

This is Seth on for Llyod. Just two, if I can. Are you -- the first one is the, are you trying any of the new fully automated onboarding modules in any of the markets with existing clients? And if you just give us a sense of what you're seeing there? And then as a follow-up, you mentioned the growing appetite for agencies to work with your self-serve tools, just wondering if you could flush that out a bit more and give us a sense for how that might impact the business? May be in terms of client growth or spend per client growth?

Jean-Baptiste Rudelle - Criteo S.A. - Co-Founder, Executive Chairman, CEO & Member of Advisory Board

So yes, very good questions. We are indeed, when we have new products, we always do trials on small scales before we roll them out on large scales. And we're actually working -- well, the product team is working hand-in-hands with the field team to test on small clients, our new products. Not only to look at bugs, but also to make sure that the interface is user-friendly, that people understand where to click, what to do. And this is especially important for self-service functionalities. So we're indeed testing this and making sure when we start the rollout in Q2, everything is going to go as smoothly as possible. You mentioned agencies. So this is -- very much part of this self-service platform. As you know, agencies, they are looking at different ways to add value to their own clients. And for this they need technology tools. And this is what we're providing to them, which means that historically, it's true that our business with agency has been fairly limited with the exception of certain countries, like Japan and Korea, where we've been working with agencies for a very long time. But now we're seeing increasing traction of our technology platform with agencies, especially in the U.S., where they recognize that now they can set up, configure and monitor campaigns on their own. It makes the whole thing much more appealing for them, and we're doing increasing business with agencies across the board.

Operator

Our next question comes from Andy Hargreaves of KeyBanc.

Andrew Rex Hargreaves - KeyBanc Capital Markets Inc., Research Division - Senior Research Analyst

Just a question on the sales force. I think you mentioned that there was still some disruption, even though net hires should improve. So wondering if you could just comment on the churn side? And if the direction of churn, at least, is headed in the right direction and the sales force? And then separately, on retail, sort of, two questions, one, just if you could give us some kind of context for the type of deals that are happening, meaning, size of the company, maybe rough size of the deals and what the scope of those are? And then if we should anticipate any impact to the model over time from the shift to this asset sale at least in that portion?

Benoit Fouilland - Criteo S.A. - CFO

I will cover the quota carrying.

Jean-Baptiste Rudelle - Criteo S.A. - Co-Founder, Executive Chairman, CEO & Member of Advisory Board

You want to cover the quota carrying?

Benoit Fouilland - Criteo S.A. - CFO

Yes, I mean, just rapidly on the sales force, if you look at the dynamics of the quota-carrying figures, in fact, they've slightly -- we observed a trend in Q4 and they were slightly up compared to Q3. So what it reflect is I think we are in a situation where we have now a stabilization of the attrition. And I think from a focus standpoint, we're very focused now on making sure that we restore the hiring cadence, so that we can have this quota-carrying headcount figure to increase during the course of the year.
So regarding our retail media. As I said today, the focus and the traction is really on the head of the market, our largest clients. So the majority is in the U.S., just given the size of the market, this is where we have our biggest clients. We have also some in Europe and a few of them in APAC. So these are very large deals and each of them is a significant part of the business. So right now is -- we are implementing those deals. These are a bit different in terms of sales process. Typically, we answer to a request for information and for quotation. So these are longer-sized sales cycles. But we believe, at the end, it's going to make our business model and our platform even more sticky with those clients, because there is a lot of integration with them. And so it's a new type of setting for us. It's really about -- it's about really selling technology rather than managed service what we used to do in the past. But what's really exciting is that it's allowing us to really have strategic conversation directly with the CMOs and the CEOs of those companies, and I have been meeting personally CEOs and board members of our largest retailer partners and this brings a completely different dynamic, while before we used to be managed by much more low-level people in our retail organizations.

Operator

And our next question comes from Heath Terry of Goldman Sachs.

Heath Patrick Terry - Goldman Sachs Group Inc., Research Division - MD

You mentioned earlier that Firefox was only about 4% of your revenue. Wondering if you can just -- I know you've said before, Facebook's around 6%, wondering if you can just give us a sense to sort of which platforms are the biggest for you now and sort of the most important with all of the changes and sort of shifting user patterns that have happened. And then we realize it's obviously a very small part of your business, but if you could sort of update us on where the relationship with Facebook stands? And where it's now in terms of their importance to your business? And I know you've talked about Chrome, specifically, but maybe more broadly the relationship with Google and Apple as well?

Jean-Baptiste Rudelle - Criteo S.A. - Co-Founder, Executive Chairman, CEO & Member of Advisory Board

Okay. So let me try to cover all of this. So first Facebook, first to clarify, Facebook is more -- around 4% of our business than 6%. It used to be bigger than that. But as you know, Facebook has been restricting access to their own inventory to technology partners like us. This is why -- and this is -- this has been a long-term trend of Facebook over the years, and which -- for us, the impact was that we are reducing our dependency on Facebook, which is now a very small part of our mix. And we are redeploying the money spend from our clients to what we call the open internet, which is all the properties that are not the walled gardens, that are supporting technology providers like us. And this is a very fragmented space. We are working with thousands and thousands of different publishers and I think we give the number of the one where we have direct access where it's above 3,000 of them and it's growing every quarter. So we are really reinforcing our partnership and our access to this inventory on the open internet. Firefox, as I mentioned, this is more in the browser category. It's a very small part of our business and, especially, small in the mobile piece, which is the one, which is growing the fastest for us. Google is much more a partner for us in the respect, and they are - doing - they have an ad exchange, where we are one of the biggest buyers, both in the U.S. and in Europe. And we have a very good relationship with Google. We are building a lot of things in common and helping each of us with our road maps. It's -- this is a relationship that's been going on for 10 years, and we have a lot of things in common in terms of the way we see the market and way we see the future of ad tech.

Operator

Our next question comes from Nick Jones of Citi.
Nicholas Freeman Jones - Citigroup Inc, Research Division - Assistant VP & Senior Associate

I had a question on the -- your ID Graph. I've seen some interesting articles indicating advertisers and publishers might be wanting to consolidate the number of ID offerings they are using. Do you have any commentary on how that would -- that trend would impact Criteo? And how Criteo stacks up against the other ID offerings out there?

Jean-Baptiste Rudelle - Criteo S.A. - Co-Founder, Executive Chairman, CEO & Member of Advisory Board

Sure, absolutely. Very good point. So this is probably one of the area we are the most proud of and the most excited, because it's one of the most remarkable achievements, the ability to build a very robust ID Graph across the board. Just to remind about this, the ID Graph is the ability to recognize the user across the board on multiple devices whenever it's a mobile phone, a PC, a laptop or a tablet. And you are right to point out that there are very few companies in the world capable of doing this. Actually, it's really a handful. And there is a very easy way to measure if your graph is good or not good, because there is also a lot of buzz in this market, is the ability to onboard the CRM data from clients and the match rate that you are capable to offer. And the match rate we have is one of the best, if not the best in some countries, even better than Facebook in Europe. And we've something we are very proud of. And the way we've been achieving this is by a coop program, which is involving more than 80% of our clients. To each of them, it's contributing to a very small fraction of the ID Graph, but altogether that will represent, in terms of shopper, the most robust graph in the market. And this is definitely something, which is a very key asset for us, for our future deployment. And I was always mentioning, we are growing business with agencies. This is something they value a lot. It is very important for them to have the right ability to measure the performance of the campaign and having access to a robust user graph is extremely important.

Edouard Lassalle - Criteo S.A. - VP & Head of IR

Well, thank you, JB. This now concludes our call. We thank, everyone, for attending today. The IR team will be available for any further questions you may have. Goodbye, everyone, and enjoy the rest of your day.

Benoit Fouilland - Criteo S.A. - CFO

Thank you.

Jean-Baptiste Rudelle - Criteo S.A. - Co-Founder, Executive Chairman, CEO & Member of Advisory Board

Thank you.

Operator

The conference is now concluded. Thank you for attending today's presentation. You may now disconnect.