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ATOM.OQ - Q3 2021 Atomera Inc Earnings Call

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CORPORATE PARTICIPANTS

Francis B. Laurencio Atomera Incorporated - Chief Financial & Accounting Officer and Corporate Secretary

Scott A. Bibaud Atomera Incorporated - President, CEO & Director

CONFERENCE CALL PARTICIPANTS

Richard Cutts Shannon Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst

Mike Bishop

PRESENTATION

Mike Bishop

Okay, we'll begin. Hello, everyone, and welcome to Atomera's Third Quarter Fiscal Year 2021 Update Call.

I'd like to remind everyone that this call and webinar are being recorded, and a replay will be available from Atomera's IR website for 1 year.

I'm Mike Bishop, with the company's investor relations.

As in prior quarters, we are using Zoom, and we will follow a similar format with participants in a listen-only mode. We will open up with prepared comments from Scott Bibaud, Atomera's President and CEO; and Frank Laurencio, Atomera's CFO, then we will open the call to questions. If you are joining by telephone, you may follow a slide presentation to accompany our remarks in the Events & Presentations section of our investor relations page on our website.

Before we begin, I would like to remind everyone that during today's call we will make forward-looking statements. These forward-looking statements, whether in prepared remarks or during the Q&A session, are subject to inherent risks and uncertainties. These risks and uncertainties are detailed in the Risk Factors section of our filings with the Securities and Exchange Commission, specifically in the company's annual report on Form 10-K filed with the SEC on February 19, 2021. Except as otherwise required by federal securities laws, Atomera disclaims any obligation to update or make revisions to such forward-looking statements contained herein or elsewhere to reflect changes in expectations with regards to those events, conditions and circumstances. Also please note that during this call we will be discussing non-GAAP financial measures as defined by SEC Regulation G. Reconciliations of these non-GAAP financial measures to the most directly comparable GAAP measures are included in today's press release which is posted on our website.

Now with that, I would like to turn the call over to our President and CEO, Scott Bibaud.

Go ahead, Scott.

Scott A. Bibaud - Atomera Incorporated - President, CEO & Director

Thanks, Mike. Hey. Good afternoon and welcome to our Q3 update call.

The semiconductor industry is in a very unusual period which we believe provides a tailwind for compelling new technologies and is creating the type of long-term opportunities that will benefit Atomera's MST technology and our licensing business model, so before I go into the details of our last quarter, I'd like to take a few moments to share with you how the macro environment will affect Atomera's strategy. Much has been made of the acute supply shortages plaguing our industry, particularly in automotive components. In reality, these challenges cut across the spectrum of electronic products, and most predictions are that those shortages will continue at least into 2022. As a result, fabs have been focused on solving near-term capacity constraints rather than executing on product costs and performance improvements. Of course, they understand that, when

times change, they'll need to react quickly with new technology not only to help avoid a repeat of this situation in the future but also to maintain or grow market share and protect profit margins as supply normalizes.

In a dramatic departure from industry norms, foundries are announcing weaker price increases. Suppliers are demanding 12-month noncancelable orders. And those with capacity are stealing share from those without, leading to record industry revenues and profitability. Supplier power is at its peak. The total IC market is forecast to grow 24% this year alone, so our customers have built up significant cash war chests to invest in their future. Semiconductor industry is also being affected by geopolitical forces like never before. U.S.-China trade tensions are driving governments around the world to look at building or shoring up self-sufficient semiconductor infrastructure to enhance their own security.

The result of those 3 unusual macro factors is an unprecedented upcoming period of CapEx growth. It seems that, every week, we hear more announcements of new fabs and higher CapEx forecasts from the big industry players, including TSMC, Samsung, Intel, TI, Sony, UMC, ST, Renesas and Infineon. According to IC Insights, industry CapEx growth in the next 5 years will be 60% higher than the last 5 years.

So how does all this affect Atomera? Well, clearly we will benefit from the focus on R&D from companies flush with resources. Big CapEx budgets offer the best opportunity to adopt MST for production since it's easier to add MST deposition tools to a new fab than to squeeze them into a legacy fab that may be running out of floor space. Those focused on the bleeding edge have the money to investigate how MST can help them bring the newest nodes to market faster. Some market players are spending big to add capacity in legacy nodes, but they have to be sure that, when they build those new fabs, they can fill them. And MST will allow them to differentiate, grow market share and drive higher volumes, which will certainly help. For the intermediate players who don't have the resources to build giant fabs, they will be looking at a strategy of high-volume specialty processes and [what might] otherwise be commoditized nodes, a perfect fit with what MST can deliver to their product portfolio.

Finally, some parts of the industry are in a CapEx arms race that requires they spend at least at parity with their competitors. For them, the path to winning will involve better manufacturing efficiencies, higher yield and better performance, all places where MST can add value. It's clear that our potential customers also see these opportunities with MST and want to take advantage. In summary, we see the industry entering into a massive round of investment, which we expect will benefit MST in many ways.

Consistent with much of the pandemic, our customer pipeline is unchanged. As we've said in the past, some of our customers have been so distracted by managing the supply shortage that we've experienced slowdown in our progress, especially at foundry partners, whereas some of our other customers, especially IDM partners, seem to be more consistently staying on track and even looking at ways to allocate more resources to MST despite their supply constraints. For the first time in more than a year, we've been able to get out on the road to see customers at their facilities and have the type of detailed discussions necessary to generate new business. I'm pleased to tell you that every single one of our customer visits over the last quarter was positive and was focused on either advancing existing work or starting new engagements. For many of our customers who are in the thick of the capacity crisis, the focus is on starting work with MST early, even before we can get access to R&D wafer runs, by designing with MSTcad, doing early EPI deposition work and planning the details of future wafer runs so we are well positioned to slingshot into product development as soon as the shortage period subsides.

Work with our JDA partner is well underway with strong progress being made towards the objectives set out at the beginning of the JDA. In particular, our partner has been depositing high-quality MST on wafers built in their fab and conducting tests called out in the JDA. In addition, our pipeline of potential new JDAs has expanded this past quarter beyond what we were working on in Q2. The reason why we are seeing expanded JDA opportunities is because of the very compelling data we can show customers in our key technology focus areas. In the last quarter, Atomera has met with a lot of potential customers about MST SP and its use in 5-volt power devices. Almost universally the feedback is that we are reaching performance levels that are the best available in the industry, but it's important for our customers and investors to understand that MST SP is just an example of how MST can both -- be applied to almost any technology node or application area to achieve significant performance advantages. Many of our customers absorb the data in these meetings and start investigating whether they can use MST to enhance other critical product areas. Of course, our team is always very enthusiastic about helping them take on those challenges.

During our travels, we are also able to verify that the breakthrough performance we've identified using MST on RF SOI wafers is indeed solving an intractable industry problem. For the first time, this quarter, we've been able to show our own measured data to potential customers for proving that using MST on RF SOI wafers will provide significantly higher performance, enabling more advanced and efficient implementations of the next

generation of 5G cellular RF chips. We have also continued to work internally and with customers on the use of MST in the most advanced nodes. Even beyond our key technology focus areas, MST is exhibiting other technical benefits that will also provide a significant commercial opportunity.

As an example, recently, we identified some additional high-potential MST benefits for use on high-k/metal gate products which are used at 28 nanometers and in virtually all the FinFET and gate-all-around nodes. Atomera has been working with Professor Suman Datta's group at Notre Dame to verify the performance benefits for MST on gate-last high-k/metal gate devices. Professor Datta was previously recognized by Intel for the development of Intel's high-k/metal gate process. A recent finding has shown that MST reduces stress-induced leakage current or SILC, which is a key parameter in reliability improvement reducing bias temperature instability. One of the known issues with high-k/metal gate is that bias temperature instability limits the tolerance for voltage overdrive and hence the current of high-k/metal gate CMOS devices.

This new discovery of a 2 to 3x reduction in stress-induced leakage current is on top of the already demonstrated benefits of MST in high-k/metal gate devices, namely 23% higher electromobility and up to a 2.7x lower gate leakage. So a manufacturer using MST in high-k/metal gate devices can see significantly improved performance by higher electromobility and by using overdrive on their circuits without impairing reliability. All of this can be achieved while lowering the device's power consumption through the improved gate leakage MST provides. Because this is brand-new information, we're just starting to share with potential customers today.

As you know, Atomera has been working with a vendor to bring up a new 200- and 300-millimeter Applied Materials Centura EPI deposition tool in a state-of-the-art research facility. For most of the quarter, we've been successfully depositing MST film on both types of wafers and in parallel have been in discussions with the vendor concerning expectations of ongoing quality levels enabled by the addition of some further equipment. I'm pleased to let you know that, as of this week, we have finalized our agreement and have taken formal acceptance of the tool. Therefore, this month, we'll be able to commence delivering MST wafers to customers, in addition to conducting the development work on 300-millimeter wafers necessary to support efforts in the most advanced nodes. We are very excited to have this new state-of-the-art EPI tool along with its sophisticated cleaning, inspection and metrology equipment. There's no doubt that it will help us to develop a wider set of markets for MST technology and accelerate our turnaround time for customers and for internal R&D.

Finally, I'd just like to point out the excellent progress being made by our team in building our patent portfolio. As of the end of Q3, we're now up to 298 patents issued and pending worldwide, which represents growth of over 20% year-on-year. Our portfolio comprehensively covers MST in method, device and enabling architectures; and is made more valuable by the fact that it is discoverable and therefore defensible. The licensing life of our technology is also longer because, in addition to our patents, we license know-how, which does not have an expiration date.

In summary, this quarter, we have continued to make great technical progress, which we believe will be translated into licenses in the near future. As we found in our recent travels, face-to-face interactions accelerate the market to embrace MST. And as we get on the road more extensively, we are optimistic that we will continue to drive adoption by customers to meet the strategic imperatives coming out of today's capacity crunch. We are working with customers who are sitting on abundant cash resources and will spend it on technologies that will give them a long-term competitive advantage, providing a superb opportunity for them to adopt MST and propel it to broad penetration. Between the macro of this market and the micro of our technology, Atomera is positioned extremely well to take advantage of this remarkable period in the semiconductor market.

Now I'll turn the call over to Frank to review our financials.

Francis B. Laurencio - Atomera Incorporated - Chief Financial & Accounting Officer and Corporate Secretary

Thanks, Scott.

At the close of the market today, we issued a press release announcing our third quarter 2021 results. This slide shows our summary financials, which I will discuss in more detail.

Our GAAP net loss for the 3 months ended September 30, 2021, was \$4.2 million or \$0.19 per share. In the third quarter of 2020, our GAAP net loss was \$3.6 million, which was also \$0.19 per share. Net loss per share was the same in both periods because our weighted average shares outstanding increased to 22.6 million in Q3 2021 compared to 19.3 million in Q3 2020.

Sequentially, GAAP net loss increased to \$4.2 million in Q3 from \$3.7 million in Q2, reflecting a \$424,000 quarter-on-quarter increase in operating expenses and \$52,000 of interest expense in Q3. Net loss per share increased to \$0.19 per share in Q3 compared to \$0.17 in Q2 due to the higher net loss, while weighted average shares outstanding increased only slightly from 22.5 million to 22.6 million.

At this point, I'd like to talk in a little bit more detail about the accounting [for and the lease] of our new IP tool, which as Scott said in his remarks we have now officially accepted. Acceptance is a key term because, under the lease contract, formal acceptance triggers our monthly payment obligation. Although we've been able to deposit MST using the new tool for several months now, we waited to tender our acceptance until we were comfortable with the supporting equipment around the tool to consistently ensure high-quality wafers for delivery to customers even at the more advanced nodes. The lease has a 5-year term and is considered a finance leased under GAAP, which means we account for it like an asset purchased with vendor financing and we recognize both amortization and interest expense. The amortization, which is recognized in R&D expense, will be a constant \$319,000 per quarter for the term of the lease. The cash payments on the lease are a fixed \$150,000 per month or \$450,000 per quarter, but over the term of the lease, the mix between paying down principal and interest will change, with the interest portion declining each month.

Total OpEx went up by \$557,000 in Q3 2021, as compared to Q2 -- I'm sorry, to Q3 of 2020. G&A increased by \$315,000 between those periods mainly due to higher legal expenses for patent filings and higher D&O insurance [payments]. R&D expense increased by \$182,000 primarily due to \$212,000 of amortization [expensed] in Q3 related to the tool lease. Sales and marketing expenses were \$267,000 in Q3 of 2021, an increase of less than \$100,000 over the same period in 2020.

Comparing expenses in Q3 over Q2 of 2021. R&D expenses of \$2.2 million in Q3 were up by \$163,000 over Q2, also reflecting the amortization [expense] from the tool lease. G&A expense increased by \$131,000 quarter-over-quarter due to the timing of [IP legal] expenses. And finally, sales and marketing increased by \$130,000 sequentially due to bringing onboard a new SVP of marketing and business development and retaining a new PR firm. Our press release and this slide contain a reconciliation between GAAP and non-GAAP results, but one item I'd like to point out is that, while we exclude the interest expensed on the tool lease from our non-GAAP loss, we don't back out amortization expensed associated with lease.

Non-GAAP net loss in Q3 2021 was \$3.4 million compared to \$2.7 million in Q3 of 2020, reflecting a \$606,000 increase in non-GAAP operating expenses. In Q2 of 2021, non-GAAP loss was \$2.9 million.

Lastly, stock compensation expense, which is noncash and continues to be the biggest difference between GAAP and non-GAAP results, was \$756,000 in Q3 of 2021, \$847,000 in Q2 of this year and \$829,000 in Q3 of 2020.

Cash balance at September 30, 2021, was \$31.8 million compared to \$34.3 million at June 30. The \$2.5 million decline reflects \$2.8 million of cash used in operating activities, offset by cash inflow of \$241,000 from financing activities.

As of September 30, 2021, we had 23.2 million shares outstanding.

As Scott mentioned in his remarks, we're optimistic about the progress we are making with our first JDA customers -- customer, and we see a bigger pipeline of new JDAs that could help accelerate commercialization of MST-enabled products. For the ongoing JDA, we continue to expect to reach the milestones remaining in that contract in the next several quarters, but we cannot give guidance on the amount or timing of revenue recognition from those milestones, so our guidance is for 0 revenue in Q4. Consistent with past practice, we are not providing revenue guidance beyond the current quarter.

Our operating expenses through the first 3 quarters of this year totaled \$9.5 million, so I'm comfortable saying that we expect our full year non-GAAP operating expenses will come in toward the lower end of the guidance range of \$13.25 million to \$13.75 million. In our next earnings call, I will

provide more specific color on our 2022 spending plans, but over the coming year, we are expecting to increase our R&D expenses as we add engineering head count. And our marketing expenses will go up as we continue to expand our efforts with fabless customers.

With that, I will turn the call back over to Scott for a few summary remarks before we open the call up for questions.

Scott?

Scott A. Bibaud - Atomera Incorporated - President, CEO & Director

Thanks, Frank.

I'm glad we're able to share with you the highlights of this last quarter. As we get out on the road, it's clear that our customers appreciate both the benefits of MST and our engineering execution to showcase its potential. We believe customers will take advantage of the upcoming industry investment cycle to incorporate Atomera's technology and expand their competitive advantage in the market. Our team is excited to support this challenge, and the resultant licenses will establish Atomera as a leader in the semiconductor industry.

Mike, we will now take questions.

QUESTIONS AND ANSWERS

Mike Bishop

(Operator Instructions) And we will attempt to answer as many as we can. (Operator Instructions) Right now our first question comes from Richard Shannon of Craig-Hallum. Richard?

Richard Cutts Shannon - Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst

Let's see. A lot of things to ask about here, Scott. First of all, I think I'll ask about your expanded pipeline in JDAs. If we saw your graph -- I notice you haven't had any change in the profile of engagements there, so clearly you're adding customers who were previously in the pipeline now into JDA. So can you maybe talk about the reasons what's -- or why -- what's driving that, either applications or other dynamics that have created that situation right now?

Scott A. Bibaud - Atomera Incorporated - President, CEO & Director

Yes. I think the reason why we're seeing more expanded JDAs is based on those 2 key technologies that I was talking about with the RF SOI and the MST SP. And what we're seeing is customers who are interested in starting to do work on that ahead of this capacity crunch ending. And so we have to structure kind of a program that includes some TCAD and includes some joint R&D work upfront and then ready for when wafers become available for us to start moving forward. At least one of our JDAs is also with customers who we believe can run wafers much more quickly than others because, as I mentioned in my remarks, I would say -- this isn't a perfect statement, but I would say the foundries are more impacted by the capacity constraints than some of the IDMs. And so some of the IDMs have a little more ability to continue to run R&D wafers today even in the capacity crunch.

Richard Cutts Shannon - Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst

That's helpful, Scott. And maybe just kind of quick detail on the topic of these new JDAs in the pipeline here. Are these customers that are like in phase 3 or phase 1, or kind of a mix? How would you characterize where they are as a whole?

Scott A. Bibaud - Atomera Incorporated - President, CEO & Director

Well, some are in phase 3. Some are in phase 1. We have some discussions with other people that we hope will turn into JDAs that aren't in phase 1 yet.

Richard Cutts Shannon - Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst

Okay, great. That's helpful perspective. Let's see here. With your current JDA partner, I think you've given some time frames that you generally expect to see them move to a phase 5 and then eventually a phase 6. From what you know and have seen, so far, in the past quarter, do those time frames still fit?

Scott A. Bibaud - Atomera Incorporated - President, CEO & Director

I mean we -- remember the time frame for the JDA. Last quarter, I gave some explanations about how it -- this is a phase 4 being conducted by a central engineering group in the company. They will then deliver the technology out to other groups that will -- they will have to do some kind of phase 3 level integration work before they go into phase 5 for production. So it's the timing is a little tough to call, but once they get into phase 5, I think that timing is easier to understand. It's about 9 months before they're into volume production.

Richard Cutts Shannon - Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst

Okay, okay. That is helpful. Let's see here. You've talked a little bit about an advanced -- kind of activity in advanced nodes here. The paper that you published [this summer] was very interesting, although admittedly a bit above my head or maybe below my head, whichever is a great way to describe it here. You've noted in the last few conference calls some activity here. Maybe if you can discuss relative to a lot of commentary we're seeing in the industry. We've had a lot of earnings releases and even analyst events from fabless suppliers and equipment makers here in the last few months that are kind of revolving on what's going on here. Maybe can you discuss kind of the applicability of your technology to any of these approaches, extended FinFETs versus gate all around, the nanosheets and things like that? Where can you -- or maybe, if it's easier to describe where you don't think you'd play, that would be a great perspective.

Scott A. Bibaud - Atomera Incorporated - President, CEO & Director

Actually we -- I think our paper gave a little bit of a hint at it. And obviously we are presenting a lot more than that to the potential customers who have the most advanced nodes, but we believe that MST brings very significant advantages both to FinFETs and o gate all around through the open diffusion blocking capabilities that become more and more important as you get down to those very, very small process nodes. There's also a number of other things that we think can be very helpful in the construction of those gate-all-around and FinFET devices. Unfortunately, we -- one thing we can't really do is make our own FinFET devices and prove it out because it's just a super expensive process, so what we are hoping to do is to work with an -- 1 or 2 of those leading suppliers, but when we do get data from doing work with them, they won't let them -- share them with the industry or with investors because they will consider it private data. So we have to talk at a very high level for that, at least for the time being, without giving any specifics, unfortunately.

Richard Cutts Shannon - Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst

Okay. And on the topic of customers and advance nodes, I think everyone is aware that there are basically only 3 companies who can really afford to invest at the very leading edge, so is -- are we kind of looking at a customer base for those nodes here basically [numbers in 3]? Or do you also talk about or work with the fabless guys who want to work with those fabs? How do you, how do we think about the potential customer base?

Scott A. Bibaud - Atomera Incorporated - President, CEO & Director

Yes. So far, we haven't really worked with fabless guys in that area, but we're trying to work with those top 3, obviously, without giving any details about who we are working with, but also I would say we see the memory makers as other folks who -- they're not necessarily making gate all around or FinFETs, but they are making very advanced architectures to try to move to the next level of memory technology. And we also see really great viability for MST there.

Richard Cutts Shannon - Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst

Okay. That's great perspective. Maybe 2 last quick questions. I'll jump out of the line to see if there's other questions here. Scott, I -- you've said this in more than one conference call here, but is it your distinct belief that, when you're entering production, you're almost certainly going to be intersecting a new fab and a new node? Or do you think there's actually -- do you think a possibility of getting into kind of an existing node and then which one will be first? Obviously -- we're obviously very interested in the first one that gets across the finish line. How do you, how do we think about that?

Scott A. Bibaud - Atomera Incorporated - President, CEO & Director

I would say and I think I've said in the past we're doing a lot of work on RF SOI and on the power products. They tend to be in older nodes, and we definitely could intersect one of those in an existing fab. Or what's interesting about some of the CapEx growth that I talked about is that a lot of those players have announced they're adding a lot of capacity into those older nodes. And obviously it's very easy to throw in an extra EPI tool when you're building a \$2.5 billion fab out there [that will] be able to implement MST. So we see great opportunity with existing fabs and with the build-out of the newer ones that people are talking about.

Richard Cutts Shannon - Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst

Okay, that's helpful. Last question for me. I'll jump out of line. Scott, I've asked you this question offline, I think, at least once in the last few years here, but thinking about the other kinds of activities that IDMs and fabless companies undergo to try to push the ball forward on cost performance, power, whatever. And obviously they've been getting these advancements from their internal R&D teams, maybe even from equipment guys and other industry consortium. How do you get a sense of how you fit relative to all the other activities that are going on; and confidence that companies that you're interfacing with, even in -- especially the JDA customer at phase 4, that MST is going to be the, if not an included, approach to their future plans?

Scott A. Bibaud - Atomera Incorporated - President, CEO & Director

Yes. It's a great question because every one of these big companies has got a big pipeline of R&D things that they're working on. And where do we fit with those? And I can only say that the fact that we continue to get new engagements and new wafer runs with those guys says that they consider us in the top tier of R&D projects they would consider. It's very normal for kind of the CTO's office to be looking at 30 potential things they can do in the next year. Maybe they're only going to fund the top 10 or the top 8, but in many cases we find that we're among those top 8 or 10. It's not true in all cases. And we believe that in the cases that we aren't included in the top 10 it's because the customer doesn't quite understand exactly how much benefit that -- we can bring to them. And we hope that we can help sell it to them more effectively.

Mike Bishop

Okay. We have a number of questions coming in on the Q&A window here, and so I'll just go ahead and summarize them. A number of the questions are obviously overlapping from the audience here, so I'll just categorize them and ask a few. The first question: With the build-out of a number of fabs industry-wide, does -- that build-out, will it hurt Atomera? Because once those are all active, the supply of semiconductors will greatly increase. So the question is will -- what's the impact to Atomera once the fab build-out is underway.

Scott A. Bibaud - Atomera Incorporated - President, CEO & Director

Yes. I actually think it proves a great opportunity for us. So think about the semiconductor industry over the years. Back in the '90s and early 2000s, it was more common for there to be massive boom and bust cycles in the industry, where people would build out a bunch of fabs simultaneously. They'd all hit the market and then suddenly there was excess capacity, and profitability declined in a lot of these companies. You can kind of see that the same thing could happen coming ahead here in the future, and there's been a lot of articles written about it. So what's the reaction of companies when they build a fab and they can't fill it? Because when you build a fab, it becomes your first priority to maximize the capacity utilization in that place. It's incredibly expensive to run every single day and so you've got to fill it up as fast as you can. What would they do? Well, they try to -- I mean one thing they could do is sell at a lower cost than everyone else. There's a chance they could do that. And if that's the case, MST could help by allowing them -- by a lot of things we present here about how you make chips, like for example power management chips. So you can shrink them by 20% and then you could sell them at much lower costs. So that would be a great opportunity for someone who has put in a lot of new wafer capacity. For other players who are trying to compete against them, they need to figure out how to differentiate to be able to look a little different and to be able to create their market share and grow it.

So definitely -- and as you dig down into the -- after the fabs are built, what's going to happen next? And what's going to happen next? It just reveals opportunity after opportunity for MST, and so we are out there today talking to customers about that. And I can tell you that they see the same thing and their reaction is they'd like to start working with us earlier rather than later.

Mike Bishop

Great. A number of questions here. We put out a blog a while back on hiring a PR firm, and folks are wondering what the motivation there is for the -- for hiring a PR firm.

Scott A. Bibaud - Atomera Incorporated - President, CEO & Director

Okay, yes. Great question. So as you know, we brought on a new Head of Marketing. He has lots of great ideas about how we'd expand our reach. One of the things that we're going to be trying to do, especially with these new technologies like MST SP and RF SOI, is to more aggressively expand our reach beyond foundries and IDMs, to the fabless players. Now when you're talking about foundries and IDMs, you're probably talking about really 50 or 60 customers who really matter. So it's an amount of people that, with our team here, we can get our hands around and we know, but when you start adding in fabless customers, there's probably hundreds and hundreds more that you need to be concerned with, so one of the ways to get our word out to them is to start doing it through targeted media advertising like with trade journals. And so that's one of the reasons that we've brought on the PR firm. And I know the -- we brought them on in August. And you haven't seen much from them yet, but I can tell you that they're working on things and you'll start to see much more activity from us in the near future.

Mike Bishop

And then we've seen a number of questions here on time line. So there's -- there are a number of questions about how long until phase 5 and then how long then till royalty, so maybe give an overview on what you expect the time line to be for both how long the JDA rolls into production and then maybe what the royalty phase looks like, the timing on that.

Scott A. Bibaud - Atomera Incorporated - President, CEO & Director

Yes. So as you know, it's notoriously difficult to predict. And we try to -- we try not to give exact forecasts on that, but I can give you what I think is my best guess. So with the JDA customers or at least with this JDA customer, as I mentioned earlier to Richard, we have -- they're -- they've installed the technology in the factory, which is a huge step and will make everything run much faster. Once they're completed with the JDA, they're going to tell other businesses inside the company they can start working with MST. Now those guys will have to take MST and integrate it into their products, which is kind of what we would call a phase 3 thing, integrating into their products, but then they don't have to go through phase 4.

That part is done. They will jump straight to phase 5 and then go to production. How long does it take them to adopt and integrate it into their products? I think it will be much quicker than it has been traditionally because they have the tool in their fab. And they can build wafers really quickly and run a lot of experiments and get them done much more quickly, but it is very hard to call until the JDA ends and we start finding out what businesses adopt the technology and how much work they have to do to integrate them. So I would -- I mean, hopefully, I can, I mean, give you an idea that it could be as short as maybe 9 months or so to do that phase 3 [reviewing] before they went into production qualification, but it could be much longer. I can't really say for certain.

Mike Bishop

Okay. And then a question that just came in: With more customers moving phases, do you expect newer customers to move along faster? Or is every customer unique on how they progress?

Scott A. Bibaud - Atomer Incorporated - President, CEO & Director

Yes. So every customer is certainly unique, but let me just say this one interesting phenomenon that's happening. I talked about it in the prepared remarks. We're engaging with a lot of customers today who want to do develop and work with us, but they can't get R&D wafers. So what they're doing is they're saying, okay, let's do a bunch of TCAD and then do whatever we can without a lot of wafers. And then so the day that we get wafers, we have everything ready to go really fast to its product development and, hopefully, get into production [quickly]. Now the way that we've defined phase 1 and phase 2 and phase 3, people who are doing that type of work won't really progress. It won't look like they're progressing through those stages very fast because it's -- phase 2 is about processing wafers and phase 3 is about processing more wafers, so even though we're doing a lot of work, it'll look like they're still in phase 1. We haven't figured out how to give insight to our investors on that yet, but we'll try to do what we can in upcoming calls to give you more insight to where we're doing more of that early TCAD work.

Mike Bishop

Okay. And then after a customer goes into the royalty phase -- we had a question that asks for how many years those -- do you anticipate a royalty stream to last.

Scott A. Bibaud - Atomer Incorporated - President, CEO & Director

Well, if I'm going in negotiating position, that -- the royalty stream will last indefinitely. Of course, everyone will probably try to talk it down to a much shorter time period. I would expect that we'll end up with a point where we're getting royalties on the order -- well, actually I don't want to even say because I'll be negotiating against myself, but I think it's reasonable that we will get royalties for a long period of time, 8, 9, 10 years or more. If you think about what [Arm] does, there's no sunset on the royalty that you get from a device in most -- I mean they negotiate licenses individually with many customers, but in most cases they just continue getting a royalty as long as you produce the chip. And I think that's going to be the model that we're targeting.

Mike Bishop

Okay. So a question is that we referred to 3 areas for MST: MST SP, RF SOI and advanced nodes. How much of the \$450 billion market, in percentage terms, do you think that these 3 areas cover?

Scott A. Bibaud - Atomer Incorporated - President, CEO & Director

Well, RF SOI is a relatively small slice. It's growing rapidly, but only 3 or 4 years ago, it wasn't really a big factor. And it's started to become very important, especially in RF products, so -- and you can -- if you want to see more on how fast that market is growing, you can look at Soitec, who's

the key provider of those SOI wafers. And they have some good data about how their revenue has grown there. For the MST SP, that is a huge market. Yes, I'd hate to quote it because I don't know it off the top of my head, but it's on the order of several hundred billion dollars a year -- no. Sorry. Yes, okay, I'm not going to quote it because I don't remember the number straight off my head. Frank might know, but it's very, very large market. One of the -- there's an article today out in The Wall Street Journal talking about how this industry supply shortage is persisting. And one of the products it talked about which was in shorter supply is something called the power management chip. That is exactly what MST SP is designed to address. And it would not only give people the ability to make higher-performance power management chips but also produce them at much higher volumes because they could do shrinks if they implemented MST SP. So -- and then of course, the -- from a dollar perspective, the leading edge is the most valuable sector in the industry. The wafer count -- I mean wafers they're running in there is not as high, but they sell each wafer for a very large amount of money. And of course, that would give us a bigger royalty opportunity. So altogether I think we're talking about very, very large things.

Mike Bishop

Okay, well, I think we've covered most of the ground that was asked in the questions, so I'll turn it back to you for closing comments.

Scott A. Bibaud - Atomera Incorporated - President, CEO & Director

Well, okay, great. I want to thank you all for attending today's presentation. We're very pleased to be able to share with you the results of the last 3 months and to provide a sense of the excitement we feel inside Atomera.

Please continue to look for our news articles and blog posts to keep you up to date on our progress. You can sign up for them, along with investor alerts, on our website, atomera.com. We look forward to seeing some of you during our scheduled marketing activities, including the Craig-Hallum Alpha Select Conference in November and the Needham growth conference in January. Should you have additional questions, please contact Mike Bishop. We'll be happy to follow up. Thank you again for your support, and we look forward to our next update call.

Mike Bishop

Thank you. And this concludes Atomera's Third Quarter Fiscal 2021 Conference Call. Have a good evening.

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