Rigetti Computing Presentation at 24th Annual Needham Growth Conference
January 10, 2022

Participants

- *Dr. Chad Rigetti, founder and CEO of Rigetti Computing*

- *Taryn Naidu, COO of Rigetti Computing*

- *Brian Sereda, CFO of Rigetti Computing*

- *Quinn Bolton, Analyst, Needham & Company, LLC*

<<Quinn Bolton, Analyst, Needham & Company, LLC>>

Welcome, everyone. Thank you for joining us. My name is Quinn Bolton. I'm the Semiconductor and Capital Equipment Analyst for Needham & Company. We really appreciate you attending the 24th Annual Needham Growth Conference. It's my pleasure to host this presentation from Rigetti Computing. Rigetti is a pioneer in full-stack quantum computing having operated quantum computers over the cloud since 2017.

The company not only builds the quantum computers and superconducting quantum processors that power these systems, but also sells access to its machines through its Quantum Cloud Services platform. On October 6, Rigetti entered into a definitive agreement with Supernova Partners Acquisition Company, a publicly traded SPAC. Upon completion of that transaction, the company will become a publicly listed company traded on the NYSE. Joining me from the company today are Chad Rigetti, CEO; Taryn Naidu, COO; and Brian Sereda, CFO. Chad, Taryn, Brian, thank you for joining us.

<<Chad Rigetti, Founder and Chief Executive Officer>>

Great to be here.

<<Quinn Bolton, Analyst, Needham & Company, LLC>>

Before I hand it over to Chad, let me just remind the investors on the webcast. If you'd like to ask a question, please do so at the bottom of your screen in the ask a question dialogue box.

With that Chad, over to you.

<<Chad Rigetti, Founder and Chief Executive Officer>>

Awesome. Thanks so much, Quinn. First of all, let me introduce myself and Taryn. I have been working on quantum computing for about 20 years. I did a Ph.D. in quantum computing at Yale and worked in IBM – at IBM Research in the quantum computing team for several years before starting Rigetti in 2013. Taryn?

<<Taryn Naidu, Chief Operating Officer>>

My name is Taryn Naidu. I'm the Chief Operating Officer at Rigetti. I've been with the company for around three years. I've been an investor in Rigetti over the last eight years, and I've got to watch what Chad and the technical team have done competing against the likes of IBM and Google and it's nothing short of remarkable. My background is computer science. I've been on the business side for quite some time. And most recently I took the company Rightside public in 2014.

<<Chad Rigetti, Founder and Chief Executive Officer>>

Our mission at Rigetti is build the world's most powerful computers, and to use those machines to help solve the most important and pressing problems in the world today. We have been a pioneer in quantum computing for the better part of a decade. Since I founded the company in 2013, we have invented and patented much of the core infrastructure and architecture needed to bring quantum computing to the mainstream market.

And we have been responsible for many pioneering technology firsts across the industry. We're a full-stack player, fully vertically integrated from chip design and manufacturing, all the way through cloud delivery of our quantum computing power. One of the key milestones we're going to spend some time on today is the introduction of the first truly scalable quantum computing chip in 2021, that's our 80 qubit system. We've been innovating at the hardware level. Quantum computing hardware is truly the fountainhead of advances within this incredibly important and transformative industry and massive opportunity.

We've been innovating at the chip level since the start and have introduced 3Q, 4Q, 16Q, to 32 and 40 qubit systems over the course of many years. And now with our introduction of our 80 qubit system, we've introduced the first truly scalable multi-chip quantum computer into market. And this technology, we'll spend a few minutes on it, addresses the core scalability challenges in bringing quantum computing to the broad market and unlocking this enormous opportunity.

So this is quantum computing is a massive opportunity and it is – has an opportunity to both lead to a very, very large businesses as well as to have a really positive impact on the world. The way we think about this is within the next decade, a single Rigetti quantum computer could become more powerful than the entire global cloud infrastructure that's built up today. That is the power and potential of quantum computing that we are unlocking.

This technology and our solutions have the potential to unlock solutions to some of the most important and pressing problems in the world today from supply chain optimization and truly optimizing investment portfolios. Optimizing and defending and protecting the power distribution system or the energy grid, large scale climate simulations we've got really exciting results out of a partnership with the United States Air Force, for example, on large scale climate simulation, hypersonic simulation, computational fluid dynamics, and in-silico enhanced computational capabilities for in-silico drug discovery.

These are the kind of problems that are going to shape the technology landscape over the next several decades. And our quantum computers, we believe are going to be critical to unlocking that. The way quantum computing works is fundamentally different than traditional computers, whereas traditional computers encode information in bits, which can represent either zero or one. Quantum computers represent information in quantum bits. Quantum bits can represent both zero and one simultaneously.

And as a result, quantum computers are imbued with the capability to solve problems by evaluating solutions to those problems simultaneously. This fundamentally changes what they're capable of. For example, to a quantum computer, it would take a classical computer with more bits or transistors than there are atoms in the visible universe to solve a problem like calculating the structure of penicillin.

A quantum computer with 286 qubits, for example, could solve that problem. That's the kind of potential world changing potential that quantum computers have. We develop our technology and are bringing it to market through a partnership strategy where we work with major customers that represent the long-term demand and have the problems that quantum computing as part of their core operations have the challenges that quantum computing is addressing.

One example is a partnership with Astex Pharmaceutical company where we're developing quantum computing solutions for drug development. We have multiple contracts and an extensive partnership with different Department of Energy entities. One is with, for example, is with Lawrence Livermore National Lab, where Lawrence Livermore scientists are using Rigetti quantum computers over our quantum cloud services platform to carry out calculations that inform the design and development of next generation fusion reactors, ultimately seeking to unlock limitless clean energy from the same reactions that power of the sun.

We also believe that applications and computational or quantitative finance are going to be a major near-term application area of quantum computers and has a substantial both revenue opportunity for Rigetti in the quantum computing industry, but also substantial positive impact on the world through enhancements in the financial system.

Now the challenge in quantum computing, there is an enormous market opportunity that sits ahead of us. The challenge is to build systems that have the scale and the performance needed to unlock practical workloads. So the critical ingredient here, both McKinsey and BCG have studied the market and have said, this is likely to be a multi-hundred billion dollar market, potentially close to $1 trillion long-term in market opportunity. Really, the challenge is developing quantum computing systems that meet the requirements for running practical workloads in a production environment.

And the key challenge along within that has been scalability, delivering systems with 500 to 1,000 physical qubits that can ultimately run the kind of problems that are needed at scale to unlock this market. We have developed a chip technology based on multi-chip solution that unlocks this very long – that unlocks the scalability challenge that addresses that challenge and brings us much closer to this market opportunity. So our proprietary chip is based on a multi-chip solution, we're able to build next generation quantum processors by tiling out individual by repeat use tile shown in teal on the slide here, assembled onto a cap shown in gray.

This solution is modular. It is highly manufactureable, and it brings a level of predictability in our scaling of the technology to meet the market opportunity going forward. This technology is highly – we believe is highly defensible, it's covered by more than 20 patents pending and issued and is underpinned by five plus years of focused innovation at Rigetti. So as we're bringing this technology to market with our 80 qubit system, the first processor with this multi-chip technology. We believe we're in a very strong industry position to translate this technology leadership into product and market leadership and capture market share ahead of competitors.

Going forward, our technology roadmap focuses on delivering systems with ever greater scale, speed and performance. And shown on the slide here is a – our intention going forward to deliver systems with a 1,000 physical qubits and then 4,000 physical qubits in 2024 and 2026. Critically, these systems will carry us through the milestones of narrow and then broad quantum advantage.

Now our broad quantum advantage will lead to accelerations in the rate of revenue growth in the industry, because they represent the moments when quantum computers start to truly surpass the capabilities of what can be done with traditional classical computing on some of these high impact problems we've talked about. Narrow QA is when that advantage is a factor of two or four or 10 along speed, performance or cost. Broad quantum advantage is when quantum computers start to reach beyond what is possible at all with classical computing and really bring intractable problems into a compute-based workflow for the first time.

Rigetti is vertically integrated – is fully vertically integrated from chip design and manufacturing within our own captive fab through cloud delivery of the quantum computing systems that we build over our quantum cloud services platform. One of the critical advantages of our full stack strategy is both the acceleration of a roadmap that it can provide. We can turn new Silicon in between five to 15 weeks, whereas traditional semi fabs or MEMS fabs, would take much, much longer than that. So we can iterate very quickly on the technology. We also own the IP that we develop through this process of internal design and development of our own quantum computers.

When you put these ingredients together of the multi-chip scalability, the speed, the fidelity that we've been able to deliver, we believe we're positioned to be the industry we grew. One example of this is I want to show you a direct comparison between us and our primary public market comparable in IonQ, Rigetti systems are about a 100 times faster than IonQ systems for solving specific problems.

This performance advantage, we believe is going to be durable and leads to a substantially larger market opportunity for Rigetti systems in terms of TAM, but also a higher revenue capacity per unit time, our systems from a competitive perspective versus competitor. When you put these together, we believe we're going to be able to translate this technology advantages as a pioneer in the space into an accelerated path to delivering on the key technology – on the product roadmap needed to unlock the broader market. We anticipate hitting narrow quantum advantage around 2023, 2024 in broad quantum advantage a few years following that.

Each one of these will lead to an acceleration in the rate of growth of revenue across the industry, because customers will find an easier way of adopting and applying the technology at scale going forward. So we have a really strong foundation of the business in place.

So our core technology of quantum computer chips and quantum processor units delivered over the cloud leads to the quantum computing as a service business model. Our core business model is based on time charging of quantum computing delivered over the cloud on an hourly basis today. We have major partnerships with Amazon Web Services as a distribution partner. We recently secured and announced a partnership with Azure as well to bring quantum, Rigetti quantum computers to a – to increase accessibility of our systems in the cloud market.

We have major partnerships with the blue chip players within the United States government advanced technology sector, the United States Air Force, DARPA, NASA, as well as multiple Department of Energy entities like Lawrence Livermore National Lab, Fermilab and Oak Ridge National Lab. Overall over the past between 2018 and 2021, we've been able to secure north of $40 million in total contract value from these major customers and partners.

One of the highlights has been Rigetti Computing was selected along with Fermilab to lead one of the five United States National Quantum Initiative research centers. This is a major multiyear government initiative in the United States to ensure and accelerate U.S. leadership in quantum computing. And we were selected as one of the, the lead industrial partner, of one of the five key centers across the United States in quantum computing.

We have developed an extensive IP portfolio that covers all aspects of our core products from chip design and manufacturing all the way through cloud delivery algorithms and applications for problem solving in quantum processor hardware. One of the key aspects of our portfolio is because we've been an industry pioneer, we entered the space before many of our competitors were really founded. We have been able to capture IP in a very – from a Greenfield era in quantum computing. We believe this IP portfolio is strong and extensive relative to our core business model.

We also have an incredibly deep and talented workforce at Rigetti. We're a highly technical organization. We have more than 40 PhDs from leading research granting institutions around the world like Yale, MIT, Stanford and a seasoned executive leadership team with a public company experience to lead the company going forward. And with that, I'm going to hand it over to Taryn to walk us through the financial section.

<<Taryn Naidu, Chief Operating Officer>>

Great. Thanks Chad. So let's get started with the revenue and EBITDA slide. And so, first and foremost as Chad mentioned, the long-term business model at Rigetti is quantum computing as a service where we deliver access for quantum computers delivered over the cloud. We've been building out this foundational business, but in the near-term, we've been focused as well on what we call development contracts. These are multiyear milestone driven contracts, generally funded by the government, but they are collaborations between the private and public sector. Typically they have range between three to five years and generate about $9 million to $15 million in revenue per contract.

So these contracts have been very healthy for us in a couple ways. Number one, the revenue opportunity with them is great. Number two, this is really a way for us to accelerate product development. We're getting access through these collaborations to many of the world leading experts up and down the stack. And that's really helping us kind of hone in and again, accelerate our product development. And I think lastly, these are long-term customers of QCaaS. And so we have started to build the foundational relationships with the ultimate buyers of quantum-computing-as-a-service.

So when I look through the revenue in 2019, we did about $700,000, in 2020 that grew to about $5.5 million. Of that $5.5 million about 40% of that revenue was generated by QCaaS. And about 60% was through these development contracts. The first nine months of 2021, we announced that we had generated $6.9 million in revenue. And as you see the revenue ramp continue throughout the years, the major drivers that are going to accelerate the revenue are achieving the narrow quantum advantage milestone, and then the broad quantum advantage milestone. So these are the times where we get our quantum computers really into broader tech or into production. And that's going to accelerate the revenue. Just from an EBITDA perspective, the major drivers of the OpEx here are really R&D of next-generation systems and headcount growth. We expect to be EBITDA positive in 2025.

So if we unpack our QCaaS business a little bit more, we've been operating our quantum cloud services since 2017 and we work with customers in two different ways. We have many customers that are working with us directly. These customers are, work with us directly where they're working towards quantum advantage or narrow quantum advantage. It's where performance and customization really are hand in hand as the most important things. We expect to continue to grow this up until 2026, where we'll have 100 plus customers. We're not trying to build out a network of tens of thousands of customers working with us directly. The revenue per customer here we think is going to be fairly large on an annual basis.

We also have been building out a network of distribution partners. As Chad mentioned, we were a launch partner with Amazon's Quantum Service called AWS Braket. We have been working with Strangeworks, Oak Ridge National Lab, and recently announced a partnership where our quantum computers will be available on Azure here in Q1 of this year. We expect to continue to grow this by one or two per year, and the revenue opportunity with this will kind of follow the size of their customer base. This is a way for us to get access to a larger breadth of customers and really make sure that our computer – our quantum computers are accessible where all the customers are and all their major workloads exist.

Now, what we really like about this is, as we achieve over $0.5 billion of revenue in 2026 this will be driven by 14 quantum computers live, multiple generations. The average revenue per machine right now is about $4 million. And we project by 2026 this will be about $40 million per machine. So if you think about a single super computer that is the size of around a basketball court. The nice thing about this is all 14 machines will fit in that same footprint. So the revenue opportunity is dramatic here per square foot.

<<Chad Rigetti, Founder and Chief Executive Officer>>

Awesome. Thank you so much, Taryn. So overall, we feel like this is a world changing opportunity. We're incredibly excited about the future at Rigetti. We have the leading technology approach based on superconducting qubits and within that, we have a distinctive multi-chip solution that we have recently brought to market. Our first multi-chip quantum computer base is a 80 qubit system that's currently in private beta, this proprietary chip architecture accelerates scaling, and our full stack strategy is going to allow us to get to the customer and industry product milestones to capture market share ahead of competitors. We've got an incredibly deep team within the organization to bring this technology to market and to be a leading player in a very, very large global opportunity. Thanks so much for your time.

<<Quinn Bolton, Analyst, Needham & Company, LLC>>

Thank you, Chad. I've got a few questions if I can, and I'll moderate any questions coming in from the audience, but maybe just starting off, one of the things that separates the company is your quantum chip. Can you talk a little bit more about what is on that quantum chip? Is it gates? Is it qubits? And how do you sort of piece these together to make your, that the larger systems?

<<Chad Rigetti, Founder and Chief Executive Officer>>

Yeah, you bet. Thanks Quinn. Quantum computers are based on qubits. So what's on our quantum processor chips are the physical qubits themselves, as well as any associated componentry or circuitry that includes I/O as well. In our architecture, what's highly distinctive about this as we've been focused on solving the scalability challenge for many, many years. There's multiple different challenges that need to be addressed, scalability is the hardest of all. And by doing that, that has led us to this multi chip solution. What we're able to do is to build a single cohesive, large quantum computer by assembling what you, the processor fabric or the qubit fabric itself from multiple different of these teal dyes.

Those, the qubits on different dyes are able to be entangled. They're able to, work cohesively to solve a problem. It's not multiple core processor. It's a single core quantum processor where that core is distributed across multiple pieces of silicon. That technology is made possible, that's all made possible through our 3D integration chip level technology. And with all these chips its really that core qubit technology that encodes and processes the information in the quantum computer.

Now, it is, this approach of a tileable quantum computer at the chip level is beguilingly simple to think about at a high level way to describe it. It's underpinned by five plus years of focused innovation at Rigetti to bring this technology to market, and that has led to substantial IP. What we believe is going to be substantial defensibility around this core approach. We've also seen a movement now from other players in the industry start talking about the need for multi-chip solution down the road. And we are substantially ahead of other players in developing that.

<<Quinn Bolton, Analyst, Needham & Company, LLC>>

Sort of a follow on question. If the quantum chips are sort of the qubits, and the circuitry needed for those qubits, how do you program them? What's the equivalent of the gates or the logic is that done in software or are there other semiconductor based components to do the actual logic implementation?

<<Chad Rigetti, Founder and Chief Executive Officer>>

Yeah, great question. The, we are a full stack player, and so we also build the core software, whether it's firmware in FPGAs that control our quantum processor, or higher up the stack cloud software to deliver access to it. But the critical thing is the way that these quantum computers process information is a lot more like a neural network than a traditional discreet processor, classical processor. So ultimately the way you program these machines is by composing sequences of logic operations at the chip level. Those are orchestrated and executed by a classical control system that is based on classical technology, FPGAs, et cetera, and that's shown behind us in the images here.

So on the chip level, you've got the quantum, the qubits themselves, that, that process, the information, those qubits are trained and programmed, like you develop a neural network or train a neural network ultimately, and controlled by external classical computing architecture. Now, one of the really important innovations that Rigetti has defined and brought to market over the past, seven, eight years is hybrid quantum classical computing. So ultimately our vision and our view of quantum technology is that it's going to solve problems at scale by working in tandem with advanced classical computers or advanced chips from GPUs, CPUs, TPUs, et cetera. And that approach has led us to really viewing our machines as hybrid quantum-classical computers and given, and with that much of the programming of the quantum process is actually offloaded to traditional tooling, traditional frameworks that developers are familiar with.

So from a product development perspective and the platform quantum cloud services Rigetti QCS is a platform that our customers use to access the power of our quantum computers. This platform includes programming tools and familiar languages like Jupyter or Python as well as software written by third parties, and partners to make use of our quantum computer systems in this hybrid environment delivered over QCS.

<<Quinn Bolton, Analyst, Needham & Company, LLC>>

Great. You just sort of addressed one of the questions that came in, which I'll read it just in case there's a component that you'd like to further address, but the question was, what are the pro –

what is the programming model used by your customers? Does Rigetti provide the software development tools or is there some standard third-parties they employ? I think you've covered some of that, but if there's anything else you'd like to address to that question, I'll open that up to you.

<<Chad Rigetti, Founder and Chief Executive Officer>>

Absolutely. We build the core software needed to program and compute with our machines, so the core operating system, if you will as well as the programming tools to develop software. We rely on partners. And we partner with companies across the ecosystem to develop that application layer software, if you will. So we're building the full OS and deploying that over the cloud. We work with partners on different components of it. And then at the application layer, specific software for say, drug development or computational finance or montecarlo simulation is something that often would be brought by a partner.

<<Quinn Bolton, Analyst, Needham & Company, LLC>>

Great. Next question is can you discuss the customers in 2020 and 2021? What exactly are they using Rigetti for – is the revenue all through AWS? If not, what percent is AWS?

<<Chad Rigetti, Founder and Chief Executive Officer>>

Great. Yeah. Taryn, do you want to talk about that?

<<Taryn Naidu, Chief Operating Officer>>

Yeah, so we've – as I mentioned earlier, in 2020 when we did about $5.5 million in revenue, about 40% of that was quantum-computing-as-a-service revenue and the remaining 60% was from the development contracts. And so those development contracts are typically, again they're milestone driven towards technical achievements up and down the stack, delivering next generation quantum computers or working on kind of real-world applications that could be valuable to the end customer.

And so a lot of the revenue has been generated by that. We don't break up how the QCaaS revenue is derived. We've worked through a number of distributors in 2020, between Strangeworks, ORNL and AWS. But also there's a significant footprint of that revenue that was generated from direct customers as well.

<<Quinn Bolton, Analyst, Needham & Company, LLC>>

Great. Now follow up to the first question on software. Can you go into more detail as to how the programming is offloaded to conventional computers? Is pyQuil some sort of cross-compiler and who are the third – who are the hot third-parties?

<<Chad Rigetti, Founder and Chief Executive Officer>>

Yeah, great question. So the – within a computation, the framework to view this is really – within a computation, there are certain steps that are quantum amenable or excelable, and certain

steps where classical computing works just fine. And our view is as a hybrid quantum classical computing company, we build our quantum processors specifically to address and accelerate those quantum excelable steps. If you take that approach, you then got to focus on a really tight integration between the quantum processor and the classical compute that you're using both at the hardware and software level, and that's what we've done. And that's been a big part of the success of the company so far.

pyQuil is, what it – I'll explain what it is by telling what it stands for, it's a Python wrapper for Quil, and Quil is the quantum instruction language. So Quil ultimately allows you to compose programs that include both classical and quantum instructions of basic computational instruction sets at the same level. So it's a Python – a Python-based tool to develop Quil programs. The classical computer can then be used in a similar way that you'd train a neural network. So in fact, you can use the classical computer to train your quantum processor to optimize its performance and get the human out of the loop in some of this programming.

So ultimately there's still a lot of work to be done in developing and augmenting the quantum application software as needed in the ecosystem. What we're really excited about at Rigetti is with our quantum cloud services platform and with our 80 qubit system, we now have the platform and the QPUs if you will, the quantum processing units of the scale and the speed and the performance needed, where they can truly be leveraged and applied in these practical problem instances. So we have an example of this. Recently, we worked with the United States Air Force on a weather mapping problem. We were able to integrate a Rigetti QPU over QCS into an established machine learning pipeline and get really exciting results out of that. So being able to insert quantum computing to address a specific step in a computation through this hybrid model is the power that this unlocks.

On the software and application side there's a burgeoning ecosystem of players at the software at the pure software level. And whether it's the Zapatas, QC Ware, 1QBit, there's a broad set of players at that level of the – at that layer of the stack. And that's just really, really exciting for the industry, because in addition to all the progress on the core technology if you will, the quantum computer chip, the quantum computer system, the cloud delivery, hybrid integration. There's real fast development cycle that's happening on direct application of that to end user problems and building workflow-based software to apply this at scale.

<<Quinn Bolton, Analyst, Needham & Company, LLC>>

Great. Have another couple of questions. First, just on the workload or the applications in the presentation, you talked about a 60 qubit, a 250, a 1,000 and a 4,000 of a systems in your cloud network over time. Do applications scale across all of those platforms, or would a workload or application written for a 60 qubit system need to be reworked to one of the higher qubit count systems?

<<Chad Rigetti, Founder and Chief Executive Officer>>

We anticipate having a pretty high degree of forward compatibility. Obviously, there'll be opportunities with greater scale and greater performance with future systems to augment that software and to take advantage of that scale, but ultimately the foundational rubric of that software and the core components will be forward compatible across future generations.

<<Quinn Bolton, Analyst, Needham & Company, LLC>>

Got it. Another question on just the narrow and broad quantum advantage, does that vary by application, or is that really just more a function of the number of qubits? Do you reach narrow and broad quantum advantage sort of at the same time for – across multiple applications?

<<Chad Rigetti, Founder and Chief Executive Officer>>

That's a fantastic question. And in fact quantum advantage is something that will be reached on an application by application basis. So quantum advantage is when you're really solving a problem, an operationally relevant problem for a customer with performance improvements, whether it's improved accuracy of the solution, lower cost of solution, or faster time to solution, the three metrics that really matter when evaluating the computing technology. Quantum advantage will be reached separately for each application instance, because it's specific to the software stack and the technology, the classical comparator, if you will that you're comparing gates.

Now going forward why broad quantum advantage is so important, with narrow you're – for the first time, we're going to be moving our systems into a production setting with our customers. So rather than working with the research team to demonstrate quantum advantage, and to demonstrate the performance improvement, we'll be working with the production team, right. And we're using it repeatedly daily in production to price derivatives, or to simulate different molecules et cetera. With broad quantum advantage you start to reach problem solving that is intractable with classical computers. And that actually starts to rather taking market share from classical computing alternatives. It starts to grow the market overall for computing, because you're now bringing problems into a compute based workflow for the first time that haven't been there before. And that broad QA will then lead to another inflection point in the rate of revenue growth across the industry.

<<Quinn Bolton, Analyst, Needham & Company, LLC>>

Great. Another question from the audience, this one maybe for Taryn. What are the development contracts you touched on those a little bit in the presentation? Are they mostly with U.S. government agencies? And can you talk about your backlog of development contracts and sort of the expected revenue in 2022 and 2023 from those contracts?

<<Taryn Naidu, Chief Operating Officer>>

Sure. So again, so I think that the primary focus has been on the U.S. government. We have contract – development contracts with DARPA, U.S. Air Force, as Chad mentioned, we have the national quantum institute where we were selected as one of the five. We've also were selected a couple years ago to stand with the first quantum computer in the UK through innovate UK program. So we continue to do well, and it makes up the majority of the total contract value backlog that we have. We have roughly almost half of our revenue projections under contract for 2022 and about a third for 2023.

And so, we continue to build out these relationships. We continue to build out new opportunities, but our goal with this is to not, once you get through that first contract with people, right, and you build a foundation and to build on that work and to get into contract two and to contract three with the different stakeholders. So we've been successful in that. This is something that we didn't spin up this year. We've been working on this very hard since 2017, 2018 to start achieving these relationships and these contracts.

<<Chad Rigetti, Founder and Chief Executive Officer>>

I would add in addition to that, all these development contracts have a component of quantum computing as a service within them. And so the core approach here is to work with partners and customers to bring in resources, financial, and expertise and technical to accelerate our product development towards solving their problem, their challenges, their computational challenges that they're interested in. The DARPA program is a great example. We're working on solving optimization problems of interest to the U.S. Navy. So as we have success on these development contracts, we anticipate that to the QCaaS component to also grow over time, as we then start deploying solutions in a production environment for the endpoint customer.

<<Quinn Bolton, Analyst, Needham & Company, LLC>>

Can you talk to sort of this is another question from the audience, are what problems are being run on your systems today and are the end customers, all government financed at this point. And I guess maybe a longer term question is how do you see the, especially with the QCaS model, how do you see the, the revenue shifting from sort of government to commercial applications?

<<Chad Rigetti, Founder and Chief Executive Officer>>

Yeah, I can talk about quickly. So the kind of challenges that are being addressed today center on problem areas, where there's a high degree of complexity within the computation that's needed, that may mean very large scale datasets where traditional computing just, can't crunch it in a reasonable amount of time or potentially smaller datasets, but where there's a very high degree of correlation within the variables that you need to simulate. And again, that's a challenge that becomes very challenging for classical computers, typically characterized by a degree of complexity in the computation.

Some examples are generative modeling in machine learning. Optimization problems, so whether it's a network optimization or optimizing a fleet of autonomous vehicles for example, or a delivery network as well as problems in computational chemistry, in applying to drug development and material science. Those are the kinds of challenges that, that people are, that people are focused on today, on our platform.

Now, with respect to the government, as the kind of prime customer in all this ,major government investments are, have had a very positive impact on the quantum computing industry

and Rigetti has been very well positioned to capture value from those investments and to leverage and grow relationships within USG and allies. Going forward, we anticipate that Gov is going to continue to be a substantial component of the core business. It's about 40% to 50% of the high performance computing market in a meaningful fraction of the overall cloud computing market.

So we expect government business to be a, substantial component of the business going forward, but the business is much broader than that. And ultimately we anticipate major applications for quantum computing to be, amenable to our solutions for any organization that uses advanced computing today as part of its core operations or as part of its competitive advantage. And that's a pretty broad swath of the Fortune 500 if you will. Industry or pardon me, government plays a critical role and is doing so today to catalyze the development of that capability domestically within the U.S. and within these other nations where we're engaged.

<<Quinn Bolton, Analyst, Needham & Company, LLC>>

Last question since, we're almost out of time. Is AWS the only place that customers can go to run their code, if not, where else can they go and how many other quantum devices does AWS or the other cloud vendors offer up as regular instances?

<<Taryn Naidu, Chief Operating Officer>>

Okay. So yeah, AWS is not the only place to go. You can come directly to our quantum cloud services. If you go to rigetti.com, be able to engage with one of our sales reps there. We're on AWS, Strangeworks is another quantum startup where machines are available, ORNL if you're a researcher within the government, you can go there. And as I said very shortly, we will be available on Azure. With respect to AWS, I believe there were two other launch partners. And I think they've announced maybe another partner now. So there's a handful. And then with Azure, I know there's two other partners on there.

<<Quinn Bolton, Analyst, Needham & Company, LLC>>

Great. Well, I think we're, we're almost out of time. So I just wanted to, to thank the team for presenting at the Needham Growth Conference. Really appreciate you going over the, the company and the story and the exciting opportunity in quantum computing, Chad, Taryn, Brian. Thank you very much for joining us. Happy New Year and look forward to catching up with you soon.

<<Chad Rigetti, Founder and Chief Executive Officer>>

Happy New Year. Thanks so much.

<<Taryn Naidu, Chief Operating Officer>>

Thanks, Quinn.

<<Quinn Bolton, Analyst, Needham & Company, LLC>>

Thank you.

About Rigetti Computing

Rigetti Computing is a pioneer in full-stack quantum computing. The Company has operated quantum computers over the cloud since 2017 and serves global enterprise, government and research clients through its Rigetti Quantum Cloud Services platform. The Company's proprietary quantum-classical infrastructure provides ultra-low latency integration with public and private clouds for high-performance practical quantum computing. Rigetti has developed the industry's first multi-chip quantum processor for scalable quantum computing systems. The Company designs and manufactures its chips in-house at Fab-1, the industry's first dedicated and integrated quantum device manufacturing facility. Rigetti was founded in 2013 by Chad Rigetti and today employs more than 140 people with offices in the United States, U.K. and Australia. Learn more at www.rigetti.com.

About Supernova

Supernova is led by Michael Clifton, who was most recently a technology investor at The Carlyle Group; Robert Reid, a long-time senior partner at Blackstone; Spencer Rascoff, a serial entrepreneur who co-founded Hotwire, Zillow, dot.LA and Pacaso and who led Zillow as CEO for nearly a decade; and Alexander Klabin, founder and CEO of Ancient and former managing partner, co-CIO and co-founder of Senator Investment Group.

Additional Information and Where to Find It

Supernova has filed a registration statement on Form S-4 (as amended, the "Form S-4") with the Securities Exchange Commission (the "SEC"), which includes a proxy statement/prospectus, that will be both the proxy statement to be distributed to holders of Supernova's common shares in connection with its solicitation of proxies for the vote by Supernova's shareholders with respect to the proposed business combination and other matters as may be described in the registration statement, as well as the prospectus relating to the offer and sale of the securities to be issued in the business combination. After the registration statement is declared effective, Supernova will mail a definitive proxy statement/prospectus and other relevant documents to its shareholders. This communication does not contain all the information that should be considered concerning the proposed business combination and is not intended to form the basis of any investment decision or any other decision in respect of the business combination. Supernova's shareholders and other interested persons are advised to read, when available, the preliminary proxy statement/prospectus included in the registration statement and the amendments thereto and the definitive proxy statement/prospectus and other documents filed in connection with the proposed business combination, as these materials will contain important information about Rigetti, Supernova and the business combination. When available, the definitive proxy statement/prospectus and other relevant materials for the proposed business combination will be mailed to shareholders of Supernova as of a record date to be established for voting on the proposed business combination. Shareholders will also be able to obtain copies of the preliminary proxy statement, the definitive proxy statement and other documents filed with the SEC, without charge, once available, at the SEC's website at www.sec.gov, or by directing a request to Supernova's secretary at 4301 50th Street NW, Suite 300 PMB 1044, Washington, D.C. 20016, (202) 918-7050.

Participants in the Solicitation

Supernova and its directors and executive officers may be deemed participants in the solicitation of proxies from Supernova's shareholders with respect to the proposed business combination. A list of the names of those directors and executive officers and a description of their interests in Supernova is contained in Supernova's prospectus dated March 3, 2021 relating to its initial public offering, which was filed with the SEC and is available free of charge at the SEC's website at www.sec.gov. To the extent such holdings of Supernova's securities may have changed since that time, such changes have been or will be reflected on Statements of Change in Ownership on Form 4 filed with the SEC. Additional information regarding the interests of such participants will be contained in the proxy statement/prospectus for the proposed business combination when available.

Rigetti and its directors and executive officers may also be deemed to be participants in the solicitation of proxies from the shareholders of Supernova in connection with the proposed business combination. A list of the names of such directors and executive officers and information regarding their interests in the proposed business combination will be included in the proxy statement/prospectus for the proposed
business combination when available.

No Offer or Solicitation

This communication does not constitute (i) a solicitation of a proxy, consent or authorization with respect to any securities or in respect of the proposed business combination or (ii) an offer to sell, a solicitation of an offer to buy, or a recommendation to purchase any security of Supernova, Rigetti, or any of their respective affiliates.

Forward-Looking Statements

Certain statements in this communication may be considered forward-looking statements. Forward-looking statements generally relate to future events and can be identified by terminology such as "pro forma", "may", "should", "could", "might", "plan", "possible", "project", "strive", "budget", "forecast", "expect", "intend", "will", "estimate", "anticipate", "believe", "predict", "potential" or "continue", or the negatives of these terms or variations of them or similar terminology. Such forward-looking statements are subject to risks, uncertainties, and other factors which could cause actual results to differ materially from those expressed or implied by such forward looking statements. These forward-looking statements are based upon estimates and assumptions that, while considered reasonable by Supernova and its management, and Rigetti and its management, as the case may be, are inherently uncertain. Factors that may cause actual results to differ materially from current expectations include, but are not limited to: the outcome of any legal proceedings that may be instituted against Supernova, Rigetti, the combined company or others following the announcement of the business combination and any definitive agreements with respect thereto; the inability to complete the proposed business combination due to the failure to obtain approval of the shareholders of Supernova or to satisfy other conditions to closing; changes to the proposed structure of the business combination that may be required or appropriate as a result of applicable laws or regulations or as a condition to obtaining regulatory approval of the business combination; the ability to meet stock exchange listing standards following the consummation of the business combination; the risk that the proposed business combination disrupts current plans and operations of Rigetti as a result of the announcement and consummation of the proposed business combination; the ability to recognize the anticipated benefits of the business combination, which may be affected by, among other things, competition, the ability of the combined company to grow and manage growth profitably, maintain relationships with customers and suppliers and retain its management and key employees; costs related to the business combination; changes in applicable laws or regulations; the possibility that Rigetti or the combined company may be adversely affected by other economic, business, or competitive factors; Rigetti's estimates of expenses and profitability; the evolution of the markets in which Rigetti competes; the ability of Rigetti to execute on its technology roadmap; the ability of Rigetti

to implement its strategic initiatives, expansion plans and continue to innovate its existing services; the impact of the COVID-19 pandemic on Rigetti's business; and other risks and uncertainties set forth in the section entitled "Risk Factors" and "Cautionary Note Regarding Forward-Looking Statements" in the registration on Form S-4 and proxy statement/prospectus discussed above and other documents filed with Supernova from time to time with the SEC.

Nothing in this communication should be regarded as a representation by any person that the forward-looking statements set forth herein will be achieved or that any of the contemplated results of such forward-looking statements will be achieved. You should not place undue reliance on forward-looking statements, which speak only as of the date they are made. Neither Supernova nor Rigetti undertakes any duty to update these forward-looking statements.