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# EDITED TRANSCRIPT

GE - General Electric Co Conference Call to Discuss  
Acquisition of Arcam AB and SLM Solutions Group AG

EVENT DATE/TIME: SEPTEMBER 06, 2016 / 12:30PM GMT

## OVERVIEW:

On 09/06/16, Co. announced two hi-tech acquisitions of SLM and Arcam in additive manufacturing equipment and services.

### CAUTION CONCERNING FORWARD-LOOKING STATEMENTS:

This document contains "forward-looking statements" – that is, statements related to future events that by their nature address matters that are, to different degrees, uncertain. For details on the uncertainties that may cause our actual future results to be materially different than those expressed in our forward-looking statements, see <http://www.ge.com/investor-relations/disclaimer-caution-concerning-forward-looking-statements> as well as our annual reports on Form 10-K and quarterly reports on Form 10-Q. We do not undertake to update our forward-looking statements. This document also includes certain forward-looking projected financial information that is based on current estimates and forecasts. Actual results could differ materially.

### NON-GAAP FINANCIAL MEASURES:

In this document, we sometimes use information derived from consolidated financial data but not presented in our financial statements prepared in accordance with U.S. generally accepted accounting principles (GAAP). Certain of these data are considered "non-GAAP financial measures" under the U.S. Securities and Exchange Commission rules. These non-GAAP financial measures supplement our GAAP disclosures and should not be considered an alternative to the GAAP measure. The reasons we use these non-GAAP financial measures and the reconciliations to their most directly comparable GAAP financial measures are posted to the investor relations section of our website at [www.ge.com](http://www.ge.com). We use non-GAAP financial measures including the following.

- Operating earnings and EPS, which is earnings from continuing operations excluding non-service-related pension costs of our principal pension plans.
- GE Industrial operating & Verticals earnings and EPS, which is operating earnings of our industrial businesses and the GE Capital businesses that we expect to retain.
- GE Industrial & Verticals revenues, which is revenue of our industrial businesses and the GE Capital businesses that we expect to retain.
- Industrial segment organic revenue, which is the sum of revenue from all of our industrial segments less the effects of acquisitions/dispositions and currency exchange.
- Industrial segment organic operating profit, which is the sum of segment profit from all of our industrial segments less the effects of acquisitions/dispositions and currency exchange.
- Industrial cash flows from operating activities (Industrial CFOA), which is GE's cash flow from operating activities excluding dividends received from GE Capital.
- Capital ending net investment (ENI), excluding liquidity, which is a measure we use to measure the size of our Capital segment.
- GE Capital Tier 1 Common ratio estimate is a ratio of equity to total risk-weighted assets .

General Electric Capital Corporation (GECC) has been merged into GE and our financial services business is now operated by GE Capital Global Holdings LLC (GECGH). In this document, we refer to GECC and GECGH as "GE Capital". We refer to the industrial businesses of the Company including GE Capital on an equity basis as "GE". "GE (ex-GE Capital)" and /or "Industrial" refer to GE excluding GE Capital. Our financial services segment previously referred to as GE Capital is now referred to as Capital.



## SEPTEMBER 06, 2016 / 12:30PM GMT, GE - General Electric Co Conference Call to Discuss Acquisition of Arcam AB and SLM Solutions Group AG

### CORPORATE PARTICIPANTS

**Matt Cribbins** *General Electric Company - VP, Investor Communications*

**Jeff Immelt** *General Electric Company - Chairman & CEO*

**David Joyce** *General Electric Company - SVP & President and CEO, GE Aviation*

**Greg Morris** *General Electric Company - GE Aviation Additive Technology Leader*

**Vic Abate** *General Electric Company - SVP & Chief Technology Officer*

**Jeff Bornstein** *General Electric Company - SVP & CFO*

### CONFERENCE CALL PARTICIPANTS

**Andrew Kaplowitz** *Citigroup - Analyst*

**Julian Mitchell** *Credit Suisse - Analyst*

**Joe Ritchie** *Goldman Sachs - Analyst*

**Deane Dray** *RBC Capital Markets - Analyst*

**Andrew Obin** *BofA Merrill Lynch - Analyst*

**Nigel Coe** *Morgan Stanley - Analyst*

**Gautam Khanna** *Cowen and Company - Analyst*

**Jeff Sprague** *Vertical Research Partners - Analyst*

**Steve Tusa** *JPMorgan - Analyst*

### PRESENTATION

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#### Operator

Good day ladies and gentlemen and welcome to GE's additive manufacturing investor meeting.

(Operator Instructions)

As a reminder, this conference is being recorded. I would now like to turn the program over to your host for today's conference, Matt Cribbins, Vice President of Investor Communications. Please proceed.

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#### **Matt Cribbins - General Electric Company - VP, Investor Communications**

Good morning and thanks for joining our investor call. Today I'm joined by our Chairman and CEO Jeff Immelt, CFO Jeff Bornstein, GE Aviation President and CEO David Joyce, Head of Global Research Vic Abate, GE Aviation CFO Shane Wright and GE Aviation Additive Technology Leader Greg Morris. Earlier today we posted the press release and presentation on our investor website at [www.GE.com/investor](http://www.GE.com/investor).

As a reminder, elements of this presentation are forward-looking and are based on our best view of the world and our businesses as we see them today. As described in our SEC filings and on our website, those elements can change as the world changes.

Now with that I will turn it over to Jeff.

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### **Jeff Immelt - General Electric Company - Chairman & CEO**

Thanks, Matt, and good morning. We wanted to give investors some context for the two high-tech acquisitions we announced today in additive manufacturing equipment and services: SLM based in Germany and Arcam based in Sweden. With the foundation of these investments combined with our substantial commitment in advanced manufacturing we plan to enter the market for additive manufacturing equipment, materials, services, software and production.

In addition, we will expand our development of additive innovation across GE and in our installed base. This move fits the GE business model and adds to our strategy to become the premier digital industrial Company. We have an integrated core of strong industrial businesses, ones that build, power, move and cure the world.

We leverage our enterprise strengths: data created by R&D scale, a common global footprint, service technology, Predix, financing and culture. And we're moving from strength to strength as we build positions in industrial analytics and now in additive manufacturing. These represent foundational capabilities for industrial companies in the future.

Through our investments we're creating horizontal capabilities and vertical businesses. And by doing so we're driving productivity for GE, our customers and the industrial world.

We view additive manufacturing as transformative technology to expand product design, flexibility and promote speed. It facilitates the manufacturing of highly valued parts. It can dramatically improve service delivery and asset management.

Importantly, these tools are a perfect match for GE capability and gives us a lead in one of the fastest growing industrial markets of this era.

Let me go into a little more detail on our plan. We plan to launch in the additive manufacturing business. We will offer a full line of products, we will fully leverage our existing ecosystem inside GE including product design and internal consumption.

We will build a strong service business including materials, design, software and production. Many of these capabilities already exist inside GE and all of our products will embed the capability of Predix and will be an important part of our Brilliant Factory initiative. We expect the business to have about \$300 million of revenue in 2017 and grow quickly to \$1 billion by 2020.

In addition, it should facilitate \$3 billion to \$5 billion of costout inside GE over time. This investment is in line with the strategy of the Company. We have a valuable industrial Company with strong businesses and big ecosystems.

We've created value through the enterprise at the GE Store. We are leading the digital transition of industry, creating both horizontal capability and new businesses. And our aim is to achieve substantial productivity for GE and our customers.

We will remain on track for our financial framework in 2016 and the bridge to 2018. We plan to have these businesses report to Dave Joyce in Aviation. While their usage will span the Company, David is our biggest practitioner and I will now turn the presentation over to Dave and the team.

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### **David Joyce - General Electric Company - SVP & President and CEO, GE Aviation**

Thanks, Jeff. We've been on a journey of discovery with additive technology for quite some time at GE and it accelerated significantly after we bought Morris and RQM in 2012. Since then we've become more convinced at the transformational opportunity that additive brings based on our own proof points.

The left-hand side of this chart is meant to give you a perspective on why additive. Today's manufacturing processes are castings, forgings, weldings, brazings and subtractive machining. Additive creates products by building up features and complicated geometries from powder layer by layer.

Additive changes the game because it changes the paradigm between the cost of manufacturing and the complexity of design. Designers can optimize for performance and productivity with new and better cost entitlements and faster cycles.

We are using additive in a LEAP engine today and our assessment over the life of the LEAP production is that additive can yield a 25% to 30% additional reduction in product cost entitlement and a 25% reduction in lifecycle cost and service. In our Advanced Turboprop Engine we've eliminated 845 parts in design incorporating additive. This represents an elimination of thousands of machining features and inspections and hundreds of quality plans and procurement contracts.



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As I stated this productivity can be transformational. This next page uses a turbine frame assembly in one of our jet engine development programs as an example of the enterprise productivity. Incorporating additive manufacturing the frame assembly can be created in one design file produced by eight engineers, manufactured and inspected using one additive machine and will be repaired at one source with access to all design and manufacturing information linked through Predix.

Now compare that to today's conventional assembly, managed through 40 disparate data systems, 300 individual parts designed by 60 engineers and manufactured at over 50 sources, and in service sent out to five sources for repair. We believe this turbine frame assembly story is a good proxy for the future of digital industrial manufacturing.

Now let me turn it over to Greg Morris to talk about the industry. Greg joined the GE Aviation family in 2012 when we acquired his companies, Morris Technologies and RQM.

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### **Greg Morris - General Electric Company - GE Aviation Additive Technology Leader**

Thank you, David. We see four primary industry drivers that create the value train: machines, materials, production and services. Primary among these is the maturation and advancement of the equipment capabilities.

Current laser and electron beam technology is very capable but in order to achieve mass adoption we will need to take machine productivity and speeds to a new level. For each step change in machine speed and size the number of parts that become candidates for additive multiplies exponentially.

We also believe there are a number of opportunities to incorporate advanced sensing and monitoring capabilities into future machines that will result in unparalleled part consistency and quality. We anticipate that the different processing modalities that these acquisitions provide in addition to the equipment advances that have been outlined will allow us to protect current machine margins while delivering superior quality and value to customers.

Closely linked to the machines are the metal powders used in the process. With these two acquisitions and other partnerships, we will build on our direct material production capability. This combined with GE's strong materials research and development history provides an opportunity for us to create next-generation materials that are tailored specifically to the additive process.

Material volumes will grow in lockstep with the number of machines fielded that in turn will drive material pricing down, creating a more competitive landscape and further allowing for the democratization of additive parts. Given GE's leadership position both in the additive ecosystem as well as our deep materials domain knowledge we will lead the development of industry standards critical to creating the foundation from which all practitioners can build on.

Another area of significant synergy is our ability to move these technologies from the R&D and prototype-oriented phase into the production environment. Over the course of the past five years our Aviation and Power businesses in particular have been applying their production know-how and expertise to existing additive technologies, incorporating automation and inspection capabilities critical to successfully industrializing the processes. Automation and fully production-capable machines enable the Brilliant Factory and brings part conversion productivity to a new level.

Finally, a substantial opportunity exists around the services component of additive where we can leverage our application engineering knowledge and wrap this into our Predix digital platform. This will create value for our customers in a multitude of ways including the creation of a seamless digital thread and an opportunity for customers to shorten their production learning curves by acquiring the experience GE has gained from our ramping up of additive production internally. The industries where additive has the opportunity to bring substantial value are primarily segments we know well, thus allowing us to leverage our experience for maximum benefit of customers.

Back to you, David.

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### **David Joyce - General Electric Company - SVP & President and CEO, GE Aviation**

Thanks, Greg. As we assess the market in additive we see machines growing by 20% CAGR through the middle of the next decade and services, including materials and software, growing to over \$10 billion in seven years. The modalities associated with additive are developing fast based on the speed and feature resolution of the application.



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We are starting the equipment business in two segments: the largest laser powder bed through SLM. This technology uses laser melting to micro weld the powder layer by layer, creating additive parts. The second company, Arcam, is in a very fast growing segment of electron beam melting to micro weld the powder and build parts, two very complementary technologies that have a variety of applications across multiple business segments.

We, of course, will continue to apply our research and development to all modalities at our global research centers. By these two acquisitions give us a great start in this rapidly developing industry. Now I will turn it over to Vic.

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### **Vic Abate - General Electric Company - SVP & Chief Technology Officer**

Thanks, David. As we look at all the various additive technologies and think about the entire ecosystem we see all roads lead through the machine. And at GE machine design is at the center of what we do across the Company.

Shown here are the key high-tech components for the SLM Solutions platform as well as the Arcam machines. Central to their capabilities are technologies which include lasers, electron beams, scanning heads and controls. The ability to control the additive process coupled with the understanding of material science is at the core of these technologies.

Each brings capabilities and allows us to trade for attributes like build speed and feature accuracy which are critical for the adoption of additive.

Down below is an illustrative example of how we think about additive machines. Similar to our Healthcare business where we use high-tech components and advanced materials and software to look inside the human body we see many parallels in the design and evolution of additive machines. The ability to build from particles, sophisticated parts and the evolution of those platforms through upgrades and software is limitless.

Now back to you, David.

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### **David Joyce - General Electric Company - SVP & President and CEO, GE Aviation**

Thanks, Vic. As we assess the market for additive powders growing at more than 25% CAGR metals represent approximately 12% which by 2020 we estimate could be as high as one-quarter of the additive powder industry. These material systems are very familiar to our GE Industrial businesses and research centers.

Six of our businesses are using powder today and we have currently almost 350 patents in this material space. We're confident that we can accelerate material and alloy development and certifications of material properties, all driving adoption across multiple industries. Arcam is a leading provider of premium titanium powder to the additive manufacturing customers.

So now let me turn it over to Vic again.

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### **Vic Abate - General Electric Company - SVP & Chief Technology Officer**

Thanks, David. This chart illustrates why we believe we are in great position to lead in additive technology. Over the past few years we have built a tremendous network of teams in sites who are advancing additive manufacturing for GE every day.

As we have increased the use of additively-produced parts across the Company we have not only grown the number of people engaged but we've also significantly enhanced the competencies necessary to be the additive leader. And we view the additive ecosystem from idea all the way through a certified part.

We've rapidly build out the GE additive store, starting with the depth of GE research in both Niskayuna and Germany where we have deep domain knowledge in areas such as material sciences, laser physics and controls. Our acquisition of Morris Technologies in Cincinnati, Ohio has been a catalyst for us in driving the adoption of additive parts given their application engineering and design expertise in additive. Earlier this year we opened our GE Center for Additive Technology Advancement in Pittsburgh which focuses on factory design and the industrialization of additive technologies at scale.

From the ability to design a broad range of components to fundamental research on additive processes and materials to industrialization of machines, factory designs and software GE now touches all parts of the ecosystem in multiple modalities of additive manufacturing.



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This page illustrates the investments we have been making in advanced manufacturing since 2010 as well as our key focus areas for the future. Across our global research centers and the GE businesses we've invested \$1.5 billion over the past seven years in advanced manufacturing technologies across the Company. These investments have put us in a unique position to identify, implement and scale new manufacturing technologies like additive.

We believe we have a very strong pipeline of additive technology investments that will change the game in areas like productivity, materials and digital. We can see a future with much faster, not 10% but 10X or 100X faster machines and 100X more materials for our designers to design with. And with digital an entire new digital thread is enabled as this technology is all driven by software, not physical drawings.

These efforts will allow us to get more materials into the additive ecosystem, build bigger parts faster for the most economical solutions and optimize for properties and performance with a speed and accuracy currently not available in the industry. More industrialized machine platforms coupled with Brilliant Factory technologies will enable the adoption of these developments more rapidly and better differentiate GE and our customers. We see this opportunity transforming not only our new make parts but driving new and innovative service offerings, as well.

As we look towards 2025 we see the growth of additive in GE driving the need for more than 1,000 machines. This equates to new additive machines being brought online in GE every three days over the next decade. As the industry and applications evolve and change having robust, reliable, state-of-the-art capability is very strategic for us.

Aviation is leading the way, moving from components to whole engine platforms produced additively. Our Power and Oil & Gas businesses are taking the lessons learned from Aviation and are identifying multiple parts whose performance can be enhanced with additive and subsystems that can be simplified with additive manufacturing.

Business models will evolve with the distributed manufacturing that additive enables, the ability to repair components with new materials and features will drive value for our customers through our installed base, our Healthcare business is trailblazing new applications for very hard to manufacture materials such as tungsten and they are developing direct write additive methods as a platform for electronics printing. The GE portfolio of designs, features, materials and additive processes is industry-leading and pacing technology developments across the entire ecosystem. Back to you, David.

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**David Joyce - General Electric Company - SVP & President and CEO, GE Aviation**

Thanks, Vic. So here's the incremental value to GE. Starting in the upper left corner, materials as a service, commercializing our materials expertise, a foundational technology in the Company, expanding our digital playbook and Predix as a service on the factory floor to include additive, applying additive to enable new cost entitlement.

I've listed three here as an example from Aviation of the current impact of additive and we're just getting started. New products and services that exploit the new cost entitlements creating new markets. We're currently working in Aviation on a new product family of additive conformal heat exchangers that will revolutionize the weight and performance of this industry in Aerospace.

And as a practitioner of additive turning the price into cost on almost 1,000 machines that enable this advancement across the Company.

Here are the economics. We are buying both SLM and Arcam for approximately \$1.4 billion. We expect together we will achieve 40% CAGR over 10 years.

Our internal use case will include 1,000 machines over the same time period to enable cost savings across the businesses of \$3 billion to \$5 billion.

In GE Aviation alone we have a line of sight to \$3 billion of that savings. We intend to connect these businesses into the GE Store, investing R&D on machines, materials and software technology development. Standalone on an external basis together these deals returned greater than 20% before we consider the additional savings of \$3 billion to \$5 billion in product costs across the Company. Margin rates become accretive to GE by 2021 and there is no impact to previous guidance of \$2 a share in 2018.

So let me turn it back over to you, Jeff.



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**Jeff Immelt - General Electric Company - Chairman & CEO**

Thanks, Dave. In closing we are creating an additive manufacturing business because it fits our model and will create investor value. GE competes well in businesses that leverage systems integration and material sciences, that create a valuable installed base and where productivity is driven through digitization.

Here the GE Store contributes massively through materials and the Global Research Center, Predix, internal consumption, globalization and financing. This allows us to lead in the next generation of productivity along with industrial analytics. And it bolsters our long-term goal of 5% organic growth with margin expansion.

To recap, we plan to enter the market for additive manufacturing equipment sales, materials, service and production. We will serve the entire market including internal demands and we believe that this is transformative technology which expands product design and service productivity. It's a perfect fit for the GE Store and a great return for investors and we plan to lead.

Matt, now back over to you for some questions.

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**Matt Cribbins - General Electric Company - VP, Investor Communications**

Thanks, Jeff. I will now ask the operator to open the lines up for questions.

### QUESTION AND ANSWER

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**Operator**

(Operator Instructions) Andrew Kaplowitz, Citigroup.

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**Andrew Kaplowitz - Citigroup - Analyst**

Hey, good morning guys. Jeff, so you talked about the roadmap to go from about \$300 million in revenue in 2017 for additive manufacturing to about \$1 billion by 2020. Obviously a high level of growth.

And you gave us different methods to get there. Can you give us a little more color on how you get there and where the growth is coming from?

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**Jeff Immelt - General Electric Company - Chairman & CEO**

Let me dish this one over to Dave and his team. David?

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**David Joyce - General Electric Company - SVP & President and CEO, GE Aviation**

Yes, so if you take a look at where the market is, in fact, it shows the total growth in the market in the presentation material on page 7. We see this market and we're not alone. I would say that all the analysts that really follow additive see this on the precipice of a big trajectory, and I can tell you just from our use case within the Aerospace business we couldn't agree more.

As I said, just think about us going to 1,000 machines over the next 10 years and we will probably represent 5% of what we think the growth is in the entire, in this business over that same time period. So if you look at Automotive, if you look at Medical, if you look at all the other segments in the industrials it's easily going to allow us to get to the \$1 billion mark in the time frame that we said we could.

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**Andrew Kaplowitz - Citigroup - Analyst**

Okay, that's helpful, Dave. If you look at your 2018 goals you said there is no change based on these investments.

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But we look at the ability to expand margins, you talked about 50 basis points a year in gross margin, 16% segment margin. You're taking \$3 billion to \$5 billion of cost out over time.

Does that help you in getting to these near-term goals? How should we think about the near-term goals in the context of these investments?

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**Jeff Bornstein** - *General Electric Company - SVP & CFO*

I think the \$3 billion to \$5 billion our cost out goal is obviously an enormous motivation for making this investment in this side of technology. I think most of that value creation is going to happen outside of the 2018 window. We will have use cases and we will have experiments that we're doing and applying the technology that will demonstrate the cost savings, but I think most of that value creation is going to happen after 2018.

We committed to 50 basis points of margin improvement on average year-to-year for the foreseeable future. We made that commitment on an organic basis, so no change to that direction whatsoever.

When you get to the outer years here 2019 and 2020 and beyond we think this will be a huge contributor to how we think about gross margin improvement and lower product and service cost.

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**Jeff Immelt** - *General Electric Company - Chairman & CEO*

Dave, anything to add on that?

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**David Joyce** - *General Electric Company - SVP & President and CEO, GE Aviation*

No, Jeff. As I said during the discussion we at GE Aviation have done a pretty detailed inventory just based on three engine lines: GENx, the LEAP and the GE9X which will hit service in 2020. And we have a line of sight, quite frankly, through the existing installed base service as well as the new products, the \$3 billion of that \$3 billion to \$5 billion that we quoted inside this presentation.

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**Jeff Immelt** - *General Electric Company - Chairman & CEO*

Three things, Andrew. We will have parts in production across the other GE businesses by 2018, so you are going to see benefits in their margin rates, as well.

One other contextual point I think might be helpful by 2020 and the \$1 billion roughly 40% of revenue will be services. So not only are we going to be expanding the product buildout, but there's a very exceptional service stream that goes with this.

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**Andrew Kaplowitz** - *Citigroup - Analyst*

Appreciate it, guys.

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**Operator**

Julian Mitchell, Credit Suisse.

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**Julian Mitchell** - *Credit Suisse - Analyst*

Hi, thank you. I just wanted to ask a question around the \$1 billion revenue target and what you are assuming there for any dissynergies from competitors who are currently customers of Arcam and SLM walking away. I think if you look at Arcam, for example, Honeywell even presented at their Analyst Day just a few months ago, SLM supplies to Siemens. So what sort of dissynergies have you factored into your 40% revenue CAGR target?



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**Jeff Immelt - General Electric Company - Chairman & CEO**

Dave, why don't you start and I will fill in as well.

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**David Joyce - General Electric Company - SVP & President and CEO, GE Aviation**

Yes, so look, I think it's important that we put this in the right perspective. This is a big, digital industrial play for the Company beyond simply the Aerospace segment.

It incorporates an opportunity for us to sell machines across many segments: Automotive, Medical, Aerospace, Industrial, Electronics. This is a bigger play than just Aerospace.

Relative to competitors in this space, look in Aerospace we do a lot of business with each other. I do business with United Technologies on a regular basis whether it be Goodrich or whether it be Hamilton Sundstrand.

They do business with us whether it be through Avio Aero or one of our other or Unison which is another division. So I don't see any displacement as being part of this story on a broader scale of this as a pure digital industrial play beyond the aerospace industry.

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**Jeff Immelt - General Electric Company - Chairman & CEO**

I would just add, Julian, I think we have experienced not just in Aviation but across the Company where over time we have products because they are so competitive we sell to some of our customers.

And I would say the backdrop to all this is an equipment market anyhow that's growing in excess of 20% to 30% a year. So there's a ton of opportunity out there.

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**Julian Mitchell - Credit Suisse - Analyst**

Great, thanks. Then just on the operating margin target of about 20% in five or six years time I think that's much higher than most additive manufacturing pure plays are doing in the industry right now. So I wondered what you felt was different about GE's offering as you go into this industry, particularly in the context of other industries like Energy Connections where you went in and obviously the margin performance there has not been at the level of the incumbent main peers.

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**Jeff Bornstein - General Electric Company - SVP & CFO**

I think Jeff answered your question when he gave you the split. We think 60% of the revenue profile here is the machines themselves and we think we're going to have a very compelling technology over time that's going to be highly differentiated. But there's a 40% services component in this including materials and powders that we think is going to be very lucrative.

So there's no reason for us to think that this between services and equipment is going to look materially different than any other GE business on a going forward basis where we're well in excess of 20% margin between both services and equipment.

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**David Joyce - General Electric Company - SVP & President and CEO, GE Aviation**

Yes, Jeff, and I will just follow up. There is an opportunity here for more sophisticated playbook and services in this industry. That fits more into our equipment businesses that you are used to seeing whether it be in Aviation or Healthcare.

So think of a service business that not only upgrades contracts on the equipment but provides advanced software for design and manufacturing, provides application engineering skills which could be CAD all the way to the additive parts themselves. And think of contract manufacturing using additive as a service as part of the business that we will explore. And think of materials application consultation as another piece of the services model here so that we can really certify material systems to help accelerate the adoption of this in every one of the industry segments. So that's the model as we see it and build out.



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**Jeff Immelt - General Electric Company - Chairman & CEO**

I would add, Julian, again I just think eventually companies here are going to hit escape velocity in terms of scale. We want to be one of those companies that does that.

And just from a pure product cost when we decompose some of the products it looks a lot like some of the Healthcare products we make. So I think from a systems integration standpoint we have a chance to design technical, low-cost products that we think we can take to market and be quite competitive as we do so.

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**Julian Mitchell - Credit Suisse - Analyst**

That's great. Thank you.

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**Operator**

Joe Ritchie, Goldman Sachs.

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**Joe Ritchie - Goldman Sachs - Analyst**

Thanks. Good morning guys. So maybe my first question, I have always thought of additive manufacturing for you guys as being more of a product cost story. Clearly this seems to be a transition.

So I'd love to hear some thoughts around the evolution. How long have you guys been thinking about getting into the revenue component of this industry? And then also if you could maybe touch on the investment that you need to make to help commercialize these two acquisitions.

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**Jeff Immelt - General Electric Company - Chairman & CEO**

So maybe I will start, Joe, and then hand it over to David again. We've been practitioners for a number of years both at the Research Center, Aviation and other businesses.

I think as we studied the technologies and learn more about the products and experience them ourselves we saw the industry evolving in a similar fashion to other GE industrial businesses: systems integration, installed base service. And when we looked at our patent portfolio and technical foundation on both materials and equipment it was maybe the most robust of anybody in the industry.

So it's a like business with similar customers where we seem technically advantaged in an industry that we felt was going to grow at multiples of the industrial world. That to me is an entry point in terms of how I think about the growth of the Company.

Then I think we had the opportunity to enter two modalities. We've got another three underway at the Global Research Center, so we've got the chance to be a full line player in a relatively short period of time. I think we felt like we could build a nice competitive position in the industry.

So let me turn it to David just in terms of any other color.

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**David Joyce - General Electric Company - SVP & President and CEO, GE Aviation**

So I would say our journey on additive started back in the early 2000s, to be very frank about it. We hit the accelerator button when we went ahead and procured Greg's companies, RQM and Morris Technologies. Greg had been on the cutting edge of applying additive in a more industrial setting than simply a prototype setting and was specifically looking at metals.



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As a result of our work with Greg we became very excited about the opportunities in Aviation to the point where we actually industrialized additive down in Auburn, Alabama for our fuel nozzles for the LEAP engine which is our latest narrow-body engine that is in service now on the Airbus neo and getting ready to go on service for the 737 MAX. So we have experience in it.

We then extended that experience to our Advanced Turboprop and our 9X. And the more we learned about it, the more we liked it and the more quite frankly transformational this is for the designers and for everything, I mean for the whole supply chain, this is a very transformational technology moving forward.

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**Jeff Immelt - General Electric Company - Chairman & CEO**

Let me just interject with something that I think might be getting confused a little bit is that we're really talking about the metals segment primarily here, guys. And that's a very different segment than the plastics technology.

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**David Joyce - General Electric Company - SVP & President and CEO, GE Aviation**

Exactly. That's exactly right.

So for us we not only do we want to be on the cutting edge as a practitioner across the Company for exactly what you said, not only cost out but innovation and design. We look at this as a clear equipment business that we would like to participate in, as well.

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**Joe Ritchie - Goldman Sachs - Analyst**

That's helpful. Maybe one follow-up for you, David, you mentioned that on the \$3 billion to \$5 billion in cost outs that you have line of sight on \$3 billion just within Aviation. Can you maybe just tell us a little bit more specifically what you're targeting within Aviation and beyond to get to the \$3 billion to \$5 billion?

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**David Joyce - General Electric Company - SVP & President and CEO, GE Aviation**

Yes. So I would say looking at the installed base and then we take a look at the opportunity to bring additive into the services portfolio for an installed base. So think about us having 46,000 installed engines in the commercial world by 2020 and the ability for us to look at the additive technologies as it impacts repairs in that entire installed base and what that does for the services portfolio.

So that's one piece of this. And then think about the new products that we have coming to market: the LEAP engine, the Advanced Turboprop, the advanced helicopter engine, the ITEP engine that we're working on with the Army right now as well as the GE9X, all of which have are ripe, quite frankly, for opportunities and also as upgrades for our existing products.

So think of the GENx engine and an upgrade strategy with that that allows us to take cost out and put more performance in the engine using additive. So additive is not just about cost out, it's about changing if you will, quite frankly, the frame around the canvas that the designers work on. They are designing differently, more effectively and more efficiently using additive than without it, which is one of the reasons that we're so excited about this technology.

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**Jeff Immelt - General Electric Company - Chairman & CEO**

I think just big picture think of across GE our ability to have more content of all of our products is just going to grow immensely through this innovation and this technology. I think beyond that we will have capability that we can share with our customers and more broadly with customers in the industrial space both in additive manufacturing similar to what we plan to do on the digital and analytical side. So, again, I think this just creates a more valuable GE for our investors.

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**Joe Ritchie - Goldman Sachs - Analyst**

Okay, thanks, guys.



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**Operator**

Deane Dray, RBC Capital Markets.

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**Deane Dray - RBC Capital Markets - Analyst**

Thank you. Good morning, everyone.

The roadmap for the parts conversion on the Aviation side, I'd be curious to hear what your experience has been on FAA approvals of these products. Are there any unique challenges, if you've got a high volume of these products getting redesigned for additive manufacturing is the FAA geared up for these approvals?

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**David Joyce - General Electric Company - SVP & President and CEO, GE Aviation**

Yes, terrific question, Deane. We've been working with the FAA, we've had them into the Aviation business in Cincinnati. They've walked lockstep with us to make sure that everything we're doing we can verify the certification.

We will meet the same standards we do with any other part. Whether it's forged or welded or machined subtractively or additively it will go through the same level of testing, the same level of quality assurance and the same level of FAA regulation. I don't know, Greg, I know you've worked with the FAA directly. Why don't I turn this over for you to give a little color?

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**Greg Morris - General Electric Company - GE Aviation Additive Technology Leader**

Yes, sure. Deane, it's a great question and I would argue it's not just the FAA, it's other bodies, government bodies such as the FDA in the medical arena. These are all institutions that clearly have concerns about a new technology.

But we've worked for a number of years with the FAA and I know the same thing has been happening on the FDA side of the equation. So we've informed them very carefully and we've walked them through the processes and I think we have a very strong level of comfort from these different bodies.

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**Deane Dray - RBC Capital Markets - Analyst**

That's good to hear. Then there's been a couple of references on this call about this being a great start, two assets, gives you two modalities, you've got some modalities in your R&D center today.

Are there more assets that you have your eye on? How do you build out this platform? Do you need more resources in let's say CAD/CAM, but what's the buildout from here?

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**Jeff Immelt - General Electric Company - Chairman & CEO**

You know Deane, I think about this primarily as an organic play. In other words, we've been working in the space as David said and as Vic said for a number of years, so we have a backlog of technologies that I think we think we can commercialize.

Similarly on the materials side I think if you think about the Global Research Center a deep pool of material technology and capability going forward. And then I would say these two companies bring-in addition to just equipment-a number of ideas in terms of what we can do in the future.

So the way I would think about this from an investor standpoint is that we are sitting on a lot of capability already that these will just help us put a finer point on. But the last thing I would say, Deane, is look, we're committed to lead in this business the same way we do in Aviation or Healthcare or other businesses and so we look forward to growing and building capability. I think Dave in terms of the investment we're going to put into the business organically.



## SEPTEMBER 06, 2016 / 12:30PM GMT, GE - General Electric Co Conference Call to Discuss Acquisition of Arcam AB and SLM Solutions Group AG

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**David Joyce - General Electric Company - SVP & President and CEO, GE Aviation**

Yes, \$1 billion over 10 years as a round number is the way to think about it, Jeff, of additional investment. But I think that we've got more than enough assets that the key for us in the near term is going to be plugging these two really good anchor modalities into an incredible research and development and application set of a stack, quite frankly, that we've been working in our own Company.

The other way to think about this is we are always going to be on the cutting edge as a practitioner of this technology. And the question is as we develop that IP is are we going to keep it and commercialize it through this business or is it going to go elsewhere? So for us this was it just makes all kinds of sense because we are going to commit ourselves to be on the leading edge of this technology in each one of the businesses because of the value of it.

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**Deane Dray - RBC Capital Markets - Analyst**

Thank you.

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**Operator**

(Operator Instructions) Anna Kaminskaya, Bank of America.

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**Andrew Obin - BofA Merrill Lynch - Analyst**

Yes, hi, it's actually Andrew Obin. Just a follow-up to Deane's question on certification of 3D parts, where are you on nozzle certifications? Are those actually certified with the FAA because I've heard of some delays?

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**David Joyce - General Electric Company - SVP & President and CEO, GE Aviation**

No, we're flying them right now. If you go to Istanbul and take a Pegasus airplane you will have the nozzles underneath your wing.

They are flying right now in revenue service on the A320neo, the engine is certified on the 737 MAX and we're going through the aircraft certification process with Boeing as we speak. So it's done.

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**Andrew Obin - BofA Merrill Lynch - Analyst**

Okay, and just to follow up specifically on Aviation about more opportunities for vertical integration, and I'm thinking areas like nickel on or coatings how should we think about those assets longer term? Would you like to bring them in or do you think partnership is the right way to go forward?

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**David Joyce - General Electric Company - SVP & President and CEO, GE Aviation**

Well, I think coatings is a big broad subject. If you look at all of the opportunities I think we have a good strategy right now with the way we're doing our coatings with Praxair and Turbocoating being our two joint ventures as we speak now. That's been really the right strategy for us because it utilizes their expertise in building out that equipment at the same time we get to use our expertise and technology and materials on both of those coating systems.

In the future it really depends on the coating system and how we do it. You're right, though, we want to look wherever we have a big, if you will, intellectual capital invested in something like a coating or something like ceramic matrix composites or additive or titanium aluminide this make versus buy dialogue has got to be front and center.

It's as strategic as the design of the parts going forward, especially with additive. It's just another example of that same dialogue that has to occur in the business.

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**Jeff Immelt - General Electric Company - Chairman & CEO**

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I would add to David's point if you think about Healthcare we're sole-source on collimators, Power has got ample opportunities as does Oil & Gas. So I think this ability to open up our own let's say content is going to be massively important.

Then I would just echo, Andrew, what David said. As designers and practitioners I think we're going to be immensely valuable to the customers of this equipment going forward because we just have massive amount of experience in how 3D design metal parts get done.

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### Operator

Nigel Coe, Morgan Stanley.

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### Nigel Coe - Morgan Stanley - Analyst

Thanks, good morning and congratulations. So it seems to me that you mentioned that 40% of the out-year revenue is in service and clearly the service opportunity with additive manufacturing is huge. But just thinking about IP protection in this world where you have one digital file, how do you think about protecting your IP on very high margin spare parts?

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### David Joyce - General Electric Company - SVP & President and CEO, GE Aviation

You know, Nigel, I think of it, quite frankly I don't think of it a lot differently than I do today and maybe I should but I don't. I think that as we get more sophisticated in the design of these parts I mean literally the internal passageways of these parts are extraordinarily complicated in terms of the design and that complexity does not come with incremental cost. That's the beauty of additive.

So I could give you an example. We have a turbine frame liner in one of our engines that we're working on right now. The turbine frame liner, and you won't believe these numbers, this turbine frame liner literally holds the flame inside the combustion process.

So it's a very, very volatile, hot environment. We drill 2,600 laser drilled holes inside this combustor liner to make it work. And the holes are uniquely shaped and the dimensions are not just little holes, they literally are elliptical and they have to be quality checked, etc.

With additive we have, make it in one piece, we've reduced the cost with the one piece by 35%. We've improved its capability because we can design the holes with additive in ways that we can't manufacture traditionally so that the liner itself runs 400 degrees cooler and lasts 5X longer in service with a 35% cost reduction.

Now that's an example of the reality of what additive can do when the designers look at literally changing their concept of geometries versus what they have been limited to in traditional manufacturing work. In terms of IP protection that design of that one frame is so sophisticated and requires so much knowledge as to how to get it done I don't see it being any different than the combustor liner we have today.

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### Jeff Immelt - General Electric Company - Chairman & CEO

A couple of other, Nigel, contextual points. I would say we're pretty experienced in terms of how to do materials patents at the Global Research Center. That's been I'd say a core strength for a long time.

If you think about the equipment itself, I can only -- because again we're going to learn this as we go but a new CT scanner might be launched with 10 or 15 patents associated with it. So I think we will be good on the equipment side knowing what the art is.

Then the last thing, I would say we're hoping to make this a seminal part of Predix. And so I think there will be opportunities to monetize knowledge as we look at Brilliant Factory and Predix on the manufacturing floors going forward.



**Operator**

Gautam Khanna, Cowen.

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**Gautam Khanna - Cowen and Company - Analyst**

Yes thanks, good morning. So on slide 13 you quantified the incremental savings these deals give you on the LEAP, 9X and GENx.

I just wanted to understand first the split. Does this relate entirely to the OE production cost or does it include some assumption on the aftermarket? If so what is that split?

And then what is the timing of achieving those targets? And maybe David, if you can talk about some specific parts besides the one you mentioned for the combustion chamber that are made with castings now that you think these specific deals will help replace with additive?

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**David Joyce - General Electric Company - SVP & President and CEO, GE Aviation**

Yes, so these are all original equipment numbers that I put on page 13. They don't include these services side of the business.

I want to be clear that this is a snapshot in time right now. In other words, when the designers go back and do an inventory on LEAP or 9X and nx and we ask ourselves where we can redesign components in the case of nx at an upgrade timing at first shop visit which or at OE, you know what I mean when we put the upgrade in, or where we can design 9X to take full advantage of additive, these are where the numbers lie.

So think of the shrouds in the turbine, think of the nozzles in the combustor, think of the combustor liner itself, anywhere where today we've got very sophisticated geometries that require a number of parts that are brazed and welded together, that's the way to think about the savings here is we can take very complicated assemblies that have complicated manufacturing processes and we can really reimagine them with additive in a way that eliminates literally thousands of dimensional tolerancing inspections, yields go up, products, the performance improves and costs come down. And most of that is in the most sophisticated areas, so turbine frames, combustor liners, turbine shrouds, low-pressure turbine blades, all of which are good candidates for this additive technology as we look at it.

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**Jeff Immelt - General Electric Company - Chairman & CEO**

Dave, when does the Advanced Turboprop go entry into service?

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**David Joyce - General Electric Company - SVP & President and CEO, GE Aviation**

2018.

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**Jeff Immelt - General Electric Company - Chairman & CEO**

So that's probably the best example of a new product, let's say, that's being designed fully with additive in mind. So you're going to see substantial cost-reduction as we launch an engine like that.

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**David Joyce - General Electric Company - SVP & President and CEO, GE Aviation**

845 parts have been eliminated in that design because of the capability of additive.

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**Operator**

Jeff Sprague, Vertical Research Partners.



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**Jeff Sprague - Vertical Research Partners - Analyst**

Thank you. Good morning everyone.

So just thinking about this little bit back to the question of make versus buy, there is also I guess an element here of vertical integration. There's a very important external story you talked about, but this at least rhymes a little bit with Avio if I think about vertical integration.

Could you speak to that question more broadly? Do you see the Company moving towards a more vertically integrated model over time?

And then the second part of the question really is just back to the make versus buy. Given the amount of investment you have made in this area over the last 10 years or so, was there some particular technical hurdle that you couldn't get over organically that drove you to do these deals or is it just a timeline/acceleration strategy?

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**Jeff Immelt - General Electric Company - Chairman & CEO**

A couple of questions in there, Jeff. Why don't I maybe start, and then I would say that basically all the businesses that we're in content matters.

We're always going to need suppliers but in places where we think we have very specific expertise and competitive advantage, those are places that as time goes on we think about making versus buying. In this particular case, I would say, Jeff, we saw a great chance for a vertical business as we went through it and we've spent a lot of time looking at this and assessing it.

So in addition to just purely thinking about backward integration, we saw a way in many ways to create a very good market space for us going forward with a lot of competitive advantage because of the work Vic and his team have done over time. Avio, of course, we've got a pretty good experience with that. And then I would say that speed to market in doing these two acquisitions I think gave us platforms and teams that we thought would be extremely valuable going forward, that we can add to.

So I think this is a way, Jeff, to give us some acceleration and expertise in a way that basically I think is an investor-friendly way that will accelerate our efforts. And that's I think how we looked at these acquisitions. I don't know, guys, if you would add to that.

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**Vic Abate - General Electric Company - SVP & Chief Technology Officer**

Just a couple of thoughts there. The use cases that we were seeing were outpacing the pace of the industry. So when you actually look at a lot of the equipment that we were applying to the industrialization of that the modifications we were pushing research at a fast pace to keep up with the use cases.

So these acquisitions really put us in a position to take all roads for the lead through the machine as far as the implementation and the adoption. So we're able to take very fast-changing derivatives of fundamental technologies, get them into an industrialized package and then implement them where we can use them across the Company to scale faster.

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**David Joyce - General Electric Company - SVP & President and CEO, GE Aviation**

Jeff, I'd just like to say relative to Arcam and SLM we looked really carefully at the landscape of all the available companies in order to accelerate it. And we determined on multiple fronts that these two had very complementary technologies that fit very well into our profile.

And we had experience with both of them, working Arcam in Italy on low-pressure turbine blades and titanium aluminide as we speak, on the 9X which has been and continues to be a very positive experience, and SLM we're doing some very advanced research with their machines because of the open architecture on which they are designed. So in both cases it's a very determined decision that we want to go after SLM and Arcam.

And my hat is off to those two teams. The leadership is terrific and the teams have done a great job of establishing themselves and their technologies in the marketplace to where a Company like us can advance it even faster.



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**Jeff Immelt - General Electric Company - Chairman & CEO**

But I would just, for investors I would say look, we do this, we have a pipeline of ideas that are going to go, I think this allows us to accelerate behind this. We've got a bunch of other ideas in terms of how to accelerate, how to lead, how to build good customer presence and things like that.

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**Operator**

Steve Tusa, JPMorgan.

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**Steve Tusa - JPMorgan - Analyst**

Hey guys good morning. In the last 10-Q you guys had a little bit of an updated disclosure around the FASB ASU 2014-9 and you referenced specifically the changes in the accounting for aircraft engines.

And I'm just curious if that applies to services or OE? And if that is the case on the OE front is this one of the ways of getting to that cost level that you need in context of that change in accounting? It seems like it would be relatively significant for aircraft engines which you called out in your filing.

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**Jeff Bornstein - General Electric Company - SVP & CFO**

Steve, are you referring to we did expand the disclosure on contract assets. But are you referring to the new revenue recognition standard comment?

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**Steve Tusa - JPMorgan - Analyst**

Yes, it's the ASU 2014-09. You talked about aircraft engine specifically, so I'm just curious is there different accounting you are using for that impacts the OE side and, therefore, helps you get out in front of that from a cost perspective?

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**Jeff Bornstein - General Electric Company - SVP & CFO**

No, no, no. Steve, we've not implemented the new standard yet. We likely won't implement it.

It's not required to be implemented until 2018. The standard doesn't just impact aircraft engines.

It will impact all of our business to varying degrees. We're in the very early stages of going through what that might look like, etc.

So I think we're way early on being able to describe to you what it means. And it's an accounting change. It doesn't change economics of what we do.

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**Jeff Immelt - General Electric Company - Chairman & CEO**

Look, I think this is really all about growth in competitiveness and building new business. So I think that's the context for what we're announcing today.

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**Matt Cribbins - General Electric Company - VP, Investor Communications**

Okay, thank you. Just a couple of quick announcements before we end.

The replay of today's call will be available this afternoon on our investor website. And we will be having our third-quarter earnings call on Friday, October 21. Thank you everybody for joining.



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**Jeff Immelt** - *General Electric Company - Chairman & CEO*

Thanks everybody.

**Operator**

This concludes your conference call. Thank you for your participation today. You may now disconnect.

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