

The background is a light gray with abstract geometric patterns. On the left, there is a dense network of thin gray lines connecting small dark gray dots, forming a complex web. Scattered across the middle and right are several thin-lined triangles of various sizes and orientations. In the top right corner, there are small, faint circles or dots.

WHITE PAPER PROJECT

Contents

01 NIVIDA

- About the Company
- Financial Revenue Analysis and Scalability
- Sustainability Of the Business
- Impact on Society
- Business Transformation

02 SILA NANO TECHNOLOGIES

- About the Company
- Impact on Environment
- Financial Revenue Analysis and Scalability
- Sustainability Of the Business
- Impact on Society
- Business Transformation

03 DESKTOP METAL

- About the Company
 - Tech Transformation
 - Financial Revenue Analysis and Scalability
 - Sustainability Of the Business
 - Impact on Society
 - Business Transformation
 - **Combined PESTLE Analysis.**
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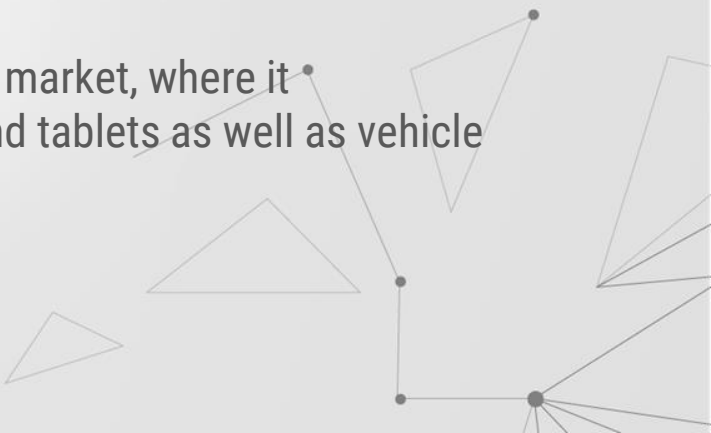


01

NVIDIA




ABOUT THE COMPANY

- NVIDIA builds graphics processing units and hardware to power various types of AI-enabled devices. The company's technology is used for everything from robots and self-driving vehicles to intelligent video analytics and smart factories.
 - NVIDIA expanded its presence in the gaming industry with its handheld game consoles Shield Portable, Shield Tablet, and Shield Android TV and its cloud gaming service GeForce Now
 - More recently, it has moved into the mobile computing market, where it produces Tegra mobile processors for smartphones and tablets as well as vehicle navigation and entertainment systems.
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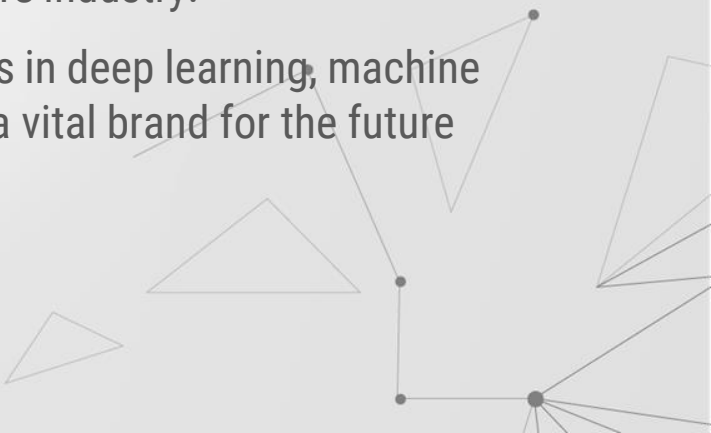


FINANCIAL REVENUE ANALYSIS & SCALABILITY

- NVIDIA was founded in the April of 1993 and has continued to dominate the GPU and gaming industry since the early 2000s. NVIDIA currently controls 90% of the market for supercomputer accelerators while simultaneously dominating the GPU and Gaming industry.
 - NVIDIA's annual revenue for 2022 was **\$26.914B**, a 61.4% increase from 2021. NVIDIA annual revenue for 2021 was \$16.675B, a 52.73% increase from 2020.
 - The global gaming market size is anticipated to reach USD 504.29 billion by 2030 whereas the overall Graphic Processing Unit (GPU) was valued at USD 33.47 Billion in 2021 and is projected to reach **USD 477.37 Billion by 2030** creating excellent opportunities for future growth.
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SUSTAINABILITY OF THE BUSINESS

- As the e-gaming industry progresses so does the rise in the demand for high-end graphic processors and better gaming consoles dominating this market, NVIDIA has a great scope for business in future.
 - NVIDIA is currently working on the world's most powerful supercomputer which uses AI to predict the future of planet earth and work on healthcare research thus providing the company with an opportunity to even enter the Healthcare industry.
 - NVIDIA's GPU-accelerated computers and breakthroughs in deep learning, machine learning and physics-informed neural networks make it a vital brand for the future technological revolution on earth.
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IMPACT ON THE SOCIETY



ENVIRONMENT

NVIDIA's GPUs make previously impossible types of scientific inquiry possible, and researchers can compare their simulations to experimental data. By creating biological simulations of how, for example, an RNA molecule forms an enzyme found only in cancerous cells.

NVIDIA's Graphical Processors greatly help in **Optical Coherence Tomography** With detailed 3D images provided in real-time, surgeons have a more complete view of a situation and can intervene immediately and more accurately, diminishing surgical risk and improving outcomes

INDUSTRY



SOCIAL

Safer, Smarter Cars. Improving automotive safety is increasingly an IT challenge. NVIDIA is working with car manufacturers like Audi AG to develop new safety systems that can detect pedestrians, read speed limit signs, improve navigation and help avoid collisions.

BUSINESS TRANSFORMATION

- NVIDIA has come a long way in the past ten years. This is evident from the tremendous growth in the company's revenue over this period. And is still growing exponentially, but what strategies should it use to grow even further? The answer to this question is that it can continue progressing in the gaming industry – one of its main mandates - and produce graphic cards that meet the requirements of newly developed games at affordable prices. One of the main problems the company is facing right now is meeting the industry's demand; the supply is too low, leading to their products being listed on the black market for 3 to 4 times the original price, disrupting the community, where users are switching to other brands just because they can't get their desired product for its original price. Therefore, NVIDIA needs to increase its production rate and meet the demand and supply. Other than that, it can continue research and development to make technological advancements.



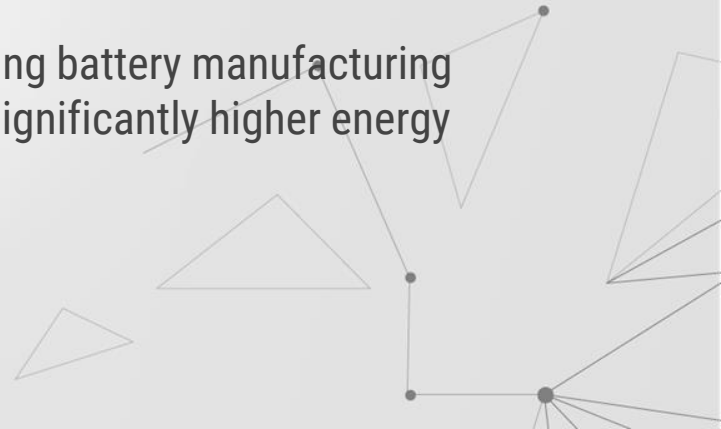
02

SILA NANOTECHNOLOGIES



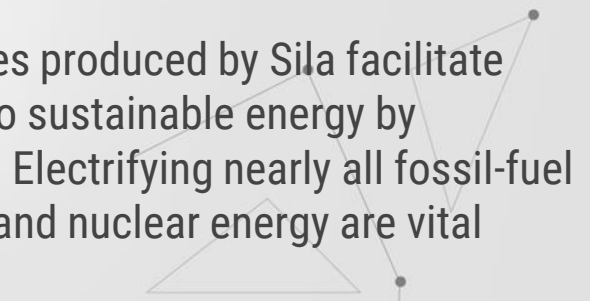
ABOUT THE COMPANY

- Sila Nanotechnologies is an engineered materials company focused on dramatically improving energy storage.
 - The company aims to enable higher energy density batteries for smaller, lighter, longer-lasting wearables and portable electronics, mass adoption of electric vehicles, and practical use of renewable energy.
 - Sila's silicon-dominant anode products drop into existing battery manufacturing processes, replacing graphite entirely, and delivering significantly higher energy density at the cell level with lower swelling.
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IMPACT ON ENVIRONMENT

- Discarded lithium batteries can pose a hazard to the environment if disposed of improperly and can explode if left unattended.
 - Sila Nanotechnologies uses recycled materials in its batteries. Nanotechnology products, processes and applications make a significant contribution to environmental and climate protection by saving raw materials, energy and water, and by reducing greenhouse gases and hazardous waste.
 - In addition, the small, inexpensive and efficient batteries produced by Sila facilitate energy storage, helping the world transition smoothly to sustainable energy by significantly reducing CO2 emissions from fossil fuels. Electrifying nearly all fossil-fuel burning activities and powering grids with renewables and nuclear energy are vital steps we need to take to protect the environment.
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FINANCIAL REVENUE ANALYSIS

- Sila nanotechnologies founded in 2011, spending the last 10 years developing its battery technology it is now valued at over 3.3 billion dollars with annual revenue of 100.3 million dollars.
 - The growth of Sila is estimated to be over 5 billion dollars by the end of 2023 with an investment of more the 800 million dollars.
 - As the world slowly shapes toward EVs and sustainable eco-friendly energy Sila Nanotechnologies has a huge scope for growth to meet the demands for energy storage.
 - The Whoop 4.0 device is the first product on the consumer market using the groundbreaking Sila battery technology. The wearables company is a good partner for Sila Nanotechnologies, having just raised \$200 million in capital funding at a \$3.6 billion valuation.
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SUSTAINABILITY OF THE BUSINESS

- Sila has scaled from laboratory research to commercial with its use starting in the consumer market when it was used in Whoop 4.0(a smartwatch) launched on September 2021. It has to upscale its manufacturing and enter its way through the consumer market.
 - Joint battery ventures with BMW and Daimler to use Sila's silicon-anode battery technology will bring Sila batteries to the automotive market by 2025.
 - Improving power density in batteries offers more freedom for designers to make new electric products, creating more electrification of more of our activities in the future and enabling our switch to renewable energy. Creating future opportunities for **SILA**.
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IMPACT ON THE SOCIETY



ENVIRONMENT

It can replace hazardous lithium batteries with batteries that are made using recycled products and make a significant contribution to environmental and climate protection by saving raw materials, energy, and water, and by reducing greenhouse gases.

Its lighter and long-lasting batteries can be used in portable electronics and wearables like smartwatches and laptops. It can also be adopted in the growing market of electric vehicles.

INDUSTRY



SOCIAL

Due to their batteries, laptops and portable electronics can have a larger battery time which will promote their use. It can also influence the invention of new products that have thin screens or are lightweight because of the small size of their batteries.

Three major factors which will lead to a higher growth rate in future are:



The diagram consists of three dark grey rectangular boxes with a 3D effect, each containing a factor. Each box is connected to a horizontal line that extends across the width of the slide. The boxes are arranged vertically, with the first box at the top, the second in the middle, and the third at the bottom. The text inside the boxes is white and bold.

Electrification in transport and mobility


Large-scale battery deployment in electric grids



An abstract geometric pattern in the bottom left corner, consisting of a network of thin grey lines connecting several small black dots, forming a complex, web-like structure.

Stringent regulations on emission

BUSINESS TRANSFORMATION

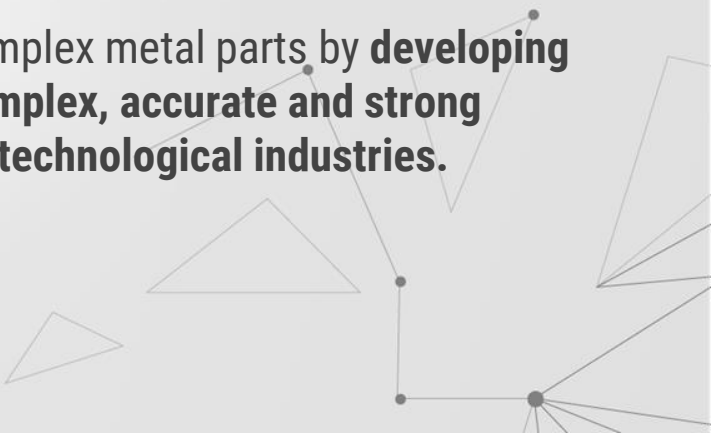
- As Sila is just starting its commercial production through the consumer electronics market, it would be a good strategy to partner with smartphone tech giants such as Samsung, and Apple or with leaders in computer manufacturers such as HP, and Dell to announce themselves on a massive level.
 - The batteries that Sila is developing are a huge breakthrough in technology as they can replace the current batteries in portable electronics such as wireless headphones, smartwatches and smartphones. But, the company is not alone, it has to speed up its production to beat the competition from other companies such as Enovix, Enevate, and Angstrom Materials to keep their business growing.
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03

DESKTOP METAL

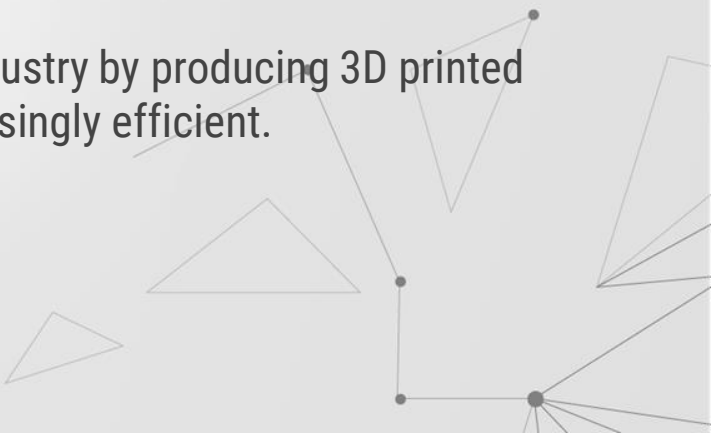


ABOUT THE COMPANY

- Desktop Metal, Inc., based in Burlington, Massachusetts, is accelerating the transformation of manufacturing with end-to-end metal 3D printing solutions.
 - Founded in 2015 by leaders in advanced manufacturing, metallurgy, and robotics, the company is addressing the unmet challenges of speed, cost, and quality to make metal 3D printing an essential tool for engineers and manufacturers around the world.
 - Desktop Metal has eliminated barriers to designing complex metal parts by **developing metal 3D printing systems that can safely produce complex, accurate and strong metal parts at a scale for use in both the medical and technological industries.**
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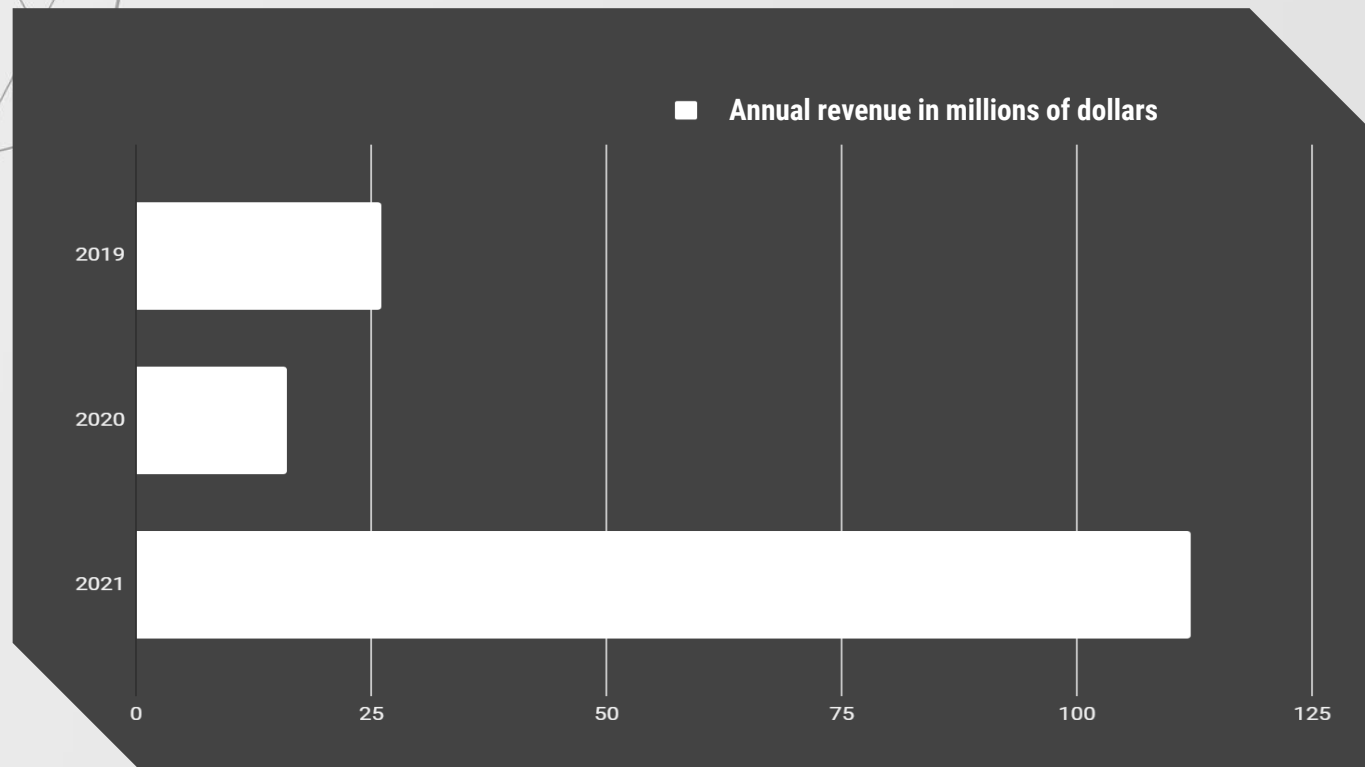
TECH TRANSFORMATION

- In 2017, Desktop Metal was selected as one of the world's 30 most promising Technology Pioneers by the World Economic Forum and named to MIT Technology Review's list of 50 Smartest Companies.
 - 3D printing and additive manufacturing are becoming some of the most disruptive technologies in the fourth industrial revolution.
 - Desktop Metal is revolutionizing the manufacturing industry by producing 3D printed parts at low cost, which are cheaper, lighter and increasingly efficient.
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FINANCIAL REVENUE ANALYSIS

- It has a net worth of \$1.12 billion and annual revenue of \$112.408 million.
 - According to the company, the additive manufacturing(3D printing) market is estimated to grow over 11 times from \$12B to \$146B by 2030, driven by the shift from prototyping to mass production applications.
 - It has rapid growth as it jumped from annual revenue of only \$16 million in 2018 to \$112 million in 2021. **Desktop Metal anticipates generating revenue of roughly \$260 million in full-year 2022**, which would represent 131% growth compared to 2021.
 - it has built strategic partnerships with Ford, BMW and more to accelerate its momentum in delivering scalable metal 3D printing technologies on a global scale.
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SUSTAINABILITY OF THE BUSINESS

3D printing is one of the most rapidly growing industries. It is estimated to grow over 11 times from \$12B to \$146B by 2030, driven by the shift from prototyping to mass production applications.

Growing market

Desktop Metal is revolutionizing the manufacturing industry by producing 3D printed parts at low cost, which are cheaper, lighter and increasingly efficient.

Low-cost high quality product

In 2017, Desktop Metal was selected as one of the world's 30 most promising Technology Pioneers by the World Economic Forum and named to MIT Technology Review's list of 50 Smartest Companies.

Recognition



IMPACT ON THE SOCIETY



ENVIRONMENT

With Metal 3D printing readily available the need to transport parts from one place to another will reduce narrowing the use of transport which can also be deemed as environment friendly.

The growth of the company will impact many industries, for example, Desktop Metal started Desktop Health, a venture to use 3D printing in dental applications which has a market of over \$30 billion.

INDUSTRY

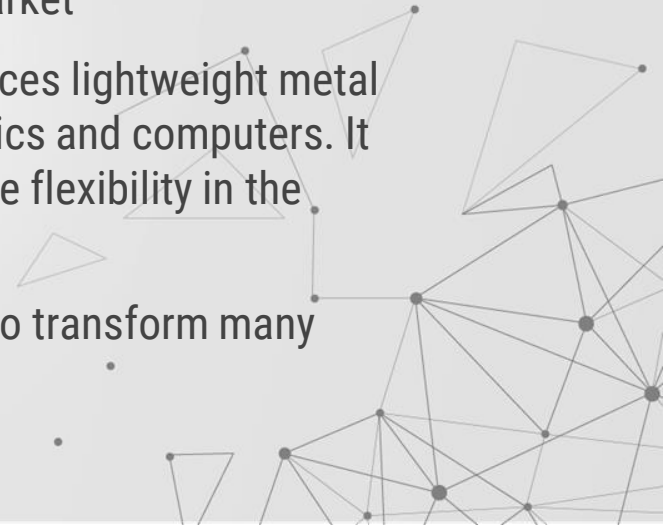


SOCIAL

It will also reduce supply chain and logistical disruption as metal 3D printers can be termed as onsite micro-factories. This can eliminate costly logistical chains in the future.

BUSINESS TRANSFORMATION


- Additive manufacturing itself is an expanding field, and for Desktop Metal to flourish, they have to utilize its technologies in different 3D printing applications. Apart from dental applications, and developing car parts, Desktop Metal can also look towards the construction industry which has a market of \$1.6 trillion in the USA. It can be used to manufacture tools or repair parts easily, without looking for them in the market
- As Desktop Metal is designing technology that produces lightweight metal parts, it can be very useful in manufacturing electronics and computers. It can be used to print complex circuitry and can provide flexibility in the internal design of computers.
- Desktop Metal has a great future and it can be used to transform many industries in the near future.

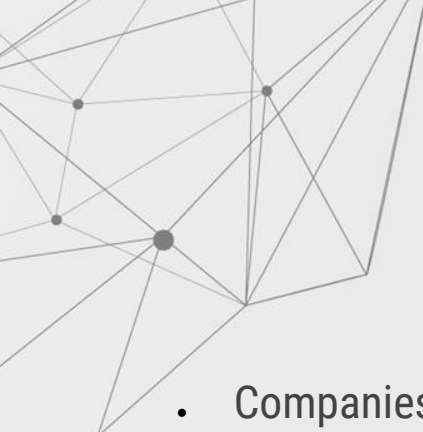




PESTLE Analysis

NVIDIA, SILA NANO TECHNOLOGIES AND DESKTOP METAL

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- Sila Nanotechnologies and NVIDIA are located in California, USA while Desktop Metal is located in Massachusetts, USA
 - The US enjoys a stable political climate, advanced infrastructure, and technology positioning itself as a great destination for foreign direct investment which is a good sign for the companies.
 - The education system in California and Massachusetts is one of the best in the world, and so is the health care system. Therefore, the company can find employees locally and attract them as well.
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- Companies such as Apple, Microsoft, Google and Facebook all originate from the US. The rapid rate of technological improvement in the country creates greater opportunities for innovation and growth for all the companies giving them access to a large market.
 - California taxes are among the highest in the United States and are imposed by state and local governments. Massachusetts has one of the highest average salaries in the United States, so taxes are also very high. This poses a challenge for local businesses.
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