



planetmogul®

preparing students to be future ready

workbook

ages: 11+



AEROSPACE
& DEFENSE
INDUSTRY



critical
TECH
areas



Sports



ANIMATION



Entertainment

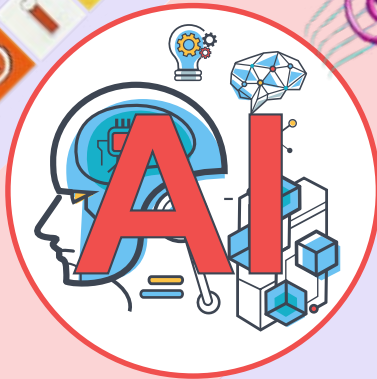


TELCO



TECHNOLOGY

INVESTING



AI

semiconductors



E-COMMERCE



FINTECH
FINANCIAL TECHNOLOGY

BE
FUTURE
READY

MOGULS -in-TRAINING
Entrepreneurship & Career Planning



planetmogul[®]
preparing students to be **future ready**

Planet Mogul is cultivating a pipeline of entrepreneurs, innovators and a prepared workforce.

The Planet Mogul Workbook provides introductory entrepreneurial + career prep to activate students' critical thinking with lessons and activities in 17 different industries; preparing them to chart a course in critical STEM-related and other fields, turning mindshare into market share.

BE
FUTURE
READY





Students
11+



Entrepreneurship
Learn about the different types



Career Planning

Learn
how to
present

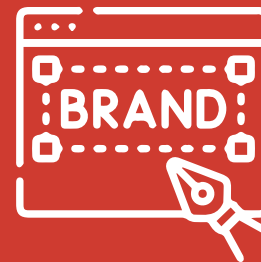


HOW TO USE



Leadership

Write
your first
business
plan



Branding
Why it is so important



Social Media
How to use responsibly



Intro to
different
INDUSTRIES



Learn
Market Share



Learn
Profitability



Product
Development:
Industry Activity Page

MOGULS-in-TRAINING
Entrepreneurship & Career Planning

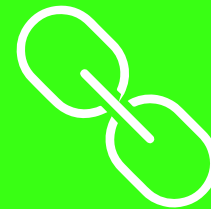
BE
FUTURE
READY



Train-the-Trainer



Scholarships



Staying
Future Ready

All the words that are
highlighted are links
with additional
information
and resources.
Investopedia



ADVICE



DEPOSITOR



COMMERCE



FUNDING

► **What is an ENTREPRENEUR?**

An individual who creates a new business, bearing most of the risks and enjoying most of the rewards.

Investopedia

► **Why entrepreneurship is important to the economy**

ENTREPRENEURSHIP



STARTUP

► **Entrepreneurs and Entrepreneurship: Definitions and Examples**

► **Innovative | Social Entrepreneurs**

A person who pursues an innovative ideas with the potential to solve a community problem.

Investopedia

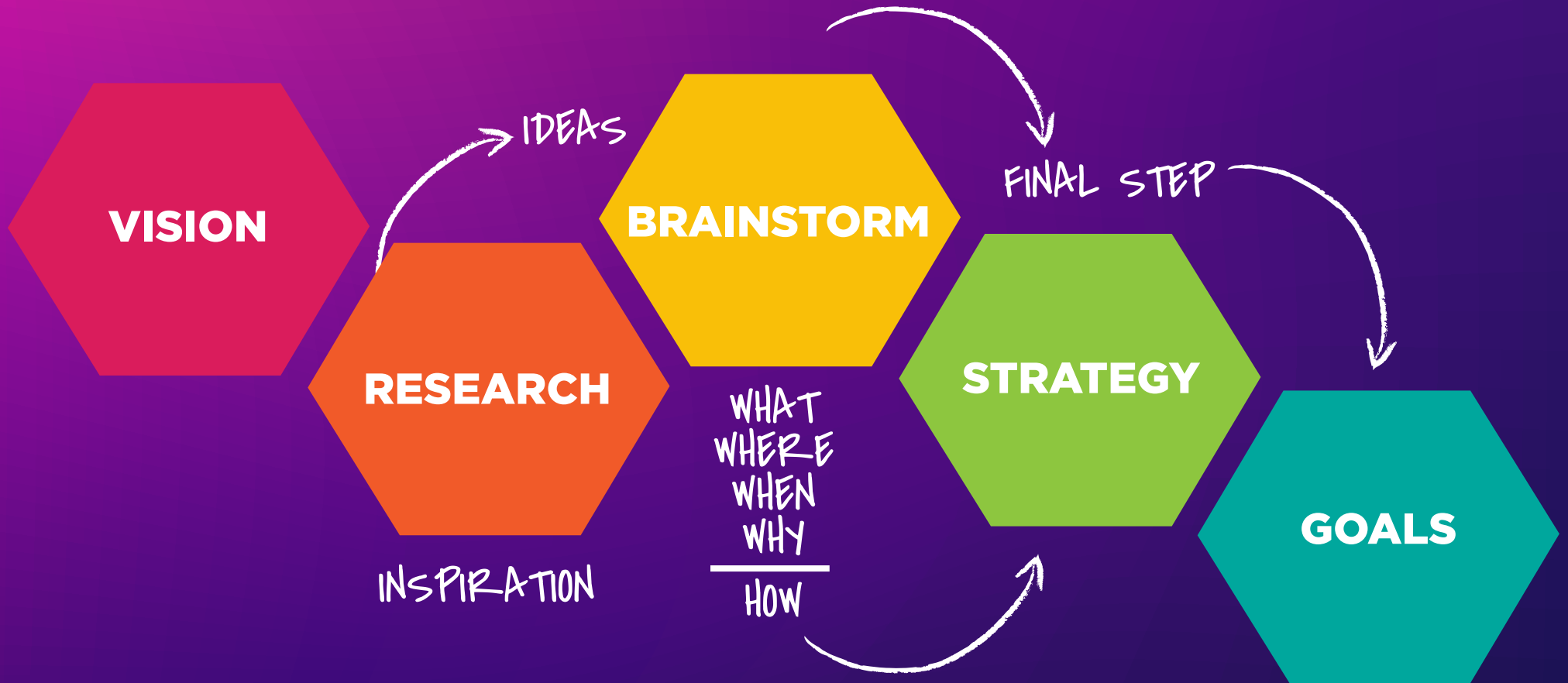


BUSINESS



CAPITAL

THE JOURNEY



ENTREPRENEURSHIP

MOGULS -in-TRAINING
Entrepreneurship & Career Planning



ONE IDEA CAN MAKE A DIFFERENCE

Write all your ideas down in a journal
- one idea CAN make a difference

▶ **DISRUPTIVE INNOVATION**

After researching the different industries, what part or service is missing? **What is your idea?**

YOUR NEW IDEA

▶ **Make a prototype** -
go to a college/university or trade school and ask for help to produce the prototype

Once the prototype is complete
show to 50+ people and get their opinions and make any changes

Protect your product
ask an attorney in your community to help you trademark/patent your product



▶ **STARTING A SMALL BUSINESS: A COMPLETE GUIDE**

- ▶ **Develop a business plan**
- ▶ **Four most common reasons a business fails**
- ▶ **Business Development**

▶ **FUNDING STRATEGIES**

- **Learn** how to present your new idea to raise funding
- ▶ **Types of funding options:** determine what is best for your company
- **Receive** funding for your company

▶ **THE FIVE-STAGES OF SMALL BUSINESS GROWTH**

Harvard Business Review

▶ **PUBLIC RELATIONS**

- ▶ **Distribute a press release to your community announcing your new product to start creating your branding**
- ▶ **How public relations can be a competitive advantage**

PROTECTING YOUR COMPANY COPYRIGHTS, PATENTS AND TRADEMARKS



Copyright

A copyright is a form of protection provided to authors for their original work. This includes creative and intellectual work like:



The owner has exclusive rights to reproduce, distribute or perform the work publicly.

Copyright do not require registration and the owner will have protection in most countries.



Trademark

A trademark is a sign which distinguishes a company's product or service from it's competitors. A trademark can be a:



The owner has exclusive rights to use the trademark and legally prevent its unauthorized use.

Trademarks are specific to a country or a union like the EU. Trademarks last for 10 years.



Patent

A patent is an intellectual property right granted by the government to an inventor for the exclusive exploitation of their invention.



The owner has legal rights to exclude others from making, using or selling the patent.

Patents are specific to a country. A patent normally lasts for 20 years.



Registered Design

A registered design is a protection provided to the appearance of a product or part of a product. It defines how a product looks.



The owner has legal protection from others copying the design for their product.

Registered designs are specific to a country. A registered design normally lasts for 25 years.

INTELLECTUAL PROPERTY

► **NON-DISCLOSURE AGREEMENT**

A Valuable Tool BEFORE Sharing Your Ideas with Others

When is a non-disclosure agreement appropriate for small businesses?

RELATED LINKS: United States Patent & Trademark Office

► <http://www.uspto.gov/>

► **INTELLECTUAL PROPERTY - AN ASSET**

Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce. This is your differentiator and should be strongly protected.

▶ **3D Printing**



▶ **Autonomous Vehicles**



▶ **eCommerce**



▶ **5G**



▶ **Cybersecurity**



▶ **Internet of Things**



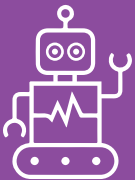
Type of ENTREPRENEUR:

INNOVATIVE ENTREPRENEUR

An **Innovative Entrepreneur** is a person who creates and implements new ideas, products or services in order to bring about positive change in the market and society. These types of entrepreneurs are constantly seeking new opportunities and are willing to take risks in order to bring their innovative ideas to life.

The following are examples of the TOP innovative entrepreneurial ideas in the last 10 years:

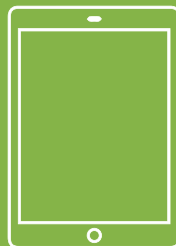
▶ **Artificial Intelligence**



▶ **Cloud Computing**



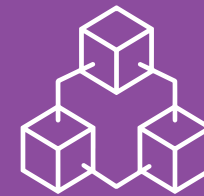
▶ **iPad**



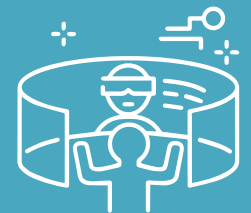
▶ **Augmented Reality**



▶ **Blockchain**



▶ **Metaverse**



Type of ENTREPRENEUR:

SUPPLIER

What is a supplier?

A **supplier** is a person or business that provides a product or service to another entity. Suppliers bridge the gap between manufacturers and retailers by offering the raw materials, products or services that businesses require for their operations.

What can you provide to the automotive and the aerospace industry?

Car anatomy

Exterior components

1. Roof
2. Sunroof
3. Windscreen
4. Windscreen wiper
5. Head light
6. Bumper
7. Indicator light
8. Front fender
9. Bonnet
10. Grill
11. Wing mirror
12. Wheel
13. Hub cap
14. Door
15. Door post
16. Door handle
17. Window



Interior components

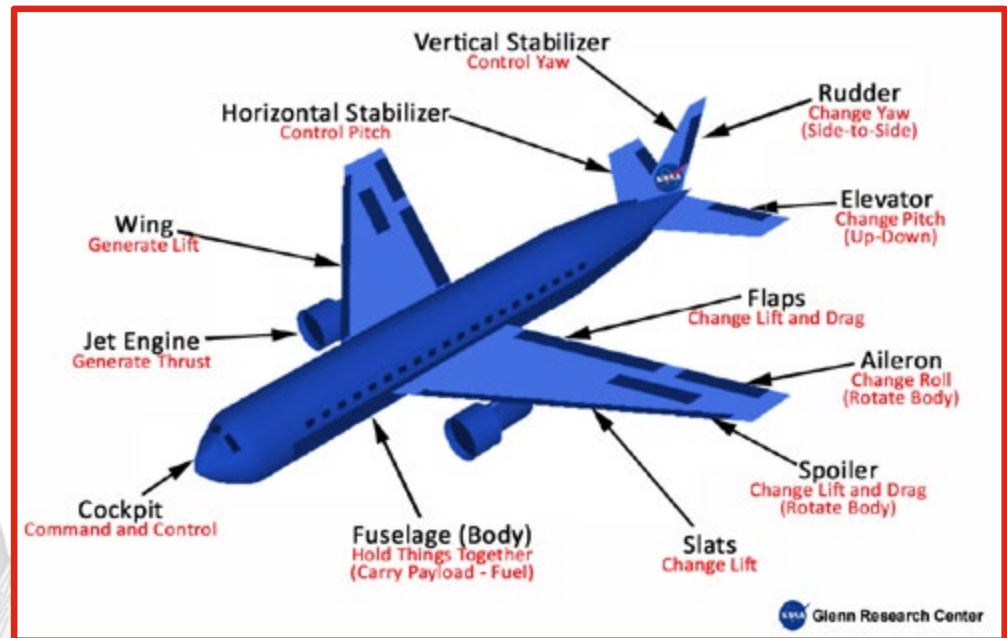
18. Seat
19. Seat belt
20. Dashboard & steering
21. Battery
22. Oil pump and filter
23. Water pump and hoses
24. Radiator and cooling fans

motorway

30,000

The number of car parts can vary, but modern vehicles can have over 30,000 individual parts, encompassing various systems and components, highlighting the intricate engineering and complexity involved in car design.

► [The Automotive Sector](#)



3 million

More than three million individual parts are in a big body aircraft.

► [The Aerospace Sector](#)

MY BUSINESS PLAN

A business plan defines in detail a company's objectives and how it will achieve them.



EXECUTIVE SUMMARY

This section introduces the company and includes its ► **mission statement**.

Write your mission statement.



Describe your product or service.



Who is your audience?

If retail, will you use ► **e-commerce**?



► **What is your competitive advantage?**



MARKET & GAP ANALYSIS

A company needs to know the current state of its industry and the existing competition. Where the company fits in, what types of customers it plans to target, and how easy or difficult it may be to take ► **market share** from incumbents.



FINANCIAL PLAN & PROJECTIONS

New businesses can provide financial targets and estimates for the first few years. Your plan should include any funding requests you will secure.

How much does your product cost to produce or your time for the service?

How much does your competitor charge?

How much will you charge?

What should you do with the profits?

- Reinvest in your business
- Give to your community
- Save for college

MY BUSINESS PLAN



▶ BRAND IDENTITY

▶ What is it and how to build one

What is the name of your business?

Design your logo:

Design a social media post:

▶ **The Power of Branding:** how will you create your brand?



MARKETING STRATEGY

This section needs to describe how the company plans to attract and keep customers.

What ▶ **distribution channels** will you use?



PUBLIC RELATIONS

▶ **Public Relations** What is it?

- ▶ **Public Relations:**
- ▶ Offering Businesses a Competitive Advantage



PRESS RELEASE

What it is and how it works?

A paper wants to do an article on you, what do they write about? Your business, your community service? Your plans? Write a few headlines. (managing public perception) Send out a press release to your news and radio stations to tell them about your new business.



ENTREPRENEURSHIP: LEARN HOW TO PITCH YOUR IDEAS TO FUNDERS

PITCH INVESTORS

How to present your company to raise money?



► What is an elevator pitch?

According to data from the US Census Bureau, the **nearly 5.5 million businesses started in 2023** is the highest year on record.

NAIL YOUR ELEVATOR SPEECH

Should be less than **ONE** minute

■ WHAT YOU DO

Keep it short! This could be as simple as, “My Company creates world class widgets for [target audience].”

■ PROBLEM SOLVED

Be descriptive about what problem your product solves for its target customer. For example, “Our software solution helps businesses make more money and save time by...”

■ YOUR USP

Your **Unique Selling Point (USP)** is what truly tells potential customers how you are different from the competition. For example, Chipotle differentiated itself by using only fresh, wholesome ingredients.

LESSON:

▶ LEADERSHIP & ▶ SERVANT LEADERSHIP

Establish Your First ▶ Board of Directors

What is a Board of Directors?

A Board of Directors are a group of trusted advisers that are chosen to help you oversee your business and advise you on decisions to develop your business. Your Board of Directors will help you set your company's goals and how you will continue to achieve success.

Think of the President of the United States – he/she has a Board of Directors. They are called his Cabinet and they include people like the Secretary of Education, the Secretary of Defense and the Secretary of Homeland Security. It is each of these people's job to help the President understand and make the best decisions he can with the best information they can provide.

When you set up your Board of Directors, you want people that are experts in different areas:

Financial: You have started a business, but how do you make a profit? You need to hire an accountant to help you plan how you will make a profit, how you will grow your business, provide reports and pay your taxes.

Operations: Jobs or tasks that each employee must complete. Your operations is what creates and delivers the value of your product or service to your customer.

Marketing: Marketing is how you move your products and services from concept to the customer.

Technology: Technology helps you organize and grow your business, access information faster and provide services quicker.

Innovation: Innovation will allow you to be a leader in whatever industry you choose. Developing new ideas or making old ideas better will continue to develop your business.

How do you create a Board of Directors?

Your first Board of Directors can be your mentors. A mentor is an experienced and trusted advisor.

Some suggestions:

- One or both of your parents
- A teacher
- A coach
- An older brother or sister
- A leader in your community
- An entrepreneur

Steps:

- Write an overview of your business or business idea (this can be just one page)
- Invite your Board of Directors for a monthly call or meeting
- Ask their advice
- Take their advice
- Give them a monthly report

Choose your first BOARD OF DIRECTORS:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

BE **FUTURE** READY



CHART YOUR CAREER PATH

► Career Exploration

► Be Prepared and Have a Successful Career Path

► Develop a LinkedIn Profile EARLY

Learn How to Present Yourself



► Occupational Outlook Handbook

► Critical Technology Areas



► Learn Soft Skills

What are soft skills?

Character traits and interpersonal skills that support the pursuit of personal and organizational goals.

► Colleges by State

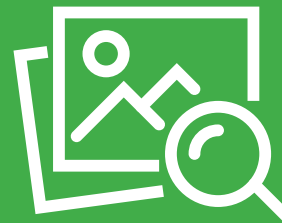
► Universities by State

► Trade Schools by State

► Scholarships by State



Research & Prepare



Explore Industries & Careers

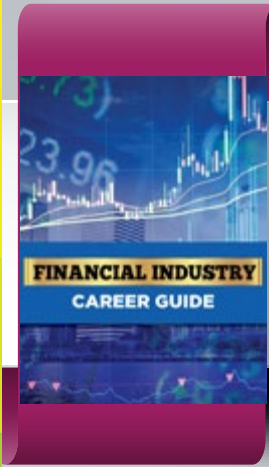
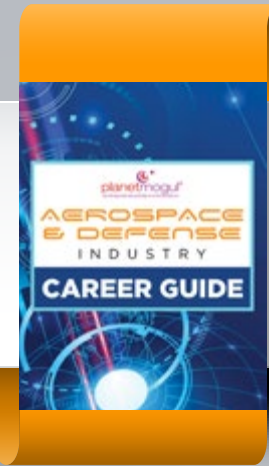
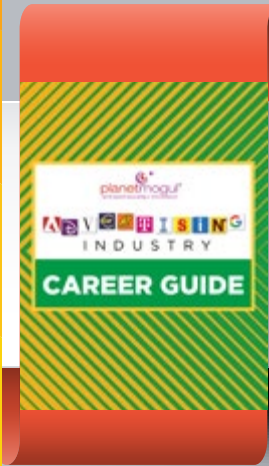
► Industry Trends

Career Center

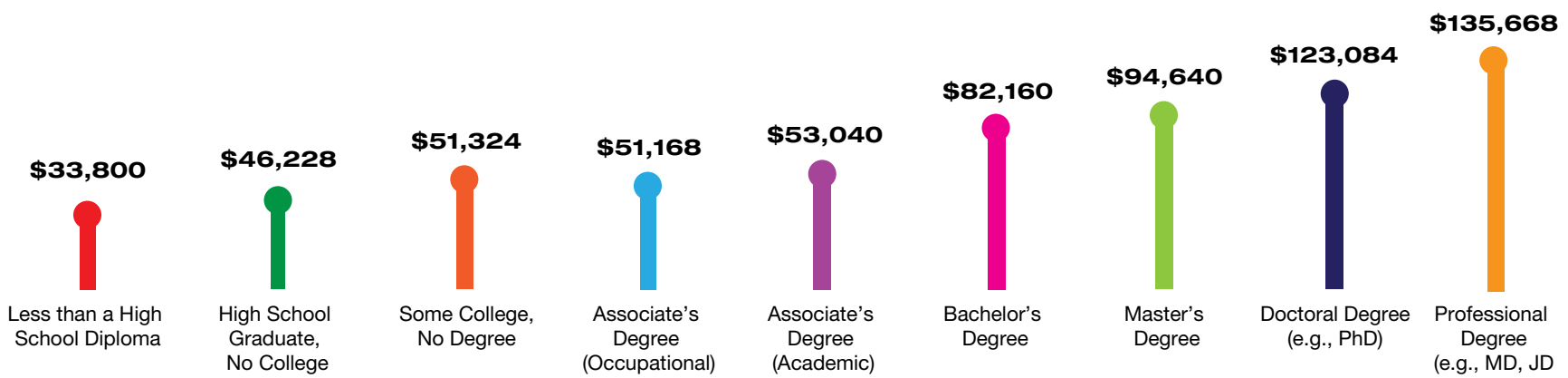
Learn everything you need to know about careers in business, corporate finance, money management, and financial planning here. Discover how to chart your path to success.

planetmogul®
entrepreneurship+innovation
CAREER GUIDE

[▶ Click Here](#)



WHY GO TO COLLEGE OR CAREER SCHOOL?



CAREER PLANNING: HOW TO PRESENT YOURSELF

PRESENTATION SKILLS

PREPARATION

Carefully research the job, industry and the employer.



DRESS PROFESSIONALLY

Show your interest in the career and commitment.

QUESTIONS TO ASK

Carefully research the job, industry and the employer.



QUESTIONS ABOUT YOUR APPLICATION

Re-read the applications and your answers carefully.



BODY LANGUAGE

Smile, make eye contact and shake hands.

SELL YOUR USP's Unique Selling Points

The skills and attributes that make you stand out from other candidates.



► The Power of Branding

A brand is an entire experience that a customer has with a company and its products and services.

► Brand: Types of Brands and How to Create a Successful Brand Identity

► HOW A COMPANY CREATES A BRAND



Some key areas to consider when creating a brand are consistency, differentiation, creativity and establishing an emotional connection.

A successful brand communicates the qualities of a product to the consumer.
A product's design, logo, packaging, and advertising message are all coordinated to convey the brand's message to the consumer.

ASSIGNMENT:

Define Your Business, Define Your Brand

To get an idea of what your brand might look like, write down three things that define your business.

THE WORLD'S TOP 10 MOST VALUABLE BRANDS

\$516.6
billion



\$340.4
billion



\$334.4
billion



\$308.9
billion



\$99.4
billion



\$96.8
billion



\$84.2
billion



\$75.7
billion



\$73.3
billion



\$71.8
billion



ICBC

Source: Statistica 2024

SOCIAL MEDIA MARKETING (SMM):

► What It Is, How It Works



BEFORE YOU POST

T H I N K

- T** - is it **True**?
- H** - is it **Helpful**?
- I** - is it **Inspiring**?
- N** - is it **Necessary**?
- K** - is it **Kind**?

► [Social Media: Definition, Importance, Top Websites & Apps](#)

► [How to Use Social Media to Grow Your Business](#)

Learn about INDUSTRIES

What is an INDUSTRY?

The term industry is a classification for a group of companies that have similar business activities. In modern economies, there are dozens of industry classifications. Industries typically are grouped into larger categories called sectors.

Investopedia

▶ INDUSTRY LESSONS YOU WILL LEARN

The collage features several educational materials: 1. 'BUILD YOUR OWN AGENCY' infographic with steps from idea to presentation. 2. 'Occupational Outlook Handbook' page for 'Advertising, Public Relations, and Communications' showing a median pay of \$36,940 per year. 3. 'FINANCIAL CENTER' worksheet with a scenario about a \$1 million campaign and questions on cost, profit, and outreach. 4. 'AEROSPACE & DEFENSE INDUSTRY' infographic with a \$1.8 trillion market share by 2035. 5. 'THE SPACE INDUSTRY' worksheet with a \$1.8 trillion market share and a 'DESIGN A SPACE VEHICLE' activity.

INDUSTRY ACTIVITY

Design, develop or innovate in each of the industries

Lessons:

▶ Innovation

Product Development

FINANCIAL

Lesson:

▶ How the industry is profitable

▶ MARKET SHARE

Lessons:

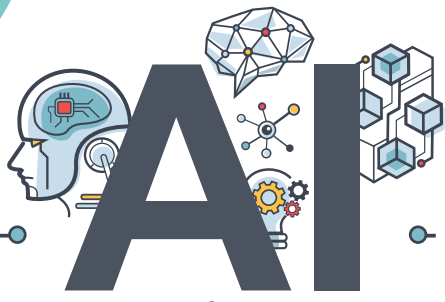
▶ Economics

▶ Social Economics

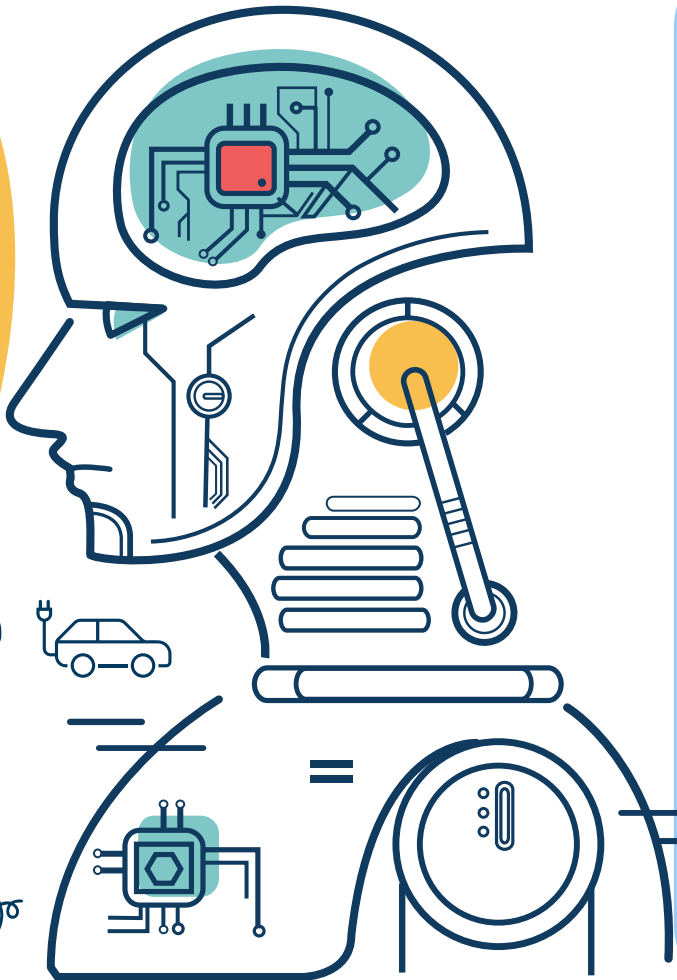
▶ Behavioral Economics

By 2030, **Artificial Intelligence** will add **15.7 trillion dollars** to the GDP

GDP
Gross domestic product is a monetary measure of the market value of all the final goods and services produced in a specific time. GDP is used to measure its economic health.

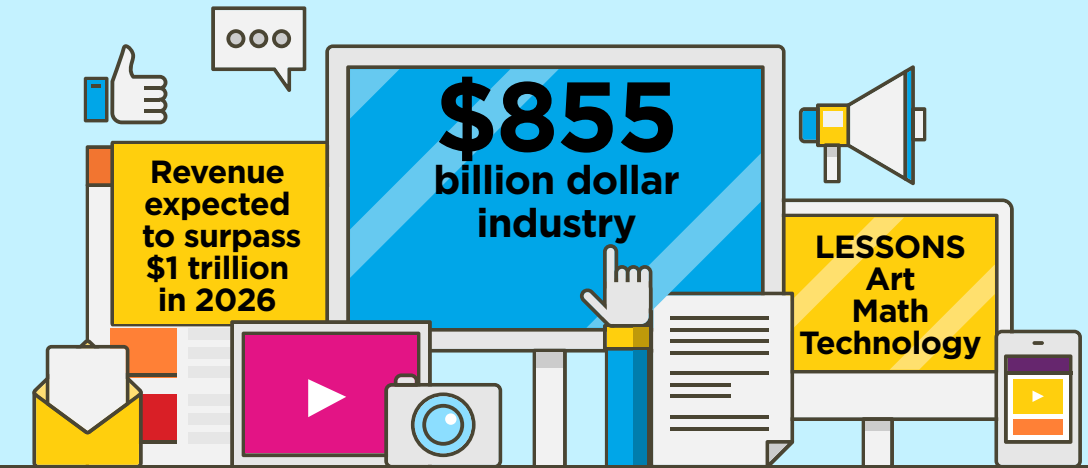


- Biggest Industries utilizing AI**
- Healthcare
 - Education
 - Marketing
 - Retail
 - Data
 - Banking & Finance
 - Agriculture
 - Transportation
 - Gaming
 - Cybersecurity
 - Space Exploration
 - Lifestyle



- Top 5 Highest Paying Artificial Intelligence (AI) Jobs**
- Machine Learning Engineer:**
\$120,000 to \$180,000
 - Data Scientist:**
\$120,000 to \$160,000
 - Deep Learning Engineer:**
\$120,000 to \$180,000
 - A.I. Software Developer:**
\$110,000 to \$160,000
 - A.I. Product Manager:**
\$130,000 to \$180,000
 - Artificial Intelligence Research Scientist:**
\$140,000 to \$200,000
- AI Overview:**
[Technology, Skills, and Jobs](#)

ADVERTISEMENT



2023 Median Pay:
\$156,580 per year
\$72.28 per hour



Entry-Level:
Bachelor's
Degree

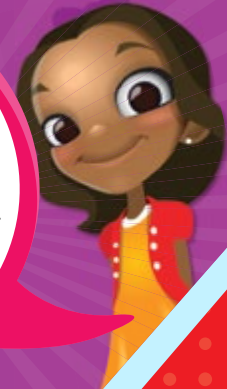
Occupational Outlook Handbook

The Occupational Outlook Handbook is a publication of the United States Department of Labor's Bureau of Labor Statistics that includes information about the nature of work, working conditions, training and education, earnings and job outlook for hundreds of different occupations in the United States.

▶ [CLICK HERE](#)

WHAT IS A ADVERTISING?

Advertising is the means companies use to communicate messages to inform or influence the users of their products and services. In today's world, advertising uses many different ways to get their message out: television, print, radio, internet, social media, mailers and more.

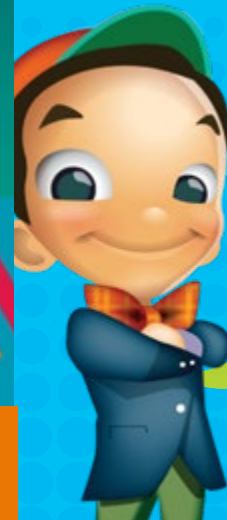


WHAT IS A BRAND?

A brand is the personality that identifies a product or company. It could be a name, term, design, symbol (or a combination of these) that differentiates a product or business from competitors.

WHAT IS A LOGO?

A logo is a recognizable and distinctive graphic, stylized name or unique symbol that serves as a visual representation of your brand.





How to start an advertising agency

BUILD YOUR OWN ADVERTISING AGENCY



THE TOP

10

MOST RESPECTED BRANDS IN THE WORLD



amazon.com



Microsoft



The Walt Disney Company

BERKSHIRE HATHAWAY INC.

Alphabet



NETFLIX

JPMORGAN CHASE & CO.

STEP 1: BIG IDEA

BIG IDEA in marketing and **advertising** is a term used when the client comes to your advertising agency and wants a BIG idea for their brand, product or concept that can be sold to the general public.



1



STEP 2: PLANNING

After the advertising team comes up with the **BIG IDEA**, **planning** and **development** of advertising campaigns takes place: identifying the target market, establishing the advertising objectives, developing the advertising budget, developing the advertising strategies, selecting the appropriate media and evaluating the advertising effectiveness.

2



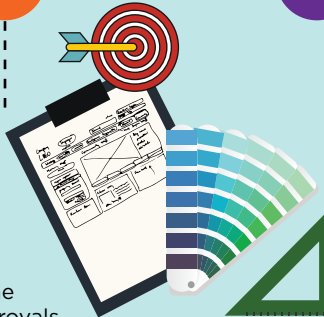
3



STEP 3: PRESENTING & APPROVAL

An **advertising presentation** describes the suggested campaigns from the advertising team after the planning process. The presentation states the objectives for the campaign and describes how the campaign will deliver its intended results. The client will reject or **approve** the campaign, so the advertising agency can move forward.

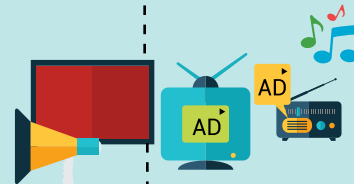
4



STEP 4: PRODUCTION

The team determines the creative brief the **production begins**: proofs for printed materials, storyboards for commercials and radio spots and design and content for the digital space. After proof approvals, actual production begins.

5



STEP 5: MEDIA

After the **production** is complete, media spots must be purchased and placed – commercial on television and radio, ads online, in newspapers and magazines and on billboards.

6



STEP 6: LAUNCH

The media schedule is confirmed and it is ready to **launch (set in motion)** around the world.

7

STEP 7: ANALYZE

Once the media campaigns have been launched, it is important to **analyze** responses in order to make track results and make adjustments.

BUILD YOUR OWN AGENCY

CREATE YOUR LOGO

Name your Advertising Agency and create a unique logo in the space provided below.

FINANCIAL CENTER

A client provides your advertising agency with \$1 million dollars (revenue) to build a campaign to promote their new product. Your agency receives 15% commission (profit) for your work.

What is the cost of the campaign?

What is your profit?

What is your outreach to get the best talent?

2024

▶ [Aerospace & Defense Industry Outlook](#)

Aerospace Sector:

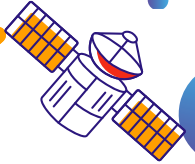
▶ [Meaning, Subsectors, History](#)

▶ [Global Military Aircraft & Aerospace Manufacturing Industry](#)

\$838 billion



AEROSPACE & DEFENSE INDUSTRY



The aerospace and defense industry is huge and complex. It serves both military and commercial markets. It designs, manufactures and services everything; commercial planes, jet fighters, single-prop private planes, traffic helicopters, radar systems, rocket-guidance systems, missiles, submarines, aircraft carriers and even the space shuttle to mission control software.

Its vast array of products includes tanks, spy satellites, flight simulators, commercial and private jets, communications satellites, consumer electronics and countless small parts, components, and sub-systems. There are 3 million parts in a wide body airplane provided by 500+ suppliers around the world.

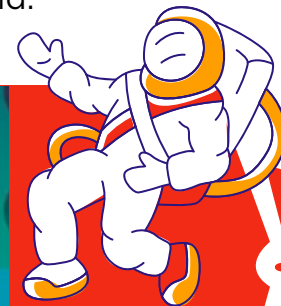


▶ **Visit all careers in aerospace**

Discover the median income, the educational requirements plus much more

Occupational Outlook Handbook

The Occupational Outlook Handbook is a publication of the United States Department of Labor's Bureau of Labor Statistics that includes information about the nature of work, working conditions, training and education, earnings and job outlook for hundreds of different occupations in the United States.



Sample Careers

- ▶ [Aeronautical Engineer - \(median pay: \\$130,720 per year\)](#)
- ▶ [Aerospace engineers](#)
- ▶ [Aerospace Products Sales Engineer](#)
- ▶ [Airline and commercial pilots \(median pay: \\$171,210 per year\)](#)

Lessons

- Science
- Technology
- Engineering
- Math

THE SPACE INDUSTRY

\$1.8 TRILLION
BY 2035

Be Future Ready ... the industry will need



Satellites
Launchers
Chips
Broadcast Services



DESIGN A SPACE VEHICLE

FINANCIAL CENTER

One of the wide body airplanes has 3 million different parts. Five hundred suppliers (a company that provides something needed such as a product or service) provide 70% of the parts.

How many parts do the suppliers provide?

The aerospace manufacturer sells the wide body airplane for \$270,000,000.00 each with a profit of 15% per plane.

What is the profit per plane?

The manufacturer sells 10 planes to an aviation company, who provides travel for passengers.

Total cost of sale:

Total profit:

NAME YOUR SPACE SHUTTLE

LESSONS

- Science
- Technology
- Engineering
- Arts
- Math

AMUSEMENT PARK INDUSTRY

\$82 billion Industry (U.S.)

Name your park: _____

Average attendance per day: 5,300

Fee per person: \$20.00

Daily income:

Design your rides and attractions

CAREERS

LESSONS
Science
Technology
Engineering
Arts
Math

ANIMATION

\$391 billion
Global Animation Industry

BANG!

POW!

ZAPI!

START & FINANCIAL CENTER

Name your animated television show:

Definition of plot:

The main events of a play, novel, movie, or similar work, devised and presented by the writer as an interrelated sequence.

You sell 20 - 1 minute commercials for \$67,000.00 each:

Total Profit:

► Explore Animation Careers

Discover your options.

DEVELOP YOUR STORYBOARD

(a sequence of drawings; representing the shots planned for the television show's production)

LESSONS
 Science
 Technology
 Engineering
 Math
 Business

▶ **THE
 AUTOMOTIVE
 INDUSTRY
 OUTLOOK**

AUTOMOTIVE INDUSTRY

**\$2.95
 trillion**
 Global Industry
 Revenue

**14
 million**
 Cars Sold
 Annually



HOW A CAR IS MADE: INVENTION TO LAUNCH

1

INVENTION MONTHS 0-72

- Research market, including in-house and field investigations, to identify the role of this product and its components in the global portfolio; define separation from similar models sold by sister brands.
- Identify special features, advantages, and potential world, U.S., or segment firsts.
- Define competitive set, target customers; set curb-weight, fuel-economy, and performance goals.



3

ENGINEERING MONTHS 0-72 (CONCURRENT WITH DESIGN)

- Customer clinics aimed at gathering current model feedback, suggestions for improvements
- Research advanced technologies—engines, transmissions, motors, electronic controls, manufacturing techniques (painting, metal forming, plastic molding), and emerging trends
- Body design and development for crashworthiness, weight, durability
- Aerodynamic development
- Design, development, tuning, validation (in-lab and on-road) of:
 - Powertrain
 - Chassis
 - HVAC, infotainment, seats, lighting systems
 - Hot-, cold-, wet-weather tests
 - Crash tests
 - Fuel-economy evaluations
- Design for manufacturing and assembly studies
- Component and manufacturing cost analysis



4

MANUFACTURING MONTHS 36-72

- Design for manufacturing and assembly
- Construct or modify production facilities
- Tooling design, construction, validation
- Pilot builds to validate process and parts
- On-line preproduction builds
- Quality improvements
- Confirm that production vehicle meets performance targets
- Train workforce
- Collaborate with suppliers
- Commence production of saleable autos



2

DESIGN MONTHS 0-72 (FOLLOWING MARKET RESEARCH)

- Interior
- Exterior
- Exterior colors, interior-trim materials selection
- Wind-tunnel assessment of theme models
- Concept creation
- Additional Computer Aided Engineering (CAE)
- Management and engineering reviews



5

LAUNCH MONTHS 60-72

- Market research
- Naming research (if needed)
- Define pricing
- Develop marketing theme
- Introduce product to dealer body
- Plan logistics (flow of vehicles to dealers)
- Create promotional (media and advertising) materials
- Craft presentations for management, auto shows, press, social media, dealers, analysts



LESSONS
Science
Technology
Engineering
Math
Business



\$2.95 trillion Global Industry Revenue
14 million Cars Sold Annually

ELECTRIC CARS



Some electric cars run solely on electricity, while others run on electricity and gas, known as hybrids.

BEV (Battery Electric Vehicle) runs solely on an electric motor and rechargeable battery.

PHEV (Plug-in Hybrid Electric Vehicle) charges internal batteries via an electrical outlet, and has a gas-fueled engine when battery runs out of charge.

EREV (Extended Range Electric Vehicle) is like a PHEV but does not use the gasoline engine to provide mechanical energy to the drive train.

FINANCIAL CENTER

Car dealerships have an average of 1,000 cars on their lot.

If the car dealers makes a profit of \$3,000.00 per car and sells an average of 100 cars per day for the year, what is the revenue per day?

REVENUE PER DAY

What is the car dealership's yearly revenue?

YEARLY REVENUE

If the cost to operate the dealership (sales commissions, building expenses, marketing) is \$1,000.00 per car sold, what is the annual profit?

YEARLY PROFIT



DESIGN A FUTURISTIC ELECTRIC CAR

FEATURES OF YOUR CAR

LESSONS
 Science
 Technology
 Engineering
 Math

CONSUMER PRODUCTS

Consumer Products
 Toiletries
 Cosmetics
 Appliances
 Electronics

▶ Consumer Goods Meaning, Types, and Examples



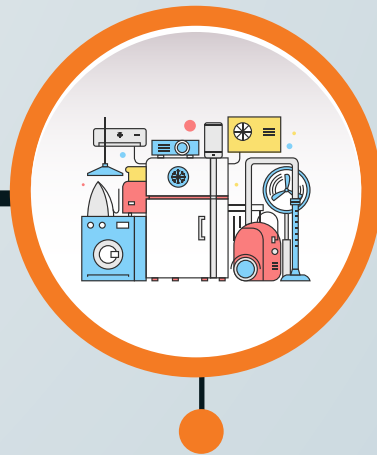
▶ The Importance of GDP

is the total value of goods produced and services provided in a country during one year.



Consumer Products Industry Revenue

More than 70% of what the U.S. produces is for personal consumption
\$21 TRILLION



Consumer Electronics

\$1 TRILLION REVENUE



Household Chemicals

\$312 BILLION REVENUE



Cosmetics

Global Market Share
 Consumer Electronics **\$634 BILLION**
 Household Appliances **\$253 BILLION**
 Cosmetics Manufacturing **\$39 BILLION**

DESIGN A NEW ELECTRONIC, HOUSEHOLD APPLIANCE OR COSMETIC PRODUCT



LESSONS
Arts
Technology
Math
Journalism



eBook Publisher



REVENUE
\$78 BILLION
191 MILLION
E-BOOKS

What kind of ebook will you publish?

- Fiction
- Non-fiction

fiction /'fikSHən/
Noun
Prose literature, esp. short stories and novels, about imaginary events and people. Invention or fabrication as opposed to fact.

nonfiction /nən'fikSHən/
Noun
Prose writing based on facts, such as biography or history.



Sell 10,000 ebooks a month at \$6.00 each.

Your monthly revenue will be:

Your yearly revenue will be:

Sell 100,000 ebooks a month at \$6.00 each.

Your monthly revenue will be:

Your yearly revenue will be:



Design your cover:

Write your first chapter:



LESSONS

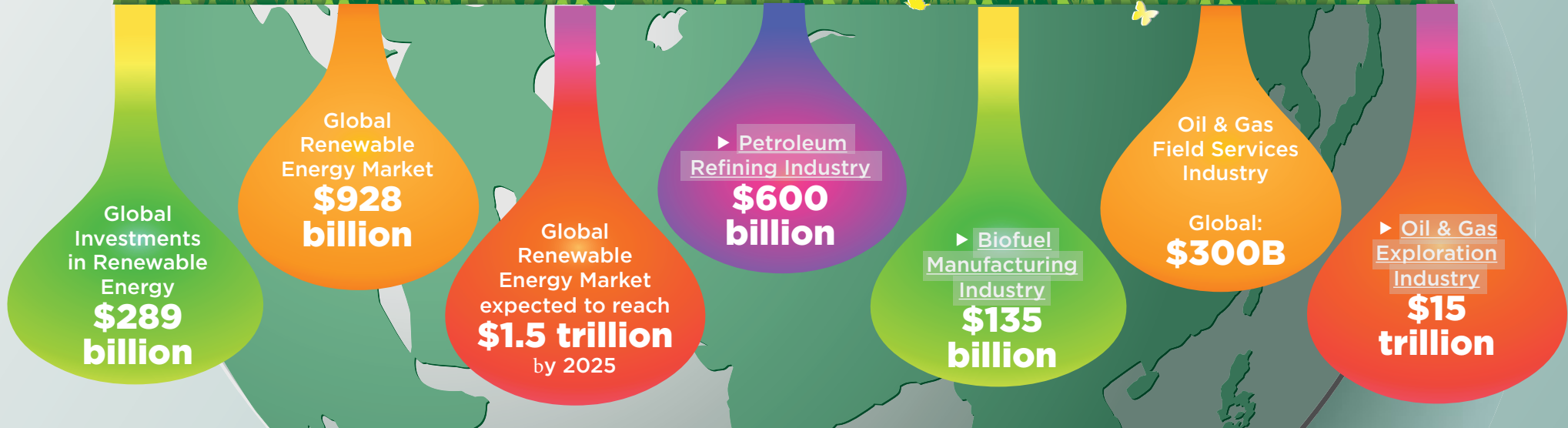
Science
Technology
Engineering
Math

ENERGY

INDUSTRY

Understanding Which
Types of Companies Comprise It

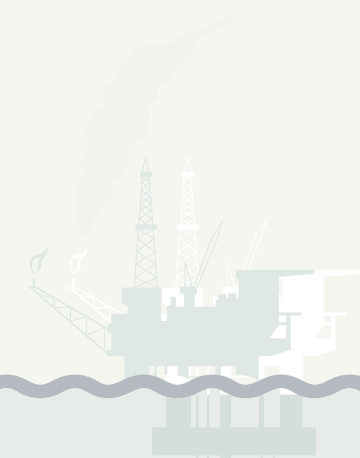
► [Click Here](#)



► ENERGY SECTOR OVERVIEW

The energy industry is the totality of all of the industries involved in the production and sale of energy, including fuel extraction, manufacturing, refining and distribution. Modern society consumes large amounts of fuel, and the energy industry is a crucial part of the infrastructure and maintenance of the society in almost all countries.

Selected Engineering Occupations	Wages
Civil engineers	\$90,950
Electrical engineers	\$94,730
Electronics engineers, except computer	\$100,790
Environmental engineers	\$89,530
Mechanical engineers	\$92,230



ADDITIONAL RESOURCES

- ▶ [How the Oil & Gas Industry Works](#)
- ▶ [Renewable Resource: Definition, Consideration and Examples](#)
- ▶ [Biofuel: Definitions, Examples and Limitations](#)
- ▶ [Career Center](#)

What type of renewable energy powers your technology?

How does your technology contribute to the health of earth's environment?

Types of RENEWABLE ENERGY



ENTERTAINMENT INDUSTRY:

MUSIC PRODUCER

\$21
BILLION
INDUSTRY

LESSONS

Technology

Engineering

Math

▶ **CAREERS**

▶ **How the Music Industry Works**

WHAT

The three main categories of the

▶ **music industry:**

- ▶ **Live music**
- ▶ **Recording**
- ▶ **Publishing**

START

Name your company

HOW A TOUR MAKES A PROFIT

On your artist's tour, you have the following goals:

50,000 seats at \$125.00 per ticket **What is the total?**

In 83 cities **50,000 seats x \$125.00 x 83**

Cost of Tour **\$50.00 per ticket sold**

Total Profit **\$75.00 per ticket sold**

SUBJECTS TO STUDY

- Science
- Technology
- Engineering
- Arts
- Math

ENTERTAINMENT:

MOTION PICTURE

Top Movies of the Decade

Global Box Office

**\$33
Billion**

► Film Industry Overview



\$1.3 Billion



\$1.3 Billion



\$2.8 Billion



\$1.2 Billion



\$1.2 Billion

DESIGN YOUR MOVIE POSTER

FINANCIAL CENTER

Your movie opens in 8,000 theaters.
Approximately 781 people PER theater attend opening day and spend \$12.00 per person.
How much revenue was earned opening day?

► Careers in the Film Industry

LESSONS

Science
Technology
Engineering
Math

What is the
STOCK MARKET?

The market
capitalization of the
global banking sector
\$7.9 trillion

Investopedia
Dictionary

FINANCIAL

**Financial
Services Market**
Growth in non-cash
payments
\$26 trillion

**Banking
Sector**
Global market
capitalization is
estimated
to be approximately
\$90 trillion

Insurance Sector
Global premiums
\$5.2 trillion

GDP
Global gross
domestic
product (GDP)
as of 2020
\$90 trillion

How Bitcoin
Works



FINANCIAL INDUSTRY

Financial services include activities
such as lending, investment management,
insurance, brokerages, payments,
and fund transfer services

Financial Sector
Overview

Corporate Finance
Finance and
Insurance Overview

Financial Careers

Global GDP is
broken down into
three sectors for analysis:
Agriculture - 3%
Industry - 25%
Services - 65%.

FINTECH

FINANCIAL TECHNOLOGY

\$245b

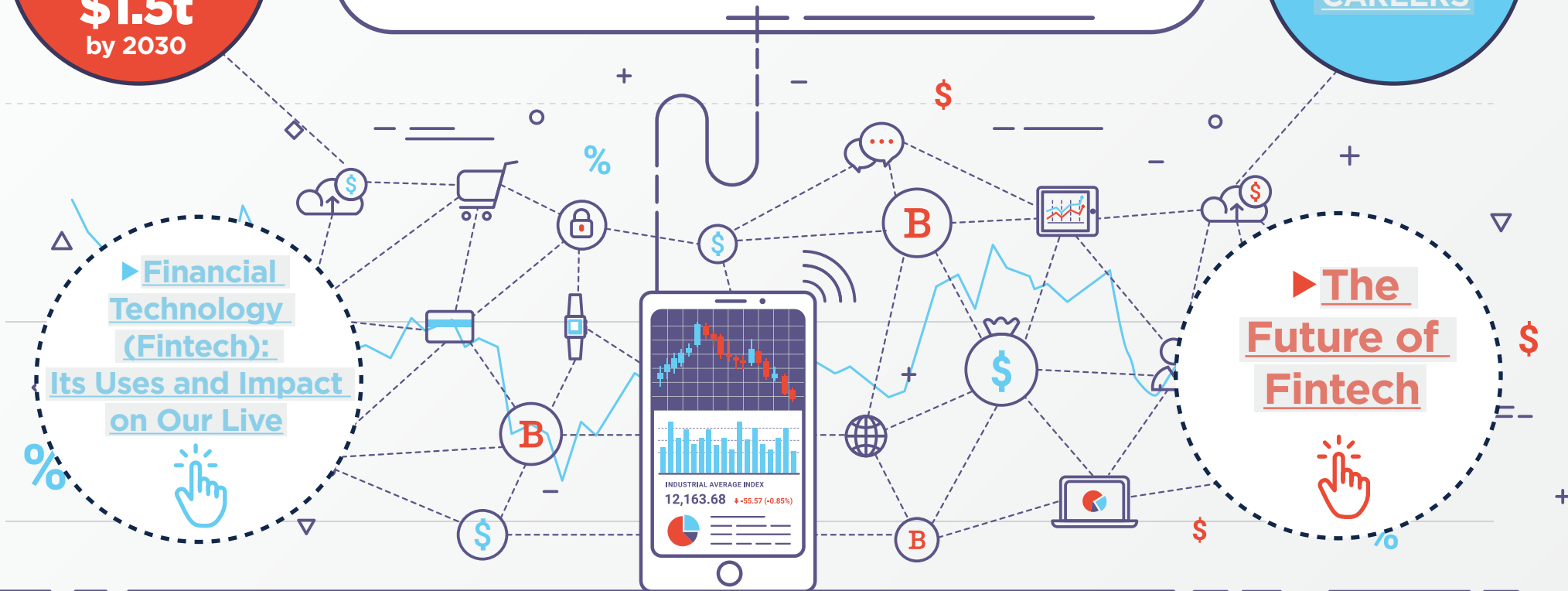
Fintech Sector Revenue

\$1.5t

by 2030

See Sample

▶ **FINANCIAL CAREERS**



Develop a FinTech Mobile App

How will you disrupt the financial industry?

What will your new app do?

DESIGN THE MOBILE APP



PERSONAL FINANCIAL WELL-BEING



LEARNING OBJECTIVES

- 1. FINANCIAL DECISION MAKING**
You now have your life goals; you need to make financial decision on how to reach your goals.
- 2. SPENDING AND SAVING**
We want to help you determine what to spend money on and how to save.
- 3. EDUCATION, CAREERS & ENTREPRENEURSHIP**
Let's start thinking about when you graduate from college, what kind of income would you like to have from your career or being an entrepreneur.
- 4. CREDIT AND BORROWING**
As you become older, you will learn more about having credit and borrowing money, when necessary. It is imperative that you understand now how critical it is to always have great credit.
- 5. BUILDING WEALTH**
Open a bank account: research the banks in your area on what they offer to students.
 - Start a budget
 - Save money
- 6. MARKETING**
What does marketing have to do with *Learning Objectives* for your Financial Well-Being: EVERYTHING. Commercials on your phone and television will target you to buy certain sneakers, to play games, to buy extra in games, all the while making the owners of those games billions of dollars. We want you to concentrate on your Financial well-being.

SPENDING & SAVING

WHAT ARE ASSETS?

A useful or valuable thing, person, or quality. An example of an asset is your Air Jordan® Collection which has value and is available to meet debts or other commitments.

WHAT ARE LIABILITIES?

Something a person or company owes usually a sum of money. An example of this is your video game rental fees.

WHAT IS NET WORTH?

The value the assets a person or corporation owns, minus the liabilities they owe.



YOUR NET WORTH IS:

FOR ADDITIONAL RESOURCES:

MASTER YOUR CARD

A community empowerment program sponsored by  **mastercard**





PERSONAL FINANCIAL WELL-BEING



Education, Careers & Entrepreneurship Creating your Planet Mogul Map

DETERMINE YOUR CAREER

DETERMINE YOUR ENTREPRENEURIAL JOURNEY

MATHEMATICIAN:
BETWEEN
\$91,000.00 -
\$140,000.00

CODER:
BETWEEN
\$41,000.00 -
\$150,000.00

ENGINEER:
BETWEEN
\$53,000.00 -
\$93,000.00

SCIENTIST:
BETWEEN
\$47,000.00 -
\$120,000.00

MUSIC PRODUCER:
\$50,986.00

Microsoft
\$125.8
BILLION

**ACTIVISION
BLIZZARD**
\$6.4
BILLION

JORDAN
\$3.1
BILLION

Apple
\$260.2
BILLION

amazon
\$280.5
BILLION

Nintendo
\$1.3
TRILLION

SONY
\$8.2
TRILLION

FINANCIAL DECISION MAKING



The rich have lots of money but the wealthy don't worry about money."

- RICH DAD

RICH

Having a great deal of money or assets; plentiful; abundant.

WEALTHY

The number of days you can survive without physically working and still maintain your standard of living.

WEALTH IS MEASURED IN TIME NOT DOLLARS

If your monthly expenses are **\$5,000** and you have **\$20,000** in savings, your wealth is approximately

how many months _____
or **how many days?** _____



We want you to understand your decisions from this point on will determine if you will be just rich or will be wealthy.



PERSONAL FINANCIAL WELL-BEING



BUILDING WEALTH



Understanding Your Income

You are making money cutting grass, working for your parents and neighbors. This is your INCOME.

Project Your Expenses. Less is More.

Tips at saving money:

- Purchase a less expensive pair of sneakers
- Purchase 1 game instead of 2
- Spend 50% less of in-gaming purchasing

What is a budget?

A budget is an estimate of income and expenses for a set period of time. When you create a budget, you allow or provide a particular amount of money to pay for a specific expense.

Develop a budget - yes, even now.

Budgeting allows you to create a spending plan for your money and allows you to save. Having a budget will allow you to have enough money for the things you need and for college.

MONTHLY BUDGET



ITEMS	BUDGET AMOUNT	ACTUAL INCOME
ALLOWANCE		
Job		
Gift Money		
EXPENSES		
Food		
Clothing		
Car		
Accessories/Personal Care		
Shoes		
Video Games Electronics		
Movies		
Events		
Books/Magazines		
Other		
Other		
MONTHLY BALANCE		

Bank Accounts

Research Student Bank Accounts in your area. Determine what fees each one charges and the easiest way for you to make a deposit.



PERSONAL FINANCIAL WELL-BEING



WHAT ARE STOCKS?



Larger companies that want to grow quickly often find it easier to sell some of their shares to the public to raise money. The **stock** of a public company is owned and traded by individual and institutional investors.

The **stock** may also be held by company founders, employees, and sometimes venture capitalists, which are people who invest in new businesses that are just getting started.

Take the next 30 days and pick out some companies that you have interaction with: food, clothes, shoes, games. Research their TICKET SYMBOL and review daily on the increase or decrease of the stock price.



Track the TICKET SYMBOL at: www.google.com/finance



▶ [CLICK HERE](#)

yahoo!
finance

EXAMPLES:



Ticker Symbol: MCD



Ticket Symbol: NKE

verizon✓

Ticker Symbol: VZ



at&t

Ticket Symbol: T



Ticket Symbol: MSFT



Ticket Symbol: ATVI

SUBJECTS TO STUDY

Science
Technology
Engineering
Math

HEALTH CARE SECTOR:

Global Health Care Industry
\$12 Trillion

▶ Industries Defined and Key Statistics

▶ Healthcare Services

Global Market Report 2023

▶ Financial Overview

of the Healthcare Sector

Health Care Sector

This includes businesses that provide medical services, manufacture medical equipment or drugs, provide medical insurance, or otherwise facilitate the provision of health care to patients.

▶ **Sample Healthcare Careers**

▶ Health Care Industries Overview

▶ **What Is a Drug?**
Definition in
Pharmaceuticals
and How
They Work



▶ **Global Medical Equipment Industry**



▶ **Features and Types of Plans**



▶ **Types and Services Provided**



**SUBJECTS
TO STUDY**
Science
Technology
Engineering
Math

HEALTH CARE SECTOR: TELEHEALTH



► Telehealth: What It Means, History, Future

► Digitalized Healthcare



Telehealth refers to the use of telecommunications technology to deliver care and health services remotely. It allows people who need medical care to connect with their healthcare providers from the privacy of their homes via smartphones, tablets, and computers.

What is the name of your app?

How will your app help healthcare professionals or improve patient care?

What is your idea for digitalized health care?

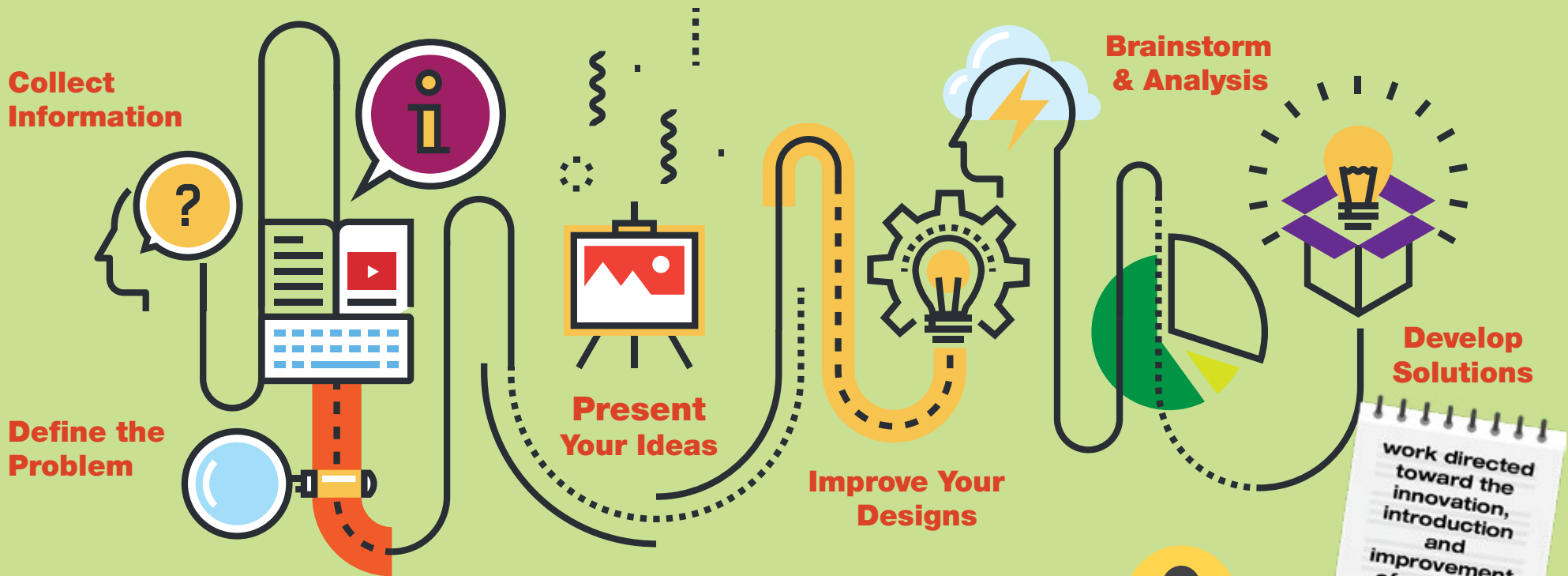
**SUBJECTS
TO STUDY**

Science
Technology
Engineering
Math

HEALTH CARE SECTOR

An ongoing effort to development or improve products and services, often undertaken by teams of highly skilled scientists and engineers.

► **What is Research and Development?**



FACTS

► **2024 Global Health Care Sector Outlook**

What area needs new research and development?

SUBJECTS TO STUDY

Science
Technology
Engineering
Math

HEALTH CARE SECTOR: OVERVIEW



FINANCIAL CENTER

If the operating costs for a 200 bed hospital is \$146 million dollars per year, what is the average cost per bed per day?

The yearly cost of running an urgent care clinic is \$1.5 million dollars. The average patient bill is \$155. What is the minimum number of patients that must be billed per year to cover the clinic's expenses?

▶ PHARMACEUTICAL INDUSTRY OVERVIEW



▶ HEALTH CARE CAREERS A-Z

Top Careers in Health Care

- Physical Therapist
- Dental Hygienist
- Physician Assistant
- Nurse Practitioner
- Physician
- Registered Nurse
- Occupational Therapist
- Home Health Aide
- Diagnostic Medical Sonographer
- Licensed Practical Nurse
- Physical Therapist Assistant
- Dental Assistant
- Medical Assistant
- Clinical Laboratory Technician
- Pharmacist
- Surgeon
- Radiologic Technologist
- Surgical Technologist
- Dentist
- Paramedic
- Nursing Assistant
- General Practitioner
- Speech-language Pathologist
- Occupational Therapy Assistant
- Anesthesiologist
- Health Information Technician
- Nurse Anesthetist
- Cardiovascular Technician
- Phlebotomist
- Pharmacy Technician
- Health Technician
- Massage Therapist
- Optometrist
- Respiratory Therapist
- Veterinary Technician
- Physical Therapist Aide
- Clinical Laboratory Scientist
- Therapist
- Nutritionist
- Optician
- Internist
- Audiologist
- Veterinarian
- MRI Technologist
- Ophthalmic Medical Technician
- Radiation Therapist
- Pediatrician
- Nuclear Medicine Technologist
- Prosthetist
- Psychiatrist

PERSONAL NUTRITIONAL & PHYSICAL



HEALTHY HABITS

Dietary habits established in childhood often carry into adulthood, so teaching children how to eat **healthy** at a **young age** will help them stay **healthy** throughout their life. The link between good nutrition and **healthy** weight helps to reduced chronic disease risk and maintain overall good **health**.



FIT TIP

Jumping Rope

Jumping rope scorchs 11 calories per minute, so you can quickly break a sweat.

PHYSICAL ACTIVITY











DAILY CARDIO

Cardiovascular workouts are imperative to a long, healthy life. Whether it's a daily walk, a quick bike ride or intense run on the treadmill, there are so many benefits to getting your heart rate up!

Working out your heart with cardiovascular exercise makes it beat stronger. Keeping it in tip-top shape helps lower your chances of heart disease and diabetes - both life threatening and far too common.

By committing to a daily cardio workout, you can lower your chances of those, and many other illnesses. Consider doing either a **thirty-minute cardio session each day**, or several that add up to thirty minutes.

EAT THIS = WALK THAT

 double cheeseburger 540 calories	=		5.6 miles
 large french fry 500 calories	=		5.2 miles
 large soda 310 calories	=		3.2 miles
 caesar salad with dressing 300 calories	=		3.1 miles
 yogurt parfait with fruit 190 calories	=		1.7 miles



PERSONAL NUTRITIONAL & PHYSICAL



EATING HEALTHY

PORTION CONTROL

Colorful foods, which are generally fruits and vegetables, contain many of the vitamins and antioxidants we need – with few calories.

Along with maintaining good health, the nutrients in vegetables and fruits work together to protect against cancer, heart disease, vision loss, hypertension and other diseases.

HEALTHY SNACKS

- Yogurt
- Popcorn
- Celery with peanut butter and raisins
- Nuts
- Trail Mix
- Fruit
- Cottage Cheese
- Oatmeal



LESSONS

Science
Technology
Engineering
Math



RESTAURANT

Restaurant Industry
\$1.5 trillion
Projected to be
\$1.8 trillion
by 2030



FACTS

How does a restaurant make money?

- get new customers
- get the customers to spend more money
- get the customers to come back

What you must have:

1. great chef
2. great location
3. great concept

FINANCIAL CENTER

A restaurant serves an average of 320 people a day.

The average payment is \$9.20 per person.

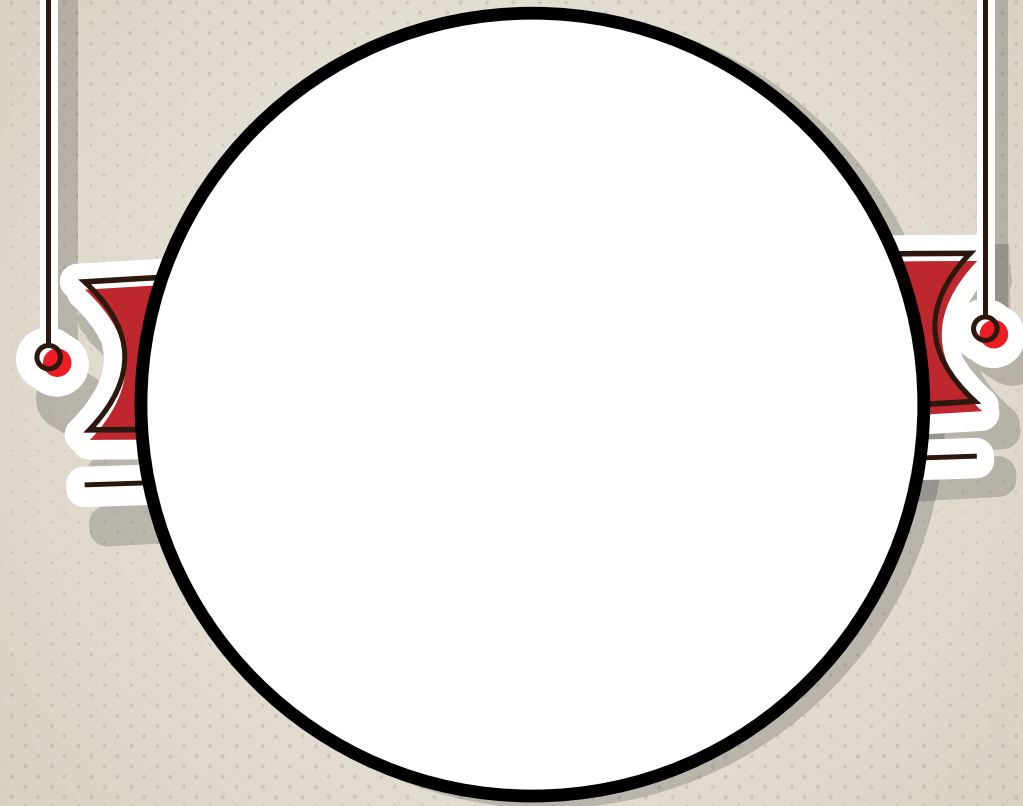
What is the revenue per day?

Your community outreach can be to provide food to the homeless



What is your menu and cost per item?

DESIGN A LOGO FOR YOUR RESTAURANT



LESSONS
Arts
Technology
Math

R E T A I L
I N D U S T R Y

► **Global e-Commerce Industry**
\$6.3 trillion
Daily online shoppers
2.64 billion

Global Retail Industry
\$27 trillion

Bookstores
\$28 billion

Sporting Goods
\$75 billion

Jewelry
\$225 billion

Global Apparel Manufacturing
\$1.7 trillion

Global Cosmetic
\$528 billion

FINANCIAL CENTER

What is the name of your eCommerce store?



What products will you sell?



► **Retail Industry ETF:**
What It is,
How It Works

What are your PRODUCTS? What is your PRICING? What is your PROFIT?

LESSONS: SCIENCE
TECHNOLOGY
ENGINEERING
ARTS
MATH

► **eSports:**
What They Are,
How They Work,
Major Players

\$1.4
BILLION INDUSTRY



CAREER OPPORTUNITIES



Esports gamer



Esports publisher



Esports commercial partner



Game developer



Esports streamer



Esports tournament winner

► **eSports Financial**
Overview

ONE OF THE MOST EXCITING INDUSTRIES
IN THE WORLD TODAY.

LESSONS
 SCIENCE
 TECHNOLOGY
 ENGINEERING
 MATH

SPORTS

SPORTS INDUSTRY

\$ **4.5 TRILLION**
 INDUSTRY GLOBALLY

\$ **498 BILLION**
 INDUSTRY IN U.S.

\$ **2.5 BILLION**
 eSPORTS INDUSTRY



NBA

- ▶ Business Model
- ▶ How NBA is Profitable

\$10 billion

NHL

- ▶ Business Model

\$6.4 billion

Tennis

- ▶ Business Model
- ▶ About USTA

\$914 million

NASCAR

- ▶ Business Model

\$820 million

MLB

- ▶ Business Model
- ▶ Team Valuations

\$820 million

MLS

- ▶ Business Model

\$820 million

Global Golf

- ▶ Business Model
- ▶ Business Overview

\$820 million

NFL

- ▶ Business Model
- ▶ Business Overview

\$18 billion

SPORTS INDUSTRY

FINANCIAL CENTER: DEVELOP A BUDGET

▶ What is NIL?

Understanding Name, Image, and Likeness Rules

▶ The Most Valuable Sports Franchises: Rankings and Analysis

How does the sport industry make money?

- ▶ Media Rights
- Gate Revenues
- ▶ Sponsorship
- ▶ Merchandise

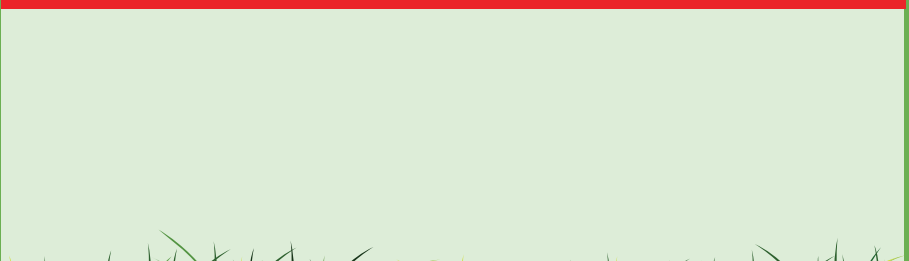
Payroll

Administration	<input type="text"/>
President	<input type="text"/>
General Managers	<input type="text"/>
Coaches	<input type="text"/>
Staff	<input type="text"/>
Players	<input type="text"/>

Operations

Office	<input type="text"/>
Rent	<input type="text"/>
Office Suppliers	<input type="text"/>
Facilities	<input type="text"/>
Stadium Management	<input type="text"/>
Utilities	<input type="text"/>

DESIGN YOUR TEAM'S LOGO



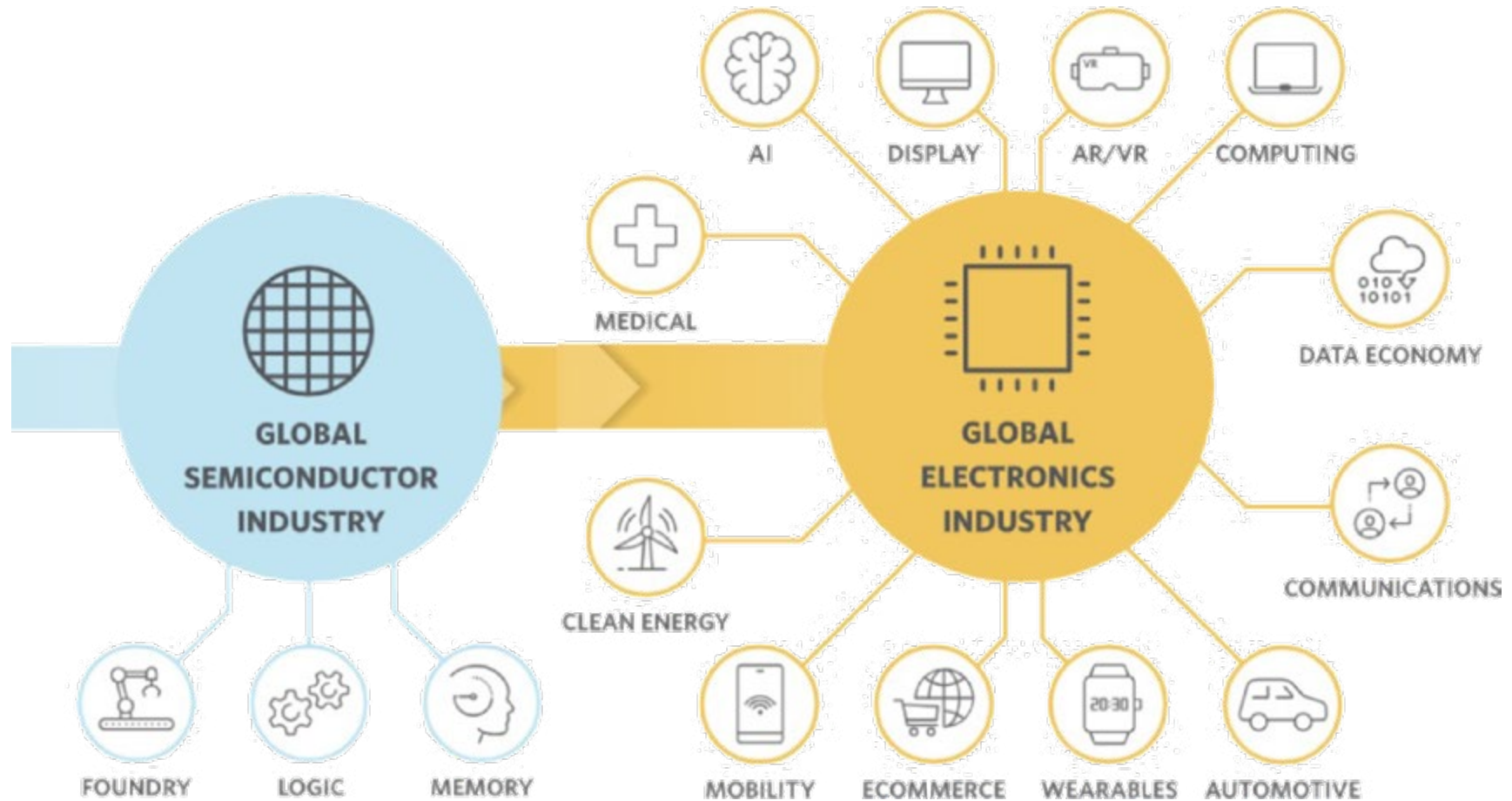
▶ **Sports Industry Outlook 2024**



► **Global Semiconductor industry revenue**
\$574 b
By 2030 projected revenue
\$1 trillion

A **SEMICONDUCTOR** is a material used in electrical circuits and components that partially conducts electricity. Find out how it is used.

► **What Is the Electronics Sector?**
The electronics sector produces electronic equipment and consumer electronics and manufactures electrical components for a variety of products.



Hybrid cars sport up to **3,500** semiconductor chips.

In 2023, **1.14+ trillion** semiconductor chips were sold around the world.

semiconductor

CAREERS



The semiconductor industry directly employs more than

300,000 people

in the U.S. and supports nearly

1.8 million additional U.S. jobs

► **List of Best Paying Semiconductor Jobs**

+ Educational Requirements

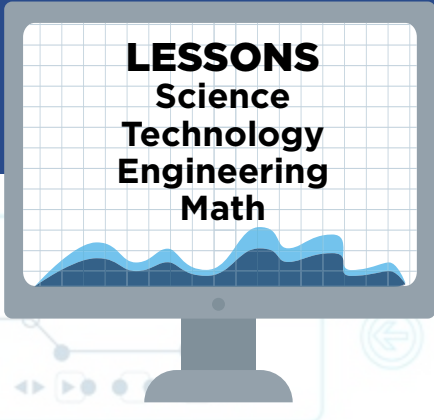


Average base salary

\$94,522

TECHNOLOGY SECTOR

► **Best Tech Jobs for the FUTURE**



\$5.2 trillion
Global Tech Industry



\$1.7 trillion
U.S. Tech Industry



* The **United States** is the largest tech market in the world, representing **35%** of the total industry.

► **TECH SECTOR: DEFINITION & 4 MAJOR SECTORS**
Companies specialized in electronics, software, computers, artificial intelligence or other things related to information technology.



Top Strategic Technology Trends 2024

1 AI Trust, Risk and Security Management	2 Continuous Threat Exposure Management	3 Sustainable Technology
4 Platform Engineering	5 AI-Augmented Development	6 Industry Cloud Platforms
7 Intelligent Applications	8 Democratized Generative AI	9 Augmented Connected Workforce
10 Machine Customers		

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Gartner

The BIG FIVE
U.S. tech companies collectively earned over \$1.7 trillion in revenue



► **TECH CAREERS**

Careers:
► **Web Developers**
Digital Designers

GLOBAL MARKET

23%
Devices & Infrastructure

19%
Emerging Tech

12%
Software

26%
Telecom Services

21%
IT + business services

TECHNOLOGY INDUSTRY

\$5.2 TRILLION
GLOBAL TECH INDUSTRY

LESSONS
Science
Technology
Engineering
Math

TECH CAREERS

\$1.7 TRILLION
U.S. TECH INDUSTRY

U.S. MARKET

21%
Telecom Services

29%
IT + business services

Careers:
► **Software Developers**

18%
Devices & Infrastructure

13%
Emerging Tech

20%
Software

GLOBAL GAMES

LESSONS

Science
Technology
Engineering
Arts
Math



Develop, publish and distribute games worldwide for consoles, PCs, mobile phones and tablets.

ONLINE GAMING OVERVIEW



MINECRAFT

300 Million downloads
140 Million monthly players
\$2.1 Billion revenue

PUBG STUDIOS

\$1.1 b
sold 75 million
units



\$451 m
sold 44 million
units

\$204
billion industry

\$440
billion by 2032

3.9b
global gamers

FINANCIAL CENTER

What is the name of your game?

How much does your game cost?

If you sell 4.5 million units, what is your revenue?

You set a goal to make \$5 million in profit on a game you sell for \$27. For every game you sell, you make \$6.25 profit. How many games must you sell to reach your goal?

SUBJECTS TO STUDY

- Science
- Technology
- Engineering
- Arts
- Math

MOBILE APP DEVELOPMENT

\$935
billion
industry

TOP MOBILE APPS



Facebook
59.6 million downloads
Revenue: \$134m



Instagram
58 million downloads
Revenue \$59.6b



TikTok
46 million downloads
Revenue: \$16.1b



Roblox
56 million downloads
Revenue: \$28b



Monopoly
59 million downloads
Revenue: \$134m

APP DOWNLOAD KEY STATISTICS

147.2 billion
apps and games were
downloaded in 2023

56.6 billion
Games

92.6 billion
Apps

113.2 billion
Google Play

349 billion
iOS (Apple)

TOP CAREER OPPORTUNITIES

► Mobile App Careers

Mobile Application Developer
\$94,000

iOS Software Engineer
\$102,000

Senior iPhone Developer
\$105,000

Senior Android Developer
\$107,000

Lead Java Developer
\$110,000

Senior Mobile Developer
\$111,000

Javascript JQuery Developer
\$124,000

Design a mobile app

PartyRock Everyone can build AI apps

▶ **BUILD AN APP FREE**
Hands-on, code-free app builder

FINANCIAL CENTER

What is the name of your mobile app?

Who is the audience?

What is the user experience?

How can you make a profit?

In-App Purchases

Users have the ability to purchase virtual goods, in-game currency, full game or app unlocks.

What is your in-app purchase?

Apple iOS
2.2 million app

Google Play
2.8 million apps

Your app is developed and now you must sell to your audience.

For the first 12 months, you have 980,000 downloads of your mobile app with an average cost of \$5.00 in-app virtual goods purchasing. You have to pay Apple iOS 15% and Google Play 15%, what is your revenue after those expenses?

CRITICAL TECHNOLOGY AREAS

BIOTECHNOLOGY



SCIENCE



LABORATORY



DNA



BIOENGINEERING




RESEARCH



ORGANISM



SCIENTIST



Biotechnology
[bī-ō-tek-nā-le-jē]

A science-driven industry sector that uses living organisms and their derivatives to produce products and processes.

 Investopedia

Investopedia / Theresa Chiechi

SAMPLE CAREERS & AVERAGE SALARIES

Bioprocess Engineer
Bioinformatics Scientist /
Computational
Biologist
\$70,000 - \$150,000



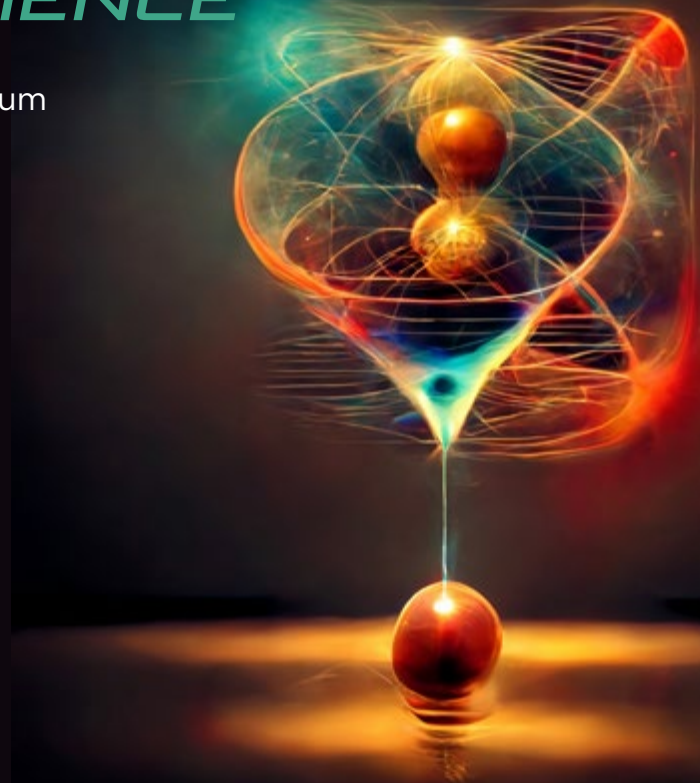
CRITICAL TECHNOLOGY AREAS

QUANTUM SCIENCE

Quantum Science, often referred to as quantum mechanics or quantum physics, is the branch of physics that studies the behavior of matter and energy at the smallest scales, typically at the level of atoms and subatomic particles. It provides a fundamental framework for understanding the nature and behavior of particles like electrons, photons, and other fundamental particles.

SAMPLE CAREERS & AVERAGE SALARIES

Quantum Computing Engineer
Quantum Hardware Engineer
Quantum Machine Learning Scientist
\$80,000 - \$170,000



Future Generation Wellness Technology, also known as “FUTURE G”

Future Generation Wellness Technology, also known as “FUTURE G,” refers to the integration of advanced technologies such as artificial intelligence (AI), wearable devices, and data-driven solutions to revolutionize the wellness industry. These innovations aim to provide personalized, accessible, and effective health and wellness solutions that cater to the evolving needs of modern consumers.

SAMPLE CAREERS & AVERAGE SALARIES

AI/ML Engineer in Wellness Technology
Wearable Technology Developer
\$90,000 - \$160,000

CRITICAL TECHNOLOGY AREAS

▶ ADVANCED MATERIALS APPLICATIONS & POTENTIAL CAREERS

Key types and applications of advanced materials:

Nanomaterials
Biomaterials
Smart Materials

Advanced materials refer to substances with enhanced properties or functionalities that go beyond traditional materials. These materials are engineered to have specific characteristics, making them suitable for advanced technological applications in various industries, including electronics, energy, healthcare, aerospace, and more.



3D PRINTING



5G



ADVANCED MATERIALS



CYBER SECURITY



DATA ANALYTIC



DIGITAL ENTERPRISE



AUGMENTED REALITY (AR)



AUTOMATION OF KNOWLEDGE WORK



AUTONOMOUS VEHICLES

▶ MICROELECTRONICS

Microelectronics is a subfield of electronics that focuses on the design, development, and manufacturing of small electronic components and systems, typically on the scale of micrometers (one-millionth of a meter) or smaller. It involves the use of semiconductor materials, primarily silicon, to create integrated circuits (ICs), microchips, and other miniaturized electronic devices that are essential in modern technology.

Average Salary Ranges:
\$60,000 - \$150,000

HYPERSOURCE

HyperSource technology is a specialized system developed by INOVA Geophysical for advanced source communication in seismic data acquisition. Careers related to HyperSource typically fall under roles in seismic technology, geophysical engineering, and advanced communication systems within the oil and gas industry.

Average Salary Ranges:
Geophysical Engineer
Seismic Data Acquisition Specialist
Field Service Engineer (Seismic Systems)
\$80,000 - \$140,000

▶ TRUSTED AI AND AUTONOMY

Trusted AI and Autonomy refer to the development and deployment of artificial intelligence (AI) systems and autonomous technologies that are reliable, safe, ethical, and trustworthy. These concepts are crucial as AI and autonomous systems become increasingly integrated into various aspects of society, such as healthcare, transportation, finance, and defense.

Average Salary Ranges:
\$90,000 - \$160,000

CRITICAL TECHNOLOGY AREAS

ADVANCED COMPUTING & SOFTWARE

Advanced Computing and Software encompass a range of technologies and methodologies that extend beyond traditional computing paradigms. This field is characterized by its focus on high-performance computing, data-intensive applications, artificial intelligence, and software development for complex systems. It plays a crucial role in scientific research, business innovation, and the development of new technologies.

CAREERS IN ADVANCED COMPUTING

& SOFTWARE span a wide range of fields, including high-performance computing, cloud computing, artificial intelligence, quantum computing, cybersecurity, and more.

Salary ranges: \$90,000 - \$160,000



Human-Machine Interfaces (HMIs) refer to systems and devices that allow humans to interact with machines, computers, and other technological systems. These interfaces serve as a bridge between humans and machines, enabling communication and control through various input and output methods. HMIs can be found in a wide range of applications, from industrial control systems to consumer electronics and virtual reality environments.



LESSONS

Science
Technology
Engineering
Arts
Math

TELECOMMUNICATIONS INDUSTRY

\$1.5 trillion globally

The telecommunications sector includes companies that make communication possible on a global scale, whether it is through the phone or the internet. These companies created the infrastructure that allows data to be sent anywhere in the world.

Telecommunications Sector:

- ▶ **What and How To Invest in It**
- ▶ **10 Biggest Telecommunications (Telecom) Companies**
- ▶ **Telecommunications Careers**
- ▶ **Telecommunications Career Path**

Key Telecommunications Industry Segments

The telecommunications sector consists of three basic sub-sectors: telecom equipment (the largest), telecom services (next largest), and wireless communication.

DEVELOP A NEW SMARTPHONE

What is the name of your smartphone?

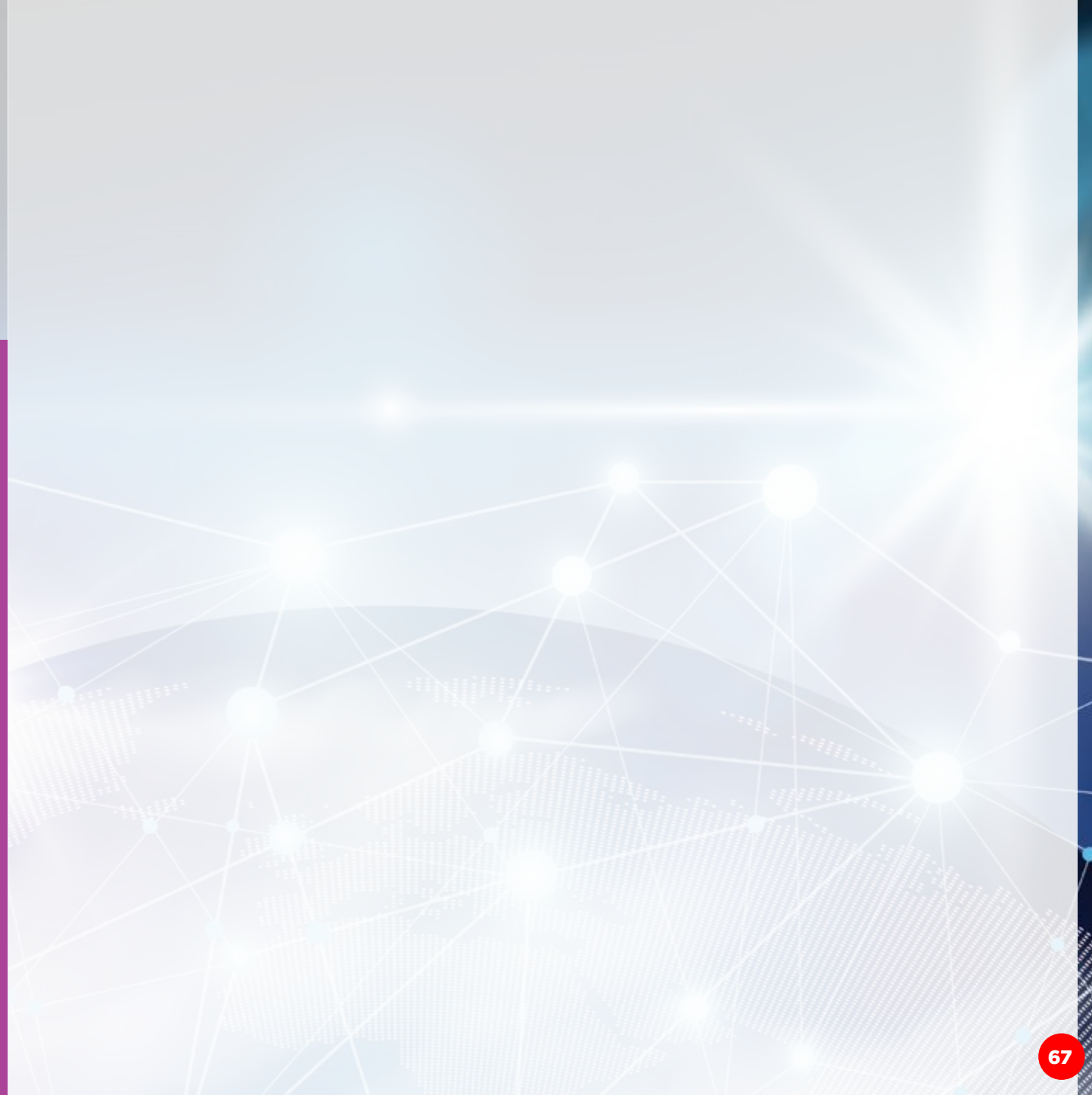
What are the new features in your smartphone design?

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The total cost of your phone delivered to customers is \$120.00, which includes parts, manufacturing and distribution. You want to make 200% profit per phone, how much will you have to charge?

You sell your smartphone design to a teleco company and you retain 2% ownership for the use of the patented design. Their average annual revenue is \$4.5 billion, what is your annual return?

YOUR SMARTPHONE DESIGN





▶ planetmogul.com

The best way to predict the future is to create it.
Peter Drucker