

# SUPPLY AND DEMAND

## What is supply and demand and how is it related to Business Knowledge & Processes?

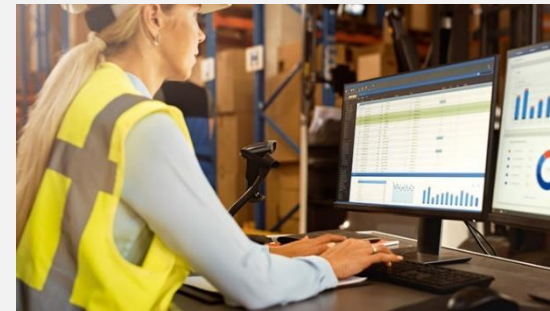
Supply and demand is the relationship between the amount of goods and services, or labor available and the amount customers want. Understanding supply and demand provides technicians insight into many of the business decisions of their employers, such as what products and services they offer, how much they charge, how the products and services are marketed, and potential plans to expand. The concept of supply and demand even impacts the number of technicians companies hire, salaries, and available career paths in a company.

## Vocabulary

- **Demand** – The ability and willingness to buy a product.
- **Law of Demand** – If prices go up, demand goes down. If prices go down, demand goes up.
- **Supply** – The total amount of a good or service that is available to consumers.
- **Law of Supply** – An increase in price results in an increase in quantity. A decrease in price results in a decrease of quantity.
- **Supply Curve** – Demonstrates the supply of a product or service that would be available at different prices.
- **Economics** – The study of the production, distribution, and consumption of goods and services.
- **Market** – All of the buyers and sellers of a particular product or service within a region.

## How will technicians use skills and knowledge related to Supply and Demand?

Maria is a Solar Technician in Florida. She had been very busy connecting new residential solar photovoltaic installations until recently and was wondering why fewer customers were choosing solar energy. She did some research and found out that the production costs of solar panels have risen over the past several months due to the jump in prices for two of the essential raw materials, aluminum and steel. In response, the manufacturer raised its prices on the panels it sold to the solar installation company. Maria's company needed to pass on the cost to customers, so the cost of solar panels increased. Fewer potential customers were willing to buy the panels at the higher



price. Maria's analysis explained how the reduced supply of the materials impacted prices, and therefore, lowered the demand for residential solar energy.



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## Skills Needed for a High-Paying Career

- Analyzing data to forecast demand
- Interpreting financial spreadsheets
- Determining how current events will impact the market
- Identifying supply and demand, business cycles, and market trends
- Explaining processes impacted by supply and demand to a variety of stakeholders

## Education

Your local community college provides the classes you will need. An understanding of supply and demand is most often taught within a Business program but may also be included in an Engineering Technology or other technology program offering associate degrees and one-year certificates. Supply and demand may also affect other technical fields in which you might start a company, invent a machine or process, or provide services. Community college course schedules are designed to accommodate the needs of working students and often include online and hybrid delivery formats. [Find your nearest community college here.](#)

## Future Trends

Supply and demand in the future will be impacted by:

- Direct sales to consumers which reduces costs and increases customer feedback
- Government policies that influence international trade altering supply and demand and consumer spending
- Challenges in finding talent, impacting expansion plans, and increasing automation and hiring outside of the U.S.

## Learn More

- [Difference Between Supply + Demand](#)
- [Economic Lowdown Podcast Series](#)
- [Infographic of Supply and Demand](#)



Preparing Technicians for the  
**FUTURE OF WORK**



# SUPPLY AND DEMAND

## What Is Supply and Demand?

According to the [Federal Reserve Bank](#), supply is the interaction between the quantity of a good or service that producers are willing and able to sell at all possible prices during a certain time period and demand is the quantity of a good or service that buyers are willing and able to buy at all possible prices during a certain time period. Supply and demand also apply to the labor market. It refers to the number of job openings and the number of individuals looking for work.

## Supply and Demand Competencies

- Analyzing data to forecast demand
- Interpreting financial spreadsheets
- Determining how current events will impact the market
- Identifying supply and demand, business cycles, and market trends
- Explaining processes impacted by supply and demand to a variety of stakeholders

## Cross-disciplinary Skills

- Creating and interpreting spreadsheets
- Using computational thinking strategies
- Interpreting statistics accurately
- Comprehending business practices
- Solving problems and improving processes
- Performing customer/stakeholder analysis

## Automotive Scenario

When the tiny, two-seat Smart Cars first arrived in the U.S. in 2008, it was a time when gas prices were very high and consumers were looking at energy efficient alternatives in the car market. Dwayne, an Automotive Technician, began servicing these cars at his Mercedes-Benz dealer in early 2009. Since then, sales and service of Smart Cars have been dropping to the point where Smart Cars stopped being sold in the U.S. in 2019. Given the drop in demand, Dwayne now only works on 1-2 per Smart Cars per month. To ensure he has job security, Dwayne is taking Hybrid Electric Vehicle Technology courses at his local community college.

## Agriculture Scenario

Sharon is an Agricultural Technician who serves several large farms in her town. She met with her clients recently to share how using global positioning systems (GPS) surveying can save them money by providing more accurate measurements of their field acreage. This is important since fertilizers applied via aerial applicators are charged on a per acre basis. Their current measurements are based on government estimates using aerial photographs, which are not precise. Sharon has a vendor that uses the latest GPS technology and has discovered that most of his other customers' fields are typically 5-10% fewer acres than they thought. That has meant 5-10% savings for the farms since they purchased less fertilizer. All of Sharon's clients decided to go with the GPS surveying, increasing the demand for this service in her area.

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## Activity

This activity focuses on the impact of supply of and demand for technicians. It provides the opportunity for students to explore a situation that is relevant to their future career paths. Begin with reviewing the definitions of supply and demand. Students will explore technician job projections on the [U.S. Bureau of Labor Statistics Occupational Outlook Handbook](#) online. They will discuss how their career path is impacted by supply of and demand for workers in their field.

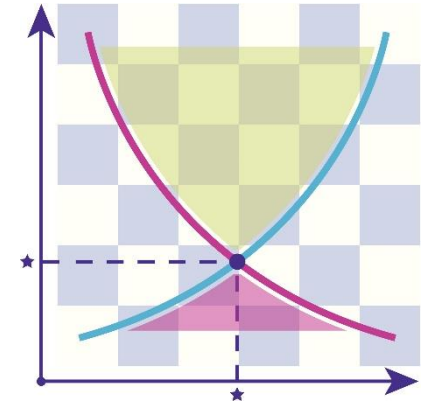
## Warm-Up

Show the 5-minute video [The Labor Market, Economic Lowdown Series](#). Review the definitions of supply and demand and how they apply to the labor market. Provide the example of the nursing shortage and that U.S. hospitals are having difficulty finding nurses to fill the shifts. Hospitals are offering signing bonuses, flexible work schedules, and other benefits to entice nurses to choose them over other employers. This is also true for many technician positions. For automotive technicians, manufacturing technicians, and others, companies have increased their salaries and are offering additional benefits. In some cases, companies are signing employment contracts with students who are still in college and paying their tuition.

## Activity Steps

- Students break up in groups of 3-5 to discover to discuss how supply and demand impacts their career paths.
- Students use the U.S. Bureau of Labor Statistics Occupational Outlook Handbook to locate the demand projections for their targeted occupation(s).

- Students find their occupation(s) and review the Number of Jobs, Job Outlook and Employment Change.
- Students discuss their findings in their groups.
- Students share what they discovered and how supply and demand impacts the world of technician careers as a class.



## Read More

- [Law of Supply and Demand](#)
- [Understanding the Labor Market](#)



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## ABOUT THE PROJECT

Preparing Technicians for the Future of Work, funded by the National Science Foundation Advanced Technological Education program, recognizes that technicians need an expanded skill set to remain competitive. The project's Framework for a Cross-Disciplinary STEM Core outlines recommendations for incorporating knowledge and skills in Advanced Digital Literacy, Data Knowledge and Analysis, and Business Knowledge and Processes. Learn more about implementing the Framework at [preparingtechnicians.org](http://preparingtechnicians.org).