


## ASSIGNMENT

<b>Course Code</b>	20CSC309A
<b>Course Name</b>	Cost Estimation and Economics in CS
<b>Programme</b>	B.Tech.
<b>Department</b>	CSE
<b>Faculty</b>	FET

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<b>Semester/Year</b>	5 <sup>TH</sup> /2018
<b>Course Leader/s</b>	Ms. Sunita Chakraborty

Declaration Sheet			
Student Name	Subhendu Maji		
Reg. No	18ETCS002121		
Programme	B. Tech.	Semester/Year	5 <sup>TH</sup> /2018
Course Code	20CSC309A		
Course Title	Cost Estimation and Economics in CS		
Course Date		to	
Course Leader	Ms. Sunita Chakraborty		
<p><b>Declaration</b></p> <p>The assignment submitted herewith is a result of my own investigations and that I have conformed to the guidelines against plagiarism as laid out in the Student Handbook. All sections of the text and results, which have been obtained from other sources, are fully referenced. I understand that cheating and plagiarism constitute a breach of University regulations and will be dealt with accordingly.</p>			
Signature of the Student			Date 25 January 2021
Submission date stamp (by Examination & Assessment Section)			
Signature of the Course Leader and date		Signature of the Reviewer and date	

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	Reg no.: 18ETCS002121		Name: Subhendu Maji	
<b>Sections</b>	<b>Marking Scheme</b>		<b>Max Marks</b>	<b>First Examiner Marks</b>
	A1.1	Identify the problems of the firms the Entrepreneur had to face during the crisis time period.	3	
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		<b>Part-A Max Marks</b>	<b>15</b>	
<b>Part B.1</b>	B 1.1	Mention 5 ways in which the modern customers are more satisfied with online shopping	5	
	B 1.2	Explain the measures taken by the business people to make online shopping more attractive.	3	
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		<b>B.1Max Marks</b>	<b>15</b>	
<b>Part B.2</b>	B 2.1	Differentiate between Fiscal Deficit and Primary Deficit. Calculate the Fiscal and Primary Deficit.	2	
	B 2.2	Draw a graphical presentation between Basic, College, Parent, Homeowner and Senior Worksheets.	3	

	B2.3	Compare the data analysis and give reasons which level of people are balanced.	3	
	B2.4	Mention four measures to reduce the debt.	2	
		B.2 Max Marks 10	<b>10</b>	
	B3.1	Introduction of the articles	<b>2</b>	
	B3.2	Content of the article	<b>4</b>	
	B3.3	Proficient to justify the articles	<b>3</b>	
	B3.4	Conclusion	<b>1</b>	
		B3 Max Marks 10	<b>10 Marks</b>	
		<b>Total Marks</b>	<b>50</b>	

**Solution to Question No. 1:**

**1.1 Identify the problems of the firms the Entrepreneur had to face during the crisis time period.**

Refer at [http://bit.ly/eco\\_assignment2](http://bit.ly/eco_assignment2)

**1.2 Explain the ways an Entrepreneur has to balance the demand and supply of goods with the price changes in the crisis.**

COVID-19 has disrupted supply chains around the world. But they've also been a vital lifeline to support the response, keeping essential medical supplies, food and other key necessities flowing where they're needed most. There's no doubt that the pandemic has tested the ingenuity, resilience and flexibility of supply chain leaders globally, as they have sought to maintain essential operations.

The pandemic has also proved to be a real test of corporate values and purpose. Consumers, investors, governments and communities may ultimately judge companies on how they respond to this period of disruption.

The COVID-19 pandemic is not just a short-term crisis. It has long-lasting implications for how people work and how supply chains function. There is a pressing need for businesses to build long-term resilience in their value chains for managing future challenges.

This requires holistic approaches to manage the supply chain. Companies must build in sufficient flexibility to protect against future disruptions. They should also consider developing a robust framework that includes a responsive and resilient risk management operations capability.

That capability should be technology-led, leveraging platforms that support applied analytics, artificial intelligence and machine learning. It should also ensure end-to-end transparency across the supply chain. In the long-term, risk response will need to become an integral part of business-as-usual protocols.

**1.2 Mention five challenges faced by the Entrepreneur to maintain the demand and supply of goods in the market.**

Refer at [http://bit.ly/eco\\_assignment2](http://bit.ly/eco_assignment2)

**1.3 Recommend three appropriate ways to overcome the problems of demand and supply of goods in the market in the crisis of the economy.**

Refer at [http://bit.ly/eco\\_assignment2](http://bit.ly/eco_assignment2)

## Retail-supply-chain changes

● Nondiscretionary categories ● Discretionary categories



### Suppliers

- Establish daily meetings with strategic suppliers
- Reduce product variety
- Reduce on-time, in-full requirements, as well as payment terms for key suppliers
- Mitigate risk for existing orders, in collaboration with suppliers



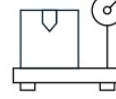
### Merchandising

- Revise buy plans and reallocate staff toward high-demand categories
- Override algorithms to redirect inventory to high-density areas
- Dial down near-term buy plans to preserve cash
- Anticipate future increases in sales and adjust buy plans accordingly



### Distribution

- Retrain employees and redeploy them to distribution centers in high-demand areas
- Raise wages and make temporary hires
- Maintain good workplace hygiene
- Cross-train store and back-office personnel to assist with e-commerce



### Logistics

- Allocate more transport capacity to high-demand items
- Have suppliers deliver directly to stores
- Stage products at strategic hub stores to feed smaller stores
- Explore alternative and supplemental delivery options
- Offer transportation capacity if private fleet is available to support movement of critical goods



### Fulfillment

- Relax same-day/next-day delivery requirements
- Optimize routing and accommodate more delivery slots
- Enforce order maximums
- Expand fulfillment and return options to give customers flexibility

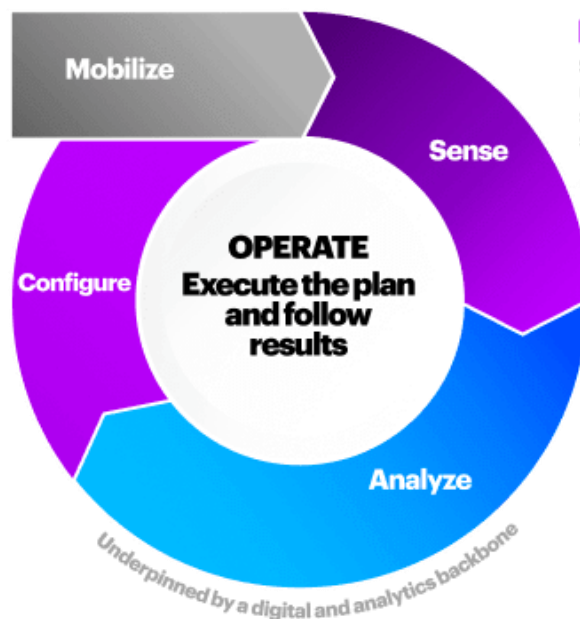
As they respond to both the immediate impacts of the pandemic and prepare for what comes next, a continuous cycle of risk mobilizing, sensing, analysis, configuration, and operation will help to optimize results and mitigate risks:



**Mobilize** the command centre and (initial) response plan. Establish operating rules for responses related to all supply chain interventions and contingency management



**Configure** and tailor the network and product flows to execute the protocols. Develop balanced scorecard to track and measure the effort



**Sense** and prioritize new risks and implications to your supply chain components / services and ecosystem



**Analyze** what-if scenarios and protocols for source, plan, make, distribute and service implications

**Solution to Question No. 2:**

**2.1 Mention 5 ways in which the modern customers are more satisfied with online shopping**

Reasons modern customers are more satisfied with online shopping are following:

**1. Convenience**

- Online shopping is available for customers around the clock comparing to traditional store as it is open 24 hours a day, 7 days a week.
- Customer can avoid crowds and waiting lines, especially in holiday shopping.
- Customer gets online customer services. Some companies have online customer services available 24 hours. Therefore, even after business hours, customers can ask questions, get necessary support or assistance, which has provided convenience to consumers.
- Customer wants to avoid pressure when having a face-to-face interaction with salespeople. they pressure or uncomfortable when dealing with salespeople and do not want to be manipulated and controlled in the marketplace. Online shopping gives them that option.

**2. Information**

- Online sellers provide more product information that customers can use when making a purchase.
- Customers put the weight on the information that meets their information needs.
- consumers also get benefit from products' reviews by other customers. They can read those reviews before they make a decision.

**3. Available products and services**

- Consumers can find all kinds of products which might be available only online from all over the world.

**4. Multiple Payment Option**

- E-commerce has made a transaction easier than it was and online stores offer consumers benefits by providing more variety of products and services that they can choose from.
- Online Shopping gives customers a variety of option for payment. Some website even has cash on delivery option which gives customer a satisfaction that they need to pay only after they receive the product.



## **5. Cost and time efficiency**

- online shopping customers are often offered a better deal, they can get the same product as they buy at store at a lower price.
- Since online stores offer customers with variety of products and services. it gives customers more chances to compare price from different websites and find the products with lower prices than buying from local retailing stores.
- Since online shopping can be anywhere and anytime, it makes consumers' life easier because they do not have to stuck in the traffic, look for parking spot, wait in checkout lines or be in crowd in store.

## **2.2 Explain the measures taken by the business people to make online shopping more attractive.**

Measures taken by the business people to make online shopping more attractive are as follows:

### **1. User Friendly Website**

- Customers can be influenced by the image of the web site when they decide what website or buyer they should buy from. Not only should companies create their secured website, but also should create it to be more attractive and more useful.
- Online stores can change a shopper into a buyer if the stores provide variety and useful information of product, good customer service, and easy-to-access website.
- Their websites have enough information but should not be too overwhelming. Putting unstructured or useless information in the website can reduce internet usefulness and ease of use. Also, companies and sellers should double-check any single words in their website to reduce mistakes and customers' misunderstanding. Information quality and visual design is important effect on repurchasing.
- The willingness to purchase online will be low if the online store lacks of ease in searching and comparing shopping, and product updates. Online store should make their website to be easy for consumers to search product and service. Making web designs and portals novel and sophisticated and web atmospherics friendly is a key to attract visitors.
- Moreover, if online stores want to convert visitor into buyer, they should improve their website by offering customer a comfortable, logical, interesting and hassle-free process and easy language by creating fast website with functional design as smooth as possible.

- Online payment process is another issue that should be taken care of because it affects the willingness to pay. Online stores should make their payment process to be as easy and secure as possible.
- To sum, if online stores want to increase the customer, they should take care of their website design to be more user-friendly.

## **2. Online Service**

- Customer service is as important as quality of website.
- If the customer service is not available or reachable, customers will perceive that companies are trying to hide something or not intending to solve their problems.
- Online stores should provide the added-value of service to customers and have customer feedback channel in their website. There should be interactivity customer service in the website, so that customers can contact with the seller anywhere and anytime.
- Software downloading, e-form inquiry, order status tracking, customer comment, and feedback are some of example that online sellers can use to fulfill their online service.

## **3. Additional option**

- customers are not able to touch or try products before they buy, online store should offer them some additional options. For instance, a money-back guarantee is one of the means to reduce customers' concern.
- Sellers might consider to offer money-back guarantee policy including shipping expenses refund to reduce purchasing risk. In addition, to avoid shipping delay and product lost, online store may cooperate with other companies with expertise in logistic to improve their distribution channels.

## **4. Flexible Prices**

- Offering customers more flexible prices and promotions or offering a one-stop shopping service are some more examples that online stores can use to make their business succeed. Online sellers may offer customers to use their bank account number, or stored-value card to complete their purchase.
- It is also suggested that online stores may offer customer an e-wallet which transfers balance from customer's online bank account to the store payment system. This may help sellers to gain more sales from those who want to buy online products or services but do not have credit card or do not want to use their credit card online.

## **2.3 Discuss the problems faced by the customer on online shopping.**

The problems faced by the customer on online shopping are as follows:

### **1. Security**

- Security seems to be a big concern that prevent customers from shopping online because they worried that the online store will cheat them or misuse their personal information, especially their credit card.
- Since the payment modes in online shopping are most likely made with credit card, so customers sometime pay attention to seller's information in order to protect themselves. Customers tend to buy product and service from the seller who they trust, or brand that they are familiar with. Online trust is one of the most critical issues that affect the success or failure of online retailers.

### **2. Intangibility of online product**

- customers cannot see, hear, feel, touch, smell, or try the product that they want when using online channel. In many cases, customers prefer to examine the product first and then decide whether or not they want to buy.
- Some people think the product information provided in website is not enough to make a decision. Online shoppers will be disappointed if the product information does not meet their expectation.
- Some products are less likely to be purchased online because of the intangible nature of the online products. For example, customers are less likely to buy clothes through online channel because they have no chance to try or examine actual product. Customers viewing a product on computer screen can show a different effect than actually seeing it in the store.

### **3. Social contact**

- Some customers are highly socially connected and rely on other peoples' opinions when making purchase decision tend.
- There are also consumers who sometimes shop at traditional store because they want to fulfill their entertainment and social needs which are limited by online stores.

### **4. Dissatisfaction with online shopping**

- customers' past online shopping experience often affect their future purchase decision. In online shopping, for example, they may get unwanted product or low-quality products, product does not match what is described or expected. The product may be fragile, wrong, or not working.
- Some online sellers may not agree to refund those products even though it is not what the customer wanted.

- Delivery is another thing that affects online purchasing decision. Slow or late shipping, for instance, makes customer walk away from online shopping

## **2.4 Explain any two measures taken by the business people to improve the transaction of goods through online.**

### **1. User Friendly Website**

- Customers can be influenced by the image of the web site when they decide what website or buyer they should buy from. companies create their secured website, but also create it to be more attractive and more useful.
- Their websites have enough information but should not be too overwhelming. Putting unstructured or useless information in the website can reduce internet usefulness and ease of use. Also, companies and sellers double-check any single words in their website to reduce mistakes and customers' misunderstanding. Information quality and visual design is important effect on repurchasing.
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- Moreover, online stores want convert visitor into buyer, they improve their website by offering customer a comfortable, logical, interesting and hassle-free process and easy language by creating fast website with functional design as smooth as possible.

### **2. Online Service**

- Online stores should provide the added-value of service to customers and have customer feedback channel in their website. There should be interactivity customer service in the website, so that customers can contact with the seller anywhere and anytime.
- If the customer service is not available or reachable, customers will perceive that companies are trying to hide something or not intending to solve their problems.
- Software downloading, e-form inquiry, order status tracking, customer comment, and feedback are some of example that online sellers can use to fulfill their online service.

**Solution to Question No. 3:****3.1 Differentiate between Fiscal Deficit and Primary Deficit. Calculate the Fiscal and Primary Deficit.**

	<b>Fiscal deficit</b>	<b>Primary deficit</b>
Meaning	It is the excess of total budget expenditure over the total budget receipt excluding borrowing.	It is the difference between fiscal deficit and interest payments by the government.
Calculation	It is calculated as, Fiscal Deficit = Total Budget Expenditure – Total Budget Receipt (excluding borrowings)	It is calculated as, Primary deficit = fiscal deficit - interest payments
Scope	It is broad or wide in scope.	Primary deficit is the part of fiscal deficit hence, narrow in scope.

Given,

<b>Particulars</b>	<b>(₹ in crores)</b>
Revenue Expenditure	70,000
Borrowings	15,000
Revenue Receipt	50,000
Interest Payment	25% of Revenue Deficit

$$\begin{aligned} \text{Revenue deficit} &= \text{revenue expenditure} - \text{revenue receipts} \\ &= 70000 - 50000 = ₹ 20,000 \text{ cr} \end{aligned}$$

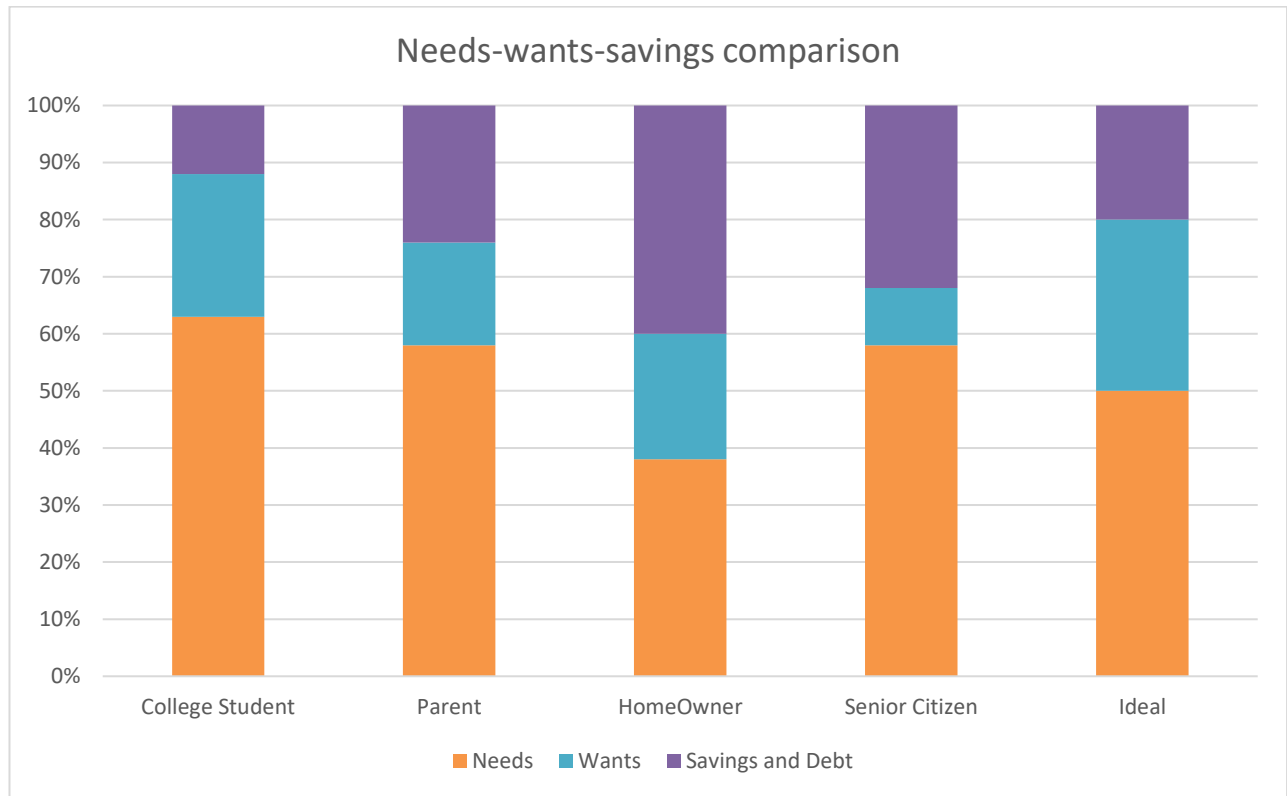
Fiscal deficit is equivalent to borrowings.

$$\text{Therefore, } \textbf{Fiscal deficit} = ₹ 15,000 \text{ cr}$$

We know,

$$\begin{aligned} \textbf{Primary deficit} &= \text{fiscal deficit} - \text{interest payments} \\ &= 15,000 - (25 \% \text{ of } 20,000) \\ &= 15,000 - 5000 \\ &= ₹ 10,000 \text{ cr} \end{aligned}$$

### 3.2 Draw a graphical presentation between Basic, College, Parent, Homeowner and Senior Worksheets.



### 3.3 Compare the data analysis and give reasons which level of people are balanced.

- Thus, it can be seen, a college student does not save that much as they don't have a major source of income beside the allowance they get from their parents. And also, college student seems to have wants expenses to be very high in comparison with the rest.
- The parent tends to save less than the homeowner as they have mortgage to pay off as compared to homeowner.
- The senior citizen tends to spend very little on wants expenses has better savings than a college student or a parent.
- In comparison with the ideal graph, the homeowner seems to be most balanced as they don't have major added expense of rent and mortgage which helps them in improving their overall savings.

### 3.4 Mention four measures to reduce the debt.

**1. Pay at least the minimum on each debt**

Each month, pay off as much of your debt as you can. At least pay the minimum you owe on each loan. This will protect your credit rating. If you can afford to pay more, pay down the loan with the highest interest rate first.

As you pay off each loan, start paying more on the next debt in line.

**2. Ask for a lower interest rate**

Ask your lender for a lower rate. If the first person you talk to can't help you, ask to speak to their supervisor.

If you have a good record of paying on time, they may be willing to reduce your interest rate to keep your business.

**3. Stop using your credit cards**

You don't have to cancel your credit cards or cut them up. But put them away somewhere safe and don't use them to make any more purchases until you've cleared your debt.

**4. Consider a consolidation loan**

You may be able to reduce your interest charges by grouping all your debts into 1 low-interest loan. This works best if you stop accumulating debt while you pay off the consolidation loan. Two common options are a home-equity loan or line of credit. The interest rate will be lower, but keep in mind that you could lose your house if you don't make the payments.

Find out how long it could take to pay off your credit cards and other debt with this debt calculator.

**5. Trim your budget**

Could you cut back on things like eating out and other optional purchases? Trimming your budget will free up more money to pay down on your debt.

**6. Talk to a professional**

If you can't figure out a way to reduce your debt, consider talking to a financial planner or credit counsellor. Non-profit credit agencies help people work through their debt problems.

They can help you develop a plan, reduce your interest costs and get out of debt over time.

**Solution to Question No. 4:**

**Productive Entrepreneurs and innovation will invigorate job opportunities and increase production in the present situation**

Every crisis brings challenges and threats to entrepreneurs and their organizations, no matter if initiated by human behavior, natural disasters or economic mechanisms. At the end of December 2019, the coronavirus (so-called COVID-19) has started spreading from Wuhan, China to other countries so widely and quickly, that on 11th March 2020, World Health Organization – WHO (2020) declared COVID-19 pandemic. As a response to mitigate coronavirus spread and save lives, governments in affected countries imposed desperate measures of social distancing, widespread lockdown, restrictions on travelling, movement, and people gatherings. Many aspects of private and public life had to be moved online. Entrepreneurs were not an exception. They had to start moving their business activities online.

However, not everything could be solved conveniently online. COVID-19 has significantly influenced the entrepreneurial engagement of self-employed persons. Some entrepreneurs had to close their businesses temporarily as a result of governmental restrictions; others had to impose precautions and to run their activities in reduced extent. They also needed to find innovative solutions in all aspects of their entrepreneurial endeavor as the consequences of the pandemic linger on. It took time before the entrepreneurs got oriented in the new situation, and governments started helping them out with particular policy-actions aiming to deliver information, advisory and financial support. Pandemics will very likely influence traditional entrepreneurial decision-making processes, communication and conflict management, well-being and entrepreneurial outcomes.

However, it's important to understand that entrepreneurship and innovation are dependent on access and participation. For entrepreneurs to bring new ideas to life, they need access to education and a level-playing field on which to compete. In this vein, the role of government leaders and public policy is to create conditions that allow more entrepreneurs to start businesses by implementing policies which nurture that environment so those businesses can grow. Economic growth suffers when entrepreneurial activity is unevenly spread socio-economically, demographically, and geographically. Under the right conditions, entrepreneurs have an incredible power: they help regional areas prosper economically, and they also serve society as they help engineer innovative solutions to problems and challenges.

**Investing in products and services people need.**

What motivates a person to start a new business? According to traditional models, entrepreneurs create new businesses in response to unmet needs and demands in the market. That is, there is an opportunity to provide a product or service that is not currently in existence, or otherwise available. Economists refer to these business-starters as “opportunity” entrepreneurs in order to distinguish these individuals from those who start businesses for lack of better work opportunities. So-called “opportunity” entrepreneurs, who launch new enterprises in response to market needs, are key players when it comes to fostering economic growth in a region. They enable access to goods and services that populations require in order to be productive. This is not to ignore “necessity” entrepreneurs that launch enterprises because they have no other options. Both can and do contribute to economic growth.



**Providing employment opportunities.**

New businesses need to hire employees. They create jobs and these economic opportunities uplift and support communities through increasing the quality of life and overall standard of living.

**Commerce and regional economic integration.**

Technology has made it possible for small, entrepreneur-led businesses to expand into regional and global markets. When new businesses export goods and services to nearby regions, these enterprises contribute directly to a region's productivity and earnings. This increase in revenue strengthens an economy and promotes the overall welfare of a population. Economies that trade with one another are almost always better off. Politics aside, engaging in regional and international trade promotes investment in regional transportation and infrastructure, which also strengthens economies. This has never been truer than it is today, as we live in an increasingly interconnected global economy. Even for a large and advanced economy like the United States, foreign markets have a significant role. Foreign trade, according to some estimates, is responsible for over 90 percent of our economic growth.

What exactly is innovation and how does it promote economic development? Under what conditions, do entrepreneurs innovate? A widely-accepted definition measures innovation using a set of criteria including how many new products are invented, the percentage of high-tech jobs, and the size of the talent pool available to tech industry employers. More recently and increasingly, our definition of innovation has expanded to include the development of new service offerings, business models, pricing plans, and routes to market. While the role that startups and young tech companies play in job creation is well documented, their contribution to overall productivity is less intuitive and not discussed as often.

**New technologies promote efficiency.**

The ability to turn ideas into new products and services that people need is the fount of prosperity for any developed country. Economic growth, generally speaking, is driven by new technologies and their creative applications. Periods of rapid innovation historically have been accompanied by periods of strong economic growth. The impetus of innovation is the greatest natural resource of all: the human mind. Creating innovative products and solutions requires an educated population and an environment where collaborative work can take place. In addition to being good for business, education increases workforce creativity and quality of life.

**Addressing environmental challenges.**

Innovation is (and will continue to be) crucial when it comes to addressing the enormous environmental challenges we face today: combating climate change, lowering global greenhouse gas emissions, and preserving biodiversity in the environment. Without power for extended periods of time, commerce comes to a halt. Without water, we cannot live. Reliable access to these innovations (such as irrigation technology, electricity, and urban infrastructure) increases productivity and enhances economic development.

**Innovation impacts socio-economic objectives.**

Innovative business practices create efficiency and conserve resources. Innovation in agriculture is especially relevant for addressing socioeconomic challenges (in addition to encouraging economic growth).

In the U.S., for instance, we waste billions of dollars annually due to inefficiencies and uncompetitive practices in our healthcare system. Hopefully, new ideas and innovations in the future will address these problems, resulting in further reforms. When this occurs, Americans' overall health and quality of life will benefit, and so will our economy if our wasteful healthcare costs also decrease.

### **Innovation happens where there is competition.**

In essence, there is a positive feedback loop among innovation, entrepreneurship, and economic development.

New and growing businesses represent the principal sources of job creation and innovative activity in an economy, two factors that generally result in the rising standards of living for all.

Businesses play a key role both in helping society get through an economic crisis and in creating innovations that shape society after a crisis. So, one key question is: how will the ongoing crisis influence future society?

While it's hard to predict the future, we can develop an understanding of what is ahead by analyzing current trends.

### **Businesses show citizenship, resourcefulness**

The global pandemic and associated policies restricting people's movements have caused major disruptions to many businesses. We've already observed major shifts in business practices. Working from home is the new norm, while many personal meetings and conferences have been replaced by video meetings and other virtual forms of communication.

Some businesses, especially restaurants, tourism operators and movie theatres have come to a complete stop. Others, like manufacturers of consumer goods, have seen a sharp drop in demand as consumers are either unable to visit shops or lack the spare cash for nonessential purchases.

The short-term impact is likely different from the long-term impact. Consumers may simply postpone the purchase of a new car or washing machine but they may not want to buy the same types of services in the future.

Many firms have initially responded to the crisis not only by cutting costs but by engaging in new entrepreneurial activities.

### **Building foundations for the future**

Actions during the crisis will shape firms in the long run.

First, the crisis creates opportunities for businesses to become more innovative. Facing external pressures, some business leaders are stepping out of their routines and comfort zones to become creative problem-solvers. Along the way, they rediscover their entrepreneurial spirit.

Some will continue to pursue opportunities first identified during the crisis. Perhaps some automotive suppliers will make medical equipment, while service providers integrate new online interfaces with their traditional businesses.

Second, reputations are built — and lost — during times of crisis. Companies demonstrating good citizenship by helping with shortages, or by making major donations, are also probably hoping that consumers will remember their actions when the economy returns to normal. What's more, treating employees well during a time of hardship enhances a company's reputation as an employer and helps attract talent as well as building a loyal workforce.

On the other hand, there are also a lot of opportunities to ruin a reputation. Companies that treat their employees or customers badly during a crisis will face major challenges rebuilding when the storm has passed. Similarly, if corporate behemoths like Amazon fail to provide reliable logistics solutions to small businesses right now, then others will develop competing platforms. Those new platforms will not only enable buyers and sellers to meet, but will also integrate service providers to transport products in a timely and reliable manner.

### **Technology push**

Beyond existing firms, some sectors of the economy are likely to grow. New technologies can offer numerous opportunities as the crisis transforms the products or services they can offer. Service businesses in particular are likely to see a lot of innovation in how services are created, packaged and sold.

In the health-care sector, health-related smartphone apps are proliferating in China — and possibly soon globally. Artificial intelligence is helping hospital emergency rooms, while virtual reality has moved from an entertainment tool to a valuable resource for technical training and maintenance.

Companies that become competent and move quickly in these areas during the crisis will have a strategic advantage over their competitors in the post-pandemic economy. For example, whoever builds the most reliable and speedy logistics infrastructure for delivering goods to private homes during the lockdown is likely to gain loyal customers.

### **Consumer pull**

Customers — both individual consumers and businesses — are becoming accustomed to new forms of business, such as online ordering for home delivery. Their established habits have been disrupted, changing attitudes and expectations. For example, the surge in video meetings creates comfort with this method of interaction, and users learn how to be effective in meetings without face-to-face interactions.

After the shutdown, many people will expect more integration of online and offline offerings. They will likely also be more at ease with using new technologies, especially video conferencing that can also reduce travel costs and carbon emissions.

It's clear the post-pandemic future will be different. What's happening during the crisis will have a lasting impact on society. Current signs of entrepreneurial initiative and goodwill give us some cause for optimism.

Throughout human history, crises have been pivotal in developing our societies. Pandemics have helped advance health-care systems, wars have fueled technological innovations and the global financial crisis helped advance tech companies like Uber and Airbnb. The present coronavirus pandemic will arguably not be an exception; entrepreneurs can be expected to rise to the challenge.

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