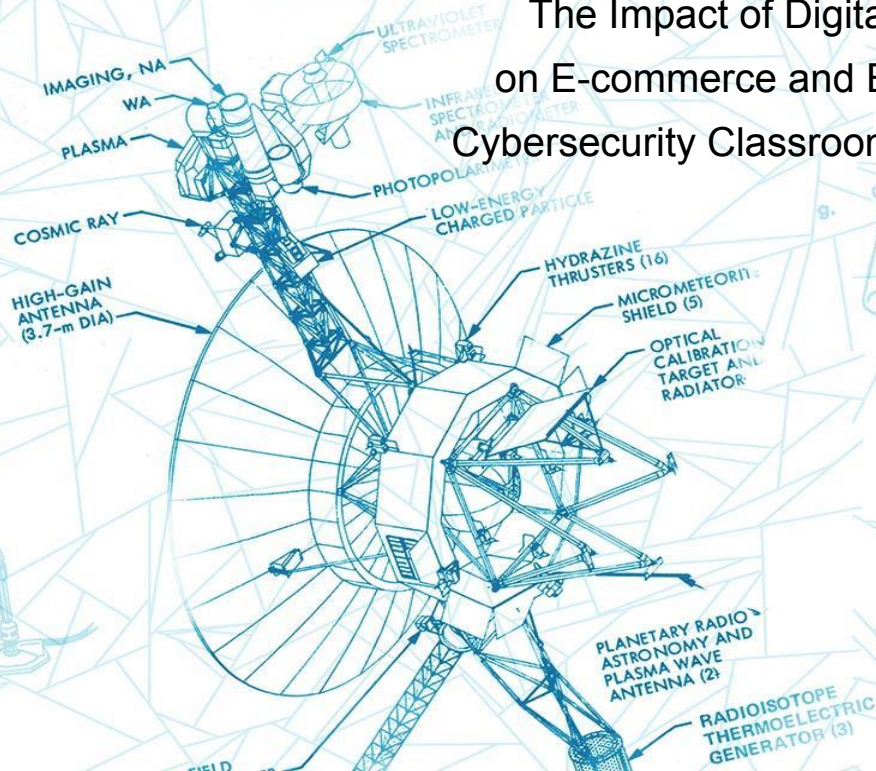


Digital Literacy in Business

The Impact of Digital Technologies
on E-commerce and Entrepreneurship
Cybersecurity Classroom Training Program



Module purpose

This module has been created to help students and teachers with digital literacy and innovations for Business high school courses.

A goal of the module is to explore new technologies through different, subjects, references, and activities. The module should help students recognize the ever-changing opportunities that technologies bring to the business world.

Future entrepreneurs are, “creative problem solvers who welcome and successfully manage change.” Ontario Curriculum

Finally, students and teachers are encouraged to select the most relevant sections and activities of this module to accompany their in-class learning tasks.





STEM Fellowship

Module activities

- Activity 1.1 - Data and Encryption
- Activity 1.2 - The Blockchain
- Activity 2.1 - Cash flow quiz for entrepreneurs
- Activity 2.2 - Research technologies in business
- Activity 3 - Ethical practices and social responsibility

E-commerce

Over the last few years customers have made more of their shopping online. In 2020, the COVID-19 pandemic has only accelerated the shift to online shopping.

This development in shopping behaviour is important to note for companies. The way they adapt and plan for their online presence will be key to their success.

READING: [Small businesses turned to technology to survive the pandemic. But it may not be enough.](#) by Heather Kelly

CANADIAN  CONTEXT: [The 2020 Canadian e-commerce report](#) by Canada Post

E-commerce simplified

[Shopify](#) is (depending on the current stock market valuation) one of the most valuable companies in Canada. Their main service is to help small and medium enterprises with e-commerce. Their services simplify and centralize e-commerce tools.



CONVENIENT CHECKOUTS

Let your customers pay their way

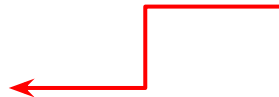
Boost conversions when you make shopping simple. Enable popular payment methods and local currencies for smooth checkout experiences.



To give customers different options to pay for products and services, Shopify has integrated most of the popular payment methods.

Which ones do you use most often? Your parents?

There is one modern payment option missing. [Where are the cryptocurrencies?](#)



Define “fintech”

[Wealthsimple](#) is an up-and-coming Canadian company. They offer many financial services (see list below). The main way to access those services has been through an app or website, which gives you an idea of their target market. Since their basic services are free and simple, the company has grown rapidly.



/ˈfɪnˌtɛk/

noun

computer programs and other technology used to support or enable banking and financial services. "fintech is one of the fastest-growing areas for venture capitalists"

Definitions from Oxford Languages

Wealthsimple



Invest
Investing on autopilot



Cash
Send cash in seconds



Trade
Commission-free stock trading



Crypto
The simplest way to invest in crypto



Tax
Taxes but fast and friendly



Reshaping banking

Merchants have benefitted from the growing e-commerce and online banking options. Along with these services, there is a whole new fork of technologies that wants to revolutionize banking. Those new technologies are cryptocurrencies and blockchains. Currently the most famous cryptocurrency is Bitcoin. Although, these technologies have amazing potential many are questioning their usefulness, legitimacy (as currencies or investments), and their future.

There are many questions around cryptos. For examples, “Will they always be legal?” and “What can we do with them?”.

Today, you can trade your crypto for products and services (although this list changes often).

EXAMPLES: [Who Accepts Bitcoin? 11 Major Companies](#) by Jordan Tuwiner

Cryptocurrencies are volatile. Businesses that accept them are as well.

How it's going (May 12, 2021)

Elon Musk @elonmusk

Tesla & Bitcoin

Tesla has suspended vehicle purchases using Bitcoin. We are concerned about rapidly increasing use of fossil fuels for Bitcoin mining and transactions, especially coal, which has the worst emissions of any fuel.

Cryptocurrency is a good idea on many levels and we believe it has a promising future, but this cannot come at great cost to the environment.

Tesla will not be selling any Bitcoin and we intend to use it for transactions as soon as mining transitions to more sustainable energy. We are also looking at other cryptocurrencies that use <1% of Bitcoin's energy/transaction.

6:06 PM · May 12, 2021 · Twitter for iPhone

77.6K Retweets 49.5K Quote Tweets 496.9K Likes

How it started (March 24, 2021)

Elon Musk @elonmusk · Mar 24

You can now buy a Tesla with Bitcoin

36.6K 138.5K 900.1K

Elon Musk @elonmusk · Mar 24

Tesla is using only internal & open source software & operates Bitcoin nodes directly.

Bitcoin paid to Tesla will be retained as Bitcoin, not converted to fiat currency.

4.6K 24K 179.8K

Elon Musk @elonmusk · Mar 24

Pay by Bitcoin capability available outside US later this year

3.1K 9.8K 142K

Show this thread



Are cryptocurrencies right for your business?

With a constantly evolving technology, obviously weighing the pros and cons will be more difficult. Just like Elon Musk and Tesla, other companies (and even governments) will struggle with these decisions. The impacts could become PR or financial nightmares for those involved

As an entrepreneur or a self-employed worker, should you accept Bitcoin as a payment method?

READING: [Should My Small Business Accept Bitcoin?](#) by Marc Chaput

It is probably still a difficult decision. Let's see if we can learn more on the subject.



I'm interested, what next?

For businesses and individuals it will be important to review tax implication of buying and trading digital assets like cryptocurrencies. Even though they are often named “currencies” the government recognizes these assets like a commodity (e.g., gold, silver, oil, wheat, corn, and coffee).



Government
of Canada

Gouvernement
du Canada

[Guide for cryptocurrency
users and tax professionals](#)

Remember that investing in cryptocurrencies to give customers another payment option is not the same thing as speculating on these assets.

Another concern is the reliability of the technology. The best way to learn about the technology and to trust it would be to experience it through a simulation. The next activity will help you to understand how it works.



Activity 1.1 - Data and Encryption

Use the tool below to generate an encrypted code that corresponds to the text you enter in the input box. This gives you a quick view on the way data is protected through cryptography. In the next activity, you will explore private and public keys for your online wallet. These keys are similar to the codes you generated in this activity. Basically, this is how cryptocurrencies and blockchains hide users' identities.

A cryptographic hash function takes any data (text, numbers, files, images, etc.) of arbitrary length as input and produces a fixed-length output. Let's try that:

[Cryptographic Hash](#)

A fingerprint of data.

write text here
SHA-256 Hash <code>50afe1867e079aa7dccbffb264eca3c2581ce8fd2f366fd2646910459039772c</code>

Watch the **Hash** change as you keep typing. You can think of it as a fingerprint of your input data.




Activity 1.2 - The Blockchain

This next activity should help students explore the basics of a blockchain and cryptocurrencies similar to Bitcoin. Students can develop a better understanding of the transactions that happen on the blockchain, such as block validation, mining, and wallet management. Exploring this tool with a larger group or a class would be more interesting.



Activity 1.2 (Cont.)

Go to this simulator main page. From there make sure to switch to another blockchain for your class.

Connected to **Public** Blockchain  Switch

Create a new blockchain, instead of connecting to the Public Blockchain

Switch Blockchain

Connect to an existing blockchain or start a new one

Enter the name of the blockchain you want to connect to. If it doesn't exist you can create a new one. You will then be able to interact with all computers that are connected to the blockchain with the same name.

Connect to Public Blockchain

Connect



Activity 1.2 (Cont.)

To have a better flow to the simulation, enter 1 or 2 for the number of leading zeros.

The block reward should be set at an amount to make the simulation more engaging (between 1 and 5 would be good).

A Blockchain with this name doesn't exist.

Create new Blockchain

Name of the new Blockchain
yourclass

Specify the required number of leading zeros (= mining difficulty) to mine a block. Every additional zero corresponds to a sixteen-fold increase in complexity. (Rough guide: 1 Computer: 2 zeros, 5 Computers: 3 zeros, 20 Computers: 4 zeros)

Specify the block reward for mining.

[Connect to Public Blockchain](#) [Start new Blockchain](#)

Activity 1.2 (Cont.)

Each student should create a new wallet on the class Blockchain.

Please note: This page is purely educational, it's only a simulation not real Bitcoin. Wallets in this simulation do not have any value!

Generate new Wallet

A random pair of keys (256 bit) will be generated. For simplicity, you can enter a unique username linked to your public key.

Username

Once this is done, you can navigate each of the menu options (Blockchain, Block Mining, and New Transactions). The first step to earn your first cryptocurrency would be to mine them. Afterwards, you can make a transfer or request a transfer. Then, keep exploring these different options. You can even try to break the blockchain by making fake transactions to see what happens.



Create a game to make the simulation feel more realistic. The game should be based on managing transactions between fictional companies. Then using the blockchain to complete those transactions. The next activity will develop your knowledge and understanding of cash flow.

BDC (Business Development Bank of Canada)

BDC is a Crown corporation of the Government of Canada. Their mission is to help Canadian entrepreneurs and businesses. BDC has a fantastic website full of useful resources. They offer interactive learning tools and make effective use of technology to support their customers.

Here are the activities in this part of the module. They will help you explore the information shared on BDC's website. The focus will remain on technology for businesses in Canada.

1. Survey for existing companies or for a detailed business plan
[Digital maturity assessment](#)
2. The internet will empower entrepreneurs.
Activity 2.1 - [Cash flow quiz](#)
3. Business Technology
Activity 2.2 - [Invest in technology](#) and [Create your website](#)

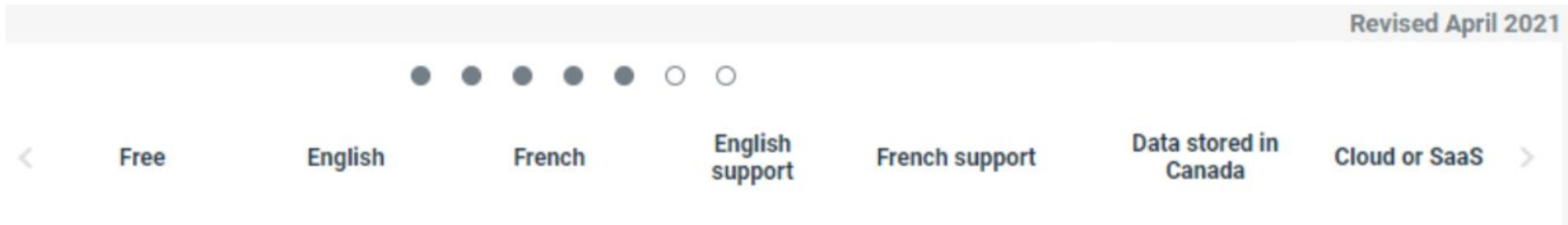


Analysis: Accounting and invoicing software

The webpage below, provides a detailed analysis of potential software options for businesses. The way they provide the analysis is through a visual table with more than 17 options (it was recently revised “April 2021”).

EXPLORE: [Free and low-cost accounting and invoicing software for your business](#)

Explore some of the recommended options. Which software do you find most interesting? Explain. Why did they include the elements below as key criteria in their table? Define “Cloud or SaaS”?



Digital maturity assessment with results (example)


Digital maturity assessment

Length of survey: 4 minutes

Did you know that companies with a higher level of digital maturity enjoy higher sales and profit growth than their peers?

Use our free Digital maturity assessment to find out where you stand and how you compare with your industry peers, as well as to identify areas for improvement.

Once you get your results*, you can download a detailed, printable report containing recommended readings and information on best practices.



3 reasons to assess your company's digital maturity

- > identify your current level of digitization
- > compare your digital maturity to your industry peers
- > discover your potential for improvement

[Start](#)

[View a sample report](#)

The data used in this Digital maturity assessment comes from a national survey of more than 2,000 Canadian small and mid-sized businesses.

BDC's "Digital maturity assessment" is useful for established companies. So, going through the assessment is not directly useful in the planning process of a new business. Although, the metrics used in the assessment are important elements to consider for any tech-savvy business.

- >identify your current level of digitization
- >compare your digital maturity to your industry peers
- >discover your potential for improvement"



Digital maturity assessment with results (Cont.)

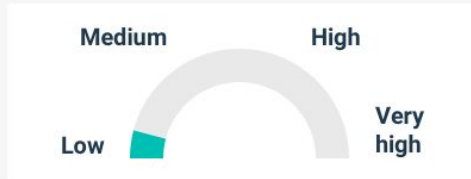
Digital maturity assessment

Your result: Your business is technocentric



Your digital intensity score: High

Digital intensity measures the use of digital technologies in the company's operations.



Your digital culture score: Low

Digital culture measures the ability to implement change in the company.

Why is my business technocentric?

Technocentric businesses score high on digital intensity and low on digital culture.

A typical company in this category invests significantly in digital technologies and uses them to run its business, both in client-facing and back-office operations. Its systems are integrated and it likely collects data on customers and operations.

However, despite sufficient digital capabilities and investment levels, technocentric companies lack the ability to drive change across the business.

Management supports digital change but might not have a clear vision or digital plan that is tied to the business strategy. Lack of communication and top-down management styles may also impede innovation and collaboration between employees. For this reason, technocentric businesses can find it difficult to coordinate digital investments across departments in order to maximize synergies.

The Digital maturity assessment uses two metrics (displayed in the graphs). On the left there is the “Digital intensity score” and on the right the “Digital culture score”. The former evaluates the integration of “digital technologies in the company’s operations”. We often think of automation as an example of an operations technology. The latter evaluates, “the ability to implement change in the company”. For example, are the company’s employees open to change and to the new tech tools or are they hesitant to the change.



Activity 2.1 - Cash flow quiz for entrepreneurs

Cash flow quiz for entrepreneurs

Test your financial management knowledge

Do you know enough about cash flow to effectively run your company?

Cash is essential to the continued operations of your business. But many entrepreneurs only have a vague idea of what it is.

This free quiz for entrepreneurs is designed to test whether you have the necessary knowledge to manage your everyday cash.



Try this quiz to:

Discover if you have a good understanding of cash flow

Get tips to better manage your working capital

Find out if you are effectively planning to avoid a cash crunch

[Start now](#)

The following quiz includes seven questions and will take you less than two minutes to complete. Simply try to choose the right answer for each question. You will receive your results once you have completed the quiz. You will also receive recommended readings and information.

For entrepreneurs and businesses, understanding the basics of cash flow is essential.

This simple quiz by BDC goes over the basic concepts that are necessary to understand.

Think back to the previous activity concerning cryptocurrencies. Imagine if your company was trading or bartering for commodities. This could have a significant impact on the company's cash flow. As most of your spending might be with your country's currency (CAD or Canadian dollar in Canada) and not with commodities.

With this activity review concepts like revenues, profits, customer and supplier payments.



Activity 2.1 - Cash flow quiz for entrepreneurs (Cont.)

Question 1 of 7

Cash flow refers to:

- A. The money you collect from customers and pay suppliers
- B. Your overall profits and revenue
- C. Your accounts receivable

Validate



Question 2 of 7

If a company has high revenues and high profits, then it is impossible for it to have cash flow problems.

- A. True
- B. False

Validate



Question 3 of 7

What is the difference between revenue and profit?

- A. Profit is what is left over after you have paid all of your expenses. Revenue is the money you have earned from selling products and services.
- B. Revenue is the cash you received from your customers and profit is the cash you have at the end of the year.
- C. They are the same thing.

Validate



Question 4 of 7

Your cash flow is directly impacted by:

- A. Your overall profits and revenue
- B. Your accounts receivable, inventory and accounts payable
- C. Your accounts receivable and inventory; accounts payable do not impact cash flow

Validate



Question 5 of 7

Using a cash flow planner is helpful to:

- A. Monitor when you risk facing a cash crunch in the coming weeks and months
- B. Monitor how much you are earning by customer or product/service
- C. Monitor where you spent too much money

Validate

Question 6 of 7

Your cash flow is impacted by the payment terms (credit policy) you have with your customers.

A. True

B. False

Validate



Question 7 of 7

An important part of cash flow management is knowing your cash conversion cycle which measures:

- A. How many days your company's cash will be tied up, making it unavailable to invest in the business
- B. How many days it takes you to break even
- C. How many days it takes for customers to pay you

Validate



Activity 2.2 - Research technologies in business

For this activity, we will explore how BDC has covered two important aspects of technology in business. Your task will be to consult one of the referenced articles found on the pages below. Write or record a summary of your article to share with other students of your class. Also, provide an opinion and an example related to the subject you selected. Complete this task individually or in a small group. Each group should have a different subject.



[Invest in technology](#)

or



[Create your website](#)

Activity 2.2 - Invest in technology (Cont.)

This page is divided in 5 subsections. Each subsection highlights steps to implement technology in a business.

Note that the last step, “Managing technology risks,” relates to the next section of this module.



What challenges are you facing?

Explore the headings below and learn how to choose technology solutions that are aligned with your business objectives.

Why invest in new technology? +

Choosing technology solutions +

Finding the right software +

Obtaining financing to buy technology +

Managing technology risks +

Activity 2.2 - Create your website (Cont.)

This page is divided in 3 subsections. Each subsection explores the decision process in building a useful website for your business.

Building a website does not need to be a complicated process. Having an online presence is almost mandatory these days. The pandemic has shown the importance of that presence.



What challenges are you facing?

Read the content below to find helpful tips on the steps involved in creating a website for your business.

Why should my business have a website? +

What kind of website do I need? +

How do I create a website? +

Right to repair - Impact on customers and businesses

Marketing, Communication, and Public Relations Perspective: When famous YouTubers discuss “Right to repair” and planned obsolescence, is it necessarily negative publicity impacted companies? Together, the two YouTubers below have over 7.3 billion total views. To resolve the issue, should companies be more transparent with their customers or should they do more research on their target market?

[What Is Right To Repair?](#)
by MKBHD



[We need Action - Right to Repair Explained](#)
by Linus Tech Tips



Planned obsolescence

Entrepreneurship Perspective: Where does your responsibility start and where does it stop? Should you, offer a very high quality product or maximize profits to generate returns for your investors? Should job creation be your only social responsibility?

[This is why we can't have nice things](#)
by Veritasium



Responsible data storage

Customer Perspective: Businesses can create customer loyalty by providing excellent products or services. Focusing on these elements will generate stronger trust. Today, customers want companies to keep their information private. As companies gather more and more data on their customers, the expectation becomes more important. These days the more efficient approach to data storage is through cloud technologies, but are these systems safe?

Key considerations

There is no single answer to the regulatory, privacy, and security challenges raised by cloud computing, but here are three important steps you can take to protect your data in the cloud:



1 Understand and comply with various jurisdictional privacy laws.



2 Understand how your cloud provider will protect your data.



3 Explore different encryption technologies and tools.

ANALYSIS: [Data privacy in the cloud](#) by Deloitte

The risks of data storage

Managing technology risks ×

Technology can be a game changer for small and medium-sized businesses. But it has to be implemented and managed properly or else opportunity can quickly turn to disaster.

- > [6 tips to protect your company's data](#)
- > [Phishing, malware and online pop-ups: 8 major technology security risks for your business](#)
- > [Technology risks to your business: 5 ways to get ready](#)
- > [10 questions to boost your tech security](#)
- > [Your checklist for avoiding IT security breaches](#)
- > [From our blog— A cyber hygiene checklist can help prevent attacks on your business](#)
- > [From our blog— A cyber playbook helps your business respond effectively to an attack](#)

BDC dedicated a section to the risks related to using technology in business. You may have discovered or read some of those articles in Activity 2.2. Many of the articles on BDC's website are directly related to data security.

After reading the “Key considerations” from the Deloitte report, consider returning to “Managing technology risks” to learn risks and solutions.



Higher or lower employee salaries

Management Perspective: Traditional thinking is that lower salaries are better for company returns. What if the opposite was actually true? Better wages promote employee motivation and job satisfaction, which in turn could compound a company's success. Even though this approach might be counter-intuitive and may not be the typical approach, here is one such example. Here is the story of tech-entrepreneur and CEO Dan Price.

READING: [Dan Price announced a minimum salary of \\$70,000 to all of his 120 employees back in 2015. It paid off big time](#) by Amir Barnea

What do you think about this approach? Which approach do you think is more ethical and/or socially responsible? Would you as a business owner or CEO take a significant pay cut to give all of your employees a salary increase?

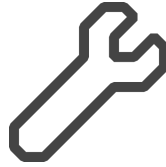
Activity 3 - Ethical practices and social responsibility

It may be more important than ever for businesses to truly have a positive impact on society. So, businesses often face dilemmas and contradictions. These issues will often arise depending on the industry or the nature of the company. When companies do not take social issues seriously, often governments may create laws to prevent these behaviours.

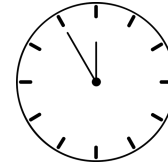
Here are three current topics of interest in the realm of ethical practices and social responsibility.



Impact on the
environment



Right to repair



Planned
obsolescence

With your class, make a list of things you know about these topics. This list can include examples or problems that are a result of these issues.

Activity 3 - Ethical practices and social responsibility (Cont.)

Here are three articles to learn more about the previously identified issues. Each article has an obvious social or ethical issue, but they also have secondary topics. Can you identify them?

Primary Topics

Secondary Topics



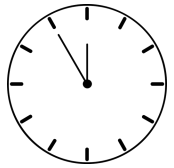
READING: [Canadian oil giants emphasize climate change and diversity as they compete for investment](#) by Kyle Bakx

?



READING: [The country rejecting throwaway culture](#) by Peter Yeung

?



READING: [Apple Agrees To Pay \\$113 Million To Settle 'Batterygate' Case Over iPhone Slowdowns](#) by Bobby Allyn

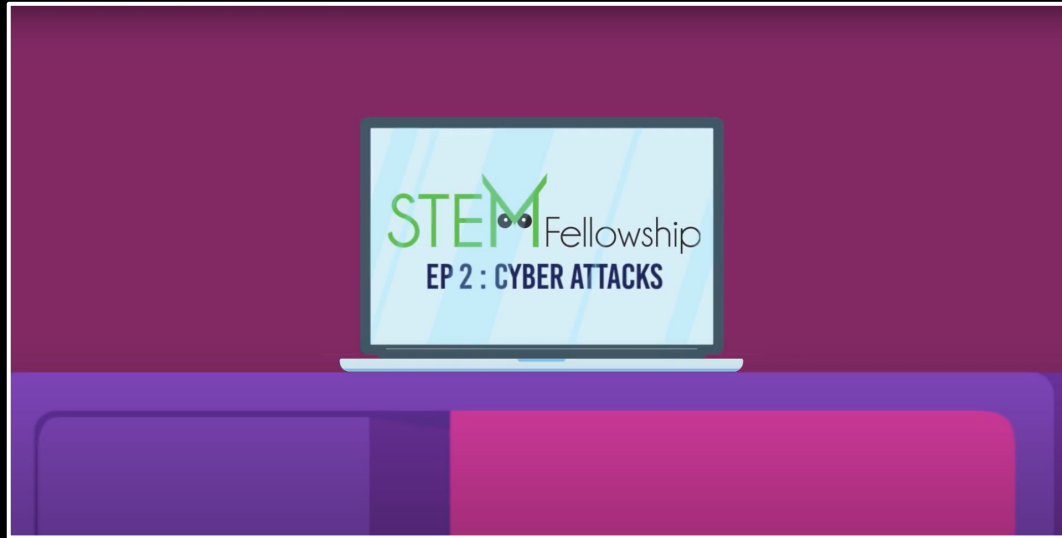
?



Dark Side - Importance of business cybersecurity

Protect your business's data from cybersecurity attacks.

[Cyber Attacks](#) by STEM Fellowship



[RETURN TO MODULE](#)



Module Conclusion

As you can see, the business world and technology are very intertwined. Business often looks to emerging technologies to make their operations more efficient and to make more profits.

Technologies are sometimes invented or created with no clear link to business. That is where informed, creative, and innovative entrepreneurs can find business opportunities.

Hopefully, this module will encourage you to continue exploring business and technology.

