HARVARD
Office of the Vice Provost for Advances in Learning

FINTECH

ONLINE SHORT COURSE

ORIENTATION MODULE UNIT 2
Capstone project casebook

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HarvardX

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Learning outcome:

LO8: Review the requirements and resources for your capstone project.

1. Introduction

The capstone project affords you the opportunity to apply your learning from this course to a real-world business problem. You will look into real companies that continue to revolutionize financial services using cutting-edge technology.

You are required to choose one problem, from the six below, as your capstone project. Each module provides you with insight that – used alongside the knowledge and skills you acquire by working through the cases in the course – will help you formulate a solution to your chosen business problem. In the week of Module 6, you will submit a slide deck in which you present your solution, accompanied by a write-up.

This casebook details six problems faced by fictional protagonists, representing diverse fields in which FinTech innovation has a significant impact on business operations. The firms represented in this casebook are all real, as are the opportunities and dilemmas created by their presence in the FinTech space. Each of the cases has a corresponding task that measures your engagement with the material and understanding of the nuances and challenges involved.

2. The problems

Problem 1 – New kid on the block: Blocksquare, the online payment revolution, and tokenizing real estate

The online-payment revolution and rise of companies such as PayPal and Stripe have fundamentally transformed the way people pay for goods and services, enabling paperless transactions between buyers and sellers without the intervention of financial intermediaries.

Global commercial real estate is valued at upwards of $50 trillion. However, the commercial real estate sector has been more resistant to change and innovation than many other industries. Ruth Wright heads up one of the top commercial property management firms in California, where she and her team assist clients looking to buy and sell commercial property – a process that is often expensive, time-consuming, and fraught with red tape.

Since around 2016, things have started to shift in favor of more user-friendly, technology-focused approaches to buying and selling property. Digital platforms such as Propy, Brickblock, and Real allow users to browse commercial property listings, complete transactions utilizing blockchain and smart contracts, and register deeds via a distributed ledger without the intervention of third parties.

Blocksquare, a company headquartered in Slovenia, is looking to further transform the real estate market by providing a simple and safe way for online users to buy or sell commercial properties around the world. Blocksquare styles itself as the blockchain and real estate equivalent to the online-payment companies PayPal and Stripe, and has developed a set of protocols, tools, and APIs that can be integrated into existing online property platforms. The company has effectively created the infrastructure for a global commercial real estate market run on blockchain technology by enabling asset-management companies around the world to divide individual properties into virtual currency tokens. Real estate firms can then issue tokens for the properties they manage. Tokens can be bought or sold online via a decentralized, peer-to-peer system.

Tokenizing real estate opens the market to a global network of internet users, making it easier and more attractive for people to invest in commercial property. As a commercial property manager, Ruth has no doubt that this will have important implications for businesses and financial practitioners involved in the sale and purchase of commercial real estate. While changes in the payment ecosystem for commercial property would be of benefit to some, they would have a negative effect on others. Ruth sits down to draft a brief to her team so that they can consider the consequences of these developments.

Visit Blocksquare's website and do some additional research to learn more about tokenizing real estate. Use the following questions to guide your research:

- What exactly does "tokenizing" commercial real estate mean, and what will this entail?
- Which processes will be streamlined through the use of online payments and blockchain technology?
- What are the costs and risks involved?
- Who stands to benefit from revolutionizing payments?
- Which products and services will cease to exist?

Your task:

For your slide-deck presentation and accompanying write-up, outline a strategy whereby commercial real estate firms such as Ruth's might benefit from participating in the tokenized real estate market. Include an analysis of the risks, costs, and benefits involved.

Problem 2 – Can crowdfunding help startups reach for the stars? Starbase as a cryptocurrency-enabled crowdfunding platform

Brian Flemming is as passionate about blockchain as he is about education. His new startup, Brightsparks, aims to improve mathematics and science literacy in under-resourced schools. His project is based at an incubator that you direct, where you must help him and other

entrepreneurs decide on the best funding sources for their projects. Thanks to the proliferation of digital platforms where entrepreneurs such as him can raise money from the crowd, this is a lot easier than it would have been prior to 2000. But are these platforms really all that different from traditional forms of venture capital? Some of his friends and fellow innovators have grown increasingly disenchanted with platforms that claim to democratize the fundraising process, while profiting off the money raised by charging hefty fees for processing payments and operational costs. Also, many established crowdfunding platforms are fairly narrow in scope and reach and end up funding only a fraction of the projects that apply to them.

Blockchain- and cryptocurrency-based platforms that allow projects to raise funds through initial currency offerings (ICOs) and tokens are relative newcomers to this scene. One of Brian's colleagues suggested Starbase, a startup that launched in 2017, as a possible avenue for fundraising for Brian's project. Starbase serves as a platform where entrepreneurs can issue their own blockchain-based tokens, or the company's STAR tokens, to attract and reward investors from all over the world. Tokens increase in value as projects grow, and can be redeemed for the major cryptocurrency, ether. This appeals to Brian, as it would give his project exposure to a global network of potential investors. However, he also has some concerns about these new cryptocurrency-based platforms. Are they just a passing phase, or will they become entrenched in the blockchain ecosystem? Similarly, you must decide whether each project in the incubator is better suited to blockchain-based crowdfunding, regular crowdfunding, or traditional venture-capital funding.

Visit Starbase's website and do some additional research on their crowdfunding platform. The following questions might help you:

- What are the benefits and drawbacks of blockchain-based crowdfunding platforms?
- How does Starbase differ from other digital crowdfunding platforms?
- How does it differ from other blockchain-based platforms such as icobox.io, kickico.com, or fundyourselfnow.com?
- What types of projects lend themselves to these platforms?
- Which of these blockchain-based platforms do you think will gain market share in the next two years, and why do you think so?
- Do you think that blockchain-based platforms will have a lasting impact on crowdfunding, or are they just a fad?

Your task:

For your presentation and accompanying write-up, create a slide deck that offers Brian your strategic consulting advice on how to secure sustainable project funding sources. In doing so, debate the merits of using cryptocurrency-based crowdfunding platforms, other crowdfunding platforms, and traditional venture-capital funding.

Problem 3 – Artificial intelligence and machine learning: A tool for Juvo's financial inclusion in the telecom industry

Faruq Adebayo works in the investor-relationship office of Juvo, a company with a vision of bringing financial inclusion to telecom users worldwide. He has just finished a meeting with a potential investor and still has Juvo's business model lingering in his head.

With data collected and created from digital devices, sensors, and internet at an exponentially growing speed, the world has entered the era of big data. In recent years, it has become more and more popular for companies to find hidden patterns and generate signals from big data by harnessing the power of AI and machine learning. Some algorithms based on AI and machine learning have outperformed traditional analytical methods carried out by humans in various application scenarios, leading to numerous startups and R&D projects in the field.

Telecommunication is an old and established industry, where vast amounts of data is already possessed by incumbents. Juvo enters this industry and tries to tackle some major pain points for both carriers and subscribers. By applying AI and machine learning to big data obtained from carriers, Juvo is creating the digital world of user portraits. Algorithms are used to give subscribers a score based on their behaviors. Juvo calls it an "identity score," analogous to the credit scores given by credit bureaus based on people's financial activities. With this, Juvo aims to move into the personal-loan and personal-banking markets.

Faruq walks out of the office and heads downtown for his next meeting with investors. Quickly merged into the crowd in San Francisco, he is still thinking about whether the investors would be satisfied with Juvo's current blueprint.

Visit Juvo's website to learn more about its services and business model. Consider the following:

- How have AI and machine learning helped Juvo transform its subscribers' data into a valuable product?
- What might be Juvo's best choice for its future direction in applying AI and machine learning?
- Should Juvo grow its own business in all possible directions by itself, or should it partner with established incumbents in those areas?

Your task:

For your slide-deck presentation and accompanying write-up, outline a strategic direction with a practical execution path that you think best suits Juvo's future.

Problem 4 – Presenting the winning case for Wawllet: Integrating traditional and innovative financial services

As she navigates the heavy traffic on her way home from Wawllet headquarters in Nicosia, Cyprus, Georgia Alanis thinks about the meeting she just had with her colleagues and the important tasks that lie ahead of them. Georgia has joined the Wawllet team shortly after graduating from business school in Athens and thrives in the dynamic environment where FinTech innovations are revolutionizing the way people think about and manage their wealth.

Since the global financial crisis of 2008, FinTech has radically transformed multiple aspects of personal finance and asset management. Wawllet is the first multi-asset personal wallet that allows users to manage fiat money, gold, and digital assets, all in a single platform. By connecting people, banks, and financial services, the company aims to bridge the gap between traditional service providers and blockchain- and cryptocurrency-based disruptors.

Wawllet launched an ICO of up to 89 million of its WIN tokens in January 2018, as the first of many innovations designed to benefit users, financial institutions, and startups. Always on the lookout for new opportunities, the company has secured a meeting with one of Cyprus' leading venture capital firms to make their pitch for a second round of capital to fund future innovation. Georgia has been tasked with selecting a winning use case for Wawllet and preparing a presentation that will convince investors to fund them. In order to do this, Georgia will have to determine which of Wawllet's services is likely to have the greatest impact on personal finance, and to articulate how Wawllet will supplement its many competitors in this space.

Visit Wawllet's website and access their white paper to learn more about their products and platform. Consider the following:

- Which aspects of personal finance will be most disrupted by recent developments in FinTech?
- Which of Wawllet's services do you think is likely to attract the most market share, and why?
- Why do you think this particular use case will supplant the current status quo in the personal-finance and asset-management space?

Your task:

For your slide deck presentation and accompanying write-up, prepare the winning case for Wawllet by selecting which of its products or services you think will gain the most market share in personal finance, and why.

Problem 5 – The cryptocurrency and blockchain bubble: Have things gone too far?

As a blockchain consultant for a private investment firm, Emma Chan's job is to advise her employers about which cryptocurrency-based companies they should buy shares in and which they should avoid. Emma isn't the only blockchain expert to have noticed a new and somewhat disturbing trend in the US stock market. Companies wishing to revive dwindling profits have only to tack "cryptocurrency" or "blockchain" onto their brands or product offerings to see their stock prices go up exponentially. She has identified Kodak and Long Island Iced Tea as two of the many unlikely candidates to jump on the bandwagon.

Kodak has launched its own cryptocurrency, Kodakcoin, and secured a licensing deal for a bitcoin-mining computer, the Kodak KashMiner. The organization claims that it will use blockchain technology to help photographers create licenses for their images, to prevent copyright violations. Long Island Iced Tea, a firm that sells non-alcoholic beverages, changed its company name to Long Blockchain Corp and declared its intention of partnering with firms that develop distributed ledgers.

These announcements sparked concerns about possible regulatory issues and other concerns, and especially whether or not companies such as Kodak and Long Island Iced Tea will be able to deliver on their promises. Cryptocurrencies have traditionally attracted a certain amount of hype and controversy. Emma recalls initial reactions to bitcoin, the first decentralized digital currency run on blockchain technology. There are many reasonably practical applications for peer-to-peer currencies and distributed-ledger systems. The difficulty comes in deciding which of these new cryptocurrencies and blockchain applications will show returns in the long run, and which are just a flash in the pan. Emma will have to consider very carefully before advising her employers.

Consult these resources to learn more about Kodak and Long Island Iced Tea's ventures into cryptocurrency and blockchain. Consider the following:

- How do you discern between reasonably practical use cases for blockchain technology and more far-fetched or dubious uses?
- Are companies such as Kodak and Long Island Iced Tea ahead of their time or are they misusing blockchain to revive their stock prices?

Your task:

In your slide-deck presentation and accompanying write-ups, create an outline of what you think are the main use cases and promise points for digital currencies and distributed-ledger systems. Also comment on use cases that you do *not* think are viable (and why).

Problem 6 – Regulated FinTech: An oxymoron, or inevitable?

Anika Reddy takes a final sip of her coffee as she scrolls to the end of the article she is reading. The Securities and Exchange Commission (SEC) has been in the news constantly, following the public announcement of its decision to bring sanctions against two cryptocurrency startups for failing to register their ICOs as securities. The two companies, Airfox and Paragon, had raised more than $10 million each in digital assets in 2017. In addition to paying substantial fines, both startups were ordered to return investors' money, register their tokens, and submit regular reports to the SEC.

Airfox and Paragon were not the first blockchain companies to fall foul of the SEC, which had shut down numerous other ICOs and cryptocurrency firms for fraudulent activities. These actions, and the publicity they generated, put blockchain companies on notice, heightening concerns that an impending government crackdown would force many into bankruptcy.

Opinions about government regulation of disruptive FinTech startups have always been polarized. As the in-house attorney for a large and successful online marketplace, Anika is familiar with the arguments on both sides. Under the current legislation, cryptocurrencies – with the exception of bitcoin and ether qualify as securities and are therefore subject to government regulation. However, FinTech has grown so fast that regulation has struggled to keep up, resulting in a grey area that some see as a loophole for fraudulent activities and others as an opportunity for innovation.

Consult these resources by CNBC, Yahoo Finance, and Bloomberg to learn more about the SEC's highly publicized crackdown on FinTech startups. Consider the following:

- Do you think the current US legislation is sufficient to prevent fraudulent activities in cryptocurrency marketplaces? Why or why not?
- A central aim of blockchain technology and smart contracts is to relieve the need for a trusted third party. Given this, can FinTech and regulation coexist, or are they mutually exclusive?
- Do you think that regulators will bring tech-savvy startups into line, or will these startups continue to be one step ahead and skirt government regulation?

Your task:

For your slide-deck presentation and accompanying write-up, formulate a strategy for the government's regulation of FinTech companies that will allow for innovation, while preventing fraudulent activities.

3. Conclusion

You are encouraged to be cognizant of your chosen problem as you critically engage with the course content. Consider how your problem may relate to the discussion questions in the class-wide and small group discussion forums, and think about how the contributions of your peers may deepen your insight into proposed solutions. The creation of your slide deck and write-up should be an evolving exercise throughout the course. You are encouraged to add to and adapt your draft submission as you work through the content. There will also be an opportunity during the course for you to submit your work-in-progress for tutor feedback in a live session.

The optional conference week at the end of the course will give you the opportunity to share your slide deck with your peers, and to see their solutions to the same set of business problems in return. Entrance to the conference week is contingent on you sharing your own presentation with your peers. This will deepen your understanding of the range of possible solutions to the challenges and opportunities posed by FinTech innovation.

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