COURSE INFORMATION

Course title:	Strategic Management of Blockchain		
Course code:	TBD	Credits:	1.5
Course duration:	Sep 9 to Oct 14, 2020	Class location:	Zoom
Class times:	Wednesdays, 7-9am PDT		

INSTRUCTOR INFORMATION

Instructor	Dr. Chris Rowell
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Office Hours	By Appointment

COURSE DESCRIPTION

Blockchain and other distributed ledger technologies (DLT) hold the potential to impact a wide range of business and social domains. Due to its foundational nature, blockchain has been widely discussed and applied, and can mean very different things to different people. Some see it as simply a means to incrementally enhance trust, security, and accountability in established business networks, while others see it as a vehicle for fundamentally transforming our social, political, and economic institutions. Despite its origins in finance, the potential of blockchain stretches far beyond cryptocurrencies, with use cases spanning across supply chain and asset tracking, land titles, insurance, construction, healthcare, energy, charity, voting, and social media. Proponents advocate the use of blockchain in enhancing individual privacy, digital security, and the ownership of personal data and intellectual property (IP), and in providing a secure platform for running other technologies such as artificial intelligence (AI), the internet of things (IoT), permissioned big data analytics. Given the breadth of its potential, combined with the range of applications we've seen thus far, it's perhaps unsurprising that blockchain has frequently been touted as profoundly disruptive[1], a giant hoax[2], and many things in between. The investment dollars are beginning to speak for themselves, however; recent years have seen a surge investment into blockchain-based solutions across a myriad of areas, Worldwide spending on blockchain solutions by large companies and governments alone is projected to go from US$2.7 billion in 2019 to US$15.9 billion in 2023.[3]

Amidst the current cacophony of aspirations, lofty promises and hype, and skepticism and disillusionment, it is critical for business leaders to understand at a basic level what blockchain (and similar DLT) can do, why it matters, and (crucially) *when* it matters for their business. This entails comprehending the broader issues and trends that could fundamentally transform their business over the longer term, whilst parsing out the realistic use cases for today. In addition, leaders must be able to critically evaluate the barriers to adoption, and the strategies available for implementing and scaling blockchain solutions.

The goals of this course are to help participants gain a foundational (though not heavily technical) understanding of blockchain technology itself, expose them to some of the broader social and economic issues that blockchain promises to disrupt, and provide a set of lenses for critically analyzing the unfolding emergence and adoption of blockchain and related technologies. Participants will gain a basic understanding of blockchain's technical underpinnings, though the focus is predominantly on the promises that blockchain holds for business and

[1] Tapscott, D. & Tapscott, A. (2016) *"Blockchain Revolution: How the technology behind Bitcoin is changing money, business, and the world"*. Penguin

[2] Gerard, D. (2017) *"Attack of the 50 Foot Blockchain: Bitcoin, Blockchain, Ethereum & Smart Contracts"*. CreateSpace Independent Publishing Platform

[3] IDC (2019) "New IDC Spending Guide Sees Strong Growth in Blockchain Solutions Leading to $15.9 Billion Market in 2023" Available at: https://www.idc.com/getdoc.jsp?containerId=prUS45429719

society, how it can change how value is created and captured (along with associated changes in viable business models), and how to identify and overcome challenges to adoption.

The six course sessions are designed to go from understanding the basics of blockchain technology and how it can be applied directly to augment current processes (sessions 1 and 2), exploring the longer-term potential and broader issues and discourses around blockchain (session 3), before dialing this back to evaluate the limitations to these utopian visions, and explore how firms can strategically approach blockchain technology over the short and longer terms (session 4). Next, we adopt the perspective of a firm that has settled on a blockchain solution, and look at how its leaders can evaluate and overcome barriers to adoption and scaling (session 5). The final session will bring everything together, by having participants design and present a blockchain-based solution to address a grand social challenge (e.g. climate change; global pandemic; etc.) (session 6).

In sum, the six sessions will explore the following themes and high-level questions:

1. **Foundations:** What is blockchain, and what can it do?
2. **Current state**: how can blockchain enhance what we currently do?
3. **Blockchain utopia:** What are the utopian promises of blockchain and other distributed ledger technologies (DLT), and what broader social issues do these address?
4. **Critically evaluating the blockchain utopia**: What roles can firms play in business and social networks underpinned by blockchain/DLT infrastructures? What business models could work in this new environment, and what could be rendered obsolete? How might the integration of blockchain/DLT into business and society unfold?
5. **Blockchain adoption and scaling:** What are the barriers to blockchain adoption, and what strategies are available for scaling blockchain solutions?
6. **Bringing it together:** How could blockchain be deployed to address a grand social challenge?

Note that these themes inevitably overlap, and so we may revisit concepts and use cases from different perspectives across the six sessions to build a holistic understanding.

Throughout the course, we'll place a heavy focus on the roles of firms and the business models that could work (and not work) in various blockchain use cases. Together, participants will acquire a set of lenses to be able to critically analyze the relevance, design, governance, and implementation/adoption of blockchain systems, focused mainly at the interorganizational level.

COURSE FORMAT

Students will engage with a combination of 12 hours in-class instruction and approximately 8 hours of video and audio content, for a total of approximately 20 contact hours.

Live discussions will be held online using Zoom each Wednesday for six weeks, from 7am-9am PDT. Students are required to attend these live sessions in order to complete the course, and will engage with pre-recorded content, readings, and written discussion questions outside of them. Each course session is built around five key components:

Before the class:

- **Lecture Content:** Pre-recorded video content by the lead instructor, along with recorded interviews with industry and academic experts on the day's key theme and concepts.
- **Background Readings:** Students will be provided background readings that offer context and additional depth as they work towards their final assessments.

- **Written Class Prep (sessions 2-5):** Students will submit written responses to a set of discussion questions in advance of each class, which we will build on during the live discussion.

During the live class:

- **Live Discussions** are hosted on Zoom each Wednesday from 7am-9am PDT (check a Time Zone converter to see what this means for you). Live discussions will involve a combination of smaller (breakout room) and larger (full class) conversations that dive deeper into the day's theme.

After the live class:

- **Peer Review of Others' Class Prep (sessions 2-5):** The discussion questions are designed to prepare you for the in-class engagement, and the live discussion in turn acts as a form of feedback on your written class preparation. To provide additional feedback, each student will also engage in a review of four other students' class prep after the live discussion (see below for more detail).

LEARNING OBJECTIVES

By the end of this course, students will be able to:

- Identify and understand the core features and capabilities of blockchain/DLT
- Evaluate the relevance of blockchain for a range of industry verticals and societal challenges, ranging from use cases focused more on augmenting existing processes to those that are substantially disruptive
- Understand how blockchain/DLT can enable new forms of organization and new business models, while rendering others obsolete
- Discuss the strategic considerations of blockchain for organizations, both in the near-term and longer-term
- Critically evaluate opportunities and challenges around the adoption and scaling of blockchain solutions

ASSESSMENTS

Summary

Component	Weight
In-class participation	30%
Written class prep (24%) and peer feedback (16%)	40%
Final group project	30%
Total	**100%**

Details of Assessments

A high-level overview of the assessment components is provided here. Specific instructions will be posted as assignment outlines on Canvas before the start of the course.

In-class participation (30%)

This is not a grade for attendance, but rather for active participation. Please be ready and willing to actively engage in all aspects of the classroom learning experience. We all have something to contribute to the collective learning experience each class, and your contributions enrich the experience for everyone. Airtime in the classes may be limited depending on the number of students, and the quality of your class participation matters much more than the quantity.

Written class prep and peer feedback (40%)

This has two parts:

1. **Before each class (sessions 2-5):** Submit responses to discussion questions based on the video, audio, and pre-readings assigned. The goal here is to establish a foundation for the in-class discussion.
   Each of these is worth 6% of the course grade over four classes (2-5), for a total of 24% of the course grade.

2. **After each class (sessions 2-5):** Reflections on others' written discussion points. The goal here is to reflect on others' work, with the additional background of the in-class discussion. After each class, you will engage in two rounds of comparison and feedback (reviewing 4 other students' work in total) and provide reflections for each. Your comparisons do not affect the grading of others' work, and are simply included as another feedback metric.
   Each round of comparison/reflection is worth 2% of the course grade, and you'll do 2 of these per class across 4 classes (2-5), for a total of 16% of the final course grade.

This piece of assessment is intended to stimulate discussion and enrich the in-class experience, and there are no "correct" answers to these per se. Your class prep submissions and feedback are graded as either "completed" or "not completed", meaning that if you complete all of this work you will be awarded the full 40% of the final course grade. Specific guidelines and tools for submitting the class prep and feedback will be available on the course Canvas.

Final group project: addressing a grand social challenge (30%)

- In the final class, groups will pitch a blockchain-based solution (integrating other technologies as needed) to address a grand social challenge (e.g. climate change, global pandemic, etc.).
- All groups will address the same grand challenge, though *students will be able to vote on the social challenge that everyone will tackle. Voting will happen earlier during the course.*
- Groups will be formed by the instructor on the course Canvas
- Your grade for this assignment is a combination of the instructor's assessment of your final output (solution and pitch) and your group members' evaluations of your individual contributions to this.
- Specific instructions for the solution design and in-class pitch will be posted on the Canvas website

LEARNING MATERIALS

All learning materials will be posted on the Canvas site for this course. This includes a series of pre-recorded lectures, podcast interviews, and background reading materials. There is no cost associated with these materials.

COURSE-SPECIFIC POLICIES AND RESOURCES

Missed or late assignments, and regrading of assessments

Late submissions will not be accepted and will receive a grade of zero.

Zoom Etiquette

In order to ensure a learning environment that is professional and conducive to collaboration and collegiality, the following etiquette applies to behaviour in Zoom classes:

- When in class, refrain from use of all other technology (phones, other applications etc.)
- Ensure your camera is turned on at all times
- Please mute your microphone unless called upon by your instructor
- Please ensure you are in a quiet environment with no background noise
- When you want to participate, you can indicate this by clicking on "participant" and using the "raised hand feature"

Class Integrity

The following rules are in place to ensure a safe learning environment where students feel comfortable exploring challenging and potentially sensitive issues:

- You must be the only person viewing and listening to live sessions when delivered

- You cannot copy, film, audio record or in any way record, share or redistribute a live session or supporting content
- You cannot share a Zoom link or invite others who are not registered students to this class

POLICIES APPLICABLE TO COURSES IN THE ROBERT H. LEE GRADUATE SCHOOL

Attendance

Excepting extenuating circumstances, students are expected to attend 100% of their scheduled class hours. Absent students limit their own academic potential, and that of their classmates, and cause unnecessary disruption to the learning environment. Students missing more than 20% of the total scheduled class hours for a course (including classes held during the add/drop period) without having received an academic concession will be withdrawn from that course. Withdrawals, depending on timing, could result in a "W" or an "F" standing on the transcript.

Punctuality

Students are expected to arrive for classes and activities on time and fully prepared to engage. Late arrivals may be refused entry at the discretion of the instructor or activity lead. Students arriving later than halfway through a scheduled class will be treated as absent for that class.

Electronic Devices

During online lectures, students are not permitted to use any electronic devices other than the primary one used for attending the online lecture (e.g. laptop or desktop). Only Zoom should be open during the online lecture unless an instructor advises the use of another for an in-class activity. Feedback from students indicates that personal devices is the number one distraction from effective learning and participation in the online learning environment.

COURSE SCHEDULE

Please note that this is a fast-moving environment, and the course schedule, topics, and readings may be adjusted to account for new developments. The schedule below is intended as a guide for the goals of each sessions and types of discussion points students can expect around the six core themes.

The specific readings and discussion questions for written course prep, along with the video and audio recordings for each session, will be confirmed and provided closer to the course start date.

DATE AND THEME	SESSION GOALS	READINGS (SUBJECT TO CHANGES)	PREPARATION AND ASSESSMENT
DAY 1, SEP. 9 **FOUNDATIONS OF BLOCKCHAIN**	Understand the core features and capabilities of blockchain systems, and how they interact. Clear up any confusions around blockchain technology to establish a foundation for the course.	Johnson (2018) Beyond the Bitcoin Bubble, *New York Times Magazine*, Jan 16, https://www.nytimes.com/2018/01/16/magazine/beyond-the-bitcoin-bubble.html Swan, M. (2017). Anticipating the Economic Benefits of Blockchain. *Technology Innovation Management Review, 7(*10), 6-13. Retrieved from http://doi.org/10.22215/timreview/1109	**Before class:** ▪ Review the course syllabus. ▪ Review lecture materials and pre-readings.

DAY 2, SEP 16 **AUGMENTING PROCESS AND INFO. GOVERNANCE**	Explore how blockchain is being applied (in combination with other technologies) to augment existing processes across a range of industry verticals, and discuss the strategic implications for incumbent firms.	Iansiti, M., & Lakhani, K. R. (2017) The truth about blockchain. *Harvard Business Review* (January/February 2017). Gaur, V. & Gaiha, A., (2020). Building a Transparent Supply Chain. *Harvard Business Review* (May/June 2020).	**Before class:** ▪ Review lecture materials and pre-readings. ▪ Complete written class prep. **After class:** ▪ Review and compare four other students' class prep.
DAY 3, SEP 23 **BLOCKCHAIN UTOPIA**	Understand some of the long-term aspirations of blockchain advocates for transforming our social, economic, and political institutions, as well as providing novel avenues for the application of other emerging technologies. Concepts covered include self-sovereign identity (SSI), decentralized autonomous organizations (DAOs), and federated learning.	Hughes, Eric. (1993) *A Cypherpunk's Manifesto*. Available at: https://www.activism.net/cypherpunk/manifesto.html May, T.C.. (1992) *A Crypto-Anarchist's Manifesto*. Available at: https://www.activism.net/cypherpunk/crypto-anarchy.html Nakamoto (2008) *Bitcoin: A Peer-to-Peer Electronic Cash System*. Whitepaper. Available at: https://bitcoin.org/bitcoin.pdf Seidel, M.-D. L. (2018). Questioning Centralized Organizations in a Time of Distributed Trust. *Journal of Management Inquiry*, *27*(1), 40-44. https://doi.org/10.1177/1056492617734942	**Before class:** ▪ Review lecture materials and pre-readings. ▪ Complete written class prep. **After class:** ▪ Review and compare four other students' class prep.
DAY 4, SEP 30 **CRITICALLY EVALUATING THE BLOCKCHAIN UTOPIA**	Identify points in blockchain-based systems that could benefit from centralized control and coordination. Discuss the roles that firms can play in networks underpinned by blockchain-based infrastructures, and what business models could (and could not) work in these settings	Hsieh, Y., Vergne, J., Anderson, P., Lakhani, K. & Reitzeg, M. (2018)* Bitcoin and the rise of decentralized autonomous organizations. *Journal of Organizational Design*, 7, 14. https://doi.org/10.1186/s41469-018-0038-1 **Focus on the critiques at the end of this article in particular*	**Before class:** ▪ Review lecture materials and pre-readings. ▪ Complete written class prep. **After class:** ▪ Review and compare four other students' class prep

DAY 5, OCT 7 **ADOPTING AND SCALING OF BLOCKCHAIN SOLUTIONS**	Identify the various barriers to adoption and the strategies available for overcoming these and scaling blockchain solutions, and discussing the trade-offs of each.	van Hoek, R. Lacity, M. (2020) How the Pandemic is Pushing Blockchain Forward, Harvard Business Review Magazine, April 27. https://hbr.org/2020/04/how-the-pandemic-is-pushing-blockchain-forward Angelis, J. & da Silva, E.R. Blockchain adoption: a value driver perspective. *Business Horizons*, 62 (3), pp. 307-314	**Before class:** ▪ Review lecture materials and pre-readings. ▪ Complete written class prep. **After class:** ▪ Review and compare four other students' class prep.
DAY 6, OCT 14 **BLOCKCHAIN AND GRAND SOCIAL CHALLENGES**	In groups, design and pitch a blockchain-based solution to address a grand social challenge. Presentations should cover the value propositions for stakeholder groups, the governance model for the solution, and the business model (where applicable) for the leading actor/venture.	TBD: Resources will depend on the grand social challenge that students decide to address	**Before class:** ▪ Review lecture materials and pre-readings. ▪ Complete written class prep. **During class:** ▪ Pitch your group's solution in a short presentation **After class:** ▪ Review your team members' individual contributions to the group project (including your own)

INSTRUCTOR BIO

Dr. Chris Rowell is a Postdoctoral Research and Teaching Fellow at the UBC Sauder School of Business and Blockchain@UBC (a multidisciplinary research cluster). He received his doctorate in science, with a focus on technology strategy and venturing, from Aalto University in Helsinki. Chris has been involved in the emerging blockchain field/DLT since 2016, and is especially enthusiastic about the implications of blockchain for organizational forms and digital business models. At UBC, he teaches blockchain from a business perspective at the undergraduate, graduate, and executive levels, and also teaches Organizational Behaviour at UBC Sauder. Outside of this, Chris works with Cyberium Group, a Vancouver-based technology and innovation consultant to help organizations and professionals understand new technologies and advance their digital transformation.