Innovation in Fintech Start-ups in Hong Kong

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Abstract

A business case is presented, detailing the establishment and background of Aqumon, a successful Financial Technology (Fintech) start-up in September 2015, Hong Kong, following the boom of the US robo-advisory market. The two co-founders, Kelvin Lei, and Don Huang left a job in a banking corporate, and a university research post, respectively. As new players in the market competing against large multinational banks and fund managers and with limited funds and resources, the case demonstrates how the two founders overcame the challenges and barriers faced by their start-up. It also showcases how entrepreneurial attitudes lead to successful ventures in a highly competitive environment. The case also provides insights into the motivations and characteristics of entrepreneurs as well as the strategies and practices they follow in their ventures.

Key Words

Robo-advisory, start-up, fintech, innovation, Hong Kong, opportunity recognition, venture capital, financing, business models

Learning Outcomes

This teaching case study will allow students to explore entrepreneurship and innovation in the fintech industry in Hong Kong.

At the end of the case study, students would have an improved understanding of the following:

- What motivates individuals to venture into entrepreneurship?
- The personal attributes and characteristics of new entrepreneurs, and practices they use to identify and pursue opportunities
- The challenges and barriers that start-ups face in the financial industry of Hong Kong
- How entrepreneurial ventures can significantly raise an industry's offering and serve the general population of the societies they operate
- The types of innovation that can be used by a business
- How a business develops and positions itself within the Hong Kong market.

Students will gain this understanding as the goals of the case draw out discussions on:

- Innovation
- Entrepreneurship
- Business models; and
- Business decision-making.

The Story

Don Huang was a high school student when his family's business dealings forced the family to relocate from Taiwan to Wuhan, China. After completing high school there, he obtained a bachelor's degree in Computer Science and Information Systems in Wuhan, at the reputable Huazhong University of Science and Technology, Don then returned to Taiwan to complete his compulsory military service. Upon completion, Don set his sights on continuing his studies at a more internationally recognised university. In 2004, he managed to get accepted into the Hong Kong University of Science and Technology (HKUST) masters program where he studied Financial Mathematics. Don loved mathematics since he was a child, so the program was a natural choice for him.

It was in the midst of the 2007-2008 financial crisis when Don graduated and managed to score his first job. The financial crisis was impacting the global job market, and many fellow graduates of his master's cohort struggled to find employment. Fortunately for Don, he was an exceptional student at HKUST and had achieved the highest grades in the department's 25-year history of masters programs in Financial Mathematics; he received A+ results in nine out of ten subjects. Recognising Don's skills in quantitative analytical methods and his exceptional academic performance, one of his professors, used his industry connections to introduce Don to DBS Bank in Hong Kong in 2008. Don was hired immediately and began working as a Quantitative (Quant) Analyst, a finance role which requires advanced knowledge of mathematics and statistics to calculate risk, price products, and analyse investments.

It was at DBS Bank in 2008 that Don met Kelvin Lei, a front-office investment advisor who had been at DBS for approximately one year when Don joined. Kelvin's role required

meeting and advising clients on various investment products, especially those clients that could potentially invest large amounts of funds. Such clients would ensure high commissions for the bank, himself or his team but would require the evaluation of complicated risk profiles and investment mix. In order to work out the best mix of investment funds to advise clients, Kevin would rely internally on Don to conduct all complex calculations and provide investment advice. For his part, Kelvin would seek feedback from clients and pass information to Don on what types of products and feature his clients were looking for and whether DBS had, or could develop, solutions that better suited the clients. Their collaboration grew over time beyond their professional relationship into a long-lasting friendship.

Don had an innate desire to research financial mathematics in more depth but was restricted by his role at DBS. He, therefore, decided to leave after two years, returning to HKUST to pursue a full time Ph.D. in Financial Mathematics in 2010. It was there that Don had the freedom to do research and produce research publications while also teaching students. After completing his Ph.D. in 2014, Don would go on to complete just over a year of post-doctorate teaching and research at HKUST and City University of Hong Kong. Don could very well have seen a stable and respected academic pathway for the remainder of his career, but as it turned out, there were exciting options on the horizon.

Kelvin meanwhile had moved between banks in similar investment advisory roles but was yet to find something about which he was really passionate. His quest for success began back in March 2012. At that stage, Kelvin had spent five years in investment banking (IB) selling Fixed Income, Currency, and Commodity (FICC) products at what was his third bank. It was one specific morning - little did he know at the time, that opportunity in the guise of disaster knocked on his door. He was summoned at an ungodly hour with coffee and breakfast in hand and received the bad news. He, among several of his colleagues, was laid off as part of

the downsizing; part of the bank's cost-cutting measures. He realised that despite the enormous salaries on offer for the services he could provide when needed, the corporate world was indeed fickle.

Kelvin had been made redundant twice and had worked at five different banks in his short career of fewer than ten years. Although Kelvin was unsure what he wanted to do next, he was confident the slow, but the energy-sapping daily grind was not for him. He was newly married, and his wife was supportive of him to venture on his own – and what better a time to try; his expenses were not particularly high, and he had enough savings to last a couple of years, so they were not financially stretched at that stage.

Now ready to get out of working for others, he had seen some new companies in the US begin to focus on using AI to provide investment advice; 'robo-advisory' it was called. He believed that this was an underserved market in Asia, yet with a considerable opportunity should someone be able to bring the right talent together with providing attractive services. He decided to visit Wall Street twice. Through various contacts, he learned more about the robo-advisory industry and the company 'Betterment,' apparently the first robo-advisory company in the world. In fact, by 2017, Betterment had over US$10 billion in Assets Under Management ("AUM"). Big US investment firms like BlackRock were jumping into using AI and robo-advisory (Appendix 4), and Kelvin realized this would soon be the trend in Hong Kong.

Upon his return to Hong Kong, Kelvin sought out Don to discuss the possibility of working together to form their robo-advisory firm. Ever since DBS days, the two of them would catch up regularly in any case as they had become friends. They continued to meet to refined their ideas on robo-advisory and one day "after meeting with Kelvin over lunch, Don discovered that his research has the potential to push the frontiers in the asset and wealth management

industry."[1] Don had already completed his Ph.D. and had begun teaching for a year or so, but at the time he was not considering Kelvin's idea of having an investment advice program that was AI-assisted and would provide a cheaper and more accurate alternative to bank advice. Don had the brains and skill to be able to design the back-end systems, whereas Kelvin had connections into the market for promoting their solution. Kelvin was looking for inspiration, and Don, looking for application.

Don pondered long and hard on whether to leave a stable research and teaching position so soon after his Ph.D. to go to experiment in a new venture with Kelvin. He was a respected professor at HKUST where he would have a promising career, become a senior professor and over time even possibly become Dean. During his Ph.D. studies and after he had begun teaching, he was instructing students to look at complex problems in the real world, such as how to build optimal investment portfolios. Don was also doing further research in his tenured position about various financial products. All of this led him to ponder how he could change the real world with the insight and experiences he had gathered from his studies. Here was the perfect opportunity to "practise what he preached" to his students by putting what he learnt over the years back into the business world.

Risking giving up a safe and prestigious career by joining Kelvin to start a company with an uncertain future was the most significant challenge Don faced in his life. He had a wife and one daughter, but his wife was supportive of whichever path he chose. Although he was not as financially comfortable as Kelvin, he still had adequate savings to support the family for some time and could always find another job if things did not work out. On the other hand, Kelvin was married, but unlike Don, he had no children, enough savings and did not have a job to give up – he had less at stake, but it was still an important decision for him to choose

[1] https://www.aqumon.com/en/story/

between going into his venture or to find another job working for someone else. They could end up far behind their peers, starting again from scratch, if things did not go as planned.

Discussion Questions

1. What are the challenges and opportunities for financial services start-ups in Hong Kong?

2. What were the merits and drawbacks of the business model Kelvin and Don considered?

3. What were the motivations and drivers for Kelvin and Don to venture as entrepreneurs in Hong Kong?

4. What risks and challenges did Kelvin and Don face in their initiative to build their start-up, and how would you recommend they address them?

5. Considering formal models/definitions of innovations like the OECD model (Appendix A) identify how differently Aqumon could innovate compared to its competitors?

Appendix A: The Hong Kong business environment

Hong Kong, a fantastic nightscape of skyscrapers with glittering lights, the world's third largest financial centre, (Yeandle, 2018) was an underserved market for low-to-mid range financial services products yet a developed market economically and financially. Being a financial centre, it has secure and well-represented institutional banking coupled with the freedom of movement of funds on a personal and business level.

It is more receptive to trade and with more certain regulations on funds and investment then most other Asian countries. Hong Kong was and remains a place conducive to people from other parts of the world coming to chase their dreams. The city operates mostly independently from the Chinese mainland and has the infrastructure and right conditions to enable success for dedicated and persistent entrepreneurs. The laws are very business-friendly and make starting a company accessible even by non-residents. Low taxes for corporations (16.5%) and individuals (15% maximum total) coupled with minimal administrative burden, which are not expected to change in the foreseeable future, provide a fertile ground for businesses to thrive. It made sense, for the two friends, to base themselves in this market if they could move into an innovation before the competition picked up.

At first, the Hong Kong market seems complicated for consumers with limited savings to start investing and growing their wealth. Most of the population are not high-net-worth individuals with millions of US dollars commanding full-service banking relationship managers or access to institutions with professionals (such as Kelvin previously) to help make investment decisions. Another aspect of the market is the focus on large business banking and institutions, so much so that they dominated and continue to dominate the financial services landscape. In this dominant market position in Hong Kong, large banks have not needed to nor been incentivised to evolve as quickly as smaller companies and other industries. Herein was the opportunity for robo-advisory.

Furthermore, such consumers were unsure of what to do with their money and how to invest. They were worried about losing their savings as well as not growing their wealth. Almost everyone in Hong Kong was, and currently are, exposed to managed funds through the Mandatory Provident Fund (MPF); a minimal forced retirement savings plan initiated by the Hong Kong Government several years prior, but consumers continue to have little understanding beyond this. Also, the MPF is vastly inadequate to be the sole funding mechanism to support retirement. Many middle-class workers in Hong Kong have dabbled in shares, and many actively trade on their phones speculatively – it is a cultural habit. Often most people also had small cash deposits, unsure of their next move, whether saving for a holiday, for going out or perhaps for a rainy day. Others had moved onto the property ladder and were busily paying down a mortgage on their home. It was common for those who had sufficient funds to use banks or investment firms to manage their investment relationship; they never wanted their money to sit idle.

At the time the landscape was ripe for robo-advisory to impact its target consumers at banks. These banks are very good at holding onto people's money and can extract significant fees for advisory and transactional services. Though banks offer many services to many customer types, the critical focus of robo-advisory was the funds' management side at the smaller investor market. Banks generally charge an entry fee to buy into a management fund usually between 1-2% minimum of the amount invested, sometimes an exit fee to sell out and always a management fee, which could range widely depending on the asset class and how actively the assets in the fund are managed, for reference a figure of up to 5% is not unusual.

The fees charged for portfolio management are generally considered expensive by Hong Kongers. Moreover, many funds are not actively managed and are also fairly generic, that is, despite being intended for investors, they would group those with similar risk profiles, and

not tailored to the individual investors' needs. Robo-advisory presents a better alternative to banks and brokers for investment management as it is more tailored to investiors needs.

The Fintech landscape

Among other recent portmanteau incorporating the word "tech," the term Fintech was one of the earlier terms coined to describe the intersection of Finance and Technology or Financial Technology and described "a business that aims at providing financial services by making use of software and modern technology."

Fintech was traditionally a competitor to the banking industry but now is also being incorporated by banks themselves to better serve customers in non-traditional ways. Lending, money transfer, approvals for various forms of financing, making payments, and of course investing are all examples areas covered by Fintech. The robo-advisory industry is a subset of Fintech, and the focus of this case is on the use of technology in streamlining investing.

We can view robo-advisory through the lens of innovation. The robo-advisory industry is one that requires significant innovation. Though there are many innovation definitions, the OECD Oslo Manual has a useful model with four types of innovation (OECD/Eurostat, 2005); Product, Process, Marketing, and Organisational innovation, which I summarise below as:

(1) Product innovation: a good or service that is significantly improved.

(2) Process innovation: a new or significantly improved production or delivery method.

(3) Marketing innovation: a new marketing method involving changes in product design or packaging/placement/promotion or pricing.

(4) Organisational innovation: a new organisational method in business practices, workplace organisation, or external relations.

Note that the OECD serves as a recognised reference point and despite Hong Kong ineligibility to be a member of the OECD due to it being a unique region of China, it has

participant status[2], reflecting the importance of the body and its relationship with developed regions beyond just its members.

In a nutshell, robo-advisors are a class of investment advisors who use mathematical algorithms to select the appropriate investment types and proportions for their customer base. Unlike traditional investment advisory, humans do not need to perform calculations and selections as computers and software run the calculations based on the inputs provided by the investor. The algorithms are calculated based on the risk profile of the investor, risk tolerance, investment goals, and personal/demographic details, with information able to be obtained in different forms depending on the level of customisation required. For instance, investors may complete a scaled or multiple-choice survey, which, for example, gives the model inputs based on their desire for risk, age, and level of assets. The robo-advisor then creates an individualised portfolio, or series of recommendations, depending on the type of advisor. Computing is becoming more advanced, and the ability to calculate outcomes based on multiple complex inputs is becoming increasingly sophisticated, to the extent which little or no human intervention in the calculations is required.

Particularly after the Global Financial Crisis (GFC) in 2008, firms such as Betterment (2010) were founded, using robo-advisory to charge very low fees and targeting smaller investors, which do not necessarily compete with the incumbent investment firms. Investors with smaller asset pools were now able to have access to tailored investment advice provided by robo-advisors, rather than having to be high net wealth individuals with private bankers able to run calculations with a back-office team. Betterment's approach spread across the US and to other countries as we see in the case of Hong Kong with Aqumon's offering. In some ways, it created a new market for investment management at the smaller end.

[2] OECD's Trade Committee and the Committee on Financial Markets
https://www.tid.gov.hk/english/ito/oecd/index.html

We can see the evolution of traditional players who are still dominant and well-resourced, moving into Robo-Advisory. Options range from either buying out smaller players like Aqumon, white-labelling services provided by these smaller players (as in, using the services of the smaller players under their name or another banner) or even going into robo-advisory themselves[3]

The cost of customer acquisition is low for robo-advisors, given the computational nature of the relationship. However, the trade-off can be seen in lower service levels. Some customers still prefer the strong personal relationship and large networks offered by the more prominent players, who retain an advantage in this space. Many other challenges are faced by robo-advisors such as competition between themselves as well as gaining enough clients to attain critical mass, growing out their customer average account size, and ensuring they maintain these clients in the long-term.

For more information on the timeline of robo-advisory and Aqumon, please refer to:

Series A funding information: https://www.centralcharts.com/en/8689-alibaba/news/798733-magnum-research-limited-announced-completion-of-series-a-financing-led-by-alibaba-entrepreneurs-fund

See the timing of several major events at https://www.digfingroup.com/magnum/

SFC licence granted: https://www.aqumon.com/en/story

Series A++ funding information: https://www.aqumon.com/en/article/82

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[3] "As Robo Advisors Go Viral, Where Do Traditional Money Managers Go?" (27 Jun 2016) https://www.investors.com/etfs-and-funds/etfs/fund-industry-wakens-from-slumber-to-take-on-digital-advice-upstarts/

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Teaching Notes

Case Summary

The case follows the founding of a real company, Aqumon in 2015. It explores how the two founders, with complimentary backgrounds, were able to identify an opportunity in the market for their AI-based investment advisory and allocation service that was subsequently invested in by several major Venture Capital ('VC') companies and banks. To November 2018, more than USD10 million in financing had been received by Aqumon.

Nevertheless, it was not always smooth sailing as the entrepreneurs needed to make several critical decisions and faced challenges that accompanied rapid growth. Fintech is a booming sector in Hong Kong and other financial centres. Lessons learned from this relatively recent endeavour could help start-ups, governments, students, and others understand the challenges faced and how to create best or support such entities.

Furthermore, the case could be used in innovation management classes to explain different types of innovation and how to deal with them, entrepreneurship classes for the opportunities and roles of founders and investors, strategic business management for the strategic decisions made and assessing their impacts and general management classes where business models could be discussed. There are also possible adaptations for use in marketing, pricing, financing, technology, or other classes.

There is no definitive 'right answer' for such a case as many avenues could be pursued and we are yet to see what is to become of Aqumon in the coming few years as it continues to expand. However, good students should be able to relate it to readings, critically evaluate all options, analyse existing options, and offer new or extended solutions. The information source for the teaching case was from numerous articles and discussions with employees of Aqumon. An extended teaching case could be written after further interviews with employees

of Aqumon or updated periodically to account for new information as the company grows and develops in the coming years.

Teaching case objectives

- To provide an example of a successful start-up company operating in a challenging yet open market environment like Hong Kong
- To examine risks and merits, risks, challenges and opportunities at stake when weighing up transitioning from a stable role to a start-up
- To highlight the many dynamics at play between the founders and start-up stakeholders
- To outline the numerous potential scenarios at play and options at stake when deciding on the next move for an entrepreneur in the context of a start-up
- To identify one specific industry in FinTech, namely robo-advisory, and provide an analysis of this particular industry and how a start-up operates within it
- To supply business educators and students with knowledge of the Hong Kong market, including cultural nuances and market forces at play
- To assist students in understanding innovation in the context of a start up in Hong Kong

Target audience

This teaching case could be used in undergraduate and graduate courses in entrepreneurship, innovation, finance, and management. Further, it could be used by international organizations and businesses that plan to venture into Hong Kong and the China mainland and are interested in familiarising their teams with the mentality and practices of Chinese entrepreneurs in the financial industry sector.

Pedagogical approaches and strategies

The students could be assigned the case as reading before, or at the beginning of a session and prepare to expand upon each of the discussion questions of the case. Further questions could be asked by the facilitator to extend the topic beyond the questions following the initial student responses.

Depending on the depth required and class length, the discussion questions could also be split into three separate teaching sessions. Students could be asked to form small groups of say three to five to come up with solutions then appoint one of their group to present their solutions to the other students in a class. The instructor should probe deeper, after each presentation, into the rationale for the answers as these are where key learnings can be garnered rather than just accept each high-level response. If in groups of five, students in the group could be asked to present one question each.

Postgraduate students could be asked to write down solutions or be assessed based on the quality of class comments and discussion. Further, they should be challenged by the instructor to respond by comparing it to their real-world work experience with companies they have worked for, or interacted. For example, they could discuss the similarities and differences such as service levels, branding, cost between a small company and large bank, and internal hierarchies.

In terms of a typical class outline, one could adhere to the following, which would run over a session of 75 to 90 minutes:

- Introduction (10-15 minutes): Confirm the students have read and understood the material. The instructor could draw on the past experiences of students and determine if any have any previous exposure or connection to the robo-advisory or wider FinTech or even financial services industry and discuss the environment around robo-advisory in Hong Kong or an alternative location.
- Operational environment (10-15 minutes): the instructor could ask students to consider Hong Kong's business environment and compare and contrast their understanding of it compared to their own business environment if it is significantly different from Hong Kong.

- Case study questions (45-50 minutes): as proposed earlier, the instructor could follow the suggestion above to split the class into smaller groups or by the various skillsets of the groups and subsequently reconvene after 20 minutes to probe each of the questions.
- Suggested solutions (5 minutes): some critical points of the suggested solutions, if not covered in the subsequent discussions, could be raised by the instructor.
- Further study (5 minutes): Discuss the students' suggested solutions. , Alternatively, set follow-up readings or homework or even a further discussion session after attaining knowledge of this case, probe into specific topic or areas of interest in greater detail (such as company structures, the financing of businesses, the application of technology in this industry or a multitude of other topics).

Case background/epilogue

Don and Kelvin, two friends who began their careers in banking, took the plunge and became entrepreneurs spawning their company 'Aqumon' (from '**Accu**racy' and '**Mon**itor') in September 2015. Once the decision was made, they moved quickly to take advantage of being an early player in the market. They started at the familiar university library, using it as their free office, to plan how they would approach what they had already settled on as a high-level concept and focus on refining and designing their offering. Kelvin, his colleagues, family, and friends had some initial funds to allow them to develop their product, but they were very cost-conscious, using interns from HKUST on low or no salaries who were eager to learn. Once they had secured their first client, a Chinese Bank, they were able to convert some interns into full-time staff and offer them a mix of salary and equity.

The two founders initially focused on a product that could lower the cost for banks and brokers – a business-to-business (B2B) approach – due to connections and knowledge acquired by both founders while working at major Hong Kong banks. After all, it was still the banks that had the most substantial propensity to pay the bills. Kelvin had the connections

and understanding of what banks needed and what customers were looking. Don brought the know-how and understanding of how automating fund selection could benefit customers and remove any emotion from selecting optimal investments. Both believed in making wealth management accessible for the masses, not just for the rich, and had a deep belief in democratizing wealth management[4]. This was the first step.

They had found a niche in the market that they thought they could address. Robo-advisory ideas had been implemented overseas in some form, such as in the US, but not in Hong Kong. It was important that both founders, particularly Don given his Ph.D. in Financial Mathematics, understood how to calculate risk and reward, among other factors to investing. Also, it was necessary to automate these investment decisions by developing and implementing algorithms to make decisions based on risk profiles; these algorithms form the basis of Artificial Intelligence in their service.

Critically, this was different from what the major banks were doing. They had already determined that banks were charging too much. What Aqumon was doing would be more accessible to the middle-class by presenting an affordable alternative. As is typical of most start-ups, they had the advantage of being nimble but were lacking in resources and funds. An example of this is that the founders even started their work in the small university library. They had to code algorithms that determined the best mix of investments. They were gradually building a platform that would choose the best funds automatically for a client, be it individual or corporate.

An important consideration that affected their planning and required an adjustment of their vision is that there exist licensing requirements around giving financial advice to the general public in most developed countries and Hong Kong is no exception. The need to comply with

[4] Friday, 13 July 2018, China Daily, Hong Kong Edition quotes Kelvin as saying "What we always want to do is to bring financial services to ordinary citizens."

this requirement, coupled with their existing bank relationships – namely Kelvin's connections to former colleagues, so it was only logical to start with a B2B approach. A B2B approach was less onerous to build programs that banks and investment companies would like to use that would result in efficiency, cost-saving, less bias, and a new delivery channel such as via mobile applications. For the founders is was clear; Aqumon would provide the know-how for banks to reach retail customers; after all, banks had the means to pay them enough to enable them to continue their business.

From the viewpoint aforementioned of market needs, this sales pitch could be compelling. They began to develop the product as an online or app-based service via a mobile phone interface, which would provide active investment advice based on the risk profile of the individual. It would take some time and refining to get right, but Kelvin and Don presented the concept and to various banks. The banks could see the potential of having an additional product in their portfolio with a relatively small outlay, and so Kelvin and Don started to make sales. They decided to build the AI and robo-advisor for the banks initially as opposed to other types of financial service business as elsewhere they have weaker connections.

Besides their initial financial investment, the only other cost during those early days was the founder's time; and, their foregone opportunity cost of working elsewhere. Nevertheless, seeing the depleting bank balance when hiring staff made the feeling even more real and apparent. They had done the hard yards in the first six months, presenting various prototypes to potential clients, and had managed to sign a few bank clients bringing in revenue. Now they were ready to build the working product; they had to deliver or else risk their reputation and the future of the company. How could they do it as quickly and effectively as possible?

Growth in the first year was slow, given the limited resources available to the founders. By June 2016 (10 months after the company was launched), Aqumon had the support of

HKUST after performing strongly at a start-up fair and were able to move to the Entrepreneur's Centre at HKUST; there were 4-5 people, including the founders and few university interns at the time. They had been given the biggest available room which had no windows and a wrong mobile phone signal but in fact, this was great for concentrating on their work! By March 2017 they had outgrown HKUST and rented a cheap village house close to the university which could accommodate their workforce of 8-10 people. To accelerate production, they had to augment the Aqumon team. With limited funds, they needed to grow the business and hire the right talent to help them build the various departments needed to get their custom-made product to market and further grow their market share. They also needed connections into the markets they were seeking and to build trust in their brand, which was unfamiliar to their target consumers.

Because they had joined the HKUST start-up accelerator program, they learned of many large Venture Capital (VC) firms. For the funding side, at any one time around the world, there are several large VC companies looking to make selected investments into companies with high-growth potential. With the thousands upon thousands of companies all looking for investors, selecting the right prospect is like finding a needle in a haystack, which is what makes or breaks the VC firms. Despite these challenges, the returns if they back the right company are enormous.

One well-known name in the venture capital space is Alibaba; a global top 10 internet company and a top 3 internet company in China. Alibaba owns and runs the Alibaba Entrepreneurs Fund, a VC fund that was set up in Hong Kong to boost the innovation and start-up environment in the city and was initially endowed with 1 billion Hong Kong Dollars ('HKD') to invest in various ventures[5]. There are regular pitches by companies for significant

[5] More details about Alibaba's Hong Kong Fund at https://www.scmp.com/tech/start-ups/article/2113126/alibabas-entrepreneurs-fund-eyes-next-billion-dollar-start-hong-kong

investors such as Alibaba, and it was after one of many of these pitches that Aqumon stood out as having a unique offering.

Alibaba ended up investing an undisclosed sum. As of June 2017, Aqumon had been funded USD3m in total[6]. For Aqumon, the investment from Alibaba brought not only funding but more importantly, the exposure of being invested in by an internet giant; this gave further marketing leverage when discussing their product and services to clients. Alibaba also gave guidance on how to make the company bigger to improve the valuation of Aqumon – by targeting retail investors and expanding into the B2C market. Kelvin understood that retail is what gives Aqumon a more significant valuation. Directly engaging retail investors who are more likely to stick with the product would be better than either channel customers or asset owners [7].

Moving into B2C was now possible for Aqumon as it had been granted the two licenses required by the Hong Kong government regulator in September 2017. Instead of direct advertising, Aqumon took a partnership approach to access mid-to-high net worth employees and various presentations, talks, and roadshows to raise product awareness. The partnership approach was to partner with reputable organisations in the finance and business industry, such as accounting membership bodies, to co-promote using thought leadership and access qualified white-collar investors. Often at these joint events with partners, Aqumon would provide some financial sponsorship and have Don or Kelvin acting as a guest speaker. Aqumon's marketing strategy was complemented by its simple, uncluttered website. The company, with its initial funding, was able to grow and open additional offices in Central Hong Kong for its proximity to banks and in Shenzhen for a lower cost location for talented China-based researchers.

[6] A combination of Alibaba and other investors https://www.centralcharts.com/en/8689-alibaba/news/798733-magnum-research-limited-announced-completion-of-series-a-financing-led-by-alibaba-entrepreneurs-fund

[7] https://www.digfingroup.com/magnum/

The founders continued to grow the business methodically and step-by-step at the same time canvassing interested investors who would bring more than just monetary value to Aqumon. A suitable partner arrived in September 2018, where another milestone was achieved; a further investment made by the Bank of China's investment division – giving further credence and prestige to the company and demonstrating belief in its market growth[8] and direction; was another big name in the Financial Services industry that consumers were familiar with and could trust.

As of November 2018, Aqumon had over 50 staff. The Aqumon teams consisted of various support staff, business development, AI, and quant teams (those that calculate the various investment strategies). Offices were located across Shenzhen in Mainland China, a Singapore sales office, the Hong Kong head office in the Central district and also a research team embedded at the HKUST in outer suburban Hong Kong. By the end of 2018, more than USD10 million in financing has been received by Aqumon. The company built and continued to refine algorithms for retail customers in Asia. These customers had short-term preferences, and customisable allocations within the given risk constraints set by their profile, which Kelvin hopes continues to encourage longer-term goal setting.

"Today in Hong Kong's wealth-management industry, robotic investing is maybe 1% of assets," Kelvin said. "That is going to rise to 20% or 30%" over the next five to ten years.

What is next? Kelvin says the company will likely raise funds again next year (2019) to extend its app into other areas of personal finances. Helping users set goals for investments – retirement, buying a property – leads naturally to being able to provide loans, insurance, credit, or other services. Kelvin says the company could consider obtaining a virtual banking license (a requirement to operate as an online bank in Hong Kong).

The company's biggest challenge? "Managing growth."

[8] https://www.aqumon.com/en/article/82

The key takeaway is that no one knows, but the sentiment is positive. Large staff salaries to maintain and build talent, high rents, and VC pressure are common issues faced by all Fintech start-ups.

There are many competitors in the market in Hong Kong alone; however, with the considerable growth of market size and parallel services offerings available for the taking, it is anticipated that this will be a buoyant industry for some time to come.

Timeline of events

Year	Event
2004	Don arrives in Hong Kong from Taiwan to commence studies at the prestigious Hong Kong University of Science and Technology (HKUST)
2008	Don and Kelvin both work at DBS bank in different divisions
2010	Don commences a Ph.D. in Mathematics (Financial Mathematics, Stochastic Control, Portfolio Optimisation)
2014	Don completes Ph.D. and commences teaching
2015 Sep	Kelvin and Don co-found the Aqumon brand under Magnum Asset Management. Staff number just the 2 of them.
2016	Acceptance into the HKUST tech accelerator program
2017 Jun	Series A funding by Alibaba and others completes. The company is now in 3 cities with 25 staff.
2017 Sep	Granted type 1 and 4 licenses from the Securities and Futures Commission of Hong Kong enabling expansion into B2C.
2018 Sep	Investment by Bank of China International. Total staff number over 50.
Future	Further expansion is headcount and offering planned.

Suggested answers to discussion questions

1. What are the challenges and opportunities for financial services start-ups in Hong Kong?

Opportunities

Students should consider current and future opportunities that could arise. The instructor could lead students to plan the direction of the company, not just from the size and scope of the Hong Kong market but from the way the company is structured compared to its competitors. Examples include:

- Timing is an opportunity because the market is just beginning to take off in Asia, there is a high rate of adoption of technology, mobile penetration and a considerable number of middle-income consumers and banks in East Asia

- The lack of market penetration at the lower-to-middle end of the market, not currently served by banks, is another opportunity

- The lack of hierarchy could result in faster decision-making and quicker adaption to market trends

- The propensity for higher risk-taking – the small organisation is not like a large bank and bound by shareholder returns and risk expectations

Challenges/Threats

Several current and impending threats could also be reflected in student responses, such as:

- Pressures from competitors in the market

- The changing regulatory environment

- The changing demand for the product/service

- The relatively small size of the Hong Kong market

- Internal cash flow and financial weakness due to the need to source funds externally

- Reduced ability to hire and retain top staff given limited resources and high risk compared to larger companies or competitors

- Lack of brand in the market could lead to various issues including hiring difficulties, challenges in convincing subscribers of the strength of its product and lower recognition vis-à-vis large competitors

- A lack of trust from external stakeholders in such a new company

2. What were the merits and drawbacks of the business model used by Kelvin and Don?

For undergraduate students, a framework strategic decision-making based on SWOT analysis template (of the company, of the market) among other models, may serve as a useful tool to make decisions on business models. Initially:

Strengths

Students could look at areas of strength versus the incumbent players and market, such as:

- The ability to own, create, and modify IP in how it selects funds.

- Having the critical knowledge and relationships of the two founders.
- Being lower cost and able to charge less to customers.
- Faster decision-making as they have a smaller, leaner structure than banks and fund managers.
- Being one of the first players in the robo-advisory market in Hong Kong, giving first-mover advantage.
- Able to react to consumer preferences and adjust its products much faster than competitors

Weaknesses

Students must also consider areas of weakness versus the incumbent players and market, such as:

- A relatively unknown brand; unfamiliarity may affect customer acquisition
- Inability to leverage existing customer bases
- Lack of global scale as banks and fund managers could leverage global skills and knowledge to corner the Hong Kong market
- Similarly, limited funds to deploy – each decision is higher-risk in the context of the market and could make or break the company

Weighing up pros and cons, students could debate whether they think Aqumon should remain a separate start-up entity or actively seek to be part of a larger organisation.

Further, when considering business models students could look at the target product and market, marketing channels, B2B, B2C, retail, direct sales, indirect channels via brokers or salespersons, online direct versus indirect via advertising.

There are countless funds on the market available for selection. Postgraduate students could discuss how the founders chose the number of funds to include in their platform.

When making the technology available to banks, students can consider if the choice was made by the client on which funds it wanted to include and the scope. For the B2C channel, the founders started with significant Hong Kong and US exchange-traded funds, to begin with, to limit their scope otherwise there would be too many to choose from, and it would get

confusing for investors, while also making it challenging to build the algorithms. In any case, students can debate the appropriate mix and number of funds bearing in mind the need to provide enough diversity of funds for many investors, liquidity and trustworthiness but not get too derailed by the IT programming complexities.

It is also critical to discuss how Aqumon's offering is better than the market thus far, which has enabled their relative initial success. The offering allows AI to make the optimum selection based on a person's risk profile. Students should note that it removes any human biases and emotion, at the same time as removing cost from manual advice.

Also, students could consider how to keep costs, and therefore fees to customers, low. If they were to price too high, then they would not be disrupting the industry. Students could discuss how to keep costs low enough and processes automated so that Aqumon could charge a lower fee for their AI fund selection as opposed to buying through traditional banking channels.

Postgraduate students could, besides, consider more complex issues, such as:

Corporate structure

Instructors could guide students to first discuss the company structure, if this is within the intended teaching outcomes for the class, such as the merits and drawbacks of sole proprietorship, partnership or company (noting that trusts or other structures would probably not make sense at this stage though students may mention them when considering a comprehensive list of structures).

Funding model

If the course is related to financing, instructors could choose to discuss funding. Students should be able to look at innovative new sources of funding and assess the practicalities of various sources weighing up their pros and cons, for example:

- Loans through personal connections, banks

- Selling personal assets
- Selling equity in the company
- Selling the whole company
- Having a VC invest and take equity in the company
- IPO or secondary market listin

3. What were the motivations and drivers for Kelvin and Don to venture as entrepreneurs in Hong Kong?

Students get a good understanding of the backgrounds of the protagonists as the story builds, and they could put themselves in the founders' shoes to generate logical responses. Both founders have different backgrounds, and therefore each has different motivations and drivers, although some overlap is expected.

For Kelvin, the following motivations and drivers could be raised:

- No full-time role at present, therefore as good a time as any to start something new
- Pride. Students would do well to understand the cultural context in China as a potential reason someone wants to prove themselves despite redundancies. It could be extrapolated further as to consider the fact that Kelvin was made redundant several times and potentially had something to prove in the financial services industry.
- Control. Previously Kelvin had little control over his destiny as he worked under numerous managers and was subject to market factors which ultimately in many cases led to his redundancy. In his venture, he could choose to go forward or stop at any time – theoretically, of course, as factors such as having enough funds also determined how long he could go on for.
- Being one's boss. Following on from control, to be one's boss was not only about destiny but gave a sense of satisfaction and knowledge that you are responsible for making something happen and motivating a team.

- Success. It is a great feeling making a venture successful; this is a big motivation for anyone considering a start-up. Success can be defined by many factors such as the number of staff you manage, employ, the size of the company in terms of revenue or versus peers and valuation, being cutting edge, respected by the industry, peers, family, friends or others.
- Financial. This merits its own point. Success is defined by many factors, but potentially none more than how much the venture makes or is sold. Indeed, this is a focus reported by media as a measure of success, e.g., Fortune 500 – largest companies by revenue – a financial measure.
- Flexibility. Working for yourself means you do not have to stick to corporate hours, but more often than not, you end up having to work a lot more hours!

For Don, on top of the factors listed for Kelvin, which could apply to both founders to varying extents, the following motivations and drivers potentially align even more with Don:

- Applying one's talents to their maximum. Having worked in a financial services company, studied, performed research and taught at university level there were different skills and talents to be applied in each instance, but all of these had different bounds and limits. Pursuing one's venture somewhat allows even greater flexibility to go beyond traditional employers' boundaries.
- Respect. Don had already proven himself as a studious and successful as obtaining top marks but beyond this as he taught and supervised students one imagines that he would also be wanting to show that he could also be a success in the business world.
- From theory to practice. Practice what you preach is a common saying and in the story, it should be clear to students that Don wondered about his teaching and advice to students, yet was not yet able to prove that it worked the same way in real life – until taking the plunge himself.

- Teamwork. Often in academia, teaching or writing is done on one's own, possibly more opportunities to work with others in a business setting were a motivating factor.

Students can discuss other potential reasons for entrepreneurs to go on this path and consider their feelings about entrepreneurship versus regular paid employment.

4. What risks and challenges did Kelvin and Don face in their initiative to build their start-up, and how would you recommend they address them?

Students could consider some of the previous information and solutions devised in previous discussion questions around how the opportunities, challenges, strengths, and weaknesses amalgamate into risks and how each impacts upon each step in building the start-up.

This question also begins to integrate innovation with strategy. It is the most open question, and the facilitator can choose how he or she wishes to allow to approach it or even overlap it with the second discussion question. The facilitator should stress the importance of having a strategy, acting quickly, rather than focusing too much on the technology, which arguably may be replicated. Further, the case purpose is of a business nature rather than moving into an IT/technological debate. Students could discuss whether they focus on B2B, B2C, both, or other delivery models. Pricing strategy, marketing, and company structure can also be covered. Some suggested discussion areas are covered below.

<u>Operational strategy</u>

Students who are familiar with the various locations that Aqumon uses may be able to determine why Aqumon splits its teams across different geographies. Risks with a new and highly unfamiliar team are mitigated partly by Aqumon taking advantage of highly qualified students at lower wages in Shenzhen (Mainland China) and university collaboration in Hong Kong at HKUST, plus the major financial centres for its sales teams in Hong Kong and Singapore to reach banks. The facilitator could discuss this further with postgraduate students or share this as further information as students discuss a strategic direction or where to grow a

future office(s). Also, using HKUST students where Don taught and worked is a sound strategy to at least have a common ground and understanding of the strengths of the students.

Students should know that Aqumon's current offering is in two main areas; B2C and B2B. They could discuss the merits of having one or both strategies for Aqumon's growth.

B2C strategy

Aqumon continues to work with major banks and financial institutions to build various components or entire parts of mobile apps or online services. The facilitator could add the details that the bank's clients can access Aqumon's white-labelled services via their regular bank login and have an option to manage their funds, make investments, set goals, adjust their risk profile and allow the AI to help select and optimise their portfolios. Such a process is delivered at a lower cost for the bank as it relies on AI as opposed to physical advisors. The cost savings may or may not be passed onto the consumer, depending on competitive and strategic decisions.

B2B strategy

Again, the facilitator could share to the class that there is an app which forms Aqumon's retail offering. Students can discuss the practical business features of this app.

This app is maturing, so goals are set, for example, for saving for a holiday or home, or their children's education and working backward to determine how much they should put away each week or month to invest, as well as their tolerance for risk. Students can discuss what the target market is looking for in such an app.

Aqumon is desperately trying to leverage brand awareness and partner with various bodies such as accounting firms to present on technology and their offering. Students can discuss if this is the right strategy or to take alternate approaches, such as use more direct advertising which comes at a cost.

Growth strategy

Students could discuss what areas of the business the founders should invest in now that they had some funds.

From all sources to date, over USD10m of financing has been obtained[9]. For added complexity, students could be asked to do some research and/or rough analysis on what USD10m could buy and how they would split the funds.

The business continues to grow and hire in its three offices, and Kelvin and Don are still at the helm. With so many significant investors, students should be made aware of the pressure placed on the founders to get a return for the investors.

Given this context, students may discuss the different avenues for exit or continuation of the business. The business is making sales and therefore is not purely conceptual. Returns may be in the form of a profit then dividends or even if loss-making it may be sold to a bank, VC or floated in an IPO.

Students should identify that growth could be from entering new markets, especially in Asia, new customers such as brokers and investment firms as well as parallel product offerings (see Epilogue).

5. Considering formal models/definitions of innovations like the OECD model (Appendix A) identify how differently Aqumon could innovate compared to its competitors?

This question aims to assist students in understanding frameworks to help structure their answers. In this case, we often look at the innovation at Aqumon and contrast it with its competitors.

Students, primarily undergraduate, could initially be encouraged to discuss 'what is innovation?'. There is no one universally accepted definition. However, the OECD, a significant supranational body, has a precise yet easy-to-comprehend definition which is:

[9] https://www.aqumon.com/en/article/82

"An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations." (OECD/Eurostat, 2005)

There are many models of innovation that can be applied and discussed though only one framework is used for discussion in this short teaching case, and it is by no means the sole definitive solution. The OECD definition of innovation types (OECD/Eurostat, 2005) is referenced because it is a highly-visible, respected, and global body.

To discover and access the opportunity being pursued, what did Aqumon do differently from what the major banks were doing?

In the context of the business model chosen by Aqumon, students should be able to point out the differences between a start-up and a major corporation in the context of the nimbleness as well as the ability to try innovative methods to grow and capture market share without the restrictions and processes required by a large organisation.

In the Appendix to the teaching case, the OECD model was provided as a framework to guide students to discuss various types of innovation. Differences and areas where Aqumon could innovate compared to banks using this framework could include:

<u>Product innovation</u>

Students should be somewhat familiar with traditional banks that require customers to manually choose investment products via a relationship manager or online. Even students inexperienced in investments can relate to generally slow existing bank processes for account opening or underlying transactions. Aqumon provides a "smarter" AI tool that would automate fund selection (or provide tailored options) based on the person's risk profile and investment goals. Students could discuss a robo-advisory product as having an added value and speed compared to the traditional channels.

Students could discuss innovative ways the product is distributed at Aqumon while products through a bank must go through a longer process. Some banks may be biased and only sell their funds or those that have sufficient commission.

Process innovation

The process of investing in funds is cumbersome. Students could contrast the many forms need to be completed and verified by large banks or corporations before someone will meet you or provide further instructions to set up all your accounts online by yourself (or on your behalf if you are high net worth). Students may think about how Aqumon sets up its account onboarding (it has an online form) and normal usage (you install an app which has a relatively easy-to-use interface for B2B), or how banks offer an app in their suite which takes out the need for unnecessary staff interactions (B2C). Students in the ever-innovative digital age could consider the benefit of automation and AI in that it removes human error in investment selection.

Marketing innovation

Instructors could direct students to Aqumon's website to see the direct B2B offering, which focuses on self-service by providing a simple and intuitive sign-up process through its website. Students could also look at the B2C channel; Aqumon does not need to confuse product offerings and brand messages by being a bank. It currently focuses on one core offering – though there are pros and cons to this as well.

On the contrary, however, students should also pick up on the fact that many start-ups are at a disadvantage by not having a brand hence lacking the trust of customers, who are more likely to go with known players. Students could compare traditional bank or investment fund websites and marketing strategies with Aqumon's website and approach to retail customer acquisition.

Organisational innovation

Aqumon or small start-ups are not restricted by process, approvals, and hierarchy when compared to large investment companies. They can adapt faster to customer needs and quickly make updates to their offering.

Aqumon has a direct, personal approach to sales, but students could stress the point that if they did not push sales to customers, the business could potentially cease to exist. Big banks with multiple channels may have salespeople motivated by commissions or targets or conversely lacking motivation due to a safe, stable salary and little incentive to make incremental sales because of no existential threat to the company.

Students could talk about buy-in by owners and owner-employees; they have the ultimate motivation to succeed and directly awarded by success versus reliance on a large corporate structure to motivate.

References

OECD/Eurostat. (2005). *Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data* (3rd ed.). The Measurement of Scientific and Technological Activities, OECD Publishing, Paris. https://doi.org/10.1787/9789264013100-en

Yeandle, M. (2018). *The Global Financial Centres Index 23*. Retrieved from http://www.zyen.com/GFCI/GFCI23_Launch_Agenda.pdf

Further resources
(Supplementary Readings)

The background environment to the case and some relevant business concepts are included to assist students in gaining a deeper understanding of the case and other related areas.

Industry
Aqumon's website and the story is a great starting point for students to learn more about the company and industry in which it operates.
https://www.aqumon.com/en/story

Hong Kong is a hotbed for start-ups in Asia. There is a push by the HK government and private sector for more innovation, such as the government-operated 'Fintech Hong Kong' through InvestHK, the government body responsible for encouraging inbound investment into Hong Kong.
http://www.hongkong-fintech.hk/en/home.html
https://www.investhk.gov.hk/

There is a rising trend for finance functions to use robotics to help automate in Greater China with several large global consulting practices providing views on the future trend such as KPMG.
https://home.kpmg.com/cn/en/home/insights/2018/11/future-of-finance-embracing-digital-and-robotic-process-automation.html

Innovation/Strategy

The innovation model used in this case is just one of several, but it is chosen as an example due to the wide recognition of the OECD and the simplicity of the four types of innovation.

OECD/Eurostat. (2005). *Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data* (3rd ed.). The Measurement of Scientific and Technological Activities, OECD Publishing, Paris. https://doi.org/10.1787/9789264013100-en

Also, the position of Hong Kong as a global financial centre is good to set the context:

Yeandle, M. (2018). *The Global Financial Centres Index 23*. Retrieved from http://www.zyen.com/GFCI/GFCI23_Launch_Agenda.pdf

Further readings in the area of innovation include the article 'You need an Innovation Strategy' which discusses focusing on technological and business model innovation.
https://hbr.org/2015/06/you-need-an-innovation-strategy

Regulatory

In the case section 'Entering new markets,' Aqumon was granted licenses enabling it to enter the consumer market (not B2B). More information about the local Hong Kong licensing body and license types are found on the Securities and Futures Commission ('SFC') website. Aqumon was granted licenses Type 1 for dealing in securities and Type 4 'Advising on securities' by the SFC of Hong Kong
https://www.sfc.hk/web/EN/regulatory-functions/intermediaries/licensing/guide-to-licence-application/regulated-activities.html).