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Trading bricks for clicks: Hong Kong poised to launch its virtual banks

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DESIGN THINKING

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DEAR READER,

Design thinking, a collaborative, human-focused approach to problem-solving, is no longer just for the creative industries. It has become an important management trend across many industries and has been embraced by many organizations. Its results are hard to ignore. Indeed, design-driven companies regularly outperform the S&P 500 by over 200 percent.[1]

To date, the financial services industry has not led in adopting this approach. However, leaders are recognizing that important challenges, such as engaging with millennial customers, can be best addressed by using design thinking, through the methodology's exploratory approach, human focus, and bias towards action. This edition of the Journal examines the value of design thinking in financial services.

Design thinking introduces a fundamental cultural shift that places people at the heart of problem-solving, which is critical in a technology-driven environment. If the customer's real problems are not fully understood, technological solutions may fail to deliver the desired impact. In this context, design thinking offers a faster and more effective approach to innovation and strategic transformation.

The case studies and success stores in this edition showcase the true value of design thinking in the real world, and how this approach is an essential competitive tool for firms looking to outperform their peers in an increasingly innovation-driven and customer-centric future. At Mastercard, design thinking has become a part of almost all organizational initiatives, from product development, research and employee engagement to solving challenges with customers and partners. Meanwhile, at DBS Bank in Singapore, a data-informed design model has been firmly embedded into the bank's culture, enabling them to successfully move from being ranked last among peers for customer service in 2009, to being named the Best Bank in the World by Global Finance in 2018.

I hope that you enjoy the quality of the expertise and points of view on offer in this edition, and I wish you every success for the remainder of the year.

Lance Levy, **Capco CEO**

[1] http://fortune.com/2017/08/31/the-design-value-index-shows-what-design-thinking-is-worth/

TRADING BRICKS FOR CLICKS: HONG KONG POISED TO LAUNCH ITS VIRTUAL BANKS

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ABSTRACT

Hong Kong's banking regulator, Hong Kong Monetary Authority (HKMA), published a Guideline on authorization of virtual banks, which grants banking status to financial institutions without the need for physical branches. This move is geared to usher Hong Kong into the "new era of smart banking" and capitalize on the significant opportunities brought about by the convergence of banking and technology. The banking sector is set to play a more active role in the semi-autonomous Chinese territory's grand ambitions to transform itself into a "smart city," amidst the backdrop of intensifying regional and global digitization. This article outlines five critical areas for consideration for virtual banks aspiring to succeed in the Hong Kong market: 1) customer focus, 2) continuous product innovation, 3) partnerships and cooperation, 4) the role of the regulators, and 5) new and existing infrastructure. Taking stock of these areas will enable new entrants to stand out amongst the long-established banking giants in the city's hyper-competitive banking industry.

Virtual banking is no longer a buzzword or futuristic concept. Hong Kong's banking regulator, Hong Kong Monetary Authority (HKMA), published a Guideline on authorization of virtual banks,[1] which grants banking status to financial institutions without the need for physical branches (i.e., all transactions will be conducted online). This move is geared to usher Hong Kong into the "new era of smart banking" and capitalize on the significant opportunities brought about by the convergence of banking and technology. It is also part of the semi-autonomous Chinese territory's grand ambition to transform itself into a "smart city," amidst the backdrop of intensifying regional and global digitization.

This guideline broke free from the long-established three-tier banking system in Hong Kong, namely: licensed banks, restricted license banks, and deposit-taking companies. 29 virtual bank license applications were filed as of the 31 August, 2018 deadline.[2] This is a compelling figure considering there are only 22 locally incorporated banks in Hong Kong to date.[3] It is emblematic of the ongoing efforts of large-scale financial institutions to compete head on with the new fintech entrants, yet they are

[1] https://bit.ly/2zEtlUg
[2] Yiu, E., 2018, "Hong Kong draws 29 applications for virtual bank licences," South China Morning Post, August 31, https://bit.ly/2wAwgkm
[3] https://bit.ly/2Nb6FUw

increasingly being outcompeted in an effort to capture the new wave of digital consumers. New all-digital banks are now taking the lead in the fight for banking supremacy. With digital solutions at the core of banks' business strategy, coupled with the willingness to push the boundaries of banking, aspiring virtual banks can take advantage of Hong Kong as an international financial market that is characterized by its proximity to China, stable technical infrastructure, low tax regime, and sound regulatory framework.

This article outlines five critical areas for consideration for virtual banks aspiring to succeed in the Hong Kong market: 1) customer focus, 2) continuous product innovation, 3) partnerships and cooperation, 4) the role of the regulators, 5) new and existing infrastructure. Taking stock of these areas will enable new entrants to stand out amongst the long-established banking giants in the city's hyper-competitive banking industry.

1. SPOTLIGHT ON THE CUSTOMER

Understanding your customer is crucial and fundamental in forming any business strategy. For industries that rely on a continuous flow of new customers as a primary revenue stream, and banking is such an industry, any new entrant must have a customer-centric approach that puts the customers' needs ahead of anything else and relentlessly focuses on how their lives can be improved.

Hong Kong has a long history of banking, housing such traditional giants as HSBC, Standard Chartered, and Bank of China. Going head to head with these banks may be a losing endeavor with an insurmountable hill to climb, but there are ways for aspiring virtual banks to take advantage of the gaps left by these giants. Every bank should aspire to serve all customers and find ways to obtain their business. But focusing on customers whose banking needs have not been fully satisfied by traditional banks may be a more strategic approach. Even with its storied history in banking, only 53% of Hong Kong residents are satisfied with their banking services, as compared to 88% in the U.S. and 78% in the U.K.[4] This suggests that there is an opportunity to adapt banking offerings to fit customers who continue to look for convenience, faster payment capabilities, and lower fees – among other improvements. New entrants have the potential to reach different market segments that have not been fully served by the incumbents.

1.1 The unbanked

This is a key segment that virtual banks in Hong Kong are looking to capture. Customers that have traditionally been unable to find products that suit their needs within large banks make up a sizeable percentage of Hong Kong's market. Catering to the needs of this customer group will boost financial inclusion and provide this segment with lower cost services, in line with HKMA's guidance on not imposing any minimum account balance requirements or low-balance fees. Virtual banks' use of new technology has given them the advantage of being able to reach the far corners of Hong Kong's broad customer spectrum.

As the HKMA sets its sights on a new smart banking era for the region, its guidelines have been designed to promote financial inclusion. Under the auspices of these guidelines and with new technologies at their disposal, virtual banks can develop products to help them reach new customer bases. Virtual banks would be smart to focus on this segment if they wish to compete in Hong Kong's banking market. The most obvious target amongst the unbanked is low-income customers who have not had the means nor the access to traditional banking products. One requirement that the HKMA has imposed to promote inclusion is preventing virtual banks license applicants from imposing minimum balances and low-balance fees.[5] Where traditional banks cannot afford to retain these low balance customers due to personnel, rental, and other overhead costs, virtual banks have some latitude to take on the additional risk due to lower operating expenses. The regulator further adds that, "The HKMA would like to point out that a key objective of introducing virtual banks in Hong Kong is to help promote financial inclusion by leveraging on these banks' IT platforms that would lower the incremental cost of taking in additional customers."[6] As virtual banks can avoid Hong Kong's notoriously high property costs, they have a chance to focus on these customers. With technology at the base of their business model, the cost to acquire new customers would be significantly less.

The upward trend of financial inclusion is not limited to allowing the unbanked to open accounts. There are other categories of customers that can help a new bank take its place in the market. Using technology to provide

4 Fergus, G., 2018, "Sink or swim. Hong Kong lenders must get smart with virtual banks as fintechs snap at their heels," South China Morning Post, February 19, https://bit.ly/2zEnu77
5 https://bit.ly/2zEtlUg
6 Hong Kong Business, 2018, "Virtual banks are no longer a thing of the future in Hong Kong," May 31, https://bit.ly/2xSXa7Z

customers with typical banking services such as transfers and remittances is also a way of improving financial inclusion and breaking into the market. In addition, new and emerging technologies can simplify processes and further lower the transaction costs.

A case in point is the use of blockchain technology: China's Ant Financial Services intends on offering remittance services for almost no cost. Hong Kong has 200,000 Filipinos working as domestic helpers who transfer an average of HK$4.4 billion a year to friends and family in the Philippines, contributing towards the third largest remittance market in the world.[7] In view of the anticipated increase in the number of foreign domestic helpers doubling to around 640,000 in 50 years, virtual banks can create a sizeable customer base by being the market leaders in this particular segment. Hong Kong banks and remittance outlets charge around HK$18 per transaction in addition to commissions and currency conversion fees. With the Alipay blockchain, these transfers can be done at a competitive exchange rate, in real time, and at much lower prices than traditional services. Aspiring virtual banks will continue to use technology to drive their business strategies, create new digital solutions, and new ways of delivery to reach customers that were previously unserved. Technology will fuel digital products and virtual banking with financial inclusion and profitability accelerating in lockstep.

1.2 Generation next: Z

Challenger banks and their micro-lending products can appeal to Generation Z (born from 1995 onwards) customers, many of whom are students with limited credit history. Microbusiness startup loans and self-employment loans could aid this generation launch new companies and deliver their ideas. Self-enhancement loans would provide underprivileged young people with the means to fund tertiary education and acquire additional skills in the increasingly competitive Hong Kong market.[8] This can be groundbreaking for Hong Kong's younger generation who find it increasingly difficult to gain the confidence of larger banks and obtain loans to jumpstart their businesses, education, and life in general. While major banks hold over 95% of the prime plus and super prime loans belonging to older generations, they hold less than half of those issued to Generation Z (Table 1).[9] This can be a potential segment for virtual banks to focus on in Hong Kong.

The low number of unsecured loan accounts is probably due to the banks becoming more stringent with their qualification criteria. Traditional banks are intentionally excluding younger borrowers, opting to withhold loans until their careers are more established. Fintechs and challenger banks can now step in to service this segment. Only one in six Hong Kongers aged between 18 and 22 are currently in the banking ecosystem.[10] As the unbanked/underbanked youngsters look to obtain their first loans or look for their first payment channel, they will soon have the option to turn to fintechs and virtual banks rather than the traditional lenders.

1.3 The digitally savvy millennials

What do millennials want? As Hong Kong's smart banking era arrives, virtual banks applying for licenses want to know how they can attract the city's new, digitally savvy customers and ensure they can become a big part of making it a smart city with respect to banking. For

Table 1: Hong Kong unsecured loan accounts distribution

	SILENT (Born 1945 and earlier)	BABY BOOMER (1946 to 1964)	GEN X (1965 to 1979)	MILLENNIAL (1980 to 1994)	GEN Z (Born 1995 onwards)
SUBPRIME	52%	25%	28%	27%	7%
NEAR PRIME	78%	58%	65%	63%	26%
PRIME	95%	86%	88%	82%	31%
PRIME PLUS	99%	96%	95%	86%	31%
SUPER PRIME	100%	97%	96%	86%	50%

Source: TransUnion HK

7 Soo, Z., 2018, "Ant Financial taps blockchain technology to offer cheaper international money transfers," South China Morning Post, June 25, https://bit.ly/2NbrKhM
8 https://bit.ly/2R9TFlu
9 Transunion, 2017, https://bit.ly/2P2d1Yo
10 https://bit.ly/2P2d1Yo

the last 10 years, the assumption was that traditional financial institutions were the only avenue through which they can satisfy their banking needs. But now the largest portion of the city's workforce of nearly 1.7 million,[11] millennials, and their taste for digital and quick solutions, have started to change the way banks construct their offerings.

From broadband internet to instant food delivery, the need for seamless, efficient, and fast services has never been greater. To win over consumers, any prospective virtual bank needs to continuously focus on and prioritize providing seamless transactions.

> "With millennials increasing in prominence and wealth, the entire banking industry is striving to rapidly adjust their offerings and business strategy to meet their demands."

Payments is perhaps the most basic and prevalent financial interaction with the masses, and yet for the longest time it saw minimal innovation.[12] This was a major pain-point for millennials who are used to sending everything from photos to documents electronically – having to withdraw physical cash or obtain account details to securely transfer money for something as simple as lunch.[13] In other developed markets, these pain points led to creation of e-payment gateways, such as PayPal, and digital wallets, such as Venmo. Traditional banks in the region were quick to follow suit, launching P2P payment platforms, such as Zelle and PayMe. Ultimately, it is efficiency, not brand names, that determines the platforms that millennials will trust to make their transactions on. Virtual banks applying for licenses in Hong Kong would be wise to invest in these types of solutions.

As millennials increase in number and influence throughout Hong Kong, their needs are increasingly important. Unlike previous generations, millennials are hooked on the aesthetic: catchy taglines and jingles are not as effective on this segment. Visual details are paramount for the new generation, as design has become their most desired stimulus. Preference is given to visual content with digital channels, such as social media feeds, apps, chats, and blogs being of utmost importance. Developing live chat interfaces, AI-based chatbots, and even online tutorials with valued content will pay dividends for challenger banks looking to sell their services to younger consumers in Hong Kong. Anything less will only result in frustration, causing them to seek alternative options.

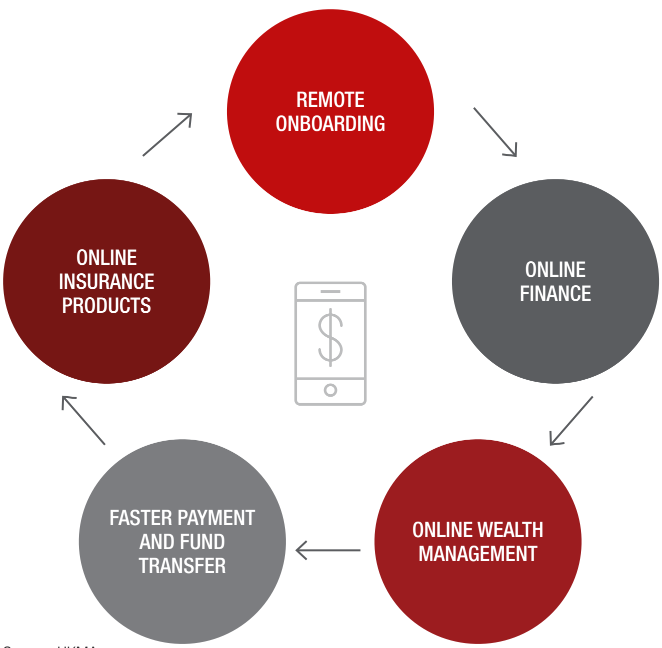
Unlike Baby Boomers and Generation Xers, millennials are used to sharing private information through a multitude of different social media platforms and digital streams. Their attitude differs greatly from their predecessors in that easy registration and services with open ID are preferred, as compared to traditional secure forms. Transparency has become a 'must have' for younger consumers. As a result, they are willing to sacrifice privacy to receive maximum level of service and efficiency. According to a salesforce.com study, 61% of people do not mind sharing their personal information with businesses, hoping that it will make a product or service interaction more personalized. Also, 58% of millennials indicated a willingness to share this information to get more accurate recommendations related to their interests, as compared to 41% of Baby Boomers.[14] The younger generation is already sharing most of their life voluntarily, so they see little harm in offering up some more if it helps simplify their user experience. Although new challenger banks should not be afraid to offer this privacy for data swap, this is a two-way street. With increased access to their personal information, millennials expect complete honesty, transparency, and personalization. Privacy and security should be further safeguarded given the free flow of information. But as the idea of privacy becomes increasingly foreign in this era of smart banking, finding the right balance between security and data collection is something that any virtual bank will need to focus on.

With millennials increasing in prominence and wealth, the entire banking industry is striving to rapidly adjust their offerings and business strategy to meet their demands. Various banks are taking different approaches, but all of them are mobilizing in preparation to receive what they know will be the main driver of the economy in the near future.

[11] Census and Statistics Department, The Government of the Hong Kong Special Administrative Region, Population Estimates, https://bit.ly/2lrEDmU
[12] Tan, S., 2017, "The future of Millennial banking," Marketing Interactive, July 18, https://bit.ly/2R9pb2T
[13] Tan, S., 2017, "The future of Millennial banking," Marketing Interactive, July 18, https://bit.ly/2R9pb2T
[14] Kreger, A., "How to design a millennial bank," Financial Brand, https://bit.ly/2ml5X78

For example, Standard Chartered announced that it plans to apply for a virtual bank license with the HKMA.[15] As part of its goal to enhance client experience and appeal to Hong Kong's digitally-savvy and growing millennials population, it plans to launch a digital-only bank that is run completely independent of its traditional banking operations. Although they are currently retaining their physical branches and presence, staff will be required to learn digital skills and teach customers to use digital solutions for simpler transactions.[16] Other traditional banks, such as HSBC, DBS, and Citibank, are taking a different approach. With well-established branch networks and digital banking services, they have decided to expand on their current digital offerings rather than apply for a virtual banking license. Though their methods differ, the goal remains the same. Attract the attention of and gain business from the digitally savvy millennials.

Figure 1: Virtual bank business model



Source: HKMA

[15] https://bit.ly/2NNylEd

[16] Yiu, E., 2018, "Standard Chartered Bank sees virtual bank licence as ticket to new business worldwide," South China Morning Post, August 6, https://bit.ly/2OJD0Ed

[17] Yiu, E., 2018, "Hong Kong prepares to usher in virtual banks, as 60 firms apply to be pioneers in financial revolution," South China Morning Post, July 28, https://bit.ly/2LOMwXK

[18] Yiu, E., 2018, "Hong Kong prepares to usher in virtual banks, as 60 firms apply to be pioneers in financial revolution," South China Morning Post, July 28, https://bit.ly/2LOMwXK

In a world where the most impactful customer segment orders meals, books tickets to distant countries, and calls taxis with a couple clicks on their phone, banks will not only have to compete with each other, but with other services in the consumer's life. To win over millennial consumers, transferring activity into the digital world is not enough. Virtual banks will have to put millennials' needs at the center and double up their efforts to ensure that their solutions provide the highest levels design, expediency, and transparency. The companies with the best understanding of how millennials think and how they operate will be able to find sustained success and obtain customer loyalty.

1.4 Small and medium-sized enterprises (SMEs)

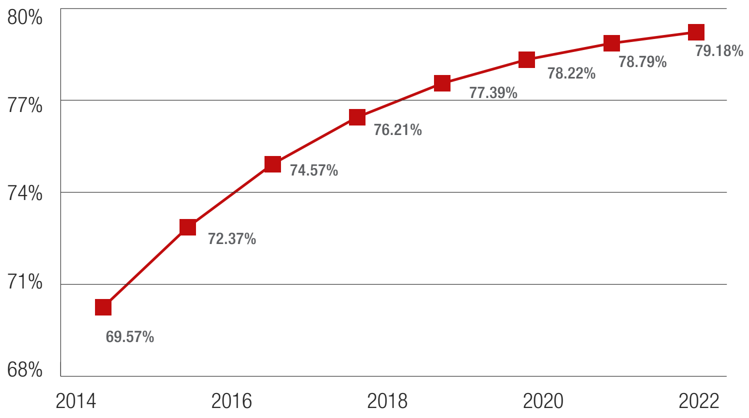
Traditional banks pay an average of HK$1 million per month for a 2,000 square foot storefront and an additional HK$1 million per month for monthly staff costs.[17] Adding in the costs for operational services in the back office, such as accounting, compliance, security, cybersecurity, and technology, one can see why they would have no interest in loans under HK$200,000. This can have the effect of marginalizing smaller businesses, where a loan can take up to six months to be approved.[18] SMEs have struggled to get their businesses off the ground in Hong Kong because of how onerous it is to open a business bank account with traditional banks. These SMEs are the lifeline of any competitive market and are vital to its sustained growth. With the decreasing financial burden of a physical presence, virtual banks can minimize the current operating costs and afford to create new products for customers that were originally seen as unprofitable. This will aid in the development of such solutions such as micro-lending and trade financing, which will allow virtual banks to provide loans to these SMEs and can have the multiplier effect of boosting the economy.

Similarly, overseas companies who are looking to set up entities in Hong Kong encounter a long and arduous process ranging from four to six weeks to open corporate bank accounts, given the KYC requirements. Virtual banks that focus on the SME segment can potentially solve this pain point and offer frictionless onboarding with the use of innovative Identification and Verification (ID&V) and Optical Character Recognition (OCR) technologies. Focusing on responding to the unmet needs of these previously unbanked SMEs, challenger banks can gain a significant advantage over its competitors.

2. INNOVATE TO ACCELERATE

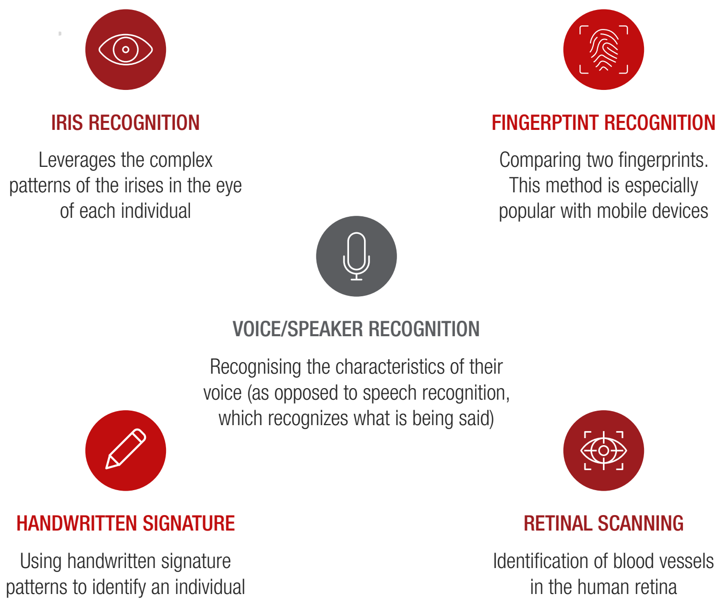
As Hong Kong continues its transition to a 'smart city,' market opportunity for challenger banks increases. These banks must continue to scan the landscape for new ideas to enhance every part of the customer journey and use their technological advantage over large banks to compete for their business.

Figure 2: Hong Kong mobile penetration rate



Source: Statista.com

Figure 3: Biometric authentication methods used by virtual banks



Offering new products and innovations along the journey that target customers embark on and simplifying interaction points will allow virtual banks to position themselves for success well into the future. In this new era of smart banking, devising a way to center their business strategy around enhancing the customer experience across different products and features specific to target segments (see Figure 1) must be paramount if newcomers to Hong Kong's virtual bank market intend to oust the entrenched incumbents.

Hong Kong has the world's 7th highest mobile phone penetration rate, at 76 percent, and yet only 14 percent of them are using those phones to connect to their bank daily; it has become one of the world's largest, untapped markets for tech-focused virtual banks with mobile solutions at the core of their brand (Figure 2).[19] Virtual banks and traditional banks are wrestling for that market opportunity, introducing new products to ensure that their company plays a major part in providing the remaining 86 percent with the means to seamlessly complete daily banking activities from their phones.

Challenger banks must take advantage of recent advancements in biometrics, AI, and blockchain to make improvements to remote onboarding, online financial management, and payment/fund transfers. The introduction of new products for each of these links on the customer journey can help companies capitalize on Hong Kong's growing number of tech-savvy customers and book themselves a spot on Hong Kong's diverse banking industry top table.

Biometrics has become an important part of the digital solutions offered by banks across the world. Advancements in this field have become the norm to revamp the customer onboarding process and provide a higher level of security (Figure 3). Consumers agree that the use of their distinct and measurable characteristics to authenticate use and verify activities is the best way to ensure the safety of their accounts during remote onboarding and throughout the life of their account. Traditional methods of authenticating have been consistent sources of security hazard and user interface/user experience (UI/UX) pain.[20] It is imperative for virtual banks to utilize the selection of different biometric authentication methods that are now available and being leveraged by traditional banks.

The methods presented above[21] are currently being used by virtual banks in other advanced economies,

[19] Gordon, F., 2018, "Sink or swim. Hong Kong lenders must get smart with virtual banks as fintechs snap at their heels," South China Morning Post, February 9, https://bit.ly/2zEnu77
[20] Live Bank, "A new definition of security. Biometrics in digital banking," https://bit.ly/2xXkzEr
[21] Goode, A., "Biometric trends for 2017" 2016, Veridium, December 15, https://bit.ly/2QhWJur

bypassing the need for customers to visit a branch to sign paperwork and create accounts physically. Aspiring virtual banks must take advantage of biometrics as a means of remote onboarding and security to appeal to customers and capture a profitable market share. By simplifying these processes using technology, they contribute to the seamless customer experience. However, careful consideration of Hong Kong's regulatory frameworks and guidance on customer due diligence remain a prime imperative.

Enhancing the customer journey does not stop with onboarding. Providing customers with options to help them manage and monitor their finances and wealth with digital, mobile solutions has become a trend that challenger banks must take advantage of. Using AI to offer personal finance management (PFM) and savings assistants within their app can help any new bank lure in new customers and improve the overall customer engagement. Giving customers insights into their spending habits, views of their overall financial portfolio, and allowing them to act on this information can be a pull for future users.

Recent surveys indicate that 43% of Hong Kong millennial customers born post-1990 save less than 10% of their monthly income, with one in four spending the entirety of their salary each month.[22] Furthermore, a third of the post 1980s and 1990s millennials do not even remember how they spend their money.[23] In one of the most expensive cities in the world, virtual banks that offer AI-based tools to help people improve their spending habits and organize personal finances could be a great source of differentiation. By committing to meeting the financial needs of an increasingly mobile and digital workforce, aspiring banks can help attract and retain customers.[24] Hong Kong customers lack the tools needed to manage their finances properly. If new banks can use technologies such as AI and machine learning to introduce efficient, user-friendly tools, they can take advantage of the growing market opportunity. New products and innovations driven by the desire to improve the customer journey will help new challenger banks succeed in the hyper-competitive Hong Kong market.

In a world that has become increasingly connected through digital and online services, a sure way for a bank to make its mark and boost its services and capabilities is in the field of remittance and fund transfers. Digital wallets are not new, but the functions included in each company's wallet and use of blockchain to power remittance services are of increasing importance. The ability for customers to send money and make payments under various circumstances is of great

Table 2: Hong Kong's payments and fund transfer landscape

FUNCTION	WECHAT PAY	ALIPAY	PAYME	TAP & GO	TNG	O! EPAY	APPLE PAY, GOOGLE PAY, UNIONPAY QUICKPASS
CREDIT CARD BINDING	✓	✓	✓	—	—	✓	✓
TOP-UP	—	—	✓	✓	✓	✓	—
ONLINE PAYMENT	✓	✓	—	✓	✓	✓	✓
MERCHANT PAYMENT	✓	✓	✓	—	✓	✓	✓
P2P TRANSFER PAYMENT	✓	✓	✓	✓	✓	—	—
IN-PERSON MONEY TRANSFER	✓	—	—	—	—	—	✓
GLOBAL MONEY TRANSFER	✓	—	—	—	✓	—	—
BILL PAYMENT	—	✓	—	—	✓	—	—

Source: moneyhero.com

22 Fintech News Hong Kong, 2018, "Hong Kong startup puts all your banks in a single app," March 8, https://bit.ly/2FpUgZM
23 Fintech News Hong Kong, 2018, "Hong Kong startup puts all your banks in a single app," March 8, https://bit.ly/2FpUgZM
24 Finextra, 2018, "Hong Kong digital bank Neat scores $2m funding boost," July 5, https://bit.ly/2IVH0Er

value. As cash becomes less frequently used in Hong Kong, improving the ways that users can remit, transfer funds, and pay has become a critical component of the customer expectations.

Digital wallets with the capacity to complete instant money transfers, cross-border peer to peer transfers, bill payment, global transfers, and top-up functions are 'must haves' for any of the Hong Kong millennial customers that challenger banks seek to attract (Table 2). One local, digital wallet startup, TNG Wallet, has been able to break away from the pack in recent years. With over 600,000 customers, comprising of 9% of the city's population,[25] TNG Wallet is an example of how a newcomer virtual banks can grab a sizeable market share in a landscape filled with giants. By offering a multitude of different options in its wallet and continuously adding to its repertoire of digital services and solutions, it has provided a blueprint for aspiring virtual banks to follow. AliPayHK already utilizes blockchain technology and introduces a variety of fund transfer options that will be crucial for increasing their customer base and profits. Other aspiring banks can follow suit by focusing on, and considering technology-based products that enhance their customers' experiences and allow them to make payments and transfers in a variety of circumstances.

Hong Kong's burgeoning fintech and digital banking industries show promise. However, there is no one blueprint to ensure success, and there is no single product or innovation that can bolster an entire virtual bank. Newcomer challenger banks must be diligent in their research to fully understand the products that customers value. Enhancing the whole customer experience and introducing products that improve parts of the customer's virtual banking journey can lead to sustainable success and garnering customer loyalty. From customer onboarding, peer to peer transfers, to instant money transfers, Hong Kong's customers demand more from their banks. Tremendous strides have been made in biometrics, AI, and remittance technology. Focusing on these advancements in emerging technology as a guide to improving the customer journey must be considered for all aspiring virtual banks.

3. PARTNER TO WIN

Building a banking business from the ground up in this highly saturated city requires extensive analysis of the various stakeholders, which acts as the foundation for any challenger firm looking to identify a viable proposition, set up effective strategies, and leverage any existing market capabilities. Furthermore, an understanding that the HKMA plays a decisive role through its smart banking frameworks and initiatives will only support a challenger firm to thrive competitively in the city.

3.1 The rise of partnerships and "coopetition"

Partnerships between banks and fintechs are springboards for innovation, speed, scale, and access to large customer bases. It is becoming increasingly prevalent in the recent years, with notable collaborations between the likes of Standard Chartered and AliPay,[26] as well as Bank of China HK and Tencent.[27] Traditional competitors are teaming up to form alliances with various objectives in mind, such as jointly setting up fintech labs and accessing more customer bases together.

As such, this creates the perfect storm for new financial propositions to be offered to a wider audience. For large banks, partnerships are logical, as they can tap into challenger firms who are able to offer them a new technology or capture a new segment of customers with whom they historically could not engage. For instance, the relatively young, tech-savvy, and affluent demographic, have demonstrated that they are more open to using non-traditional banking institutions.[28] Likewise, they also possess an overt interest in new digital offerings, such as mobile apps, mobile P2P payments, and smart wearables.[29]

The increasing shift towards strategic partnerships gives financial institutions the opportunity to capture a customer base who have historically had relatively little interactions with traditional institutions. Overall, collaboration provides mutual benefits. From the perspective of a challenger bank hoping to break into the Hong Kong market, a partnership with a larger bank enables the former to tap into their knowledge and expertise regarding local demographics and regulatory knowledge and risk control.

[25] Fintech News Hong Kong, 2018, "8 future fintech unicorn startups in Hong Kong to watch in 2018," January 5, https://bit.ly/2Ay0ow7
[26] https://bit.ly/2Ooa6Mi
[27] Zhang, M., 2017, "Big banks strike partnerships with technology companies as part of fintech wave," South China Morning Post, August 27, https://bit.ly/2OkizQG
[28] Anand, V., "Today's Banks Need a Millennial Banking Technology Framework," 2018, Finextra, January 19, https://bit.ly/2n3LngP
[29] Nielsen, "Smarter digital city," in collaboration with Google, https://bit.ly/2OWe9wl

3.2 What are others doing right?

New fintech and banking solutions are thriving in the market. Extensive analysis of the edge and deficiency of the competitors relative to the firm's strategy is essential in gaining a market advantage. A review of the profiles of 29 license applicants and the more extensive global offering confirms that plenty of potential could be unleashed as the majority are specialists in payments and online lending, rather than end-to-end digital-only virtual banking.

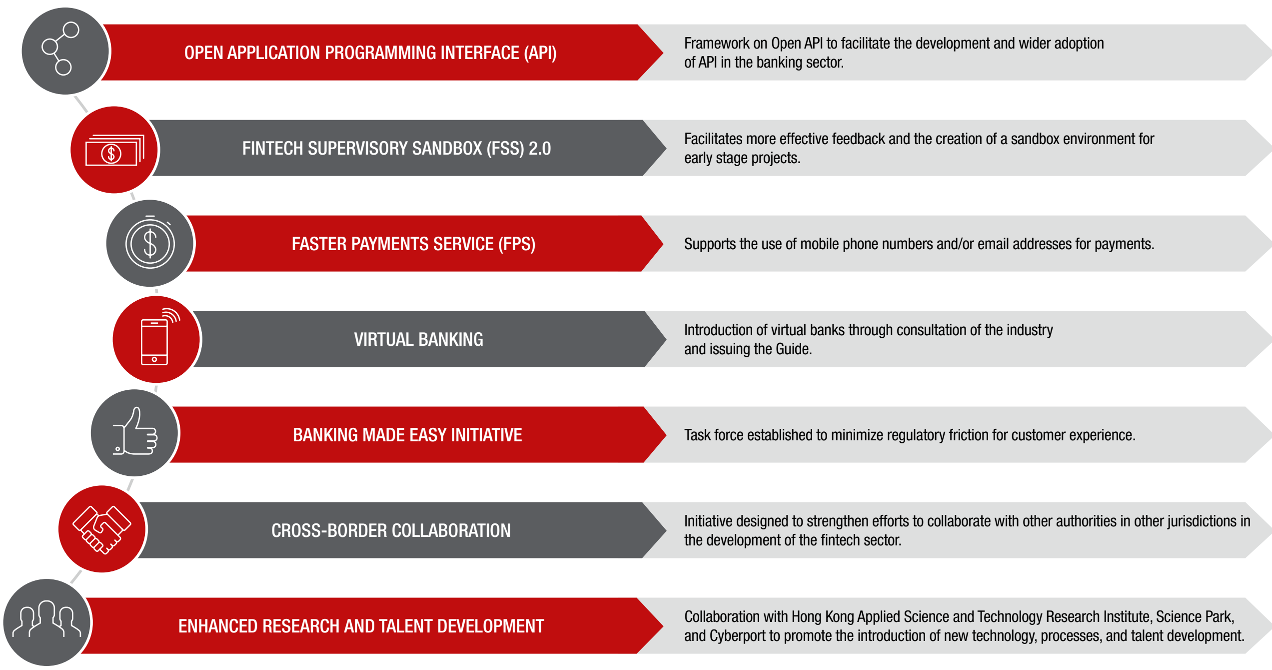
There is much to learn from existing Hong Kong mobile apps, such as HSBC PayMe, which offers the ability to pay friends and peers through the app seamlessly. Apps in advanced markets such as HK's Neat, the U.K.'s Revolut, and Germany's N26, which provide the ability to aggregate financial views by customizable measures, are also interesting to look at (Table A1, in the Appendix). Looking at best practices from first mover players and acquiring the best-fit solutions that cater to Hong Kong consumers will enable virtual banks to accelerate their growth in the market and develop targeted solutions amidst the crowd of predominant players.

4. WORKING WITH THE REGULATORS

The government and HKMA's strong support to establish the digital ecosystem for the banking industry in Hong Kong is reflected in new initiatives and investments. Hong Kong's Financial Secretary announced that the 2018-2019 budget will dedicate over HK$50 billion towards developing the city's IT infrastructure.[30] As such, official bodies play a decisive role in supporting innovation to maintain the competitiveness of financial hubs.

The successful implementation of innovation, such as the Stored Value Facilities (SVF) wallets in Hong Kong was largely due to the HKMA's involvement in the regulation and supervision of the SVF ordinance. The regulatory body was ultimately responsible for granting licenses and support. Similar guidance has been provided to companies looking to establish virtual banks in Hong Kong. The guidance under a dedicated team who have

Figure 4: HKMA's smart banking initiatives – "New era of smart banking"



Source: HKMA, https://bit.ly/2OV9dld

[30] Onag, G., 2018, "HK Budget 2018: Innovation gets a big boost with $50B investment," ComputerWorldHK, March 1, https://bit.ly/2y1CWb6

published the Guideline on authorization of virtual banks[31] provides clear direction and conditions required. With similar levels of guidance to the SVF initiatives, observers are optimistic that the adoption of virtual banks will be as seamless as that of the virtual wallet initiative.

Furthermore, as the virtual banking initiative progresses, HKMA has been proactive in giving further clarity and support to license respondents.[32] An awareness and understanding of guidelines from official government bodies can only serve to support new challenger firms in establishing a Hong Kong presence. As such, it is beneficial for virtual banks to continue to work closely with the HKMA, who have promoted several initiatives to support the era of 'Smart Banking' (Figure 4).[33] For instance, the Faster Payment System (FPS) allows banking participants to integrate the use of email addresses and mobile numbers for payments. Whilst, the Enhanced Fintech Supervisory Sandbox (FSS) 2.0 will allow early pilot trials of fintech products, with the support of regulators.[34]

5. INFRASTRUCTURE BUILD-OUT AND CO-EXISTENCE

One essential step to fully-digitalized banking services is to modernize the IT infrastructure – from the complex legacy systems. The innovative infrastructure uplift can bring value to traditional banks by speedy transformation, cost reduction, agility on compliance, and security improvement. Shifting from a 'wait-and-see' stance, the realization of digital banking offerings has drawn a lot of attention from curious customers. It has resulted in a motivated drive for innovation by governments and incumbent banks worldwide in the last decade. The continued dependency on tightly coupled legacy infrastructure combined with technical lag in Hong Kong has inevitably opened up a gap for challenger banks to proactively address the needs of customers.

Virtual banks enter the ecosystem to fulfill the everchanging needs of the modern consumers and could deliver their needs through Agile ways of working. Although virtual banks do not suffer from legacy issues, they must still ensure that the banking innovation they offer will contribute towards the wider aims of Hong Kong's 'Smart City Blueprint'. Furthermore, to stand out in this city, they must also consider taking on an educational role for the HK public on innovation.

Industry leaders agree that despite the growth in mobile innovations, banks are still far behind and outdated IT systems continue to be one of the greatest barriers for businesses to fully realize the benefits of digital transformation. Although this is largely due to business infrastructure, reliance on outdated IT systems is as much of a workforce mentality as it is the physical IT architecture itself.

While workers see the value of an innovation shift from outdated systems and are often pained by the inefficient and messy processes, lack of knowledge about innovative ways of working prevents them from moving away from the familiarity of legacy frameworks and processes. A recent HSBC survey supports this proposition: reporting that despite recognizing the value for digital innovation, only 28% of the 300 companies polled had plans for adoption.[35] This is due to a lack of understanding and awareness of the digital economy, with 40% of Hong Kong workers believing that they do not have the adequate training for digital and transformational initiatives.[36]

To create a digitally- and customer-minded workforce, there is an overt need for change in terms of workforce behavior and redundant policies relating to legacy systems. Industry experts believe this can be achieved by further investments in digital capabilities, resulting in improvements in customer service, employee experience, and long-term financial benefits for banks.[37] As such, the need to transform businesses and Hong Kong workforce has resulted in the creation of the HKMA's Smart Banking Initiatives and the 'Smart City Blueprint'.

The recognition that the city's IT infrastructure requires modernizing is the first successful step in transforming the relationship between the customer and the bank. The city's goal to improve the digital user experience aligns perfectly with what aspiring virtual banks aim to offer in Hong Kong. Initiatives such as 'Banking Made Easy' aim to reduce regulatory friction and to address inefficient areas in the customer journey, such as onboarding.

[31] https://bit.ly/2NMXsa8
[32] https://bit.ly/2OmqgWD
[33] https://bit.ly/2DChMqd
[34] https://bit.ly/2NaNRET
[35] Chen, L., 2018, "Businesses in Hong Kong slow to adopt digital tech despite growing demand, finds HSBC survey," South China Morning Post, June 21, https://bit.ly/2Oojek2
[36] Chen, L., 2018, "Hong Kong workers feel they are not equipped with the right skills for digital economy: survey," South China Morning Post, June 13, https://bit.ly/2QiVU4B
[37] Asian Banking and Finance, 2017, "Systemic drawbacks drag Hong Kong banks in digitalisation race," October 2, https://bit.ly/2NSDVFI

From the virtual banking perspective, this is the type of customer issue it has always aimed to solve. As mentioned in previous sections, onboarding trends, such as biometrics, are already being harnessed by digital banks such as Revolut and Monzo in the U.K., who have invested heavily in creating a seamless user experience. Virtual banks can also align themselves to other initiatives, such as the Faster Payment Service (FPS), allowing customers to pay using their email addresses or mobile numbers. With the focus on the customer journey and user experience, it is inevitable that challenger banks will become a part of both the smart banking and smart city plans, to make an impact in Hong Kong's hyper-competitive financial landscape.

The innovation journey of incumbent banks will depend on whether they can proactively break away from legacy systems. This will also come down to the bank's ability to educate its workforce, and to further invest in innovation and partnerships. The advent of virtual banks will only serve to further pressure incumbent banks to innovate or seek strategic partnerships with fintech firms. On the flip side, challengers looking to establish a virtual banking presence in Hong Kong should be aware of the prevalence of both the legacy infrastructure and the worker ties to these outdated systems and processes. Virtual banks benefit greatly from lack of constraints of outdated systems and processes. This provides them with an advantage of delivering new propositions to the customer in an agile fashion. However, to spearhead banking innovation in Hong Kong, challenger firms must embrace the government's wider aim of promoting and building the 'Smart City Blueprint'.

6. CONCLUSION

This article highlights five factors any new challenger bank looking to establish a presence in Hong Kong must consider. An understanding of the market's customer segments; an awareness of competitors and potential partners; an acknowledgement of the government's as well as the regulator's role; and the current infrastructural state of the city.

With new digital solutions emerging every day and a multitude of new customers up for grabs, companies are scrambling to get a piece of this customer segment. Customer bases in remote corners of Hong Kong are now within reach due to the advent of blockchain and big data, as well as offering services such as microloans and payments. Newcomers to the banking scene must be diligent and laser-focused when determining which customer segments they will target. The money saved by reducing their physical presence in the world's most expensive real estate market has accelerated the process of financial inclusion, thus removing roadblocks to a broader array of customer demographics. The competition between traditional banks' digital platforms and fintech companies has only grown fiercer as they battle to enhance the customer experience and improve the convenience of banking activities. Supplemented by the initiatives and advocation of virtual banking by the city's regulating bodies, the bar continues to rise across Hong Kong's banking industry.[38] As technology continues to advance and competition intensifies, customers from different segments can potentially reap the benefits. Ultimately, it boils down to the new, aspiring banks taking advantage of these openings in the Hong Kong market.

Virtual banks now have a real opportunity to not only generate financial revenue, but to also more significantly create trust and connect with new customer segments who have historically had little interaction with traditional financial institutions. Likewise, virtual banks must take a proactive stance towards the continued existence of legacy systems and mindset by engaging in aspiring initiatives through knowledge sharing in a growing innovation community. To fully realize this role, virtual banks must continue to work closely with the city's regulators, who continue to play a supportive role, as part of Hong Kong's journey to evolve into a smart-banking smart city. To stand out in this hyper-competitive banking industry, virtual banks must continue to harness new banking innovation to capture the ever-changing needs of the Hong Kong customer.

[38] Olsen, K., 2018, "Virtual banking is set to shake up Hong Kong," CNBC, July 18, https://cnb.cx/2QgQEOR

Table 3: Global competitive landscape – major players

	REVOLUT	MONZO	N26	STARLING BANK	DIGIBANK	BUNQ	ALLY
LOCATION	U.K.	U.K.	GERMANY	U.K.	SINGAPORE	NETHERLANDS	U.S.
KEY FEATURES	• Custom spending limits • Contactless payments • Multi-currency • Dashboard analytics categorizing payments • Intelligent push notifications • Split bills • Worldwide travel insurance	• Spending limits • Contactless payments • Multi-currency • Apple & android pay dashboard analytics categorizing payments • Intelligent push notification • Split bills • Tag company expenses	• Joint account • Contactless payments with Google Pay • Overdrafts • Spending limits • Transaction tagging • Dashboard analytics categorizing payments • Intelligent push notification	• Joint account • Wide range of digital wallets from Apple to Garmin pay • Overdrafts • Spending limits • Weekly to monthly spending insights • Intelligent push notifications • Marketplace (API plugins of financial products)	• QR code scan payment method • Overspending notifications with suggestions and solutions offerings • Budget optimizer to understand behavior and provide recommendations based on synthesized data	• Joint and group bank accounts • Multiple PIN numbers for one card • Children's bank accounts supervised by parents aimed at educating children with a safe and simple way manage money	• AllyCard Control app allows you to decide when and where your card is used • Use of Amazon's personal voice assistant, Alexa, to complete advanced banking activities and transactions
SECURITY FEATURES	• Freeze card • Report lost or stolen • View or change card pin	• Freeze card • Report lost or stolen • View or change card pin	• Freeze card • Report lost or stolen • View or change card pin	• Freeze card • Lock online payments, gambling payments and mobile wallet • View or change PIN • Location based fraud detection	• Embedded soft token for security instead of SMS for one-time passwords	• Set spending limits and block your cards at any time • Use of rotating CVC codes for secure online shopping	• One touch freeze or unfreeze card options
CUSTOMER SUPPORT	• 24/7 chatbot and live support	• 24/7 live support	• 24/7 live support	• 24/7 live support	• AI-based virtual assistant	• Online use forum • Online support	• Ally Assist, a virtual customer service assistant
SIGN-UP/ ONBOARDING JOURNEY	• ID&V check • Facial scan	• ID&V check • Facial scan	• ID&V check	• ID&V check • Video identification	• ID&V check	• ID&V check • Facial scan	• Online application
LOG-IN JOURNEY	• TouchID or passcode	• TouchID or passcode	• Username and password	• TouchID or passcode	• TouchID or passcode	• 4 finger touchless ID authentication	• TouchID or passcode

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