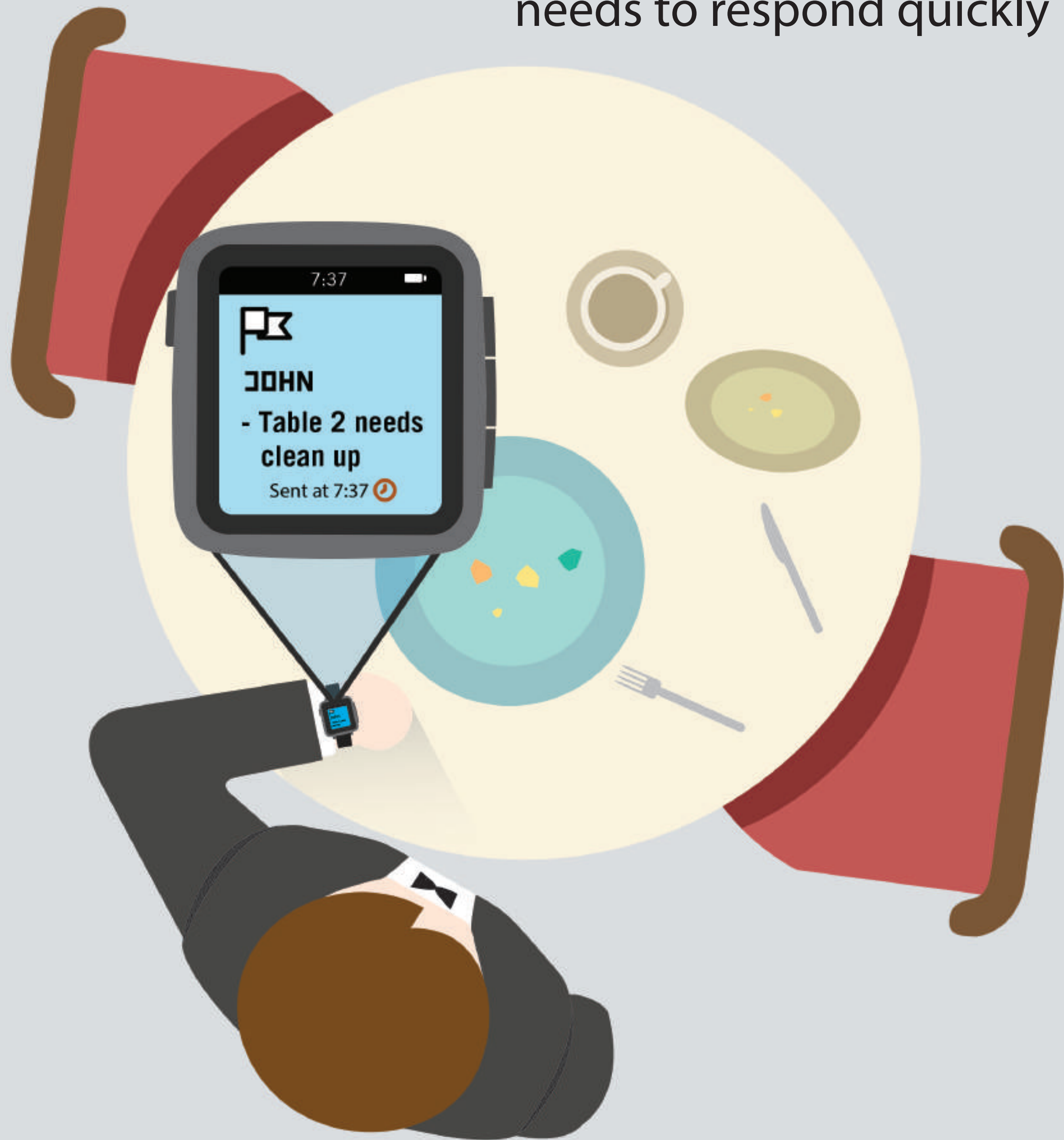
IVEY BUSINESS REVIEW

PEBBLE: CREATING AN ENTERPRISE-SIZED RIPPLE

The consumer market for smartwatches will become saturated by Apple and Android devices; Pebble needs to respond quickly | **P.23**



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THE IVEY HBA STUDENT BUSINESS STRATEGY MAGAZINE

Ivey Business Review is an undergraduate business strategy organization conceived, designed, and managed exclusively by students at the Ivey Business School, to provide a forum for tomorrow's business leaders to develop, voice, and discuss their thoughts on today's business strategies, threats, and opportunities. Articles are written exclusively by undergraduate students in the Ivey HBA program and have been created specifically for the publication after several months of intense collaboration between student writers and members of the Editorial Board. Additionally, the blog platform allows students and young alumni to further the IBR mission year-round.

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FROM THE EDITORS

We are entering an era of rapid change where businesses are threatened by consumer behaviour, technological innovations, and regulatory pressures. Nevertheless, smart business leaders understand that no matter where these waves of change may take them, there are always opportunities to be audacious, bold, and defiant to keep their businesses above water.

In this issue of the Ivey Business Review, we explore these opportunities. Hubert Lacroix, the CEO of CBC, and Jordan Banks, Facebook's Global Head of Vertical Strategy, sit down with us to discuss major changes in the media and content space. We discover disruptions within the financial, healthcare, and gaming industries as Interac takes on FinTech, Biogen takes on mimics, and Twitch takes on YouTube. We explore the fierce competition in the world of tech as Pebble keeps pace with Apple Watch, Instagram learns a cautionary tale from Google, and GE Health attempts to outsmart IBM Watson. We examine companies under regulatory pressures as Aurora combats other medical marijuana producers and American Electric Power finds 'diamonds' in a distressed coal industry. Finally, we consider changes around the world as Deere drives to India, Vegas gambles with eSports and Capitec banks on South Africa.

We are entering an era where smart business leaders need to show their eagerness to learn and willingness to adapt with the perpetual evolution of business strategy.

We hope you enjoy it.

Sincerely,

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PLATINUM

GOLD

SILVER

Jordan Banks

IBR speaks with Jordan Banks, Managing Director of Facebook Canada, about the importance of a portfolio of products in the social media space, the future of virtual reality, and internet access availability around the world.

IBR: Have you experienced any common challenges building up the Canadian operations of American-based businesses?

JB: There are consistencies when trying to build out the Canadian subsidiary of a US parent. First, there is no inherent understanding in the US of how complicated and unique the Canadian market is. Whether those are communication or buying behaviors, these big differences need to be accommodated. When starting up a Canadian subsidiary, you must ensure the US headquarters understands the nuances and differences in the Canadian market and support a complementary go-to-market strategy.

Secondly, it is important to become relevant in Canada and integrate the company into the fabric of Canadian society. Examples of this include working with political parties and non-profits, or ensuring local volunteerism from your employees. Becoming relevant, important, and additive to the Canadian market are extremely important.

Jordan Banks
Managing Director, Facebook Canada

Banks has been with Facebook since 2010. Prior to Facebook, Jordan was Chief Executive Officer at JumpTV, responsible for developing the overall strategy as well as day-to-day operation. He also served as the Managing Director of eBay Canada for seven years, where he was involved in the launch of eBay Canada in 2000. He began his career as an Associate at Goodmans LLP and NHL Players' Association. Jordan has completed his bachelor degree at Western University and continued to complete his LLB at York University Osgoode Hall Law School.

About Facebook

Facebook, Inc. is a social networking service and website with the goal of connecting the planet. Its website and supplementary social media apps and platforms allows people to communicate with their family, friends, and coworkers. The company offers advertisers a combination of reach, relevance, social context, and engagement to enhance the value of their ads. Facebook was founded by Mark Zuckerberg, Dustin Moskovitz, Chris Hughes, Andrew McCollum and Eduardo Saverin on February 4, 2004 and is headquartered in Menlo Park, CA.

"FROM THE VERY BEGINNING WHEN MARK [ZUCKERBERG] STARTED FACEBOOK 11 YEARS AGO, HE HAS ALWAYS BEEN FOCUSED ON THE USER EXPERIENCE FIRST."

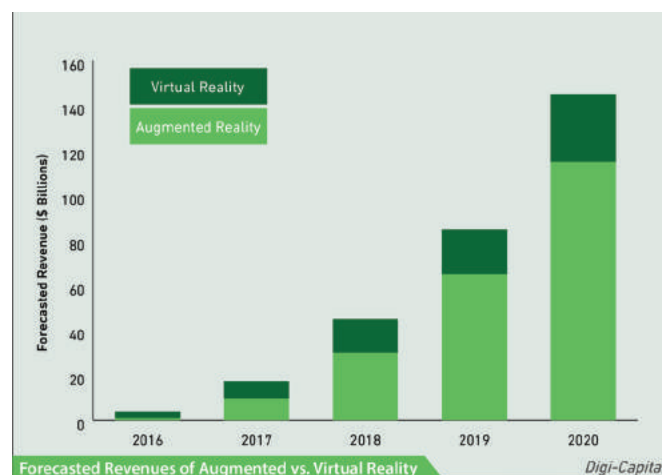
IBR: When integrating new platforms, how does Facebook balance user experience and effective monetization?

JB: From the very beginning when Mark [Zuckerberg] started Facebook 11 years ago, he has always been focused on the user experience first. If you have a great product that people ultimately want to use and that product is scalable, good and responsible - monetization will follow.

Facebook has certainly hit that mark. We have about 1 billion people around the world using Facebook every day. When you focus on Canada, 1 in every 4 minutes that is spent on mobile Internet is on Facebook or Instagram.

IBR: Can you elaborate on how similar services across Facebook's portfolio (i.e. Messenger and WhatsApp, Instagram and Facebook Photos) are complementary rather than conflicting?

JB: Our mission at Facebook is to make the world more open and connected. By having a family of complementary apps, we will do that in a much more profound and fundamental way than if we had just one app. All of the different apps and services are designed to allow people to share whatever they want, whenever they want, with the different sets of people and the organizations that they care most about. That's going to continue over time and people are going to share richer content at an increased frequency. We need to ensure that we are developing new tools that different sets of people want to use to help facilitate that kind of expression.



Forecasted Revenues of Augmented vs. Virtual Reality

IBR: What specific limitations does Facebook experience running on another company's operating system, such as iOS or Android?

JB: There are limitations, but there are more positive elements. Google with Android, or Apple with iOS, sometimes look at Facebook as a friend and other times as a competitor. We don't control the experience within the operating system, so we need to ensure that they allow Facebook and all of our apps to be freely downloaded and freely engaged on all devices using those operating systems. While we are partners with Apple and Google in a number of different ways, it is a risk, but not one we think about too often.

IBR: How will Virtual Reality (VR) change the way we consume content or communicate with others?

JB: From the very beginning, we didn't look at Oculus as only a foray into hardware investments. Over time, there have been a variety of competing platforms that change the way society functions, starting with the PC, the internet, and now mobile. We fundamentally believe that VR could be the next big computing platform but could be even bigger with an active ecosystem that we would develop.

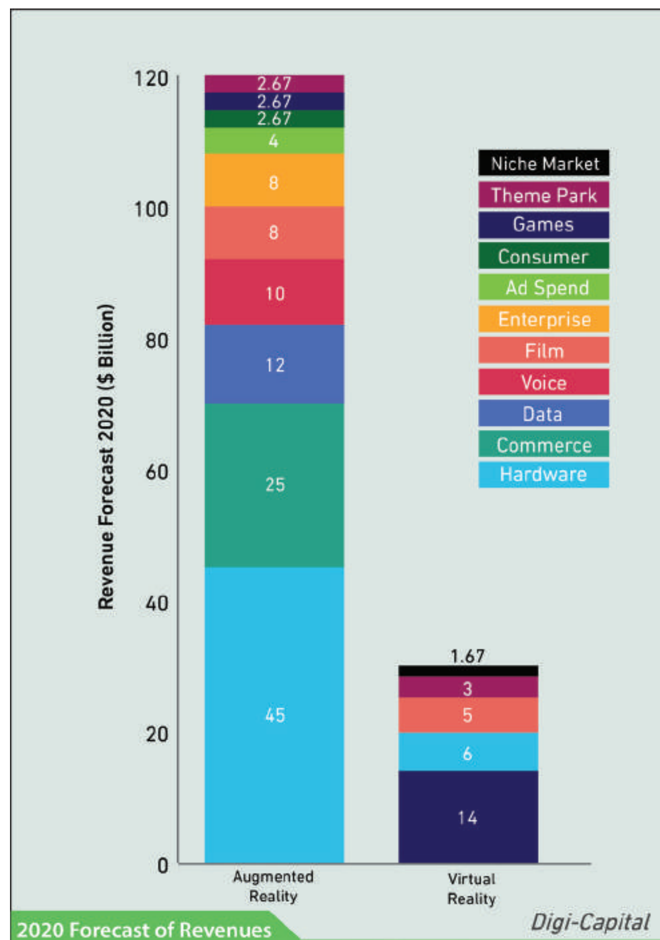
When you think of the practical applications of VR, they are quite profound. A student in Delhi could be having a sensory experience of being in a classroom at Harvard Business School. A Toronto Raptors fan could be wearing a VR headset and watching the Raptors play the Lakers in Los Angeles courtside. You could experience the Seven Wonders of the World, you could visit a doctor, all from the comfort of your own home using VR. When we think about sharing more important content with the people who are most meaningful to you, this could be an important platform through which to do it.

IBR: To implement and monetize such a wide range of content, scale is likely necessary. How do you ensure Oculus gets in the hands of the masses and not just the hardcore gamers it currently appeals to?

JB: Affordability and accessibility is the first issue. Gamers generally, by virtue of the consoles and hardware they are using, are willing to pay more for things to enhance their experience. However, in September, we announced the availability of a consumer Oculus Gear VR unit for $99. At that price point, VR will now be available to anybody, not just gamers.

The second thing is developing an ecosystem offering different content experience outside of the gaming world, with the

"OUR MISSION AT FACEBOOK IS TO MAKE THE WORLD MORE OPEN AND CONNECTED."



importance of making them feel real on a VR app or VR hardware. Facebook has gotten step closer to that recently via the 360 degree video units that play in your newsfeed. Facebook has partnered with content producers, like BuzzFeed, GoPro, and the Star Wars franchise, to produce this content. Today, all Facebook users can experience the basis of VR in their newsfeed without having to pay a dollar, put on goggles, or do anything that will alter their experience. As this content becomes easier to use, more accessible, and more prominent within newsfeed, VR has the potential to become ubiquitous in short order.

IBR: Because Mark Zuckerberg mentioned that the VR headset might be the last device you may ever need to buy, how much of Facebook's future success is based on VR?

JB: We're certainly not reliant on it, but it's also not disconnected. All of the Facebook properties are attempting to contribute to a richer sharing experience. We think Oculus is a way that people will share in the future that will add to the richness of sharing, but it won't be alone in that endeavor. We will have lots of different options to share, including our current family of apps and services. Regardless of the specific Facebook platform that people share with, the decision will be made based on consumer preferences. Some content will evolve to work well for certain platforms, so it is ultimately a portfolio play.

"A TORONTO RAPTORS FAN COULD BE WEARING A VR HEADSET AND WATCHING THE RAPTORS PLAY THE LAKERS IN LOS ANGELES COURTSIDE."

IBR: Some analysts have suggested that Augmented Reality will outpace Virtual Reality in the coming years. Considering Microsoft is already demoing its HoloLens and Google is involved with Magic Leap, how fast does Facebook need to get into the space if it's expected to grow that quickly?

JB: One of our core principles at Facebook is to "Move Fast and Break Things". That is true for almost everything we do, in the most positive sense of the word "break". If we decide that this is an area that will increase the richness of sharing and will ensure that you are connecting and having great experiences with the people who matter to you most, we will move unbelievably quickly and be incredibly aggressive.

IBR: How will M help to monetize Messenger, if at all?

JB: We don't make money from M right now. Current attempts at monetizing Messenger can be seen through betas we are running around businesses on Messenger. We have some partners in Zulily and Everlane. We are at the earliest stages of trying to figure out how we use Messenger to improve the interactions and communications between consumers and businesses, and as a result of that, allow for commercial opportunity. M, by definition, is the bridge between consumers and businesses. It is the most public and the most well developed product in the AI space for Facebook right now.

"WE WILL MAKE SURE THAT WHATEVER IS GOING WELL, IN THE SENSE OF DELIGHTING BOTH CONSUMERS AND BUSINESSES, WE WILL DO MORE OF. WHATEVER ISN'T DOING THAT, WE WILL STOP."

IBR: Is M an advent of a shift in all of Facebook's products using Artifical Intelligence?

JB: One of the things we do very well at Facebook is test and iterate. So I would characterize M as "a test". We will make sure that whatever is going well, in the sense of delighting both consumers and businesses, we will do more of. Whatever isn't doing that, we will stop. This viewpoint is not just important for M in Messenger, but everything we do at Facebook.

IBR: Mark Zuckerberg once compared Facebook to a utility, a service which people need to keep using. Is individually-targeted advertising core to this vision, or is it only meant to help fund the Facebook services everyone will need?

JB: Definitely the latter. When we went public in May of 2012, Mark wrote this incredible letter, talking about his philosophy on why he created Facebook and the way he wants to run Facebook into the foreseeable future. What he effectively said was that Facebook was not originally created to be a company. It was created to be part of a social mission to make the world more connected.

IBR: Internet.org has the potential to be an actual utility and offers growth potential for many Facebook products. What are the biggest challenges of scaling Internet.org?

JB: We are laser-focused right now in bringing internet to the rest of the world. Over the last decade we have connected over one billion people. We want to make sure that we are doing something profound to help the four billion people who are unconnected to get connected in short order. By using Internet.org and the Free Basics app by Facebook, we have now added another billion people in over 30 countries who have the opportunity to be connected.

But there are certainly obstacles. The first is financial; can you afford it and do you know it exists? To change that, we now offer a bucket of free services around things like employment, education, healthcare, and women equality that is available to everybody in a country that has Internet.org infrastructure. These people will be able to access all of those elements without ever paying a penny for data.

The second obstacle is the technical components of connectivity and the infrastructure required. We have a specific team at Facebook called the Connectivity Lab who are working on effective and efficient forms of connectivity for the most remote places in the world by using innovations like aircrafts and satellites. Our goal is that in the near future there won't be one human on the planet who wants connectivity who can't get it because they couldn't afford it, they didn't know it existed, or the infrastructure in their community didn't allow them to do that.

IBR: With competing infrastructure projects from Google and SpaceX, do you believe the internet service provider (ISP) space will be vastly different in the next 10 years?

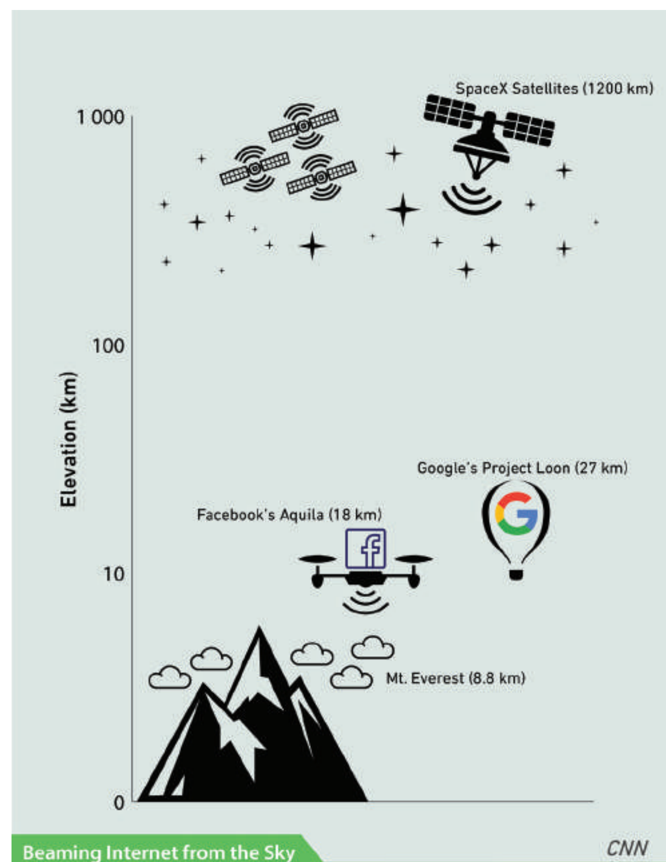
JB: Right now we are only focused on ensuring every person in the world has access to the Internet. We believe that Internet means opportunity, whether it enables progress, improves your knowledge, or drives economies. Access will help provide a better life and develop a richer and more prosperous community.

We don't see ourselves as an ISP. When we go into these countries and want to launch an app like Free Basics, we are

"WE BELIEVE THAT INTERNET MEANS OPPORTUNITY, WHETHER IT ENABLES PROGRESS, IMPROVES YOUR KNOWLEDGE, OR DRIVES ECONOMIES."

making partnerships with local telecommunications companies who already have their infrastructure on the ground. This idea of partnership is relatively unique. We're never single-handedly going to bring connectivity to every human in Sub-Saharan Africa. But if we partner with local governments, OEMS, infrastructure providers, ISPs, and carriers, we can create a really powerful partnership which will ensure that anyone who wants access can get it at a cost they can afford.

But there is an issue with developing solutions while living in Toronto or San Francisco and being connected via 4G with little worry about data. Imagine trying to develop for the undeveloped world if that's your only experience. To combat that, we now offer 2G Tuesdays at Facebook offices, which allows any employee the option to have the connectivity on their mobile device to drop to 2G. This gives them a much better understanding and appreciation for what it's like to connect to the Internet at a lower speed. It's incredible the amount of awareness that brings to our engineers and product designers. Much of what we're building is resultant of us living in the shoes of those who are not connected.



Beaming Internet from the Sky

Hubert T. Lacroix

IBR speaks with the CEO of the Canadian Broadcasting Corporation (CBC) about the company's shift to digital, the financial struggles of a public broadcaster, and the battle against social media.

IBR: Thanks for agreeing to take the time to speak with us. Perhaps the best place to start is with a question around 'digital'. You have mentioned many times that the shift from the old ways of consuming content to the new, digitally-enabled ways is the biggest challenge faced by the CBC. What did you mean by that?

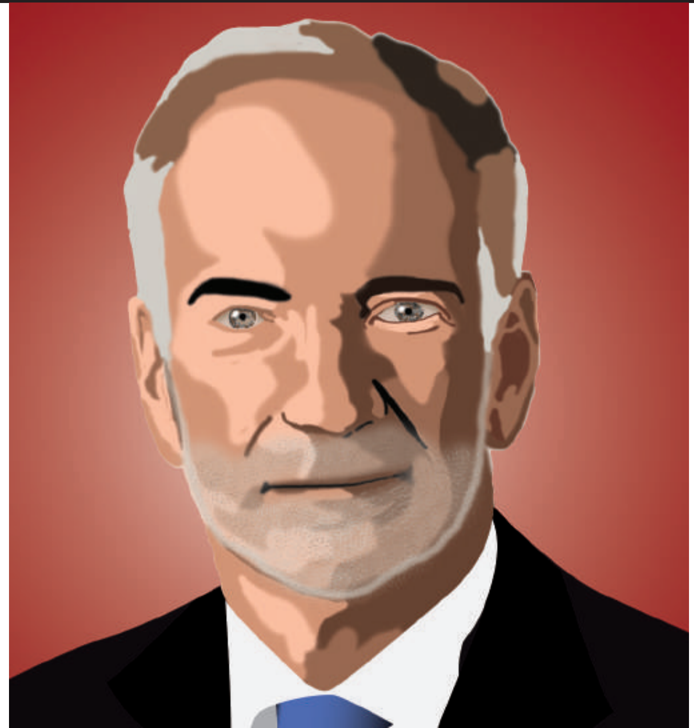
HL: The shift I am referring to is both in terms of how Canadians consume content and what content they're consuming. In television in particular, what we are seeing is that the old, linear model of giving consumers pre-determined content at fixed times is going away. The new model – particularly for young people, but true to an extent for everyone – is all about greater flexibility: consuming on-the-go and in bite-sized chunks.

Naturally, this has an impact on the types of content consumers want as well. If there is one thing that's clear, it's that we cannot simply take, for example, a piece of news we broadcasted last night on The National and stick it on our website or mobile app and expect it to do as good a job at reaching Canadians. Everything has to be faster, shorter, and more hard-hitting on these newer platforms. This changes the skill sets we need, all the way from editorial and creative down to more technical skills.

The challenge is that despite the scale of these changes in digital consumption, many of the old ways of consuming content still remain strong today. It is true that they're not growing the way digital is, but the average Canadian today still sits down in a chair and watches 28 hours of linear programming every week. That's a lot of hours, and it means we have a large market to continue to serve even while we retool towards the new methods.

IBR: Your experience doesn't sound dissimilar from some examples we have seen in other industries, such as

"THE AVERAGE CANADIAN TODAY STILL SITS DOWN IN A CHAIR AND WATCHES 28 HOURS OF LINEAR PROGRAMMING EVERY WEEK."



Hubert T. Lacroix
Chief Executive Officer of CBC

Hubert Lacroix is the current CEO of the Canadian Broadcasting Corporation and has been with the company since 2008 (re-appointed to serve a second term in 2012). Prior to CBC, Lacroix was a Canadian lawyer and a senior adviser with law firm Strikeman Elliot LLP – he was also an associate professor in the Faculty of Law at Montreal University where he teaches securities and M&A.

Lacroix received a Bachelor of Law degree from McGill University (Montreal) in 1976 – he was subsequently admitted to the Quebec bar in 1977.

About CBC

CBC/Radio-Canada is Canada's national public broadcaster. Through the delivery of a comprehensive range of radio, television, internet, and satellite-based services, CBC/Radio-Canada brings diverse regional and cultural perspectives into the daily lives of Canadians in English, French and eight Aboriginal languages. CBC/Radio-Canada also provides international reporting from a uniquely Canadian perspective, with foreign bureaus in places like Jerusalem, Washington and Beijing.

CBC/Radio-Canada's mandate is set out in the 1991 Broadcasting Act. CBC/Radio-Canada is accountable to all Canadians, reporting annually to Parliament through the Minister of Canadian Heritage.

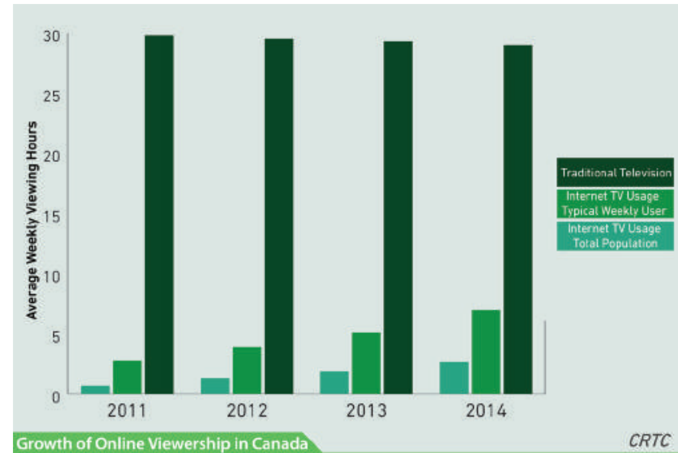
financial institutions, which are dealing with explosive growth in digital while still needing to maintain and serve their core business. How is the CBC managing to serve both at once?

HL: Truth be told, it's not easy, and it's in fact made more complicated by the financial challenges we face. We are not able – as some have – to start entirely from the ground up and build a separate, digital-first organization with all of the new tools and technologies to serve this market. We started down that path in 2010 after I gave our leaders the challenge of spending 5% of their budgets on digital, but ultimately found it ineffective to have individual 'labs' separate from the core of our business. Not only did it have the potential to forge a cultural divide within the CBC between the new and old, but starting fresh also required a level of investment that we simply couldn't sustain. Ultimately, we had to make this transformation happen within the structure we have today.

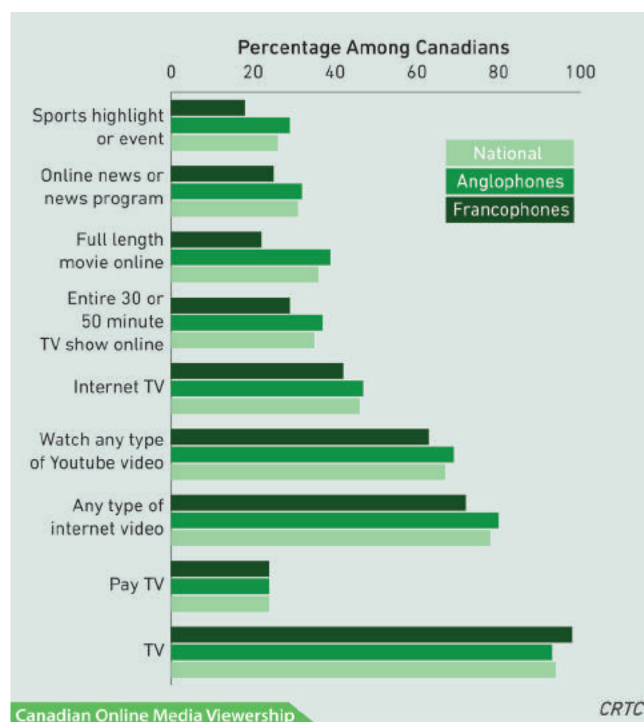
IBR: Are there other decisions regarding the digital transition that you are forced to make with the funding constraint?

HL: In general, I think it has required us to be much more deliberate and early with our bets in digital. We know that if we wait too long, we won't necessarily have the resources at our disposal to play catch-up. We need to be first more often than most and if you look at where we are today, I think you would say that we are there.

At the same time, our constraints mean that we have to be much more targeted and focused in where we place our bets. We are always on the look-out for what the next game-changing platform will be, but we can't chase opportunity where we're not certain it exists. Instagram, Snapchat, and a host of other apps are growing and vibrant platforms. Could we do something through those mediums? Sure. But will they likely ever become core parts of our digital strategy? We don't see it, and so we don't invest in quite the same way.



Growth of Online Viewership in Canada



Canadian Online Media Viewership

Ultimately, given our financial situation, the key is to stay nimble enough that if something comes along to change the game, we can pounce.

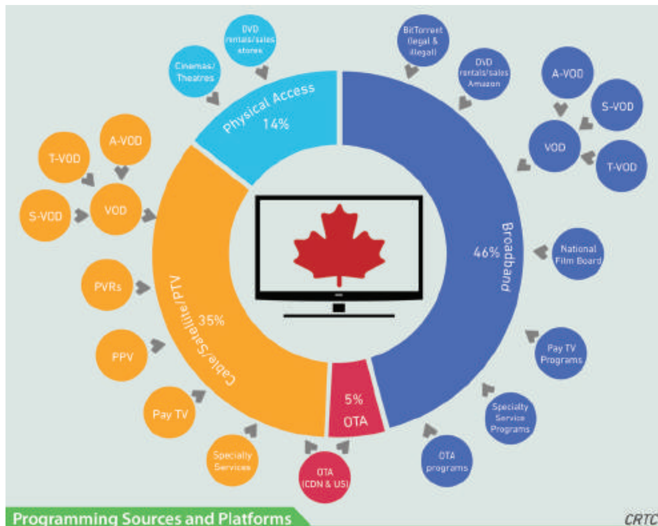
IBR: Do you see these financial challenges ever resolving themselves? The federal government recently announced an additional $150M in funding, but more broadly speaking, what tools are at your disposal to ensure the financial sustainability of the CBC in the long term?

"ULTIMATELY, GIVEN OUR FINANCIAL SITUATON, THE KEY IS TO STAY NIMBLE ENOUGH THAT IF SOMETHING COMES ALONG TO CHANGE THE GAME, WE CAN POUNCE."

HL: It's important to think about this question in terms of our three sources of funds.

The first is the government contribution, which – notwithstanding the additional $150M you mentioned – is unlikely to grow significantly over time. It will also always be a volatile source, making it a difficult one to plan around in the long term.

The second is advertising. We have been squeezed in this regard as rates have fallen in the media industry, but we are making good progress in digital. One of the big advantages that digital channels possess is that unlike



Programming Sources and Platforms

cable – where the broadcasters stand between us and the customer – we have much more direct access to consumer data. This lets us do much more from an advertising and targeting perspective, even if we are still learning how to make sense of all the new information.

The third is licensing of our content. Unlike most media companies, this is a small portion of our revenue. This is driven almost exclusively by our deal with Rogers for Hockey Night in Canada. Otherwise, the current regulatory regime doesn't allow us to charge televisions service providers for our content, no matter how vital it is to any of their cable packages.

From my view, at some point this has to change. It is unheard of for a large broadcaster to operate this way. Even amongst public broadcasters it need not be the default model – I look at the BBC as an example, where viewers pay for access to the content.

No doubt some would question why we should receive both a subsidy and payment for our content. That said, I would counter with two crucial points. First, the major cable companies are the ones truly benefiting from the existing arrangement as they get the additional content for free. They should be the ones to pay. Given the competitive environment, I wouldn't necessarily expect that cost to be passed on to consumers. Second, our mandate as a public broadcaster requires us to produce content that by its nature is unlikely to break-even from a financial perspective. The subsidy is the only way to make it economical to produce, but without compensation for that content it severely limits what we can do. The CBC model for producing television will die if we don't adjust this structure.

IBR: This latter point on your mandate is particularly interesting, especially as we know there are divergent views. From our understanding, public broadcasting took root as a way of creating an informed populace in an era of dramatically increasing democratic participation. Now, universal suffrage is no longer novel and information is ubiquitous through the internet. In your view, has that diluted the importance or changed the mandate of public broadcasters at all?

HL: Changed, yes, but diminished, no. The issue is no longer about access to information but rather curation and interpretation. With so many content options and the prevalence of social media, our society suffers from information overload more than anything. What is needed now more than ever, is someone to be trusted to make sense of it all. This is where we come in with a strong, non-partisan perspective.

"THE CBC MODEL FOR TELEVISION WILL DIE IF WE DON'T ADJUST THIS STRUCTURE."

Our mandate has morphed in other ways as well. The need to have a presence on digital – to ensure we are everywhere that viewers are – is the obvious one. Another would be though our focus as part of our 2020 strategy on local news. It's a segment that's vitally important to people, but has suffered badly from the decline in advertising and consolidation of classifieds online. As a result, small papers are closing and the private broadcasters are pulling back. This is where we put that government funding to good use – the content itself may not be profitable, but it's important to show people that we have not abandoned them.

IBR: In the case of local news, however, wouldn't it be fair to argue that some of this has been replaced by the prevalence of social media? Most of our connections on a platform like Facebook are local even if the platform itself is global in nature. If local news is of interest to us because it impacts the people we care about, wouldn't social media be the ultimate curator in this regard?

HL: True, social media has its part to play, but the credibility concern is arguably more important on social media than anywhere else. There's no control on the content and no filter on what's important or even accurate. Yes, it may add relevance, but it in no way ensures accuracy or quality, which is extremely

"WITH SO MANY CONTENT OPTIONS AND THE PREVALENCE OF SOCIAL MEDIA, OUR SOCIETY SUFFERS FROM INFORMATION OVERLOAD."

important. Take the attacks in Paris as an example; in the immediate aftermath, social media spread confusion as to the true nature of the attacks. Only until media organizations were able to filter through the noise were we able to create an accurate depiction of what was going on. That's where I think our brand becomes paramount.

IBR: Beyond simply delivering a high quality product, how do you build this credibility?

HL: There are many ways. We are fortunate to have a long legacy of quality journalism behind us that makes our lives easier in the present day. A key piece though is putting our talented people front and centre. You know, generations ago Walter Cronkite was the most trusted man in America.

IBR: Much as Brian Williams was until recently…

HL: That's right. They were there with viewers for all the big moments and, through adhering to the highest standards of professional integrity, [he] was the one they wanted to hear from the most when they needed the truth.

"SOCIAL MEDIA HAS ITS PART TO PLAY, BUT THE CREDIBILITY CONCERN IS ARGUABLY MORE IMPORTANT ON SOCIAL MEDIA THAN ANYWHERE ELSE."

We strive for that. Peter [Mansbridge] has that reputation. Adrienne [Arsenault] has that reputation. Scores of others of our journalists and personalities do as well. It's a core part of our strategy to elevate the brands of these people. Making them recognizable, trusted faces that viewers can establish a 'personal attachment' to is a key factor in the success of what we do.

The challenge is that these personal brands are unlike any other assets we possess. As much as we want to help cultivate them, we must be careful to avoid putting constraints on what our people say and do. We have a clear code of ethics that all employees must follow at all times, but otherwise we must allow room for dissent and different opinions.

IBR: With all these challenges and changes, did you ever imagine yourself still sitting here when you took the job in 2008?

HL: No, I did not; in fact, I wasn't even sure I wanted to take the job! The economy was in a tough position at

"MAKING [OUR MEDIA PERSONALITIES] RECOGNIZABLE, TRUSTED FACES THAT VIEWERS CAN ESTABLISH A 'PERSONAL ATTACHMENT' TO IS A KEY FACTOR IN THE SUCCESS OF WHAT WE DO."

the time and I was worried about the level of political interference. In time, it became obvious that there was a clear mandate to get the job done. I took it and don't regret a moment.

Another key moment for me personally came in 2012. Shortly after I agreed to a second term with the CBC, we were faced with another significant cut in our funding. I knew at that point that the coming years would be painful at times and faced a choice about whether to stay. Ultimately, I knew it was my duty to see things through, not only to quell the fear that "the ship was sinking" but because I truly believe in our mission. The future still holds many questions but I know we are making a difference to Canadians, and for as long as I can, I want to continue to do so.

DIAMONDS IN THE ROUGH

Opportunities exist for power companies to re-energize America's coal industry

Arth Patel, Allan Yan

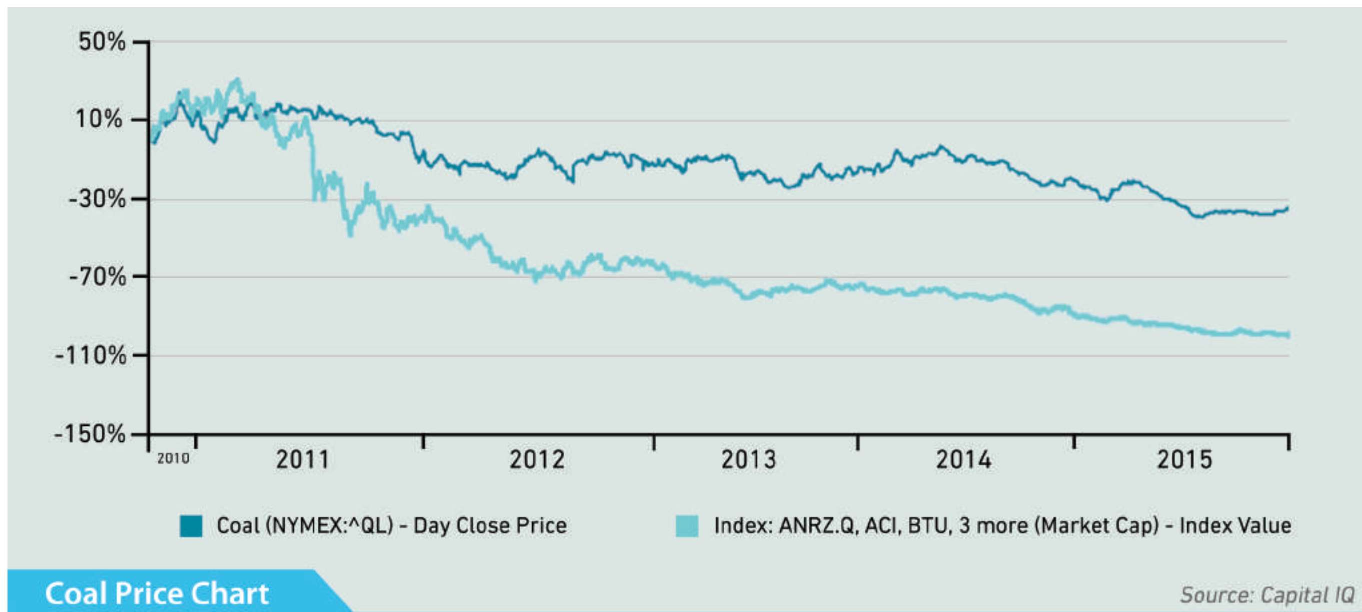
While it is hard to imagine, the coal industry was booming in 2008. Thermal coal, which is used for power generation, peaked at $140 USD per ton. Since then, the industry has fallen from grace, with larger share price declines than the tech industry saw in the early 2000s, or the financial sector saw in the Great Recession. Today, thermal coal prices trade at $42 USD per ton, and if prices remain this low, most coal companies will need to take drastic measures to preserve liquidity. Many miners took on heavy debt loads in the commodity boom of the late 2000s to finance capital investment and aggressive M&A activities. However, the new price paradigm does not support coal miners' leveraged capital structures, which has resulted in a wave of bankruptcies across the industry. Amidst the bloodbath, there exists an opportunity for unconventional players to profit from providing desperately needed capital to struggling coal miners.

Demand for US coal has been falling since 2008, driven by the retirement of aging coal-fired plants due to burdensome regulations and low natural gas prices. Since 2007, coal's share of power generation in the US declined from 48.5% to 39%. Despite low coal prices, environmental regulations make building new coal-fired power plants or retrofitting existing plants in America uneconomical. While coal will remain a significant fuel source for US power generators for the foreseeable future, it will experience a slow and steady decline as it is replaced by natural gas and renewable generation.

These low prices and flagging demand has caused many of the largest miners to declare bankruptcy. As debt maturities loom, miners are scrambling for cash as lenders are no longer interested in lending to a bad credit. Compounding the liquidity problem are other massive liabilities such as asset retirement obligations (mine closure and environmental reclamation), which require cash or liquidity to pay. Some miners in weak financial positions may be required by government regulators to put up additional capital in the form of self-reclamation bonds to cover their environmental liabilities. For example, Alpha Natural Resources was required to put up $411M USD in collateral just to continue operations in Wyoming. Despite the turmoil in the industry, coal production has remained relatively flat. The reluctance of coal miners to substantially cut production has kept the market oversupplied, and a rebound in prices is unlikely in the face of declining demand. Given the bleak commodity fundamentals, limited access to capital markets, and few remaining easy cost-cutting measures, companies need to creatively find ways to strengthen their balance sheets. One place to look is in one of their biggest customers – the US power sector.

Power in the USA

The US power system is composed of 3 parts: power generation, transmission, and local distribution. Amongst power generators there are two main types – regulated utilities and independent power producers (IPPs). A majority of US electricity generation is regulated, where consumers pay an adjusted rate 'guaranteeing' a fair return on equity invested by the generator. IPPs are private generators which generate and sell electric power in a free market environment. Unlike in regulated markets where utilities have a predetermined rate of return, generators in deregulated markets are not limited in the returns they can generate. As coal prices fall and miners commiserate, coal-fired power plants have benefitted greatly from meaningful input cost reductions. Furthermore, power generators have typically



Coal Price Chart

Source: Capital IQ

“WHILE COAL WILL REMAIN A SIGNIFICANT FUEL SOURCE FOR US POWER GENERATORS FOR THE FORESEEABLE FUTURE, IT WILL EXPERIENCE A SLOW AND STEADY DECLINE AS IT IS REPLACED BY NATURAL GAS AND RENEWABLE GENERATION.”

had healthy dividend yields and strong cash flow generation, making them an attractive income investment in today’s low interest rate environment.

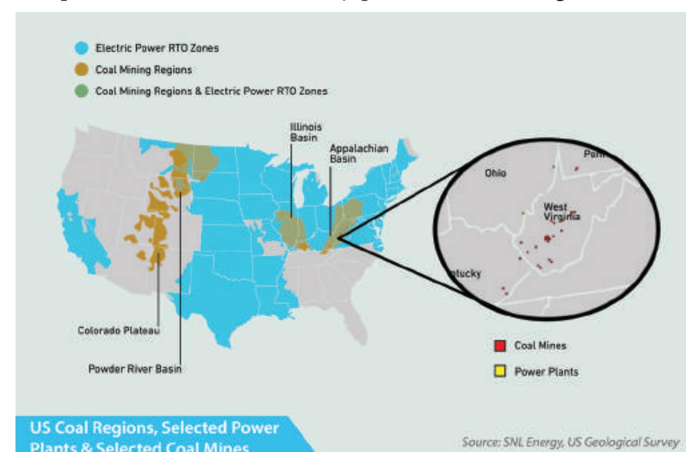
In deregulated power markets, IPPs are competing aggressively with each other solely on price, signifying that IPPs will have difficulty growing revenue. IPPs are forced to turn to cost-cutting measures to grow profitability, due to single digit profit margins. As such, even small cost savings can have a big impact on profitability.

A Sparkling Investment Opportunity

Companies with coal-fired power plants can look to partner with distressed or bankrupt coal companies like Alpha Resources by providing liquidity upfront in exchange for a long-term discounted coal price. This is a common financing mechanism called a streaming agreement which is used in other kinds of mining. In a streaming agreement, a miner is given capital by a streaming company in exchange for the right to purchase what is produced at a set price over a certain period of time. Typically, the streaming company would then sell what they purchase at the spot rate, pocketing the difference. This model has been proven to work across the mining sector. For instance, Silver Wheaton has streaming deals with 29 mines and has a market capitalization of $7B CAD.

American Electric Power (AEP) is among the largest generators of electricity in the US, with a $28B USD market capitalization and annual revenue of $17B USD in 2014. Their two largest coal-fired generating facilities are in Ohio, near the large Appalachian coal basin, and consume a combined 10M tons of coal annually. Because coal is a low energy density fuel, power plants require a lot of coal to generate electricity. As a result, coal transportation costs from mine to the power plant are significant for coal-fired generators, and in some cases may even represent the majority of the landed cost of coal. Facilities with low existing transportation cost would benefit most from a streaming agreement.

Alpha Natural Resources is one of the largest coal mining companies in North America by production, mining 84M tons



US Coal Regions, Selected Power Plants & Selected Coal Mines

Source: SNL Energy, US Geological Survey

in 2014 and has thermal coal mines near AEP's coal power plants. In 2015, Alpha's stock fell 98.8% and has subsequently entered Chapter 11 reorganization. This reorganization provides AEP with the opportunity to negotiate a streaming arrangement with a motivated counterparty, Alpha's creditors.

The Power Play

AEP would deliver upfront liquidity of $100M USD, in exchange for the right to purchase 10M tons of coal per year at a $2 USD per ton discount to the market rate for a 15-year term. AEP will stream coal from Alpha's Eastern coal operations to its two largest facilities in Ohio, the Gavin & Cardinal facilities. Alpha produces roughly 29M tons of coal per year and these two facilities are a creditworthy guaranteed market for a third of Alpha's eastern coal production. According to industry data, AEP spent over $550M USD on coal for these two plants in 2014 - therefore any cost savings per ton would create substantial savings.

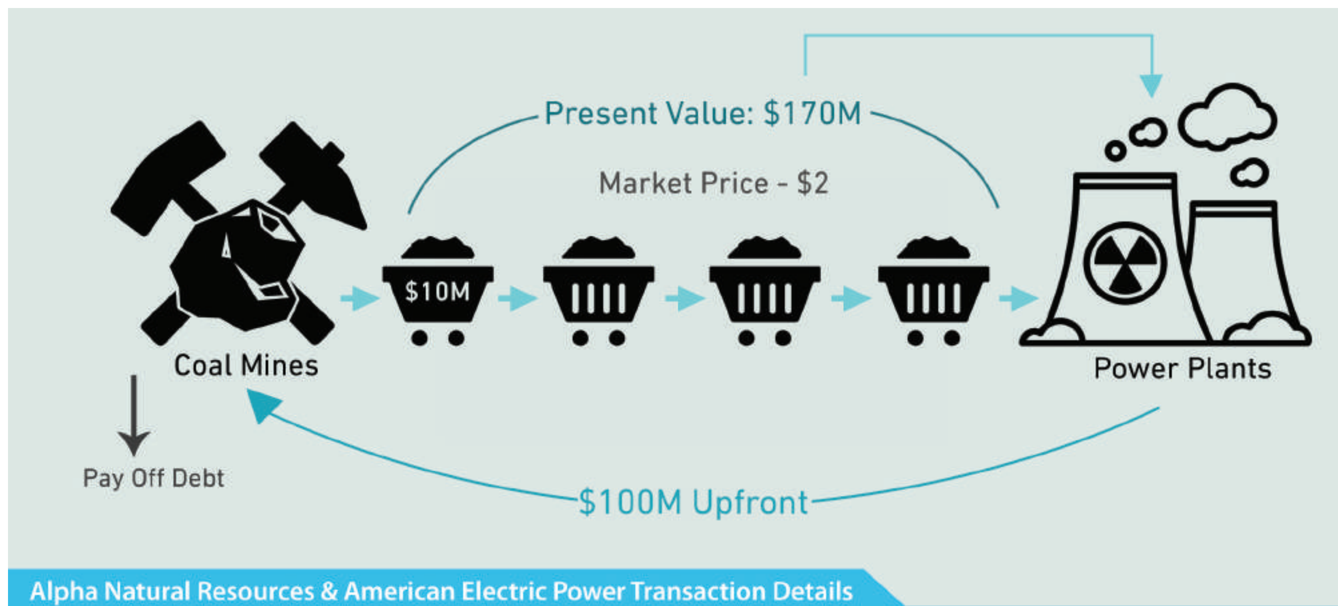
Due to its bankruptcy proceedings, the company has an opportunity to renegotiate debt obligations, unfavorable contracts, employee expenses and other costs, allowing the firm to become more profitable. Therefore, Alpha has room to maneuver on pricing moving forward. Alpha's current EBITDA/ton on Eastern thermal coal sales is roughly $6 USD, which can still be maintained if cost cutting measures are implemented elsewhere in the company. If AEP can capture a fuel savings of $2 to 3 USD per ton, they could save $22M USD to $33M USD annually. The $100M USD purchase price would yield an IRR of 15% to 20%, comparable to other streaming deals.

Alpha can use this $100M USD liquidity injection to pay off its secured debt obligations, or to keep on hand. Having cash on hand would lower bankruptcy costs, provide the ability to refinance debt at lower rates (due to lower perceived risk), and remove the need to put up capital in the form of reclamation bonds. These are all potential benefits to Alpha and its creditors by completing a streaming deal with AEP.

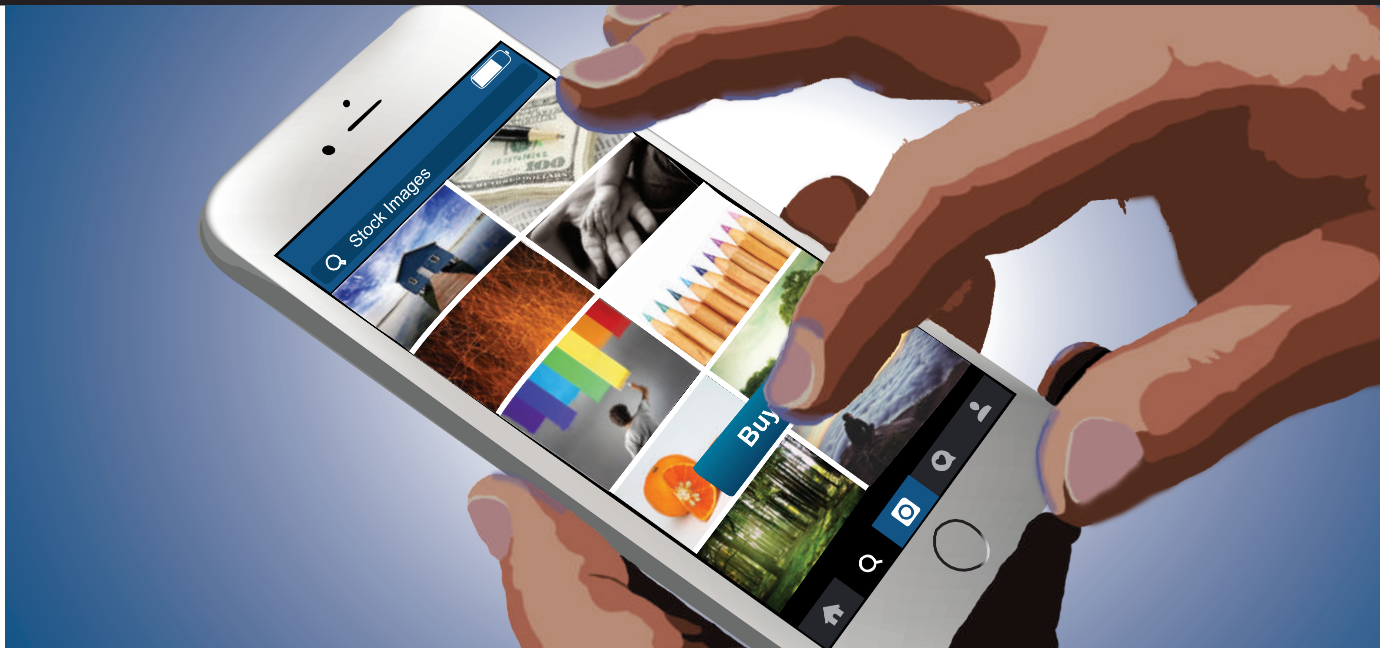
While streaming agreements work with both fixed and variable pricing structures, a $2 USD per ton discount to an index would allow streaming coal generators to maintain a cost advantage against other coal generators should prices decline, and would allow coal miners to be exposed to any increases in coal prices.

As a result of dramatic declines in coal prices, miners are left in a difficult position. Many companies would benefit from an injection of liquidity, but accessing debt or equity markets would be at punitive valuations if at all feasible. A streaming agreement would be a much more palatable fund raising alternative for many coal miners and would provide coal-fired power generators a long-term cost advantage over their competition. Moreover, given that most of the US power market is regulated, this strategy may have significant potential outside of unregulated markets. After assessing the benefits of such transactions, regulated utilities can look to implement this strategy in regulated markets, working with regulators to determine fair allocations of the additional value from the transaction between the utility and ratepayer.

"A STREAMING AGREEMENT WOULD BE A MUCH MORE PALATABLE FUND RAISING ALTERNATIVE FOR MANY COAL MINERS AND WOULD PROVIDE COAL-FIRED POWER GENERATORS A LONG-TERM COST ADVANTAGE OVER THEIR COMPETITION. "



Alpha Natural Resources & American Electric Power Transaction Details



INSTAGRAM: STOCKING AGAINST THE ODDS

Instagram is heavily invested into Direct Response Advertising and needs to explore less cyclical sources of revenue

Dan Wei, Joyce Chan

When Google's advertising revenues became severely depressed in the last economic downturn, it served as a cautionary tale for Facebook to diversify its revenue streams. The two most popular forms of online advertising are Direct Response Advertising and Brand Advertising. In Direct Response Advertising, marketers look to spend on ads that bring quantifiable results such as increases in sales or spikes in website traffic. Facebook, the world's largest social media network, generates 70% of their revenues from Direct Response compared to an industry average of 59%. Tools like Ads Manager for Facebook and AdWords for Google help achieve this, as they enable marketers to accurately target their audience and collect analytics on specific metrics that they value. Conversely, Brand Advertising focuses on building awareness with consumer markets over a longer period of time. As a result, marketers are quick to reduce investment in Direct Response Advertising in times of company cutbacks and adverse economic conditions.

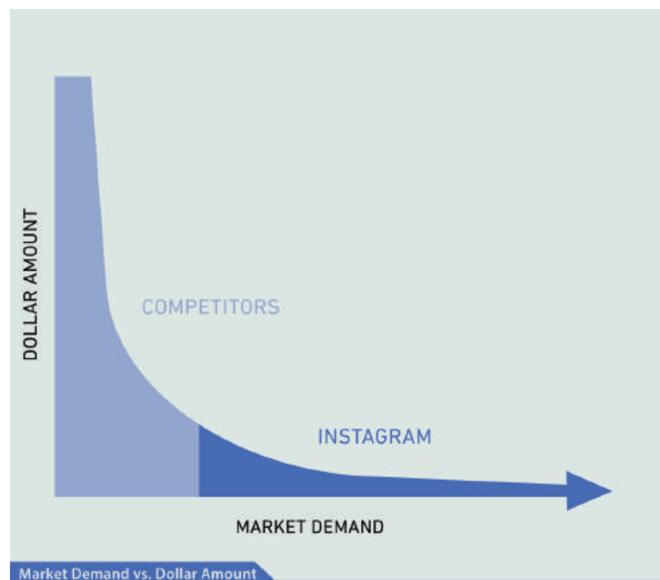
Google is highly dependent on Direct Response Advertising and had its advertising revenues from Google Sites and Google Network Sites sharply decline. In 2006, revenues from these two streams were growing at 80% and 50% year over year, respectively. In 2008 however, growth fell to 22% and 4% year-over-year. After the Great Recession passed in 2010, growth only moderately recovered to 28% and 22%, respectively. Given these adverse effects on advertisement revenues during the most recent economic downturn, Facebook should diversify its revenue streams given the cyclical nature of Direct Response Advertising.

Monetizing Instagram

Facebook made headlines when it decided to acquire Instagram for $1B in 2011. Since then, Instagram has grown into one of the world's most popular social media platforms; however, it has not generated significant revenues. To improve this, Facebook recently integrated Ads Manager with Instagram to enable marketers to create ads to be featured in Instagram user feeds.

Instagram, now revamped and complete with advertising capabilities, charges companies varying rates based on the number of users on the platform and the quality of interactions users have with the posts, as indicated by likes and shares. With 400M monthly active users, Instagram constituted just under 20% of Facebook's user base. However, Evercore analysts estimate that Instagram only

"WHEN GOOGLE'S ADVERTISING REVENUES BECAME SEVERELY DEPRESSED IN THE LAST ECONOMIC DOWNTURN, IT SERVED AS A CAUTIONARY TALE FOR FACEBOOK TO DIVERSIFY ITS REVENUE STREAMS."



Market Demand vs. Dollar Amount

generated 2.7% of Facebook's total revenue. Given that Instagram is fundamentally different from Facebook, an opportunity currently exists for the photo sharing platform to add a substantial stream of income. Monetizing Instagram in a way that complements advertisements can reduce Facebook's risk exposure by introducing an additional revenue stream.

Inspiration from Google

Companies in the past have successfully monetized acquisitions, with a notable example being Google's acquisition of YouTube. Similar to Facebook, Google shook the tech world when they acquired YouTube for $1.65B in 2006. Both Facebook and Google have invested in platforms where users share their content online, and neither platform made substantial amounts of money prior to the aforementioned acquisitions. The main differentiator between the two investments is that Google implemented a partnership program in which YouTube users allowed advertisements to appear before their videos, and subsequently shared revenues with YouTube. What resulted was an increase of professional, creative, and quality content from the YouTube Partner network that further engaged existing users, drove new users to the platform, and increased usage rates and profitability.

"GIVEN THAT INSTAGRAM IS FUNDAMENTALLY DIFFERENT FROM FACEBOOK, AN OPPORTUNITY CURRENTLY EXISTS FOR THE PHOTO SHARING PLATFORM TO ADD A SUBSTANTIAL STREAM OF INCOME."

To draw inspiration from this success story, platforms can create a positive feedback loop by incentivising users to do what they love. These incentives result in increased content volume and content quality, which draw more users to the platform. The newly acquired users then become partners themselves and post more content. The loop then continues, resulting in overall platform growth.

The Instagram Partnership Program

Instagram photos are known to be both artistic and of high quality, and the platform holds one of the world's largest archives of diverse user-generated content. As such, Instagram has the ability to establish a partnership program with its users to use its library of photos and sublicense them to various businesses and organizations as stock photography. The profits they make would be shared with the original creator. Legally, Instagram is in a position to do so, as their user policy states that all pictures posted on their platform are sublicensable.

To browse through potential pictures to license, it is recommended for Facebook to develop a marketplace that companies can access on Instagram's mobile and web platform. There, the company should be able to filter through Instagram's pictures by shape, camera quality, theme, and hashtag. Furthermore, all future pictures posted by subscribing partners should be required to include a minimum of three descriptive tags, and the submission of a short description before pictures are uploaded to help potential customers easily identify and discover pictures. If properly executed, Instagram should be able to utilize its brand and size to compete with major stock photography companies.

There are currently four main competitors in the stock image industry: Getty Images, Shutterstock, Corbis and Fotolia, with 2014 revenues of $878M, $377M, $133M, and $110M respectively. Their business models are similar in that they have freelancers take posed pictures, which are then uploaded and licensed through their website. The entire process is done manually, and has resulted in cost inefficiencies as well as inauthentic photos. Instagram's differentiated advantage from these companies is its ability to offer the largest selection of authentic photos with a high degree of filterability. Unlike their competition, Instagram would not need to employ editors to screen and edit its image library, resulting in lower labour costs, and wider selections of pictures for customers.

Despite striving to build a large library, the recommended requirements before posting will ensure that a level of quality is still upheld in the marketplace. In contrast, pictures posted on competitor platforms have to go through a more rigorous inspection processes resulting in a smaller selection for customers. Instagram can instead take advantage of the 'long-tail' phenomenon which is

inherent with social media content. The long-tail refers to the massive quantities of less popular content that may satisfy a niche desire that mainstream markets leave underserviced. The long-tail phenomenon is exemplified by the strategy championed by Netflix, a company whose online platform engaged many niche market viewers by offering niche content.

While each individual market may be small, the long-tail markets combined are projected to be worth $1.45B, derived from a proxy of freelance photographers who are not currently employed by a stock photography business in North America. This proxy was chosen because the demand of the customers in the long-tail niche markets can be seen as being less-than-satisfied by stock image companies. As a result, unemployed freelance photographers must create their content to fulfill these specific needs. Instagram is projected to capture a market share proportional to the freelance photography industry's revenue size compared to that of the entire stock image industry. The resulting 27.4% of market share would translate to $400M of additional revenue for Instagram from solely the long-tail market.

Profitability from Partnership

Income through sublicensing will be split between Instagram and its user partners to create a mutually beneficial situation for Instagram, its user partners, and sublicensees. By incentivising its users, Instagram will create a similar positive feedback loop to that of YouTube, and increase the volume of quality postings by users on Instagram. This positive feedback loop will in turn increase advertising revenues for Instagram, which diverts

"INSTAGRAM CAN INSTEAD TAKE ADVANTAGE OF THE 'LONG-TAIL' PHENOMENON WHICH IS INHERENT WITH SOCIAL MEDIA CONTENT."

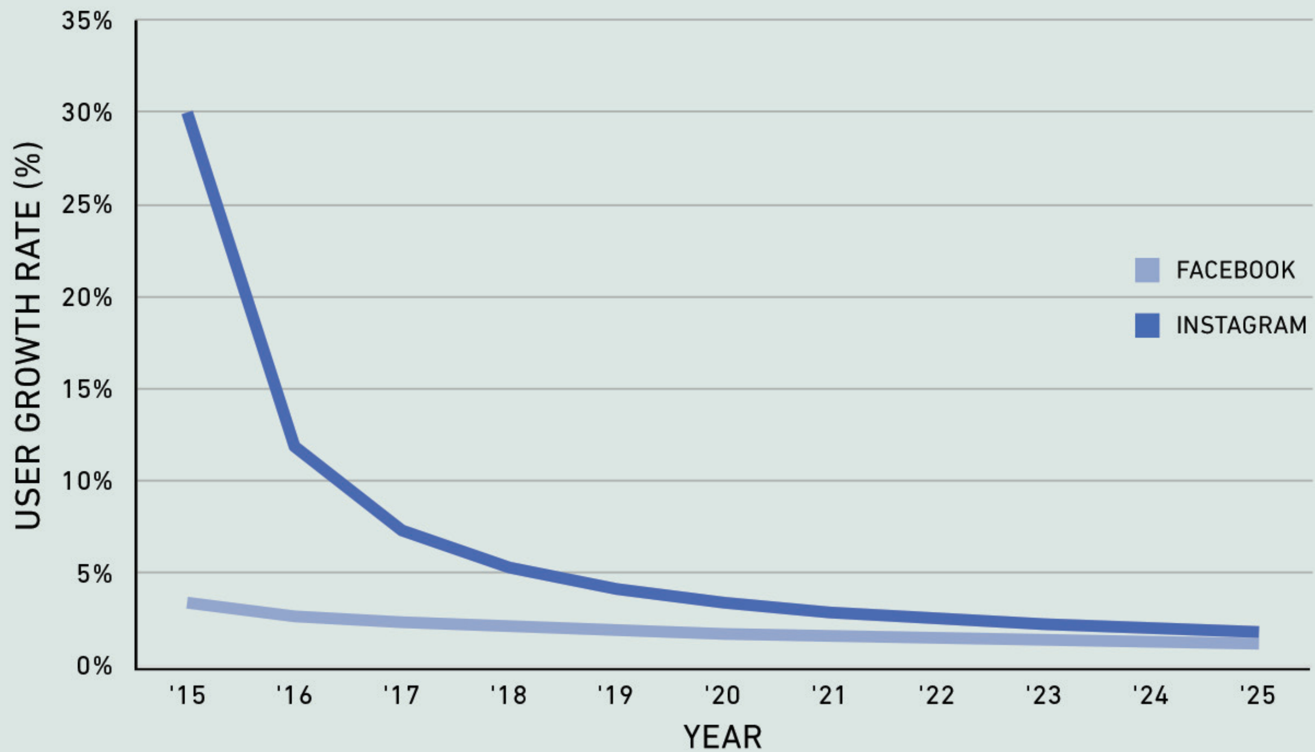
Facebook's reliance on Direct Response Advertising revenue.

Advertising revenue is driven by two key factors: increasing user exposure to advertisements and raising the value of each advertisement. The positive feedback loop will increase the number of users and the amount of time each user spends on the platform, thus boosting user exposure to advertisements.

Instagram has the potential to diverge Facebook's sole reliance on Direct Response Advertising revenue, thus hedging Facebook's revenues against competitor innovations and economic downturns. In addition to advertising, Instagram must also become profitable through its sublicensing revenues.

Instagram should start by implementing the partnership program with users willing to test out the program. Alternatively it can engage in a soft rollout to notable users who post high quality images with more than 100,000 followers, assuming that those with more than 100,000 followers have more desirable photos. In 2015, it is projected that the stock image industry will grow to $3.19B in sales, and Instagram's four biggest competitors will generate $1.55B of that market modelled after the growth they experienced from 2012 to 2014. From this,

Numbers of Users vs. Year



User Growth Rate vs. Year

Instagram is poised to capture an initial market share of 7.1% solely from the users with over 100,000 followers. This percentage was derived by comparing the total library size of the users with a followership of more than 100,000 to the library size of the big four. After distributing 55% of the revenues to partners, Instagram could earn $281M in additional revenues in 2015 from the stock image market, effectively doubling its revenue prior to implementing the partnership program.

This revenue model takes a conservative approach to valuing Instagram's potential profits, as the model assumes similar conversion rates compared to the big four competitors. However, Instagram's ability to price their photos lower than the competitors has the potential to drive sales even higher. Additionally, the model assumes that all stock photography prices will be the same, when in reality, the market is willing to pay hefty premiums for high quality photos, demonstrated by 500px's ability to price stock images as high as $750.

Innovate with Instagram

While Facebook and Instagram should not expect the partnership program to stabilize its entire revenue model, it is certainly a way for the company to innovate. If the partnership program is started with only a select few quality users to test for market rollout, Instagram can experience a network effect from its users and increase the demand of the program, all while continuing to test and iterate. As the partnership program funnels more traffic onto Instagram's platform while the risk of a shift to Brand Advertising by various industries subsists, Instagram will become an investment that diversifies Facebook's Direct Response Advertising portfolio, and hedges Facebook from uncertain economic conditions.

"INCOME THROUGH SUBLICENSING WILL BE SPLIT BETWEEN INSTAGRAM AND ITS USER PARTNERS TO CREATE A MUTUALLY BENEFICIAL SITUATION FOR INSTAGRAM, ITS USER PARTNERS, AND SUBLICENSEES."

CREATING AN ENTERPRISE-SIZED RIPPLE

The consumer market for smartwatches will become saturated by Apple and Android devices; Pebble needs to respond quickly

Leroi Yu, Monique Tuin

With a total backing of over $20M, Pebble regained its title as the most funded campaign in Kickstarter history for the Pebble Time smartwatch in March this year. This surpassed the $10M in campaign funding for the original Pebble smartwatch. Despite being the first company to manufacture a commercially successful smartwatch and garner continued excitement for their products, Pebble struggles to retain market share. Major smartphone manufacturers including Samsung, LG, and Apple have all released smartwatches in the last two years, leaving Pebble to exist only as a small player amongst giants.

A Pebble Amongst Boulders

When the Apple Watch was released in April 2015, Pebble's smartwatch market dominance was in question. In a study of consumer perceptions about smartwatches, 93% of people identified Apple as a smartwatch manufacturer. However, only 11% of people made this same recognition for Pebble, despite the company's exclusive focus on manufacturing smartwatches. Pebble faces the challenge of gaining stronger brand recognition over its more established competitors.

Pebble's mass-market approach contrasts with the strategy taken by its peers. Competitors such as Apple Watch and Android Wear have typically positioned their smartwatches as convenient, pseudo-luxury peripherals to consumers, offering high-end features and sophisticated functionality normally found on a smartphone. Pebble would struggle to match these features due to its position as a cost leader.

Furthermore, Pebble cannot match the scale of its competitors. In its first week, the Apple Watch sold over one million units, a feat which took Pebble almost two years. In the first quarter of its release, the Apple Watch captured 75% of market share, knocking Pebble down to only 8.1% of the market by the end of the year. By 2020, it is projected that Pebble will fall to 3.1% market share from continued competitive pressure. Pebble has built a strong community around its products, but in a consumer-facing market where buyers are increasingly willing to pay for higher-end features and a recognized brand, it will struggle to compete.

Pebble's recent announcement of its newest model, the Pebble Time Round, indicates an attempt to appeal more to business professional users with significant aesthetic improvements.

> **"IN A STUDY OF CONSUMER PERCEPTIONS ABOUT SMARTWATCHES, 93% OF PEOPLE IDENTIFIED APPLE AS A SMARTWATCH MANUFACTURER."**

Although business users present the next logical market for smartwatch manufacturers, this market will likely be won by the dominant players in the consumer market. Smartwatches are being introduced to enterprise through Bring Your Own Device (BYOD) programs. An individual can only wear a single watch, thus the smartwatches that make their way into enterprise will likely be those that have already won over the consumer at home. There will be limited room for Pebble in the long term in the enterprise market as it will lack significant differentiation from the consumer market saturated by Apple and Samsung. While the new Pebble Time Round was a step in the right direction, it will ultimately not be enough for Pebble to compete and succeed with business users or consumers in a highly competitive market.

Pebble's Current Position

Investment into research and development is critical to bringing innovative new products to market and finding a niche where Pebble's large competitors will not venture. However, Pebble does not have access to the same scale of capital and faces a higher cost of capital compared to its competitors. Given its limited capital resources and difficulty in raising funds from venture capitalists in the past, Pebble has historically turned to crowdfunding. However, rewards-based crowdfunding is dependent on having a product which can be marketed to end customers. Therefore consumer-focused crowdfunding will not viably provide sustainable access to capital for R&D.

In addition, Pebble has yet to identify the unique areas of the market where they can win over competitors. Pebble watches are known for their emphasis on unique features and value. The Pebble Time smartwatch boasts a battery life of up to 7 days, and better visibility in low-light and bright conditions. These features are likely more applicable in an industrial or operational context compared to a consumer market, where functionality is valued over form. While consumers desire a touchscreen, Pebble's four buttons would be more practical in work situations. Pebble is more intuitive at work if the user is wearing gloves or cannot look down to select an option.

> **"WHILE THE NEW PEBBLE TIME ROUND WAS A STEP IN THE RIGHT DIRECTION, IT WILL ULTIMATELY NOT BE ENOUGH FOR PEBBLE TO COMPETE"**

Pebble has also added extensive functionality to their smartwatches by growing the app store. Though Pebble's app store currently hosts 12,000 apps, Apple Watch and Android Wear on about to catch up within a year, hosting 10,000 and 4,000 apps, respectively. Apple Watch and Android Wear will likely surpass Pebble's app store figures, but a significant differentiator for Pebble is the price for the value. Compared to the $400 Apple Watch, the Pebble Time is priced at only $200, and the original Pebble Watch at $99. The reasonable price of Pebble's smartwatch makes it a more viable, realistic option for adoption at scale in an enterprise or operational context.

Time to Make a Move

The enterprise market provides a sizable and growing market opportunity for Pebble. Wearable technology is a growing priority for many firms, and the market for enterprise wearables is expected to reach $8.5B by 2020. While BYOD will become the norm for business professionals, companies will continue to purchase corporate-liable devices in situations that require device uniformity or specific needs. The enterprise market is positioned for 139% CAGR by 2020, significantly higher than the growth expected in the consumer market. Enterprise and industrial wearables will comprise 17% of total wearable device revenues by 2020, growing from only 1% of the market when smartwatches were first released in 2013. Pebble's focus on functionality and low price makes it more

APPLE WATCH
Price
$350 USD
Battery Life
1 Day
Compatibility
iPhone Only

MOTO 360 Gen 2
Price
$300 USD
Battery Life
1 Day
Compatibility
Android & iPhone

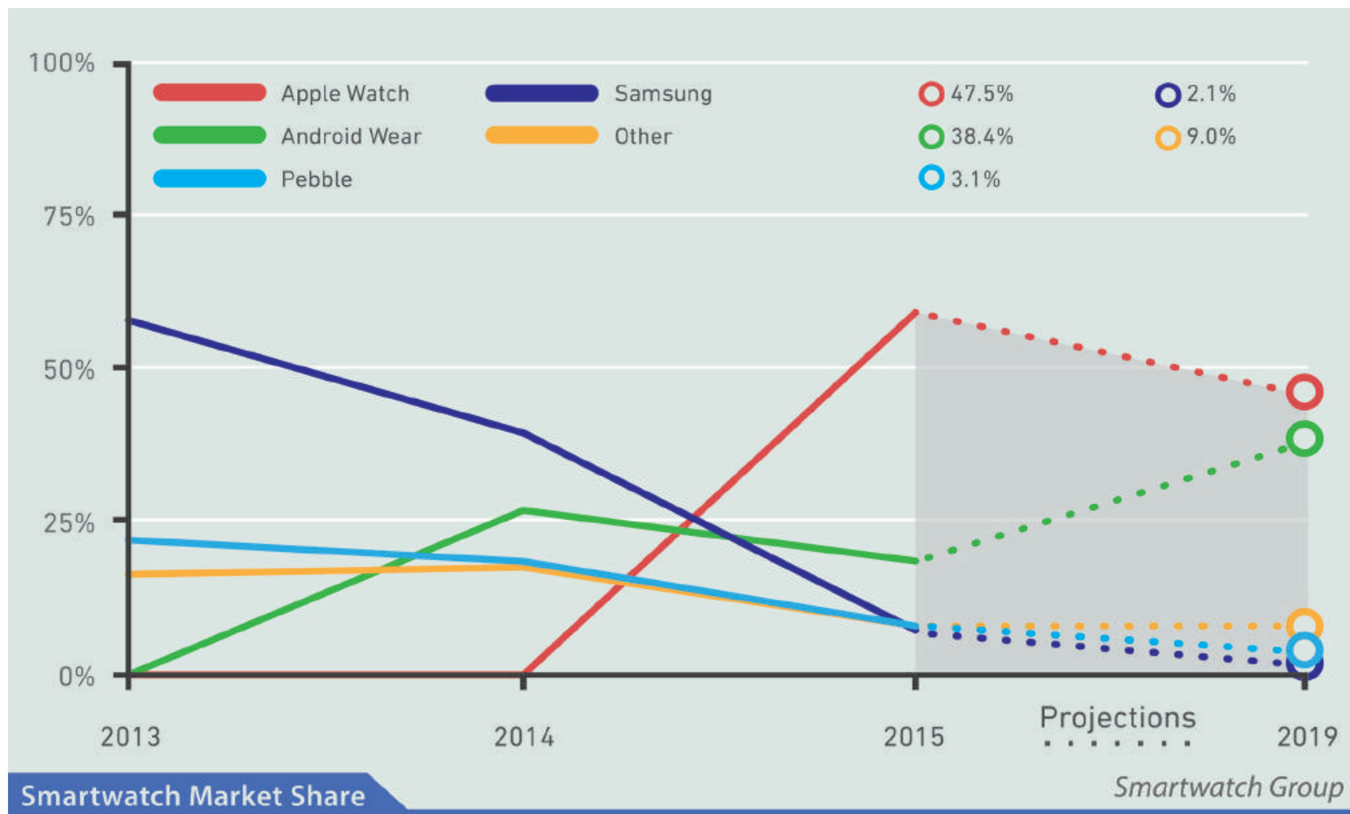
PEBBLE TIME
Price
$200 USD
Battery Life
7 Days
Compatibility
Android & iPhone

SAMSUNG GEAR S
Price
$300 USD
Battery Life
2 Days
Compatibility
Android Only

LG URBANE
Price
$350 USD
Battery Life
2 Days
Compatibility
Android & iPhone

Smartwatch Comparison

Gizmag



> **"HOWEVER, PEBBLE DOES NOT HAVE ACCESS TO THE SAME SCALE OF CAPITAL AND FACES A HIGHER COST OF CAPITAL COMPARED TO ITS COMPETITORS."**

desirable than competitors when meeting the needs of industrial or operational users.

Pebble is best suited to innovate for the industrial or operational intensive market due to its lower cost of technology. Competitors are locked into high costs and "cellphone-class technology". They have a cost-intensive baseline given their must-have features, whereas Pebble can incorporate new technologies in a low-cost implementation. Pebble has positioned itself to innovate more readily and more rapidly for different user groups.

Kickstarting Pebble's Value

Pebble should position its smartwatches for operationally focused businesses through an enterprise sales program. Applications of smartwatches in industries such as construction, retail sales, and warehousing, can create substantial productivity gains. However, the value of a smartwatch in industry has yet to be fully defined. Pebble should work directly with industry-leading companies during the R&D phase to gain a better understanding of the unique needs of that industry in order to develop the most valuable features.

Pebble should establish partnerships with innovative companies across a range of industries, both to gain from their understanding of industry needs, and to provide joint investments into capital required for R&D financing. Out of the 200 leading companies across multiple sectors, including manufacturing, telecom, automotive, and retail, 38% have set up digital Innovation Centers that aim to gain access and exposure to the latest technologies. Companies which are making investments into technological innovation would be well-suited to partner with Pebble to identify how smartwatches can create productivity gains within their company. In capital and capacity-constrained firms, R&D financing and partnerships should adopt a cost and risk-sharing framework. The companies would be willing to invest in the R&D since they will be reaping benefits from the productivity gains provided by the smartwatch features designed to meet their unique needs.

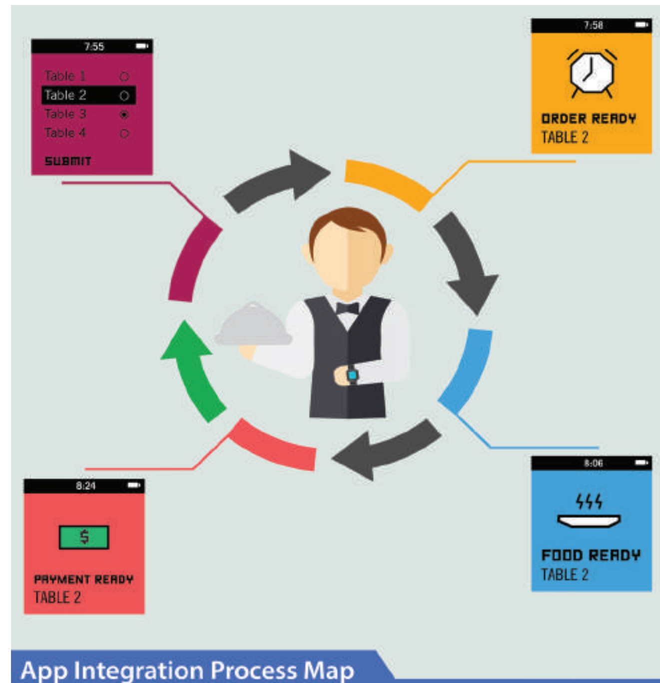
In a similar structure to the rewards-based crowdfunding Pebble has previously used, the expected return comes from the product itself, not an investment into the company. This provides a unique method of financing for R&D which aligns the interests of both parties in bringing new products to market tailor-made for the industry.

Restaurants: An Industry Application

Pebble could partner with a national restaurant franchise to explore applications of smartwatches to assist servers with keeping track of orders and tables. With wearable technology, restaurants can increase the productivity of their staff and thus increase overall profitability. Notifications would play a vital role, where the user would receive real-time feedback used to reduce meal lengths in various situations, such as when the customer requests the bill or wishes to order. Pebble should act as the companion to tablets to further increase restaurant throughput time by providing instant information updates to all servers.

Restaurants facing overcapacity constraints during rush hour periods and equipped with existing technology infrastructure such as tablets to order meals are the ideal targets assumed in the model. Assuming the partnership requires an upfront app development investment of $350,000 and hardware costs totaling $18,000, both spread across 10 restaurants, the per location cost of implementation is $36,800. In the average restaurant containing 12 tables of four people, the average bill per table is $72. Applying the industry average EBITDA margin of 25% results in each location having to breakeven by serving four additional tables per day. This translates to 7.2 minutes required reduction in meal time per table, or a 10% reduction in average meal length. The aforementioned inefficiencies are typically staff-driven and are inherent in the serving process, reinforcing the feasibility of the breakeven improvement through notifications. Using the conservative breakeven productivity gains, each location would increase their annual top-line revenue by $106,000. As such, significant value can be derived with a partnership for industry leaders, where productivity and cost-cutting measures are demanding increased attention.

Overall, the size and strengths of competitors will prevent Pebble from gaining significant market share in the consumer or business professional market. By targeting specific industries through enterprise sales, Pebble can work with industry partners to identify the unique value of smartwatches in their context. Pebble smartwatches can be used by doctors to manage patients, retail sales associates to check inventory, and line operators to manage manufacturing operations. Pebble has the opportunity to use its low technology cost to innovate in the market and retain a competitive position for future growth.



App Integration Process Map

“PEBBLE SMARTWATCHES CAN BE USED BY DOCTORS TO MANAGE PATIENTS, RETAIL SALES ASSOCIATES TO CHECK INVENTORY, LINE OPERATORS TO MANAGE MANUFACTURING OPERATIONS, AND BUSINESS EXECUTIVES TO MONITOR MESSAGES.”

RE-LEASING THE DEERE

Deere can drive profits by launching a rental and driver service in India

Andrew Semple

Deere & Co. has had a rough year. The company is one of the world's largest agriculture equipment manufacturers, with its Agriculture and Turf division accounting for 80% of its sales in 2014. It is unsurprising then, that the global crop oversupply and subsequent decrease in farmer cash receipts resulted in a 5% decrease in revenue in 2014, and is expected to fall a further 21% in 2015. However, Deere has experienced these sorts of fluctuations before and will experience them again since crop prices rise and fall with market cycles. With world-wide brand recognition and billions of cash on hand, Deere will survive this storm. Ultimately, this is a short-term challenge which disguises the true problem facing the company.

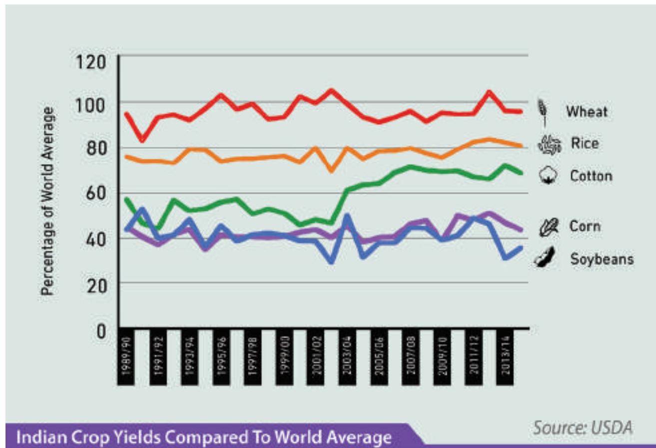
Deere's investor presentation raises some red flags. The company is planning to hit $50B in revenue by 2018 mid-cycle, nearly double of its 2015 outlook. This goal is not new, as CEO Samuel R. Allen had set it back in 2011 when sales were close to current levels. Deere suggests that agricultural output must double by 2050 to meet food demand, suggesting that the company will grow with this expectation. But that does not address the reality that the company needs to hit a 24% annual revenue growth into 2018 to achieve its target. Despite double-digit growth in equipment sales between 2007 and 2014 in Latin America, Africa, and Southern Asia, their historic growth is not enough to meet its goal.

It is also easy to see that there is a significant imbalance in the company's revenue by geography; 61% of the company's equipment revenue comes from the US and Canada, which has 14% of global arable land. By comparison, its Asia Pacific equipment segment boasts 2% of sales despite being home to 30% of global arable land - over 60% of which is in India and China. If Deere is going to achieve the high rate of growth it is expecting, it needs to take a proactive approach to be more competitive in emerging markets rather than relying on riding commodity cycles.

India Bound

To achieve long-term sustainable growth, Deere needs to look to expand in regions that will see large gains in food production efficiency. Arable land provides a proxy to assess ideal expansion locations. According to the World Bank, the top five countries by arable land are India, the US, Russia, China, and Brazil. This matches the original growth destination outlined by the CEO when the $50B sales target was set in 2011. Deere's ability to grow its customer base in the US is limited by its strong existing presence. Deere has subsequently made investments in factories in India, China, and Brazil in the hopes of growing within those markets. Despite these investments, it is alarming to see that Deere has such a poor representation in India, as it not only has the world's largest share of arable land, but is also the largest market in the world by units for tractor sales.

"DEERE HAS EXPERIENCED THESE SORTS OF FLUCTUATIONS BEFORE AND WILL EXPERIENCE THEM AGAIN SINCE CROP PRICES RISE AND FALL WITH MARKET CYCLES."



Indian Crop Yields Compared To World Average

India's need for improved agriculture efficiencies is expected to drive an already large market. While its yield of wheat crops has hovered around the global average for the last 25 years, rice, cotton, corn, and soybean yields are all well below the average global yields. Inefficiencies persist despite generally good quality soil, seasonal yet ample rainfall, the largest irrigated area in the world, and growing government outlays on input subsidies, such as fertilizers. India's small farm sizes, which have an average area of 1.15 hectares and meagre resulting cash flow, is the ultimate hindrance of current tractor adoption. Average income for an Indian farmer is $1,200 USD. Deere tractors cost between $4,000 and $10,000 USD in India, far out of the reach of the average farmer. Only the wealthiest farmers purchase equipment; even then, 80 to 90% of all tractor sales were purchased on bank credit.

The logical solution to gain market share would be to offer lower credit terms, both to capture new customers and to steal market share. However, this already happened in the early 2000s when multiple consecutive years with monsoons forced a price war to salvage market share as sales plummeted. While local players like Punjab Tractors saw market share decline, Mahindra & Mahindra (M&M) came out on top. M&M now owns approximately 40% of the Indian market, whereas Deere's share has dropped from 10% in 2011 to 7% in 2014.

Opportunity in Debt

India is currently already the largest tractor market globally by unit sales, such that for Deere to increase its revenue in this market, it will need to steal market share from competitors to meet its growth goals. Deere needs to adopt an innovative method for undercutting M&M and other players in the market in order to gain market share.

"TO ACHIEVE LONG-TERM SUSTAINABLE GROWTH, DEERE NEEDS TO LOOK TO EXPAND IN REGIONS THAT WILL SEE LARGE GAINS IN FOOD PRODUCTION EFFICIENCY. "

Given the high burden of debt often used to finance a tractor, finding a cheaper solution presents an opportunity. If a farmer is significantly over-levered in order to own a tractor, that farmer would be better off paying for someone else to seed and harvest his or her crops if the fee was less than the cost of capital of the loan. Tractor rental and driver services are not a prevalent business in the world, considering that most farmers in an area are confined to crops that follow a similar growing season. In India however, 50 crops are grown across three growing seasons, implying that a tractor and driver would experience demand throughout the year, as opposed to a spike at certain points in time. This could allow the service to operate for more days of the year than if it were in a cold climate with a single growing season. Regardless, Deere could likely never own a business like this due to dealership laws, which leaves an additional barrier to starting such a business excess capital expenditure.

"ONLY THE WEALTHIEST FARMERS PURCHASE EQUIPMENT; EVEN THEN, 80 TO 90% OF ALL TRACTOR SALES WERE PURCHASED ON BANK CREDIT. "

Deere-lerships Evolved

Deere should approach existing authorized dealers to develop and operate this tractor rental and driving service. As Deere is a manufacturer, a local dealer would be better at successfully managing this kind of venture. The benefit to a dealer includes adding a different revenue stream, while also increasing reach and positive brand value. Considering the typically high debt required to purchase a tractor, there is likely a negative association that farmers make to these dealerships.

Deere should attempt to expand this operation in Indian states with a breadth of different crops to ensure a wider spread of demand throughout the year. These states should also have larger farm sizes and a substantial tractor density, proving that they are viable markets for Deere to attempt to steal market share. Uttar Pradesh, Rajasthan, and Maharashtra are all states that fall within this category, and in total account for 36% of the Indian tractor market.

While Deere would be providing the initial fleet, the daily rate would be set based on the associated labor and equipment costs for the service. This rate would ideally be cost-effective to the farmers with the smallest land size allowable to get a tractor loan (4 acres) in order to allow for maximum market share potential. To cover depreciation, labor, fuel, and allow for a 20% mark up for the use of a 35 HP tractor and a driver, the cost would be $405 USD to an Indian farmer to come three times a year to the field. For a similar farmer to have a $7,000 35 HP tractor levered

"GIVEN THE HIGH BURDEN OF DEBT OFTEN USED TO FINANCE A TRACTOR, FINDING A CHEAPER SOLUTION PRESENTS AN OPPORTUNITY. "

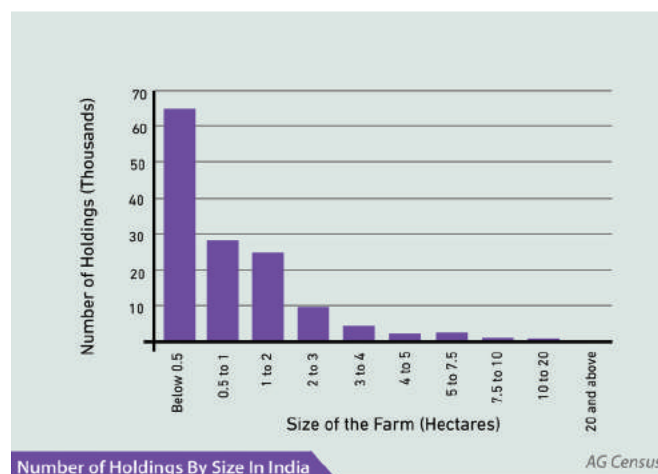
at 80% over the required 9 year term and 12.5% interest rate set by NABARD norms, the cost of capital would come close to $1,072 per year. Even if the farmer sells the tractor prior to the end of the loan's term, the cost of interest and the potential loss on the asset due to amortization would not result in a lower cost than the $405 rate. This range in cost would allow the tractor rental and driver service significant room to expand margins to ensure longevity of the business.

Smaller Farm Appeal

This change in business model also allows this new entity to offer its services to farmers who were not able to afford a tractor in past. The average farm size in Uttar Pradesh, Rajasthan, and Maharashtra are 0.76, 3.07, and 1.78 hectares, respectively. Applying the same costs and margins as above, the rate to plow a field once would amount to $51, $207, and $120, respectively. This would provide Deere access to a large array of lower income farmers within the area. While this segment is likely not as profitable and does not have room for increasing margins to match the cost of capital, Deere can use this as a way to gain recognition within smaller farms and ensure long-term growth as smaller farms merge in the distant future.

A Deere in the Crosshairs

This strategy could potentially cannibalize Deere's existing sales at the start. The farmers who are already happy with Deere's products have no reason not to shift to a cheaper alternative, ultimately switching Deere's sales from the farmer to the rental service. Additionally, one rental tractor could work on multiple farms, whereas previously, each farm would have bought its own tractor at a high credit risk.



Number of Holdings By Size In India

However, Deere acting as a cost leader encourages its competitors to switch over to the rental service as well. Considering how heavy the burden of debt is on Indian farmers, it is probable that farmers who had originally planned on purchasing a competitor's tractor will shift to Deere's lower cost option. Players with similar sized market shares may follow suit, but M&M, Deere's largest competitor, might be hard-pressed to compete in this price range if it means significantly shrinking its own margins and dominance in the market. Even if it does decide to mimic the business, the projected start-up time will provide Deere with a first mover advantage to steal considerable market share. This will have to be communicated to the partnering dealership that there is a long-term upside to ensure buy-in.

"DEERE SHOULD ATTEMPT TO EXPAND THIS OPERATION IN INDIAN STATES WITH A BREADTH OF DIFFERENT CROPS TO ENSURE A WIDER SPREAD OF DEMAND THROUGHOUT THE YEAR. "

If Deere is to meet its sales targets, the company will have to make some aggressive attempts to steal market share in the developing world. The company will never hit the 24% growth targets with such small market shares in developing areas that either are or are expecting to become global food production powerhouses. A similar rental and driver service could be scaled to other economies with low income farmers in order to access new customers and further increase the reach of the company. While Deere is unlikely to see significant gains in the short-term, an increased presence in the market by offering high quality equipment at a low cost will give Deere the foothold it needs in high growth markets, and continue growing even during down cycles in crop prices.

THE AURORA EDGE

How the newest player in Canada's medical marijuana industry can smoke out the competition

Dilara Alpli, Michael Lickver

A Budding Industry

On April 1, 2014, Health Canada introduced a new regulatory framework, the Marihuana for Medical Purposes Regulations (MMPR) which served as a platform for the birth of Canada's commercial medical marijuana (MMJ) industry. Health Canada's regulation enables private-sector enterprises to become, upon receipt of a license from Health Canada, licensed producers (LPs) and distributors of MMJ to registered patients (Patients). Today's burgeoning industry is expected to hold a C$1.3B dollar valuation by the end of the decade, as the number of Patients is expected to rise from 40,000 to almost 500,000 by 2024 in Canada. Presently, however, LPs operate in an increasingly competitive landscape with no cap indicated on the total number of licenses to be granted and 25 LPs already having been granted licenses for the cultivation and/or sale of MMJ since April 2014.

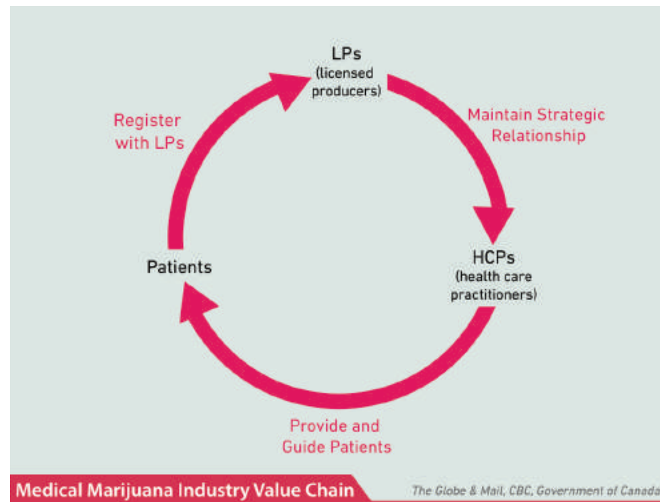
Such a competitive environment poses challenges for newly emerging LPs, such as Aurora Cannabis Enterprises ("Aurora"). Industry leaders such as Canopy Growth Corporation have been authorized to sell medical marijuana since nearly the inception of the new regulation. In contrast, Aurora, while publicly traded and holding an impressive 55,000-square-foot purpose-built production facility, only received its license to cultivate medical marijuana in February 2015 and is one of the most recent entrants to engage in MMJ sales following the completion of its final inspection by Health Canada. As such, Aurora, the first LP in Alberta, enters the market of MMJ sales at a critical time. Those producers preceding Aurora in receiving a sales license under the MMPR have secured foundations of repeating Patients that help to promulgate brand awareness and serve as a fundamental source of recurring revenue. In order for Aurora, as one of the industry's newest players, to become competitive in these respects, Aurora must develop a proactive strategy by which to compete against the host of incumbent LPs in maximizing Patient acquisition.

An examination of the current regulatory environment and operational strategy of leading Canadian LPs reveals that Aurora can develop an effective platform for Patient acquisition by forging an exclusive research partnership with Israeli licensed producer, Cann Pharmaceutical. As a result, Aurora can operate at the forefront of industry developments and engage in meaningful outreach initiatives targeted to Canadian health care practitioners.

"TODAY'S BURGEONING INDUSTRY IS EXPECTED TO HOLD A $1.3B DOLLAR VALUATION BY THE END OF THE DECADE, AS THE NUMBER OF PATIENTS IS EXPECTED TO RISE FROM 40,000 TO ALMOST 500,000 BY 2024 IN CANADA."

Deep-Rooted Obstacles: General Barriers to Patient Acquisition

Aurora must overcome several constraints related to Patient acquisition. First, potential medicinal users of MMJ must



Medical Marijuana Industry Value Chain

become registered patients by receiving a prescription from a health care practitioner and registering that prescription with a specific LP. Once registered, the MMPR stipulates onerous requirements for Patients wishing to amend their registration; this implies that each Patient will be serviced by a single LP, at least for the duration of their prescription. In other words, the difficulty in switching LPs underscores the significance of Aurora's ability to capture and retain first-time Patients who are unlikely to switch if they are happy with the product, price and customer service.

Also, Health Canada's regulation is explicit in prohibiting any advertisement of marijuana "as a treatment, preventative or cure for any disease, disorder or abnormal physical state". LPs are only permitted to disseminate the most basic material including the brand name, proper or common name of the strain, price per gram, cannabinoid content and the LP's contact information, and can only provide additional information upon request. As a result, Aurora may only reach prospective Patients through "activities not primarily intended to promote the sale of MMJ". Such a limitation emphasizes the need for an indirect yet influential channel by which to reach and attract first-time Patients.

Planting Relationships: Finding Ways to Stand Out

Engaging in outreach initiatives targeted to health care practitioners and strategic third parties can help Aurora bolster Patient acquisition rates by means of Patient referrals. While individual patients can register with LPs of their choosing, the collective influence of health care professionals will be significant to Aurora's ability to acquire Patients. Health care practitioners are highly influential in the decision-making of Patients by means of frequent interaction and the legal freedom to share a wide variety of information including views on perceived product quality and research advancements associated with each LP. By forging relationships with practitioners who can relay such information, Aurora can gain access to a legitimate and powerful forum to attract a large Patient base. Presently, however, many doctors are reluctant to prescribe MMJ, frequently alleging a lack of science-based evidence regarding medicinal effectiveness.

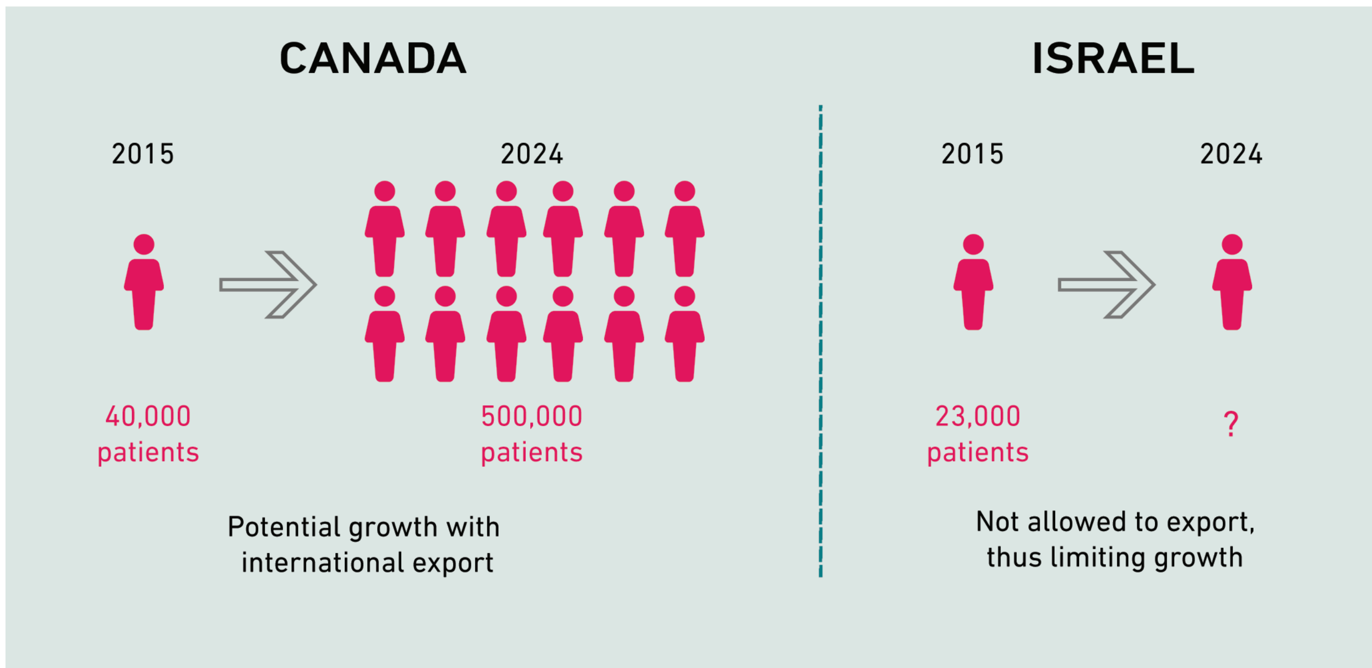
Recognizing that practitioners are in the driver's seat of determining whether Patient rates will soar or stagnate, several LPs are attempting to approach practitioners with research that may convey indicators of efficacy. These producers hope that promulgating a better understanding of MMJ's potential medical efficacy will encourage practitioners to say something positive about their brand upon prescription. Examples of proactive LPs include MedReleaf, which has 20 clinical trials underway, along with Tweed Marijuana Inc. who interacts directly with practitioners to disseminate awareness of pre-existing information surrounding medical uses of marijuana. In FY2015, Tweed's Medical Outreach Team conducted over 5000 physician visits. Correspondingly, the LP demonstrated a steady pattern of growth for each operational quarter. Grams sold grew to 165,000 in March 2015 with the number of grams sold between January and March 2015 having tripled the number of grams sold between January and March of 2014.

Several LPs have also managed to secure a stable and recurring source of Patients through entering exclusive partnerships with specialty clinics. Aphria has partnered with two national organizations committed to helping first responders and veterans manage chronic ailments. Likewise, Organigram has partnered with a nation-wide chain of clinics treating post-traumatic-stress-disorder. These LPs are consequently deemed the preferred supplier of MMJ by their respective partner organizations. As such clinics expand in size and client base, partner LPs can likely expect a corresponding increase in demand, serving as a highly sustainable source of Patients at a relatively low degree of labour-intensity invested by LPs.

The Aurora Edge: Delivering Partnership-Based Research

To best respond to health care practitioner concerns, Aurora should seek to secure a leadership position in R&D by establishing an exclusive partnership with Israeli MMJ producer, Cann Pharmaceutical ("Cann"), with more than

"RECOGNIZING THAT PRACTITIONERS ARE IN THE DRIVER'S SEAT OF DETERMINING WHETHER PATIENT RATES WILL SOAR OR STAGNATE, SEVERAL LICENSED PRODUCERS ARE ATTEMPTING TO APPROACH PRACTITIONERS WITH RESEARCH THAT MAY CONVEY INDICATORS OF EFFICACY."



Canada-Israel Comparative Medical Marijuana Markets

CBC, Ynet News, Government of Canada

fifteen years of experience producing MMJ, branded under the "Better, Medical Grade Cannabis" banner.

This partnership will enable Aurora to lead the industry in addressing research-based concerns of health care practitioners. Israel is widely renowned for its reputation as a predominant and highly progressive world leader in medical cannabis research. In addition, Aurora can avoid the lengthy approval process often associated with research initiatives from organizations such as Health Canada and the Drug Enforcement Administration.

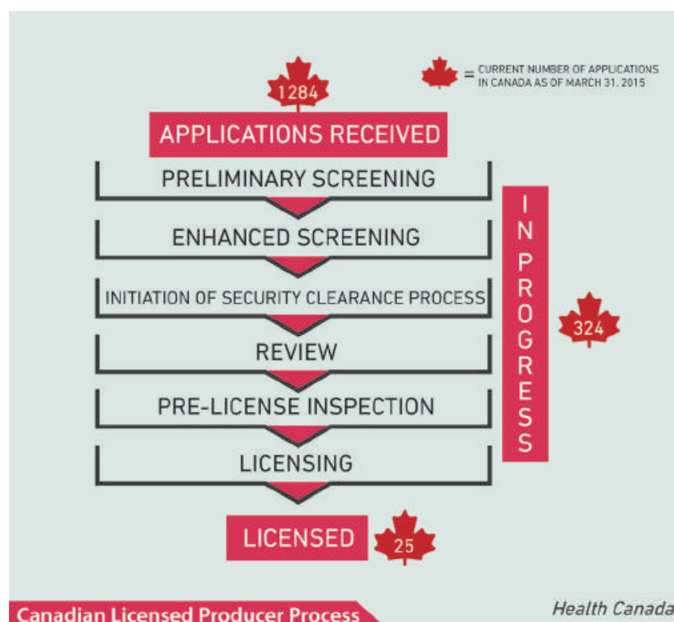
Aurora can gain access to a foundation of pre-existing proprietary product and related patient research accumulated by Cann. Aurora can also gain exposure to the mechanisms by which Israeli producers leverage clinical trials to produce new strains and develop expertise in delivering medical-grade cannabis products. Furthermore, Cann's established relationships with the network of Israeli hospitals, and both federal and university laboratories will prove advantageous in commissioning further research. It is allegedly easier to conduct MMJ-related research and clinical studies in Israel than in any other country in the world. Out of the eight existing Israeli producers, Cann holds a significant competitive advantage in its depth of experience through 15 years of production, research and patient familiarity. Therefore, it is imperative for Aurora to act swiftly in securing this partnership prior to competing Canadian LPs in order to maximize the host of data that it can build upon and distribute to Canadian healthcare practitioners.

Efficiently conducting and presenting the findings of such research will highlight Aurora's commitment to R&D and emphasis on product quality – elements of considerable importance to practitioners searching for the most scientifically-sound avenue in which to direct Patients. By delivering such partnership-based research, Aurora can quickly and continuously relay important results to those stakeholders whose concerns it is important to address and with whom it is essential to strengthen relationships.

Harvesting Canadian Potential: Why Cann Must Enter Canada

Cann currently operates in an Israeli market with meager numbers of domestic Patients and a federal prohibition on the exportation of MMJ. Also, Israelis are currently being treated with MMJ under official permits that many allege are becoming increasingly difficult to obtain. Continuing to operate in such a limited market constricts Cann's ability to capitalize on its wealth of accumulated product and patient knowledge to bolster top-line growth.

In contrast, Canada currently boasts 40,000 MMJ Patients expected to reach almost 500,000 by 2024. In addition, the MMPR allows for Canadian LPs to be granted export permits. Canada could be one of the world's top MMJ exporters, primarily due to its high-quality products that are a result of Health Canada's strictly regulated cultivation practices and product standards. Aurora has aligned its growth strategy with international expansion and the aggressive pursuit of export contracts. In April 2015, Aurora entered an agreement to form Australis Holdings LLP to construct a new marijuana production facility in the US; the site will be the largest industrial development catering to the cannabis industry in Washington. Aurora's international growth and export potential can significantly strengthen Cann's top-line growth while providing a tremendous degree of international brand recognition.



Canadian Licensed Producer Process

Cann should move swiftly to capitalize on the rapidly growing Canadian MMJ market, however, it faces many challenges to entering Canada independently. While Health Canada has not indicated a cap on the number of licenses to be granted, it was suggested in the first draft of the legislation that the number of LPs would not exceed 50. As of March 31, 2015, Health Canada had received 1,284 applications, granted licenses to 25 producers, and was in progress of reviewing 324 other applications. The application process is arduous and takes approximately two years to grant a sales license under ideal conditions. Additionally, Cann must consider the significant degree of saturation already present in the Canadian market. With 25 LPs having already been granted licenses and large industry actors having begun consolidation to form dominant entities, Cann would be faced with tremendous competition and significant brand loyalty having been accumulated by incumbent competitors.

Blossoming in the Long-Term

In the short-term, it would be feasible for Aurora to seek Patient acquisition by assuming a position of cost leadership. This can work to maximize market share in the price-sensitive Canadian market where many Patients allege paying ten to thirty times more under the MMPR than under the old regime. Being the only LP in Alberta allows Aurora to minimize capital and operational costs as a result of the lowest national tax rates and Alberta's deregulated utility system. However, in the future, with the prospect of a Canadian recreational market and the potential for a dramatic rise in production as seen in Washington and Colorado, pressure on prices will likely extend across the industry. Therefore, it will be important for Aurora to partner with Cann to facilitate a long-term approach to Patient acquisition. Notably, when industry-wide cost pressure materializes, Aurora will likely have learned how to best leverage its cost structure so as to remain competitive in profitability. This will likely be of appeal to Cann in choosing to partner with Aurora.

Moreover, the partnership can position Aurora as a first-mover in the production and research of MMJ derivative products, such as cannabis oil. With MMJ extracts comprising between 30-60% of legal market sales in the U.S, a significant opportunity exists to capitalize on such products. Aurora can leverage Cann's long-term experience in the production of MMJ-derivatives to secure a first-mover advantage in undertaking best production practices related to oils. Similarly, Aurora can use Cann's ability to expediently commission Israel-based research to act proactively in educating health care practitioners on the short and long-term Patient impact associated with such products. It is feasible for Aurora to be top-of-mind for practitioners in this new realm of products.

Proactive engagement in oil-based research, best production practices and health care practitioner education initiatives can also enable Aurora to secure exclusive relationships with specialty clinics whose patients stand especially to benefit from oil-based MMJ. Establishing such partnerships would deem Aurora the preferred supplier in exchange for research commitments tied to the MMJ-treatment of the specific ailments these clinics service. Aphria, an LP having entered a similar supplier arrangement expects income from sales generated by such contracts to comprise 25-30% of revenue.

Ultimately, considering both short and long-term interests, a strategic partnership with Cann Pharmaceutical today provides Aurora with the winning edge it needs to acquire a highly sustainable source of incoming Patients in the future.

"WITH MEDICAL MARIJUANA EXTRACTS COMPRISING BETWEEN 30 TO 60% OF LEGAL MARKET SALES IN THE US, A SIGNIFICANT OPPORTUNITY EXISTS TO CAPITALIZE ON SUCH PRODUCTS."

THE BIOSIMILAR ONSLAUGHT

Pharmaceutical companies face huge revenue uncertainties after the loss of patent exclusivity; but not all is lost

Kevin Shi, Nawid Sayed

Pharmaceutical companies which produce major protein-based biological drugs are under fire. By the year 2020, expiry of major biologic patents will expose up to $100B in revenues to attacks from companies which produce mimics of the original drug.

Pharmaceutical drugs can be segmented into traditional small-molecule drugs and protein-based biological drugs (biologics). Biologics are complex protein, sugar, or nucleic acid compounds produced from genetically engineered living cells, often isolated from natural sources. Biologics provide a wide range of treatments from anti-inflammatory indications for arthritis to vaccinations against multitudes of viruses and tumor-fighting indications for cancers.

Innovative pharmaceutical companies are rewarded for developing a biologic drug with 12 years of market exclusivity – a government-mandated supply monopoly. As the monopoly nears its end, generic competitors prepare for market entry. These competitors adopt a strategy of mimicry and price competition; they develop a "biosimilar", a mimic of the original biologic which is functionally analogous but not entirely identical due to the complexity of the biologic manufacturing process.

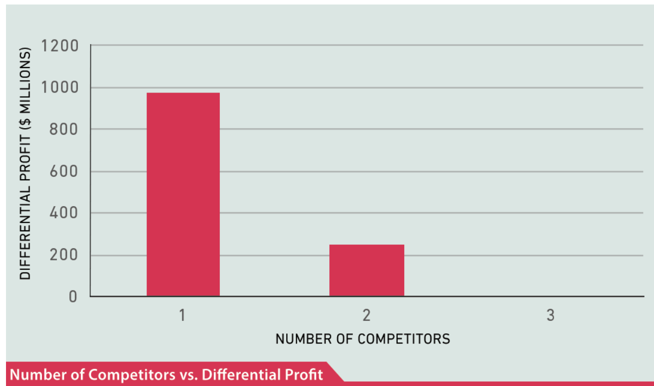
The manufacturing process for biologics produces complex compounds in a dynamic cell environment. The nature of this process demands stringent environmental control and technical aptitude such that biosimilar competitors cannot match this level of consistency without extensive R&D. This inherent complexity drives mimicry costs: developing a biosimilar requires a $100M to 250M R&D investment whereas small-molecule generics cost only $1M to 4M. Despite this heightened investment, biosimilars inevitably maintain a degree of separation from the original biologic, which detracts from their perceived quality and efficacy.

Nevertheless, upon market entry, biosimilars erode biologic revenues by competing at a significant price discount to compensate for any perceived product variation. The generic market entry effect is a primary driver of post-exclusivity revenue decay for innovative pharmaceuticals. With the loss of patent protection by 2020 and billions of dollars on the line, biosimilars represent a significant business risk for many innovative pharmaceuticals.

"THE GENERIC MARKET ENTRY EFFECT IS A PRIMARY DRIVER OF POST-EXCLUSIVITY REVENUE DECAY FOR INNOVATIVE PHARMACEUTICALS."

Biogen Battles Biosimilars

Biogen, a leading pharmaceutical company, must deal with risk exposure related to its biologic drug portfolio and development pipeline. The company prides itself in innovation – its line of biologics fuelled the company's 40% revenue growth between 2013 and 2014, reaching an all-time high of $9.7B. Despite the revenue growth, Biogen's stock price has been on the decline in part due to biologic



Number of Competitors vs. Differential Profit

revenue uncertainty. The Food and Drug Administration (FDA) recently implemented an accelerated Biologics License Application (BLA), providing a well-defined pathway for biosimilar competitors to enter biologic markets and thus further contributing to Biogen's revenue uncertainty.

To combat this uncertainty, Biogen should use a biosimilar licensing agreement to boost its post-exclusivity revenues. While the positive effect of this licensing agreement is outlined using Biogen's Eloctate drug, this strategy is applicable to all of Biogen's biologic portfolio.

Eloctate is a recombinant anti-hemophilic factor used to treat hemophilia Type A and was granted FDA market exclusivity from 2014 to 2026. The projected market share represents approximately 25% of the total hemophilia Type A market. Despite modest Q4 2014 revenues of $37M, equity research consensus projects 2026 drug revenues of up to $1.2B.

The proposed licensing system is for Biogen to license an identical generic version of Eloctate to Amgen - the world's second largest biologic pharmaceutical by revenue. Amgen is an ideal licensee because its biologic portfolio does not include hemophiliac products, thus providing them an opportunity to expand their portfolio. Theoretically, this licensing program can be applied to Biogen's other competitors as well.

Licensing Terms

Biogen's national licensing agreement with Amgen would be publicly signed within two years, taking effect upon expiry of Eloctate's market exclusivity in 2026. The terms of the licensing agreement can be seen below.

Interchangeability: Ammunition for Amgen

Under the FDA mandate, the first biosimilar to gain interchangeability for a specific biologic is awarded with one year of exclusive interchangeability during which no other biosimilar is permitted interchangeability status. During this year, the interchangeable biosimilar would have an effective monopoly as it is able to outcompete other biosimilars on

CONTRACT

BIOGEN'S TERMS

- Biogen to provide Amgen with the process required to produce a biosimilar version of Eloctate which would produce clinically equivalent results in order to achieve "interchangeability". Interchangeability designation is granted to those biosimilars with clinical equivalency to the biologic.
- Biogen to house the manufacturing of Amgen's biosimilar within Biogen's current facilities.
- Biogen to provide the process details to Amgen in 2017, 9 years before the drug's expected patent expiry, contingent to Amgen signing a non-disclosure agreement. This would allow Amgen to file an accelerated BLA well before other competitors, guaranteeing interchangeability exclusivity.

AMGEN'S TERMS

- Amgen to pay Biogen the present value of $500M in 2026 upon signing of agreement.
- Amgen is barred from entering in subsequent agreements related to Eloctate and its biosimilars without Biogen's approval.

CONDITIONAL CLAUSES

- In the case that Eloctate's actual 2026 revenues falls below a pre-agreed minimum threshold such that biosimilar competitors would not enter the market, the agreement would be null and void. Further, Amgen would be bound to a non-use clause concerning the intellectual property associated with Eloctate
- In the case that Amgen's biosimilar unit sales are disproportionate to the unit sales of its competitors beyond 5%, Biogen has the right to claim all disproportionate profit above the 5%.

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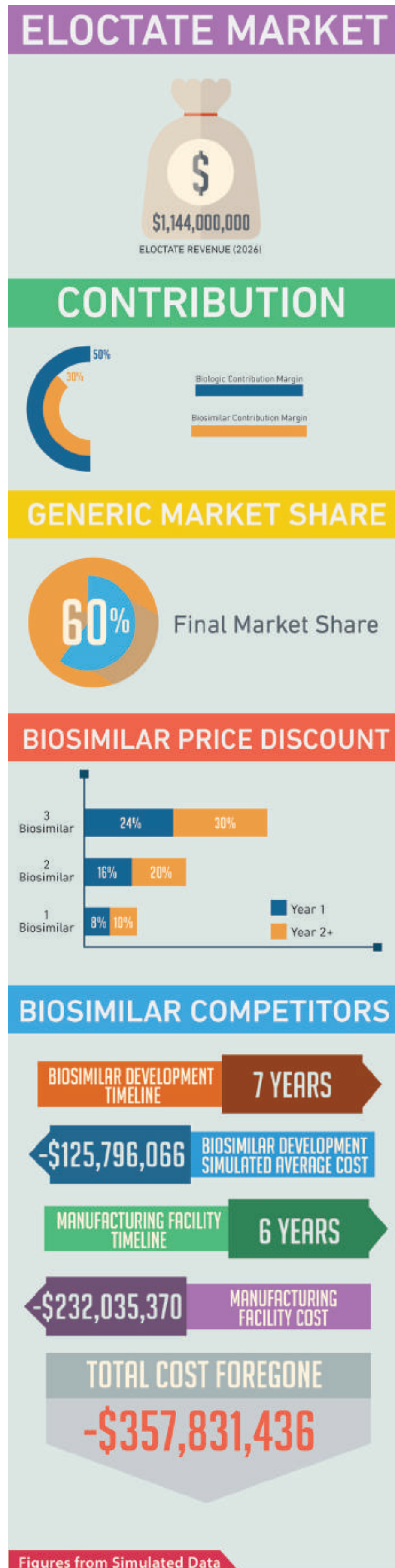
The Proposed Contract between Biogen and Amgen



status at a similar price point. This monopolized market share would decay after the exclusivity expires, at which point it can be conservatively assumed that all competitors would reach a competitive equilibrium wherein each player has an equal market share. With a decay over one year, we project the present value of receiving this exclusivity at $34M. While Amgen may receive the exclusivity without the licensing agreement, but it has a guaranteed exclusivity if it signs the agreement with Biogen. The most probable benefit from the licensing is a present value increase of $22M. For this calculation, it is assumed that only biosimilars with interchangeability will enter the marketplace since any biosimilar without the designation do not stand a chance against those which do.

Fending off Biosimilar Competitors

Following similar assumptions indicated by the Congressional Budget Office and Avalere Health, the biosimilar market for Eloctate is expected to have three competitors. Given that Amgen would be granted an interchangeable biosimilar for Eloctate, competitors could effectively be discouraged to compete with Amgen. With the licensing system, non-licensees have more to lose given the lack of interchangeability exclusivity. This loss is projected to be $16M as compared to the $6M they would have lost without the licensing system. The significantly higher loss should discourage at least one non-licensee competitor from entering the market. For every single non-licensee competitor which enters the market, Amgen would see an incremental benefit of $245M.

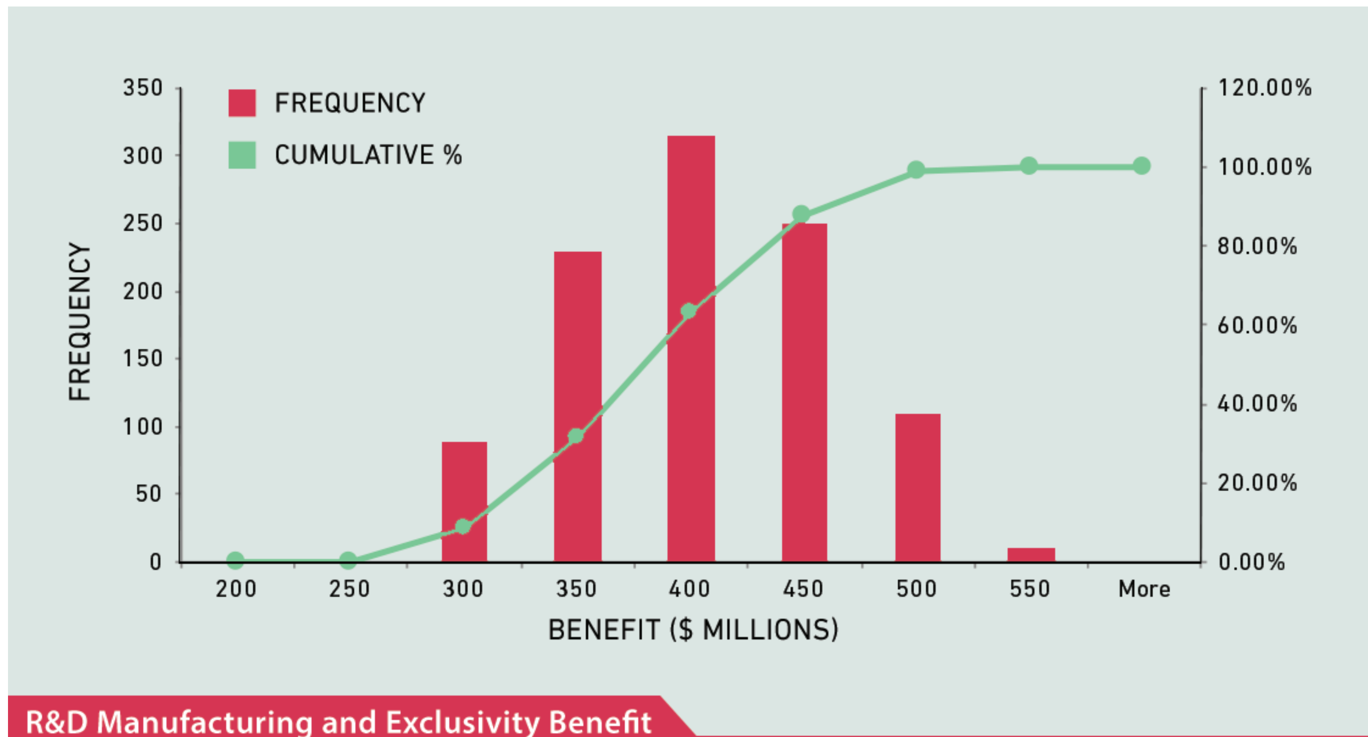
R&D and Manufacturing Savings

Pharmaceuticals require specialized manufacturing capabilities in order to maintain the stringent conditions required for biologic drug production. Biogen can help Amgen with R&D savings, which typically run from $100M to $250M over 7 to 8 years for biosimilars with a simulated average of $125M. Eloctate can also offer its existing manufacturing facilities to Amgen, especially since capacity will be freed up with a declining demand for Eloctate upon patient expiration. Based on industry average of manufacturing investment costs of $200 to 400M spread over 4 to 7 years, Biogen could also help Amgen save a present value of $230M in manufacturing costs. The combined average savings of $355M, on top of the $22M exclusivity benefit, are the basis of the licensing system.

A Non-Zero-Sum Game

Overall, savings in R&D and manufacturing, as well as the guaranteed one-year interchangeable exclusivity provides the licensee with a substantial value of $375 to 380M. This value would be further supplemented by the possibility of discouraging one or more biosimilar competitors from entering the market. Discouragement of one competitor would benefit the licensee an additional $245M. Amgen can save the years they would have otherwise spent on R&D of this biosimilar on another project which can impart additional benefit. For the licensee, the benefit of the licensing system can reach upwards of $625M. Biogen can enter fair negotiations with Amgen using this as the foundation of price negotiation with any resulting price as Biogen's profit.

In this licensing system, Biogen may bear additional legal and operational risks while manufacturing the competing biosimilar product. Some of these may be offset by the upfront fee of $500M it receives from Amgen.



R&D Manufacturing and Exclusivity Benefit

Biogen may run the risk of decreasing its brand drug market share as a result of the licensing system, however this is unlikely to be an issue in an interchangeable system where pharmacists make purchasing decisions based on price rather than brand motivations. Pharmacists, who are constrained by end consumer demand for both brand and generic Eloctate, would not change their purchasing patterns and continue to purchase the original brand. Therefore, there is a negligible effect on Biogen's Eloctate revenues, while the upside is significant.

In the worst case scenario, Biogen's brand market share can dramatically drop to 0% as a result of licensing. Biogen would then receive Amgen's disproportionate profit (+5%) from price discounted sales, resulting in a projected loss of up to $361M. This scenario is particularly unlikely because Amgen would be incentivized against pursuing disproportionate market share by the 5% loss realized on each disproportionate sale. This maximum downside, however unlikely, still pales against Biogen's upside.

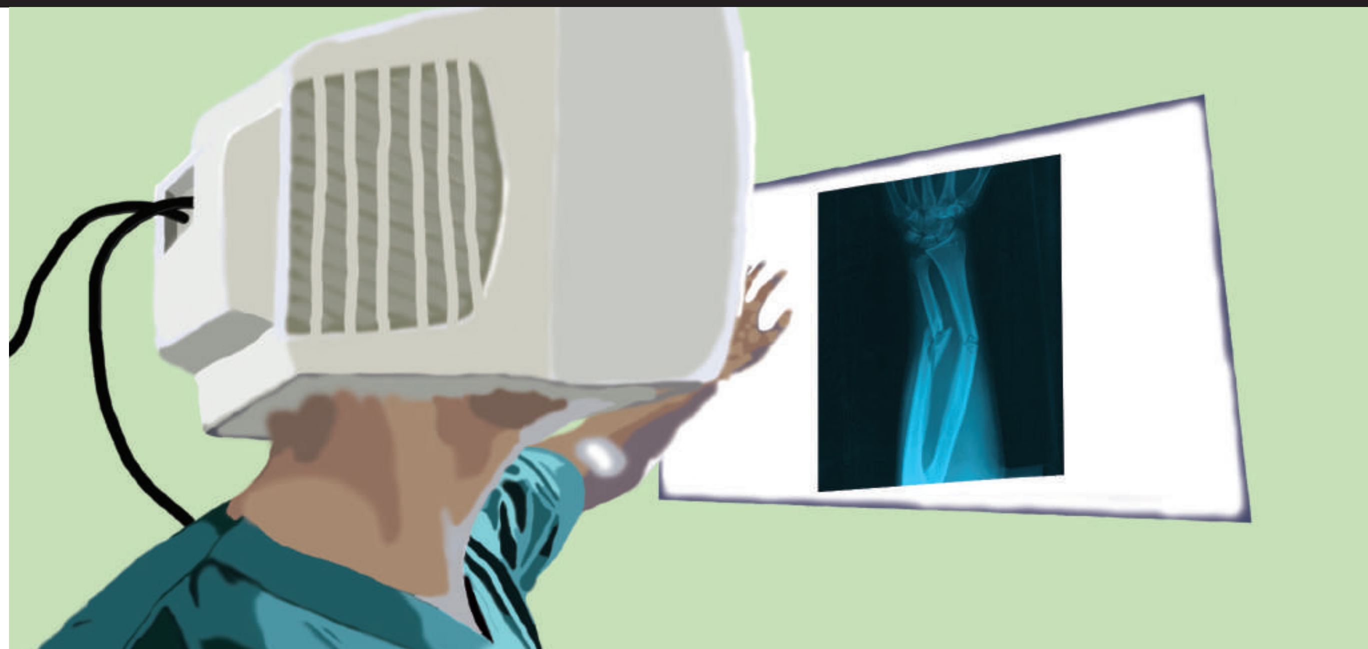
"FOR THE LICENSEE, THE BENEFIT OF THE LICENSING SYSTEM CAN REACH UPWARDS OF $625M. BIOGEN CAN ENTER FAIR NEGOTIATIONS WITH AMGEN USING THIS AS THE FOUNDATION OF PRICE NEGOTIATION WITH ANY RESULTING PRICE AS BIOGEN'S PROFIT."

Protected by Policy

Although the FDA has only established the accelerated BLA pathway in 2012, large biosimilar manufacturers such as Sandoz's Zarxio are paving the road to interchangeability. Amgen's biosimilar of AbbVie's, which has recently shown clinical equivalence to Humira in a pivotal phase III study also shows high potential of approval. As pharmaceuticals further refine the biosimilar development process in the future, interchangeability is likely to be commonplace. The success rate of approvals from the FDA can look to the more developed European biosimilar market as a precedent to testing its validity. One example is Teva's Granix, which was approved as a biosimilar in Europe and as a proprietary drug in the US.

Surviving the Onslaught

Biogen is threatened by the onslaught of biosimilars. As a biologics manufacturer, Biogen should proactively act against biosimilars through a national licensing agreement with a biosimilar competitor to protect post patent expiry revenues. This system would substantially supplement Biogen's future revenues in a replicable and scalable manner, with implications extending beyond just Eloctate to Biogen's entire biologics portfolio. The adoption of such a model by other biologic companies would ensure that pharmaceutical market conditions continue to incentivize and propel innovation in product development.



DIVING DEEP INTO HEALTHCARE DATA

GE Healthcare can help hospitals better diagnose patients and reduce readmissions by acquiring the deep learning analytics company Enlitic

Sanveer Dhanju, Andrew Truong

Nearly $100B is spent nationwide on medical imaging each year, according to the United States Government Accountability Office. Radiology is the largest contributor to US hospital profit margins, totaling 37% of profits - 3x greater than cardiology, the next largest contributor. With advanced imaging becoming increasingly important in patient diagnosis, there has been explosive growth in the amount of imaging performed since 2002. With the average American hospital operating on profit margins of just 3%, reductions in costs and increases in quality of care translate into significant improvements for their bottom line.

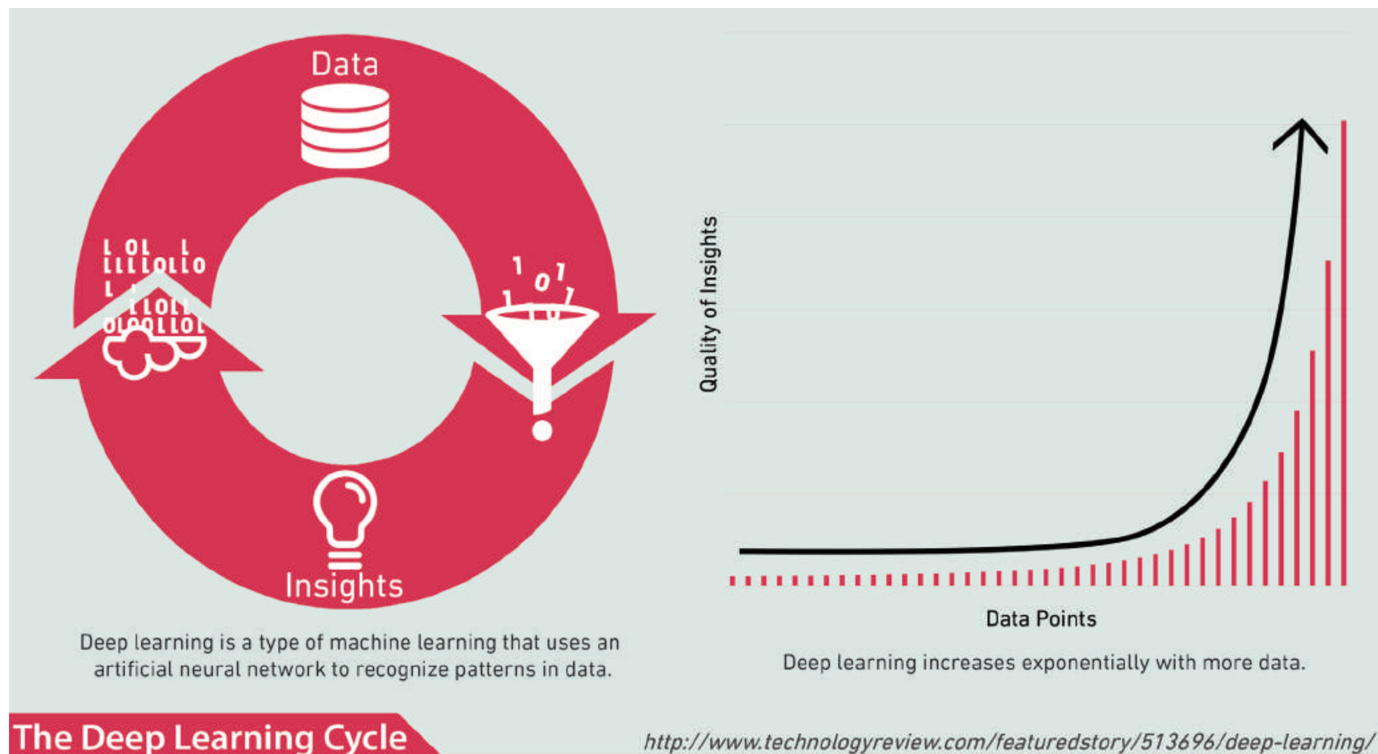
Since the Affordable Care Act was passed under the Obama administration, hospitals are subject to Medicare reimbursement penalties of up to 3% for excessive readmissions of patients with certain conditions. In context of hospitals' low profit margins, this penalty is spurring healthcare providers across the country to improve the accuracy of their diagnoses. GE Healthcare, a world leader in diagnostic technology equipment manufacturing, is strategically positioned to take advantage of advances in deep-learning analytics technologies to help hospitals better diagnose patients and reduce readmissions. To do this, GE Healthcare should acquire San Francisco based deep learning analytics company, Enlitic.

Deep Learning with Enlitic

It is estimated that in today's hospitals, over 90% of all medical information available is in the form of medical images. The availability image format data could radically change how a diagnosis is determined, and the use of artificial intelligence in healthcare has the ability to advance the field of evidence-based medicine. Tools that are currently available to help physicians with diagnoses are rudimentary and rely on broad, oversimplified assumptions. However, deep learning, a form of artificial intelligence, is at the forefront of changing the way radiologic data is analyzed. Deep learning is the use of technology to train artificial neural networks on large quantities of data and getting them to provide inferences about new data. New technology startup, Enlitic, is making breakthroughs in this field by using algorithms that can analyze radiology images to diagnose conditions with unprecedented speed and accuracy. Their technology has the potential to reduce the number of misdiagnoses in the US, which currently stands at 12M adults annually. Enlitic's algorithms seamlessly integrate into a radiologist's workflow by running in the background as images are taken. These algorithms are 'trained' to recognize anomalies and confirm the initial diagnosis of the radiologist using symptoms, patient history, lab test results, prior images, and any comparable patient cases. Anomalies between a physician's diagnosis and Enlitic's analysis can be quickly cross-analyzed to verify if the initial diagnosis was correct.

GE Healthcare

GE Healthcare is one of the largest global healthcare technology providers, with sales of over $18B in fiscal 2014 and profits of over $3B in fiscal 2014. Despite the success of GE Healthcare since its inception, its sales and profits have stagnated since 2012 due to a decline in healthcare spending and the strength of the US dollar. Management has made it an objective to



lead in technology innovation, focusing on technologies that allow health facilities to improve productivity. For example, GE acquired API Healthcare in 2014, a healthcare-specific workforce management software company, for $300M in an effort to incorporate API's staffing offerings into their core product line. GE should continue its expansion into healthcare technology and acquire Enlitic in order to inherit its deep learning technology.

Dr. Watson is on the Move

Enlitic is not the only company with deep learning technology capabilities. The entrance of IBM into healthcare analytics, with Watson Health, poses a large threat to Enlitic. IBM's advantage is the amount of data they have access to, since the amount of data is determinant of the value of deep-learning algorithms. IBM's Watson Health Unit has been on an acquisition spree, including a $1B buyout of Merge Healthcare in October 2015 to access Merge's 30 billion pieces of radiology data. This acquisition foreshadows IBM's entrance into the radiology space, and its ability to become a formidable direct competitor to Enlitic. Using Merge's data, Watson Health can increase their effectiveness at interpreting future radiological data in real time and providing correct diagnoses. Merge Healthcare is one of the largest providers of picture archiving and communications system (PACS) technology. It is currently used in over 7,500 different healthcare sites in the US to manage, store and distribute the workflow associated with all forms of diagnostic techniques such as MRI, computed tomography (CT), X-rays and ultrasounds. Not surprisingly, Merge's biggest competitor in the PACS space is GE. GE is in a strategic position to use the radiology images it has collected to develop a deep learning analytics technology. The global demand for PACS systems is expected to grow at a compound annual rate of 10% from 2014 to 2019, showing increasing demand for new PACS systems in hospitals and clinics. GE's ability to introduce greater analytics ability to its PACS systems will help it capture more market share in this growing industry.

"THESE ALGORITHMS ARE 'TRAINED' TO RECOGNIZE ANOMALIES AND CONFIRM THE INITIAL DIAGNOSIS OF THE RADIOLOGIST USING SYMPTOMS, PATIENT HISTORY, LAB TEST RESULTS, PRIOR IMAGES, AND ANY COMPARABLE PATIENT CASES. "

Readmission and Misdiagnosis Don't Go Unnoticed

Less than half of medical decisions in the US comply with evidence-based standards. In fact, 1 in 5 hospitalized patients on Medicare in 2013 were readmitted within 30 days of leaving the hospital. This costs Medicare $26B, 65% of which could have been avoided with better care and diagnostics. Large insurers are bearing the majority of the cost associated with misdiagnosis and non-optimal treatment, which is why there has been a push by the US government to reduce the incidences of readmission. An initiative the government has launched is charging reimbursement penalties to hospitals with too many incidences of readmission. Recently, only 2,665 out of

a total of 3,464 hospitals, or 77%, were charged a Medicare reimbursement penalty. The government has also required hospitals to switch to Electronic Health Record technology by the year 2017, which has historically brought an average cost saving of 9.7% for hospitals. This move is pushing almost all hospitals in the US to electronically store their healthcare data, many of whom are opting for the cloud, making their data readily assessable and prime for integration with healthcare analytics systems.

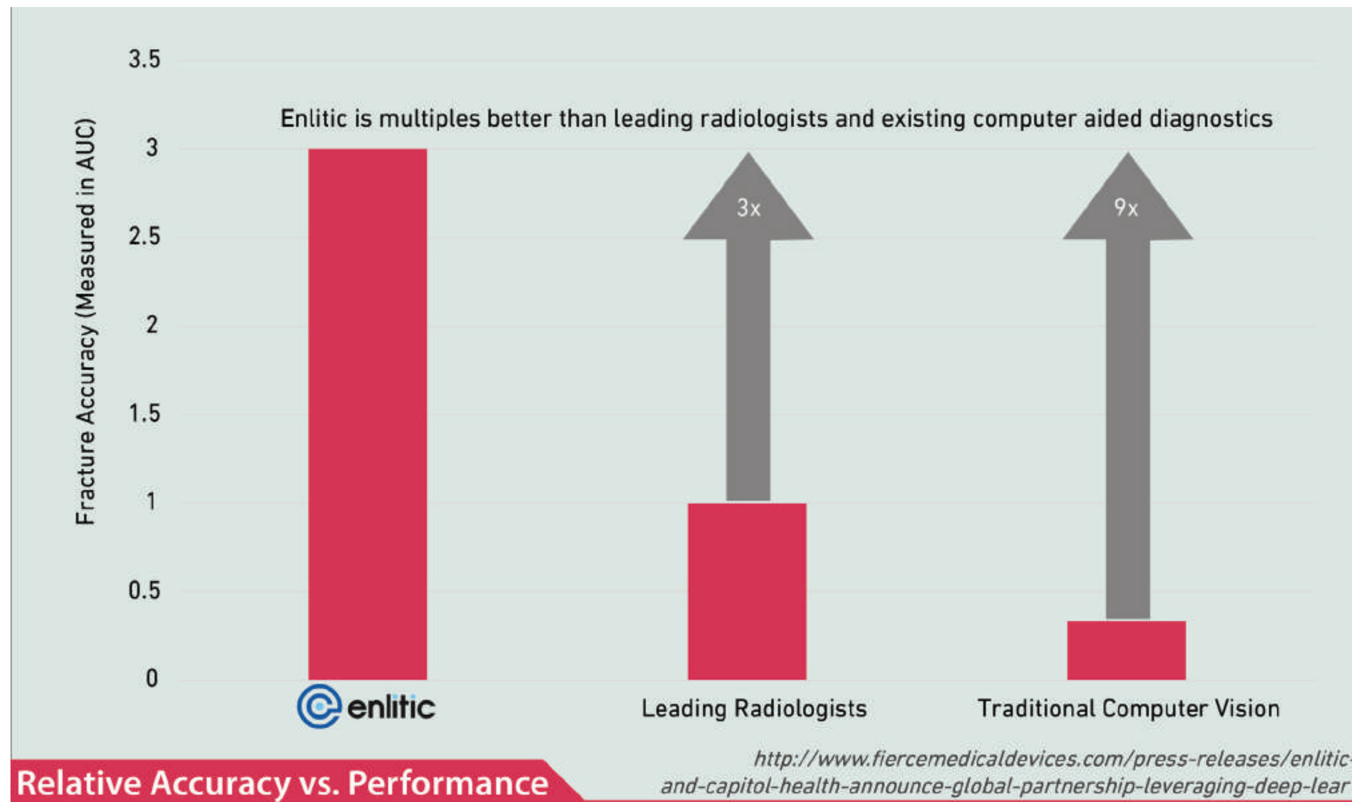
GE Healthcare, the Catalyst for Enlitic Technology

The more data Enlitic's algorithms have to train with, the more they will learn, and the smarter they will become. Currently, Enlitic is clinically ready to diagnose 12,000 unique conditions via imaging, but CEO Jeremy Howard envisions Enlitic applications in various other forms of personalized medicine. Conversely, GE Healthcare has access to one of the largest databases of medical images in the world, something that Enlitic needs to become proficient in. Enlitic recently entered into a partnership with Capitol Health in order to test its algorithms, which have been shown to perform better than top radiologist during a small-scale trial, but have never been tested in a large-scale trial. Capitol Health is a series of 51 clinics in Australia that provides services such as MRI, X-rays, CT scans and ultrasounds, etc. This is a good start for Enlitic, however it will not be nearly enough for Enlitic to compete with Watson Health and its 30B pieces of radiology data from Merge Healthcare.

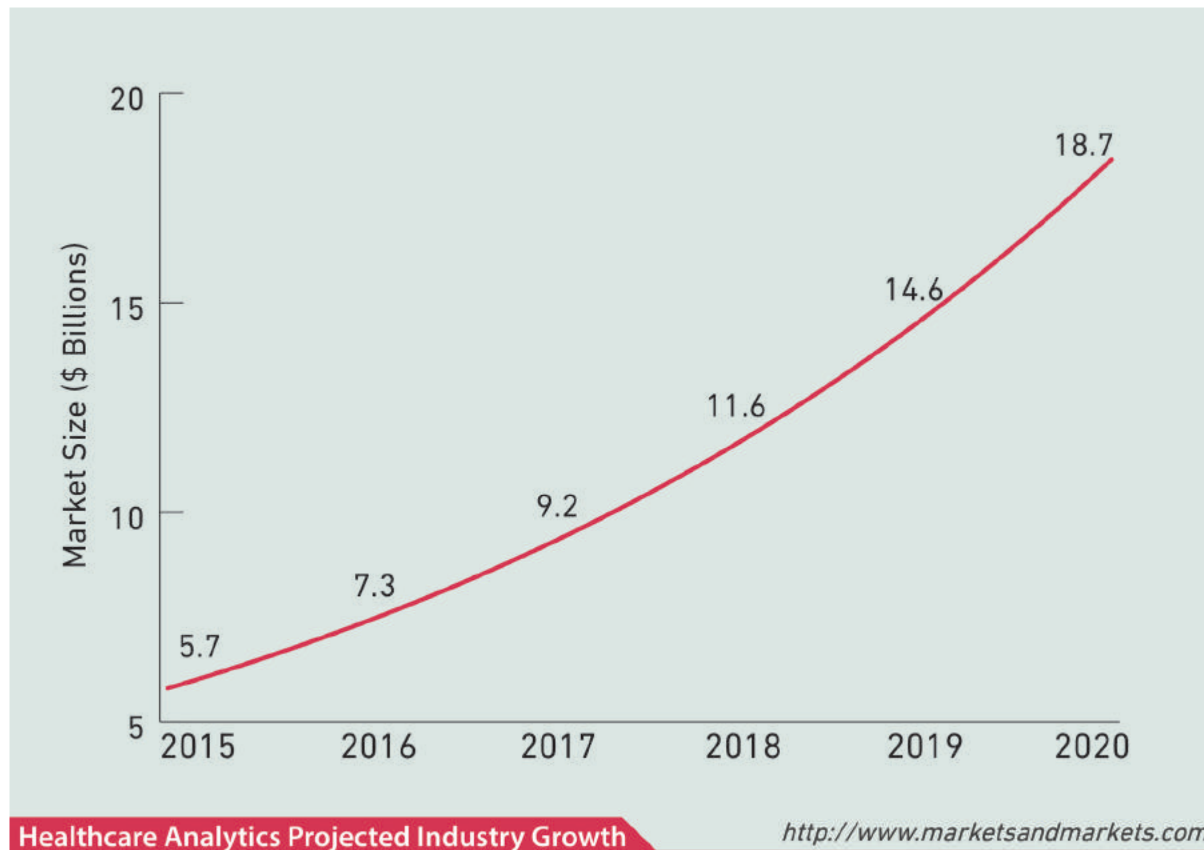
"IBM HAS SPENT OVER $1B TO DEVELOP WATSON AND MORE THAN A $1B ACQUIRING COMPANIES SUCH AS MERGE AND EXPLORYS IN ORDER TO ACCESS LARGE SETS OF RELEVANT CLINICAL DATA."

The Time is Now

The time for GE to acquire Enlitic is now. With proven technology on a small scale, Enlitic has raised $15M in funding to date. To contrast, IBM has spent over $1B to develop Watson and more than a $1B acquiring companies such as Merge and Explorys in order to access large sets of relevant clinical data. There will be no costs for GE to acquire the datasets Enlitic needs to grow. GE has been collecting data since the launch of its PACS system in 1992, while Merge's system only launched in 2001. This means GE has a bigger set of data at its disposal for Enlitics to learn from and improve. GE has an opportunity to acquire Enlitic's technology at a discount compared to other deep-learning companies that have much higher valuations but only offer solutions tailored to radiology data. GE can help Enlitic build a solution similar to Watson Healthcare. This type of investment aligns well with GE's goal of investing $2B in data analytics in 2013 over a period of five years.



Relative Accuracy vs. Performance



Healthcare Analytics Projected Industry Growth

If GE does not act while Watson Health is still in development, it is likely that Watson will become the industry standard. Down the road, GE will either have to license IBM's technology for a steep fee or play catch-up in an industry in which time is critical. GE could also lose market share to Merge Healthcare and its PACS technology, which will no doubt become attractive to healthcare sites with Watson analytics capabilities over the next few years.

Market and Markets predicts the global healthcare analytics market to grow from $5.8B in 2015 to $18.7B in 2020; a compound annual growth rate of over 26%. There is no doubt that this is a market GE wants to be a part of. GE Healthcare has the ability to inject a significant amount of value into Enlitic by providing it with the data it already has, as well as access to a large resource base from its parent conglomerate to make further investments into Enlitics. Based on Enlitic's most recent $10M series B round of funding in October 2015 and the $15M raised to date, the company could be acquired by GE for between $50M and $200M. With the infusion of GE Healthcare's data, Enlitic's technology could be developed to very accurately diagnose patients based on radiology and other data creating immense value for healthcare facilities. The value added to the company could be grown between 2 and 10x its current day value within five years. This could generate compound annual returns between 15% and 58%, far exceeding the high end of GE's weighted average cost of capital of 10%. There is a risk that the Enlitic technology will not be able to meet its growth expectations resulting in a value drop. Considering the market growth potential and the $2B GE has allocated solely for data analytics R&D, the benefits of an investment in Enlitic far outweigh the potential downside. This acquisition has the potential to create shareholder value of between $7.5M and $117M in the first year following the acquisition and between $13M and $535M in the fifth year of the venture with total value created of between $50M and $1.8B over five years depending contingent on the acquisition price and valuation after five years.

Once GE has developed the Enlitic technology, it can choose to keep it in-house to gain a competitive advantage or to license the technology similar to what IBM has planned for Watson Health. Alternatively, GE could spin out Enlitic entirely at a significantly higher valuation once the technology has been refined for a large one-time profit.

The Future is Here

The idea of a computer being able to take patient data, come up with a diagnosis and suggest a treatment is now within reach. GE Healthcare can position itself to be a major player in this fast growing market and deliver significant value to healthcare systems around the world simply by unleashing the power of the data it already has. GE will not only have multiple ways to profit from the acquisition, but it can be a leader in the development of healthcare artificial intelligence. The purchase of Enlitic will allow GE to be one step closer to its mission to "invent the next industrial era, to build, move, power and cure the world".

UPROOTING AN ENTRENCHED BANKING SYSTEM

FinTech start-ups pose a serious threat to the financial institutions in Canada, but Interac may be able to save the day

Kaitlyn Oh

With the rise of Netflix, Amazon, and Uber disrupting the media, retail, and taxi industries, the inconvenient truth is that banking is next on the horizon. With the rise of financial technology (FinTech) start-ups, Canadian banks could lose up to 60% of their retail banking and wealth management profits in the next decade. With retail banking accounting for anywhere from 50% to 70% of the Big Six Canadian banks' profits, the overall hit could be as drastic as a 42% decrease in their bottom line.

With low risk tolerance and product-focused business models, the Canadian banks are moving slowly in a time of turbulence with a greater focus on what they are selling rather than on how they are selling it. While some banks have invested into digital labs and mobile apps, these efforts have been marginal and still maintain the focus on products as opposed to innovation. With a product-focused approach, banks risk being disintermediated as start-ups accomplish the same tasks of transacting, depositing, and exchanging funds with greater speed and convenience. With the number of FinTech start-ups globally now estimated at 12,000 and the investment into these firms growing exponentially at over 100%, these firms pose a significant threat to the banks' traditional business models.

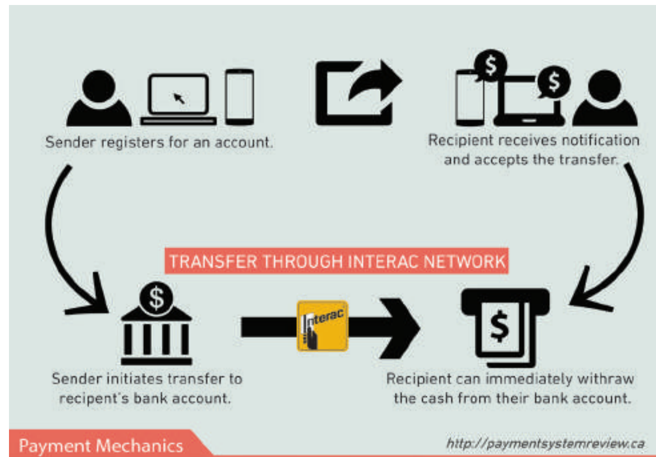
> **"WITH THE RISE OF FINTECH START-UPS, CANADIAN BANKS COULD LOSE UP TO 60% OF THEIR RETAIL BANKING AND WEALTH MANAGEMENT PROFITS IN THE NEXT DECADE."**

Drawing the Situation

Major threats are coming from all directions: lending, savings, and payments. The number of card products from alternative financial institutions, for example, PC Financial, Walmart, that are growing within consumers' wallets is resulting in lower credit card revenues for banks, particularly with increased interest in digital banking, for example, Tangerine, Zenbanx; and alternatives to foreign exchange, for example Transferwise.

The payments segment, comprising 35% of banks' profits and having experienced minimal disruption in the past 30 years, is particularly ripe for disturbance. With a growing number of new entrants, like Google Wallet and Apple Pay, the payments industry is inevitably undergoing an overhaul in its infrastructure, both domestically and for cross-border transactions.

In addition to threatening banks' revenue sources, new payment solutions are also jeopardizing the banks' access to customer data, a key source of competitive advantage



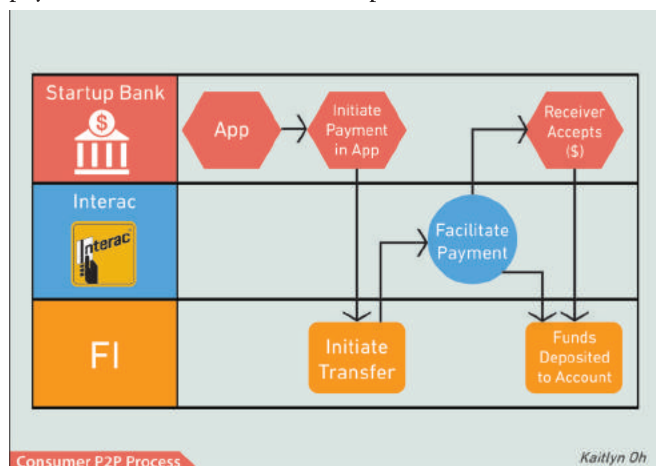
Payment Mechanics

over start-ups. As disruptor-facilitated payments run through independent systems, the information is scrubbed, leaving only the trace of the time and amount of the transaction. Without this transaction data, the banks are at a significant disadvantage when cross-selling and marketing their products. As products-based companies, without knowing which products to sell, the banks' business model is at stake.

Options for Change

Faced with the need for a plan of attack, the banks have three available options. One option is for banks to develop in-house capabilities to rival start-ups. With app development costs ranging from a meager $50,000 to $150,000 and taking approximately 10 weeks, in-house development seems like a formidable idea. However, the Canadian banks have a poor history of in-house attempts. CIBC attempted to launch a mobile wallet that encountered low adoption rates and an Android app rated 2.5 stars out of 5. Similarly, RBC has sunk millions of dollars into projects facing similar results or never having made it to market.

The other option could be to provide a platform for Application Program Interface (API) or outsource payment services to other companies. However, both of



Consumer P2P Process

these options provide the banks with little ownership and control in the development and future of the industry, and instead relegates them to a back-end role.

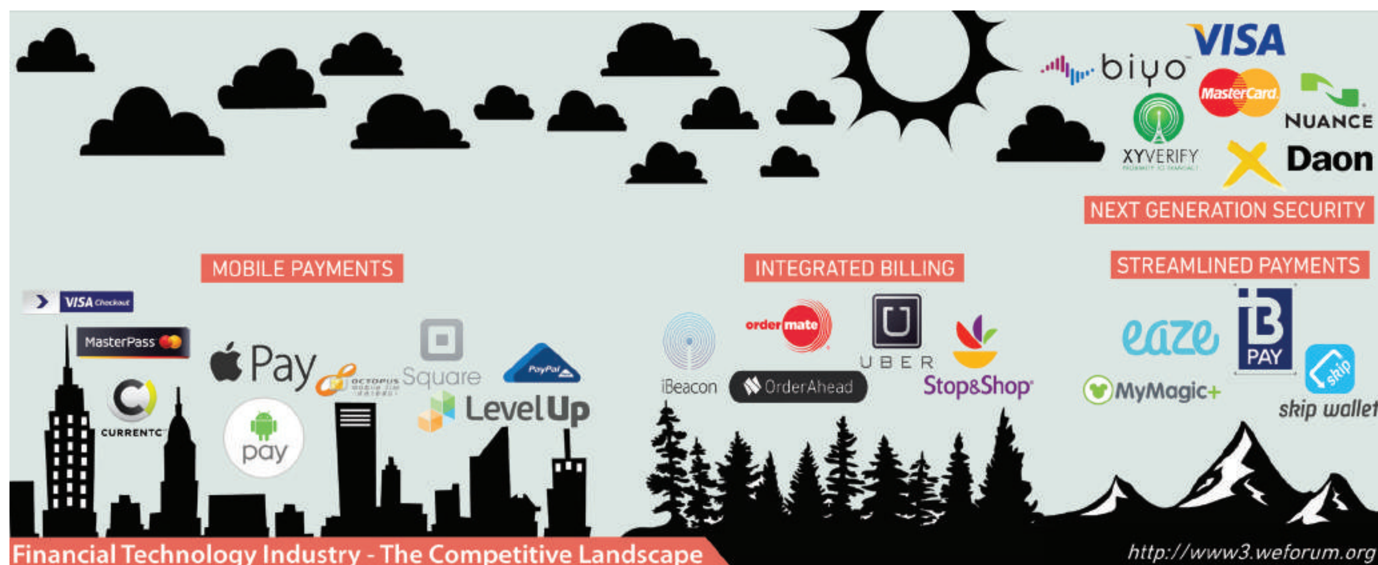
The third and most promising option is for banks to act as industry collaborators. Surveys indicate that more than 40% of banking CEOs view joint ventures, strategic alliances, and informal collaborations as the greatest opportunity for innovation and progress. In a study conducted by Deloitte UK, the collaboration option emerged as the clear preference for payments experts.

Leveraging the Network

Understanding that industry collaboration is the path most likely to be supported by CEOs of the Canadian banks, the banks need to turn to Interac - an avenue that would allow them all to succeed. The payment network holds the largest percentage of total number of transactions and is top-of-wallet for most Canadian consumers. It has national coverage and a 55% market share of the total transaction volume in 2012. With 9 out of 14 seats on the Board of Directors dedicated to the Canadian financial institutions, the banks have a vested interest and a great amount of control over Interac.

In the payment space, the Canadian banks and the start-ups specializing in payments can create a mutually beneficial relationship, where the banks can avoid previous failures of in-house developments and start-ups can reduce their financial risks on handling potential fraudulent transactions. Facing ever-growing threats and a tight timeline to develop in-house, Interac could act as a white-label network to facilitate peer-to-peer (P2P) payments for new financial institution related start ups, for example, Venmo, Popmoney and Chillr. It can provide an easy point of entry into the Canadian market place for the start-ups, acting as the network to facilitate the movement of funds, and charge the start-ups for the use of the payment network on a per transaction basis. In return, these new start-ups would allow Canadian banks to target millennial customers. Millennial customers have a longer customer life value since they are likely to still stay with traditional financial institutions as they grow older.

Start-ups would provide the user interface and technology backbone for any new apps and functionality; whereas the funds would be tied directly to customers' bank accounts. Many start-ups already have the capabilities to provide the technology backbone an investment of only $50,000 to $150,000 to develop the mobile app. Start-ups should be willing to collaborate with the banks since the convenience of having payments tied directly to one's bank account is cited as a key pain point for P2P payments. Additionally, this model would save the start-ups the hassle of handling payments and the risk of



carrying liability for any fraudulent transactions, as with the current Interac model. As a result of such partnerships, banks can offer joint banking solutions, thus adopting aspects of a digital bank without investing large amounts of capital and undertaking the risk in developing these types of solutions. This mutually beneficial arrangement would allow banks to move towards digitization and take on lower risk while still appearing innovative and capturing young consumers.

With a similar approach taken by the Indian bank, HDFC, and a new P2P start-up, Chillr, HDFC gained 50,000 app downloads in its first month of launch. Similarly, a Barclays bank in the UK launched Pingit in February 2012. Growing from a simple mobile P2P solution on all major mobile systems, the service generated £255M in transaction volume in two years. Pingit then reached over £1.2B in transactions the following year by registering over 48,000 merchants and launching "pay-by-mobile" functionality, permitting users to pay at point of sale terminals using mobile. The app experienced 1.5x growth in transaction volume in each year of operations, proving to be a great case study for the Canadian banks.

"FACING EVER-GROWING THREATS AND A TIGHT TIMELINE TO DEVELOP IN-HOUSE, INTERAC COULD ACT AS A WHITE-LABEL NETWORK."

Benefits to Start-Ups

Interac could provide a solution for start-ups to tap into the Canadian banking system. Already proven to be secure and established, Interac adds credibility to any Fin Tech start-up through its brand. Customers are demanding: two-thirds of Canadians are hesitant to trust anyone other than an established financial institution for making payments and 61% cite security as a major concern with mobile payments. As a burgeoning FinTech start-up, it is unlikely that a young company would be able to develop the level of trust necessary to overcome this inertia. In this manner, Interac could lend credibility to new start-ups and provide the support necessary to ensure greater traction and overcome some of these barriers to entry in the mind of the consumer. Additionally, the alternative for these start-ups to run payments is through a proprietary network, similar to PayPal. These closed-loop networks, which cut out intermediaries such as financial institutions, tend to be inconvenient and costly. It requires users to wait 1 to 3 days to cash out their funds and pay approximately 2.5% on the amount withdrawn.

This solution addresses more than just the consumer preferences; it also provides an easy way for start-ups to enter the Canadian market without going through the legalities of registering as a financial institution. The payments industry is heavily regulated within Canada, and to plug into the Interac network, companies need to be certified as financial institutions. This certification requires over $5M in paid-in capital, deep pockets, and

"BANKS CAN OFFER JOINT BANKING SOLUTIONS, THUS ADOPTING ASPECTS OF A DIGITAL BANK WITHOUT INVESTING LARGE AMOUNTS OF CAPITAL AND UNDERTAKING THE RISK IN DEVELOPING THESE TYPES OF SOLUTIONS."

the ability to accept deposits in addition to compliance with the 764-page Bank Act. This solution provides start-ups with a quick and easy way to enter the payment space, avoiding some of the regulatory restrictions around payments.

Short-Sighted Solution

The solution will only work in the short-term. Once the start-ups reach critical mass and can support their own infrastructure, the banks would have enabled one of their biggest threats, acting as the support to the fledgling start-ups. In the current proposed solution, the only aspects that would retain the start-ups on a long-term basis would be Interac's low pricing model. If the now-mature start-ups had deep pockets enabled by years of transacting through Interac and support from the Big Six banks, the start-ups could easily abandon the banks and take their user base with them.

The banks could pursue a number of tactics to retain these partnerships in the long-term. The first option would be to pursue acquisitions in lieu of partnerships; however, this option forces the banks to take on the risk of dropping large amounts of capital on unproven solutions. Another option could be for the banks to build contracts and force the start-ups into partnerships by making this the only way for start-ups to get access to the network initially. However, this option does not have a long-term view and contracts may eventually expire.

"TWO-THIRDS OF CANADIANS ARE HESITANT TO TRUST ANYONE OTHER THAN AN ESTABLISHED FINANCIAL INSTITUTION FOR MAKING PAYMENTS AND 61% CITE SECURITY AS A MAJOR CONCERN WITH MOBILE PAYMENTS."

A third option available to the banks could be to co-brand the start-up solutions to ensure that the Interac brand name is propagated amongst consumers, similar to the way that MasterCard and Visa have become synonymous with credit cards. Through a co-branded effort, start-ups would still reap the benefits of Interac's infrastructure, but Interac would also gain exposure to direct consumers. While this brand is established through the co-brands, Interac and the Canadian banks could begin developing their own in-house payment solutions. With the launch of these new in-house payment solutions, they could begin to gradually phase out and move users to their own proprietary solution without relying on the start-ups any longer. With a strong presence among its customers through the co-branding strategy, Interac has hope to help the Canadian banks retain the customers which were rightfully theirs.

"ONCE THE START-UPS REACH CRITICAL MASS AND CAN SUPPORT THEIR OWN INFRASTRUCTURE, THE BANKS WOULD HAVE ENABLED ONE OF THEIR BIGGEST THREATS, ACTING AS THE SUPPORT TO THE FLEDGLING START-UPS"

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CAPTURING SAVINGS FOR CAPITEC

Capitec Bank has an opportunity to increase its deposits using the principles of behavioral economics in South Africa

Vedant Suri, Michael Yuan

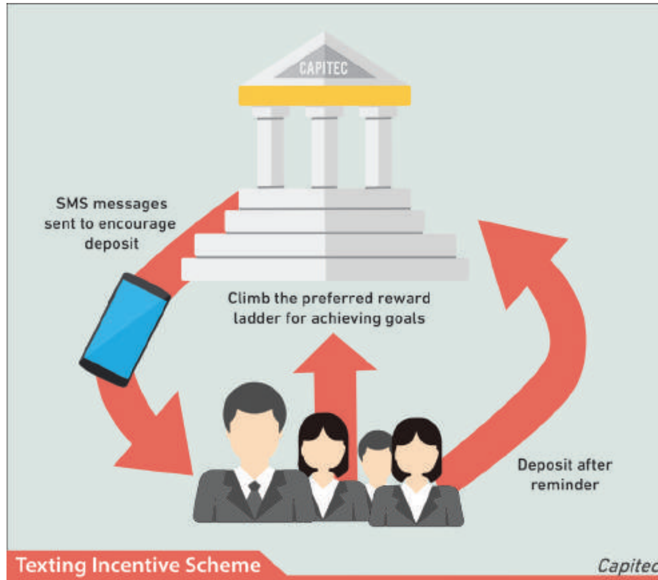
Presently, South Africa has a flourishing and fast growing banking system; however, its growth potential is stymied by limited household savings. While a large number of South Africans embrace the banking system, 57% remain skeptical and have either chosen not to save or save very little. The flourishing financial system is exemplified by Capitec, which is one of the fastest-growing and most innovative banks in South Africa. It has experienced a fourfold revenue increase since 2009 and has the second largest market share for unsecured lending, with 26% of the segment. However, it only holds a 4.5% share of the retail household deposit market, meaning there is considerable room for growth. Capitec generates profit through transaction fees and through the interest spread between the rate at which it lends and borrows. Lagging in the capture of retail household deposits encumbers Capitec's growth potential, as deposits fuel lending and drive greater interest income. Moreover, beyond increasing Capitec's capital base, a greater number of deposits would increase bank visits and lead to greater transaction fees.

"THE LOW TO MIDDLE CLASS IN SOUTH AFRICA HAS AN AVERAGE ANNUAL INCOME OF $7,000 USD, AND WITH 61% OF THAT SPENT ON HOUSEHOLD CONSUMPTION, IT IS CLEAR THAT THERE IS MONEY TO BE FORMALLY SAVED."

Capitec has both fixed and flexible savings accounts that target both revenue models. Deposits in flexible savings accounts are mostly invested in money markets to keep them liquid, such that they rely on transaction fees. Alternatively, fixed accounts are lent to short-term, less liquid borrowers and rely on higher interest income, but lower transaction fees. Regardless, an increase in total deposits will allow for faster long-term growth for Capitec.

Depositing Dreams

Increasing total deposits can result from some combination of increasing the deposits per customer currently banking with Capitec and through adding new customers to the bank. Capitec holds over $3.2B USD in deposits, which equates to an average of $482 USD deposited by each customer. The low to middle class in South Africa has an average annual income of $7,000 USD, and with 61% of that spent on household consumption, it is clear that there is money to be formally saved. Therefore, Capitec stands to gain a considerable number of deposits, on which it can generate returns by targeting its existing customer base. However, Capitec faces an uphill battle resulting from a general distrust of banks in the country. Further, banks are not well integrated into the daily lives of South Africans, resulting in many more forgoing saving altogether. Therefore, there is considerable room to employ theories of behavioral economics to entice greater savings by existing customers.



Banking on Texts

Capitec should develop a system whereby clients set a specific weekly savings goal and each saver is sent a weekly SMS message from a bank officer reminding him or her of the savings goal. In addition, the saver should be encouraged to name three to five confidantes to also receive weekly SMS messages of the saver's progress, which can be expressed in percentage terms to protect privacy. The inclusion of family members and close friends would create positive social pressure for the saver to achieve the weekly target, increasing deposits. If a customer meets his or her yearly savings target, he or she would receive a gold appreciation card signed by the CEO that allows him or her preferred access in Capitec branches. Preferred access would take the form of line by-pass and more personalized treatment. In the event that gold appreciation cards become more prevalent as South African's are encouraged to save, Capitec can offer higher tiers of cards indefinitely that require further savings and offer better rewards. This will encourage savings through positive reinforcement and foster aspirations amongst the client base to become preferred members.

"FURTHER, BANKS ARE NOT WELL INTEGRATED INTO THE DAILY LIVES OF SOUTH AFRICANS, RESULTING IN MANY MORE FORGOING SAVING ALTOGETHER."

Africa is Texting

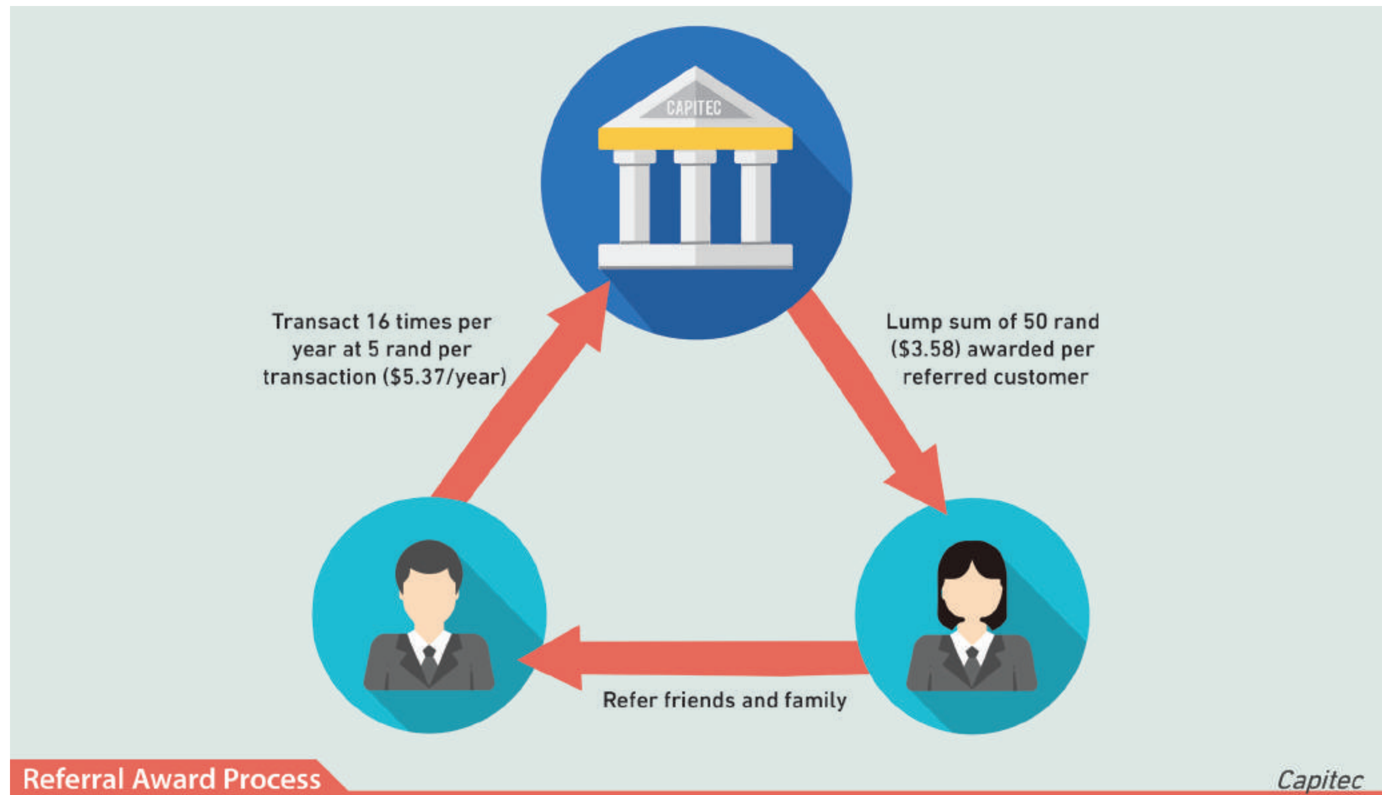
Although Sub-Saharan Africa is not a wealthy region, it has one of the highest mobile phone adoption rates in the world. South Africa's mobile phone penetration stands at 133% of the population, meaning the SMS recommendation could achieve high penetration. Furthermore, South Africa has a unique culture in which social pressure is very effective in influencing individual action. Social pressure does not need to be actively enforced, and simply knowing that others are monitoring their savings activity can pressure customers to deposit more. This informal savings mechanism is incredibly popular in the country, and the participation rate is high due to positive social pressure. Therefore, involving family and friends of savers would encourage effective commitment. While social pressure can help drive greater savings from current customers, it can also be harnessed to attract new customers.

"CAPITEC SHOULD DEVELOP A SYSTEM WHEREBY CLIENTS SET A SPECIFIC WEEKLY SAVINGS GOAL AND EACH SAVER IS SENT A WEEKLY SMS MESSAGE FROM A BANK OFFICER REMINDING HIM OR HER OF THE SAVINGS GOAL."

Referring Growth

Referrals can be used to encourage people who are currently not with Capitec to join the bank, which would increase deposits. Given that South Africans are strongly influenced by social pressure, a friend or family member could entice a person to switch from a competitor or to join the formal banking sector. Furthermore, South Africans have low confidence in banks and many are reluctant to deposit. However, Capitec has a network of over 6M people that can be used as brand ambassadors to present a friendly face to non-customers to improve confidence. This is an advantage to the referral program that is mostly impossible for Capitec to replicate through other means of advertising. In order to entice existing customers to refer others, some sort of benefit would need to be provided. Fully banked customers transact an average of 32 times per year, so it is reasonable that newly referred customers would do so at least half of that. With an average transaction cost of R5, Capitec would receive $5.37 USD annually from each new customer. There would be an obvious cost associated with such a program, although it would be outweighed by the benefits from new customers. By offering R50, or $3.58 USD per referral as a cash payment to referrers, Capitec would enjoy an 8 month payback for each incremental customer. Moreover, Capitec would benefit by using a tiered rewards system that incorporates behavioral economics. Under this system, the referrer would receive a higher lump sum payment into his or her account for each marginal customer he

"ALTHOUGH SUB-SAHARAN AFRICA IS NOT A WEALTHY REGION, IT HAS ONE OF THE HIGHEST MOBILE PHONE ADOPTION RATES IN THE WORLD."



Referral Award Process

or she successfully referred. Additionally, if he or she were also one of the new customer's contacts in the SMS savings program, there would be an additional reward. The referral system would lead to more customers and help to overcome the hurdle of a lack of confidence in banks; however, Capitec must also take additional steps to ensure it is more trusted.

Championing Confidence

Capitec should introduce a no-cost program where experts are placed in branches and customers can book one-on-one meetings or group sessions to learn about the importance of saving. These sessions should be used to not only explain why an individual should deposit with a formal bank, but also how the mechanics of depositing, reserves, and lending function. Specifically, an emphasis should be placed on communicating the social benefits of a formal banking system through increased economic activity. Additionally, a broader community outreach program should be established where Capitec would sponsor local events. This sponsorship would allow the savings representatives to speak more informally with members of the public and offer a glimpse of a more human side of the bank.

"CAPITEC HAS A NETWORK OF OVER 6M PEOPLE THAT CAN BE USED AS BRAND AMBASSADORS TO PRESENT A FRIENDLY FACE TO NON-CUSTOMERS TO IMPROVE CONFIDENCE."

This outreach, coupled with the savings experts would improve the perception of Capitec and help to lay the groundwork for more significant engagement in deposits. Together, all the recommendations would lead to greater deposits at Capitec.

Success through Saving

Capitec is a successful bank and a leader in South Africa that has enjoyed tremendous profit and share price appreciation. However, Capitec must alter its strategy in order to attract more deposits that will allow it to continue to grow. By using behavioral economics in SMS and referrals, as well as building a better brand, Capitec will be making the necessary strategic deposit today to ensure it sustains success tomorrow.

ESPORTS GAMBLING: COSMO'S NEXT LOTTO

Cosmo's next big bet should be on eSports to allure Millennials to Vegas

Lucas Dunlop, Amit Shankar

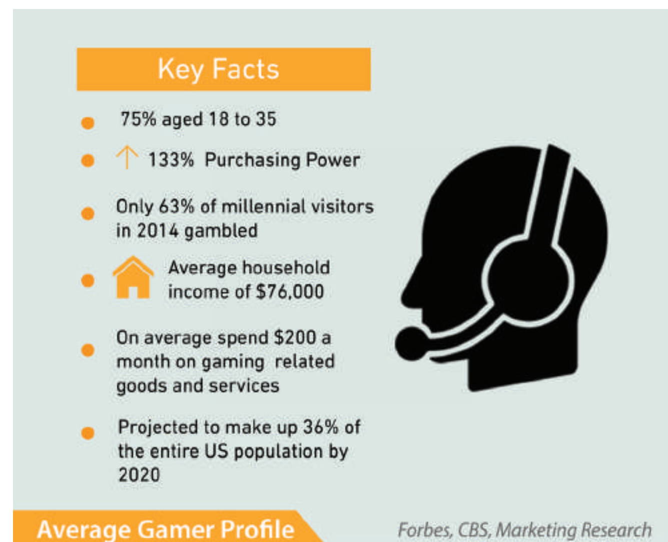
Las Vegas, the most iconic gambling destination, is on a losing streak. The casinos on the Las Vegas Strip collectively saw a 16% decline in gambling revenue from last year. While a portion of the decline can be attributed to the Chinese anti-gambling regulations, the gambling industry is also facing the long term problem of a changing demographic in their customer base. The new customers rolling into Las Vegas are millennials: young tourists who are generally less enthusiastic about gambling than they are about visiting the lavish nightclubs, concerts, and other diversions the city has to offer. In 2015, gambling only accounts for less than 37% of revenue on the Strip, whereas gambling used to make up over half the revenue in 1984.

A New Player Joins the Game

Millennials are investing time into the world of eSports, an industry which has exploded in the past few years. Video games are no longer limited to just those at the controls; competitive video gaming is on the rise as a spectator sport. Games like StarCraft and League of Legends have filled stadiums with millennial fans, all cheering for their favourite players as they fight for the titles of World Champion in their respective games. Formerly limited to professional players, organized multiplayer video game competitions now attract over 134M regular viewers worldwide. Championed by corporate sponsorships, prize pools, and advertising, the market is currently estimated to be worth $72M in Europe, $143M in North America, and $374M in Asia. Growth is expected to continue in this industry, and revenue generated directly from the eSports industry is estimated to exceed $1.2B by 2020.

The Wheel of Fortune Turns

eSports has the potential to rival and surpass the popularity of many established professional sports, and its ascent can be accompanied by the growth of gambling on eSports. According to the gaming industry research firm Eilers Research, more than $250M will be wagered on the outcome of eSports events in 2015 – this amount is expected to exceed $23B by 2020 in the conservative estimate. It is estimated that about 32.5M bettors will wager $42.9B by 2020, generating $3.3B in revenue for operators whereas the Strip last year collectively only made $6.4B in revenue last year.

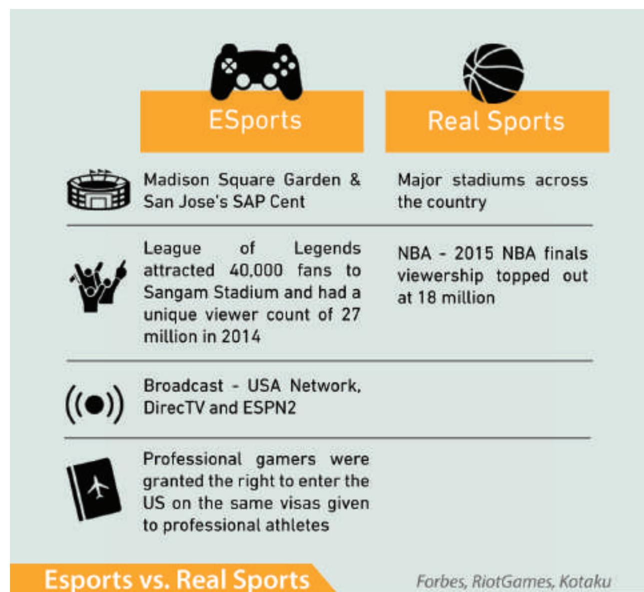


Further, many eSports viewers are already gambling. Unikrn, an eSports-only wagering site, believes it will double the number of eSports enthusiasts to 20M in the next year. However, in the US, where online gambling is illegal, participants can only bet with virtual currency holding no monetary value in the hope of winning prizes. This indicates that there is an untapped market of eSports enthusiasts who want to gamble money but cannot legally do so in the US. Gambling on eSports is a perfect fit for millennials, as it involves both a social aspect and an element of skill.

Bringing in eSports enthusiasts can provide casinos with gambling revenues as well as other spending such as lodging and shows. For every dollar spent on gambling, approximately $3.34 is spent on other casino amenities. Thus every millennial brought in by the casino will yield much more than just his or her gambling potential. The fast growing eSports market offers Las Vegas casinos the opportunity to capitalize on a ground-breaking industry which has been popularized by the millennial generation.

Perfect Pairs: eSports and the Cosmo

The Cosmopolitan Las Vegas (The Cosmo), a luxury resort casino located on the Strip, is a casino which is particularly fit to benefit from eSports gambling. The Cosmo is the perfect location to become a Las Vegas eSports hub based on its past events and managerial alignment with the idea of eSports. In 2012, IGN Entertainment, a games and entertainment media company, hosted two IGN Pro League (IPL) tournaments in the Cosmo. The tournament hosted Korea's Global StarCraft Team Leagues (GSTL) and was one of the most anticipated eSports events of 2012. The event garnered 20,000 attendees with the online events capturing 300,000 concurrent broadcast views. Although the event was not profitable, it successfully captured the attention of many eSports enthusiasts. It was hosted to eclipse the viewership



Esports vs. Real Sports

> **"VIDEO GAMES ARE NO LONGER LIMITED TO JUST THOSE AT THE CONTROLS; COMPETITIVE VIDEO GAMING IS ON THE RISE AS A SPECTATOR SPORT."**

of traditional sports and bring a luxury experience to both players and fans. Through this event, the Cosmo became one step closer to successfully establishing itself as a casino fit for eSports. In addition to the 12 to 16 hours of programming offered for the tournament, IGN believed that a casino setting provided fans with exciting alternatives during breaks such as gambling, dining at top restaurants, and visiting popular nightclubs like the Marquee. This ultimately led to increased revenues for the Cosmo as well.

Despite the partnership coming to an end in 2013 due to IGN's financial difficulties, the success of the 2012 events highlight the willingness and capability of the Cosmo to host eSports events in the future. Lisa Marchese, Chief Marketing Officer at the Cosmo, has also reinforced the property's willingness to host eSports events: "The IGN Pro League tournaments are very unique and just another way in which we evolve our entertainment and guest experiences; The Cosmopolitan of Las Vegas is excited to be at the forefront of the eSports phenomenon and serve as its Las Vegas headquarters."

Drafting a Game Plan

The Cosmo needs to once again host large-scale, high-profile events in order to build a presence for themselves in the eSports community. The key to building successful eSports events and tournaments is to select the right partner. DraftKings, a daily fantasy sports company for traditional sports, would be an ideal company with which to partner. With over 2M registered users and rising entry fees from $45M in 2013 to $304M in 2014, DraftKings is experiencing hypergrowth. In September 2015, DraftKings announced its entry into eSports. This announcement has positioned DraftKings as a competitor of incumbent eSports betting platforms such as Vulcun and Pinnacle.

Despite its strong brand awareness as a daily fantasy platform for traditional sports, DraftKings must find ways to differentiate itself in the world of eSports. Jason Robins, CEO of DraftKings, has expressed interest in casinos and would like to work with them to put on great events for players in this space. DraftKings' new entry into the eSports market, its strong brand recognition, and management's desire to partner with casinos makes it the perfect partner for the Cosmo.

There needs to be fixed attractions at the Cosmo which will attract the eSports enthusiast on a regular basis, outside of one-

"WITH OVER 2M REGISTERED USERS AND RISING ENTRY FEES FROM $45M IN 2013 TO $304M IN 2014, DRAFTKINGS IS EXPERIENCING HYPERGROWTH. "

time events. The Cosmo should implement an eSports Bar and an eSports sportsbook.

eSports Bar

An eSports Bar is similar to a sports bar where sports enthusiasts gather to watch games together and bond with a community of other fans. An eSports bar will be similar with an array of screens around the bar showing games of various types and opportunities to play in amateur tournaments. There are currently no existing eSports bars in Las Vegas, which will allow the Cosmo to entice eSports fans to its hotel. The concept of an eSports bar has already been tested in other geographies. For example, there is a successful chain of eSports Bars based in France called Meltdown, with locations in London, Berlin, and other cities throughout Europe.

Although eSports is a culture which largely developed online, people behind the screens have a shared experience and a shared passion. The existing eSports bars are lively and loud, with crowds cheering for players and teams as they appear on stage and in post-interviews. The constant buzz of people discussing games with vibrancy is impossible to replicate through a computer screen. Additionally, since millennials travel to Las Vegas for highly social and interactive environments, the eSports bar will lure millennial eSports fans in with the promise of extending the social online world into the physical world.

eSportsbook

Most casinos already offer a sportsbook: a place where gamblers can wager on the outcomes of traditional sports such as football, hockey, and soccer. By incorporating eSports, the Cosmo could become the first casino in North America to offer an eSportsbook. The demand to gamble on eSports is clearly illustrated by the success of non-cash betting websites, such as Unikrn. Thus, the current US gambling laws which prohibit online gaming anywhere in the US but allows eSports gambling in person in Nevada, give Las Vegas a golden opportunity to capitalize on a phenomenon already popular with millennials.

In the eSports bar, active gaming tournaments could be displayed on multiple screens with betting lines clearly displayed, creating a unique environment where eSports enthusiasts could watch, socialize, and gamble on the outcome of their favourite eSports matches. Having an eSportsbook where gamblers and the house can bet on multiple outcomes throughout the game will further increase profitability of the existing sportsbook. It also aligns well with millennials' preference for higher-skilled games rather than those based on chance.

Making the Right Bet

This is an ideal time for the Cosmo to make an investment because of their recent profitability and the availability of vacant space. Blackstone executives announced in early 2015 that they are looking to add new bars and restaurants in vacant spaces on the first three floors.

The initial investment to build the eSports bar and eSportsbook will take approximately $980,000. This figure includes software costs for the sportsbook and renovation costs for a 5,000 sq.ft bar and sportsbook area. On a per eSports visitors basis, profit of $477 is expected from lodging, food, entertainment, and the sportsbook revenues. Thus, the payback for the investment is 2,055 eSports visitors. It is highly likely that the Cosmo can profit from this investment given that the eSports event hosted by the Cosmo in 2012 attracted over 20,000 attendees and the Cosmo has a daily occupancy of 2,800 visitors.

Conclusion

Las Vegas is built on gaming – skill, strategy, and a touch of luck. In recent years, the Strip has strayed from its original path, relying on flashy shows and entertainment for the majority of its revenues. The Cosmopolitan has the opportunity to not only revolutionize the Las Vegas Strip, but bring it back to its roots by providing a unique eSports gaming experience to millennials. By placing itself in the forefront of eSports, the Cosmo can position itself for an explosive growth in eSports gaming industry in the future. In other words, eSports is a gamble on which the Cosmo will not lose.

TWITCH INTERACTIVE: THE STREAMING MARKET WAR

After Google launched YouTube Gaming, Twitch needs to level up fast in the face of a major competitor in the streaming market

Marco Lo, Kevin Zhang

Last summer, the gaming world eagerly anticipated the acquisition of videogame streaming platform Twitch Interactive by Google. But when Google was unable to close the deal due to antitrust concerns, Amazon swiftly entered into negotiations with Twitch and acquired them for $1.1B. Unwilling to give up on the streaming market, Google launched its own version of Twitch - YouTube Gaming.

Twitch.tv is a website that allows users to livestream their computer screen over the internet as they play videogames. Visitors can watch these streams and interact with other users, including the streamer. For the past few years, Twitch has dominated the live game-streaming segment; however, YouTube Gaming's entry marks a turning point for the industry - Twitch now has a major competitor.

No Lags in the Streaming Industry

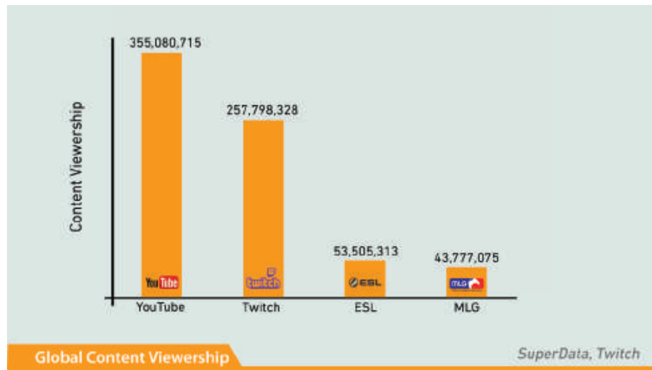
The audience for video gaming content has doubled in the past four years, and is projected to double again in the next four. In this booming $3.8B videogame viewing industry, Twitch currently holds 43% of global revenues with its live streaming platform. This is higher than YouTube's 36%, despite Twitch having 20% lower viewership. It is clear why companies such as YouTube would want to branch out from static video and enter the increasingly lucrative segment of dynamic gaming video content.

The rise of mobile gaming is causing a surge of new casual gamers, while existing gamers are becoming increasingly engaged in the gaming culture and increasing their monthly spend. Another trend is the development of electronic sports (eSports), which are competitions between professional gamers. The International, an annual tournament for the fan favorite game Defense of the Ancients 2 (DotA2), had a prize pool of over $18M in 2015, up from $11M in 2014 and $3M in 2013. Another popular game, League of Legends, hosted their World Championships this year where an estimated 45M viewers worldwide tuned in, up 40% from the previous World Championship. For Twitch, this has translated into 100M unique viewers and 16B minutes viewed per month in 2014, up 122% and 33% respectively from the previous year.

The YouTube Factor

YouTube Gaming stands out from all of Twitch's past upstart competitors because of its established brand. YouTube commands 73% of all viewership for video gaming content, due to its dominance in the static video segment. Furthermore, almost every Twitch user is also a YouTube user. In fact, many Twitch streamers also make videos for their YouTube channels, or upload their broadcasts to YouTube for archiving and for

"IN THIS BOOMING $3.8B VIDEO GAME VIEWING INDUSTRY, TWITCH CURRENTLY HOLDS 43% OF GLOBAL REVENUES WITH ITS LIVE STREAMING PLATFORM. "



Global Content Viewership SuperData, Twitch

additional revenue. This development creates a tempting opportunity for users to consolidate their streams and videos on the same platform.

The main advantage of YouTube Gaming over Twitch is its superior functionality. It offers 1080p60 video on an HTML5 engine, as well as a rewind function during live broadcasts - none of which are offered by Twitch. It has already surpassed Twitch in developing innovative features, such as a mobile app that allows users to stream their mobile games while using their front camera to incorporate themselves into the stream.

YouTube offers everything Twitch does, from streaming to monetization to viewer chatrooms, and does many of them better than Twitch. Even though YouTube Gaming is a new project, it has already streamed various eSports events with high viewership alongside Twitch. If Twitch does not address its competition accordingly, Amazon's billion-dollar investment could be run into the ground.

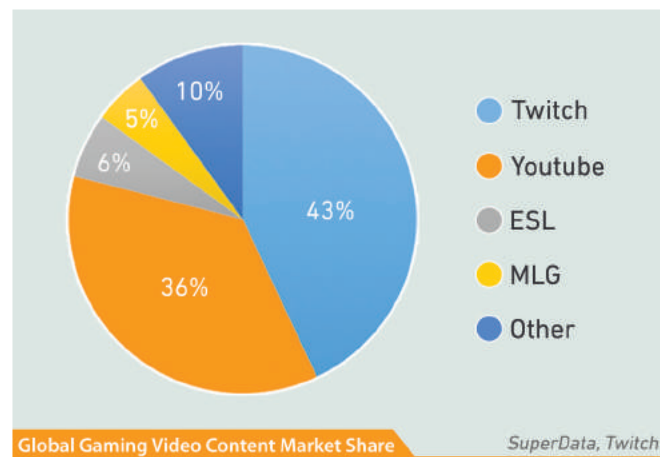
The Next Level

The live game-streaming segment will become increasingly attractive to new entrants. YouTube is only the first of many competitors that will emerge in an attempt to capitalize on the growth trajectory of the industry. Instead of focusing on competing against YouTube, Twitch will need to establish a unique value proposition for its users going forward. All entrants will be able to create a similar streaming platform and provide the same functionality. With more competition, streamers will have more bargaining power and platforms will need to compete on price. In addition, the existence of multiple platforms will drive functionality and services, so Twitch must invest in infrastructure and service improvements in order to consistently exceed the expectations of its two main users – viewers and streamers.

Amazon's Structure & How To Cross-Sell Amazon.com

Attracting Viewers

For viewers, there are two fundamental elements contributing to Twitch's entertainment value. The first is social interaction with streamers and other viewers through chatrooms links, games, and other platforms. The second is high quality gaming content for viewing. Twitch's current success is attributable to having the largest community of hardcore gamers and the most popular streamers. Twitch can improve its user experience by facilitating more community interaction. However, relying on this network effect is likely unsustainable as the model is easy to replicate by competitors such as YouTube Gaming, who also hold large established communities.



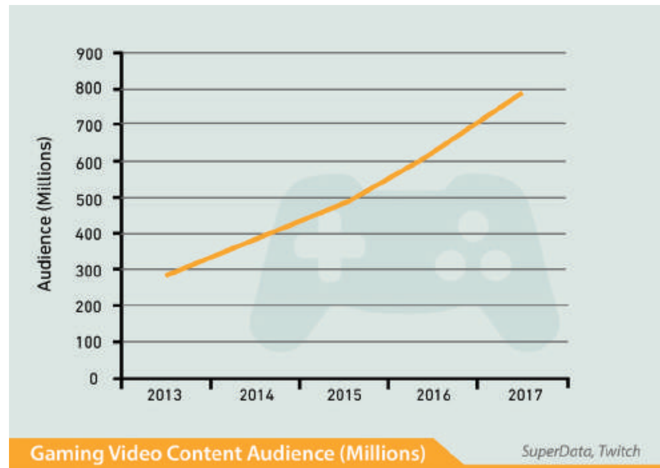
Global Gaming Video Content Market Share SuperData, Twitch

Ultimately, viewers are attracted to their favourite streamers, not the platform. Twitch consolidates popular streams in one place and makes it convenient for viewers to see who is streaming at any given time. However, there have been cases with famous gamers and foreign events that have moved off Twitch, where viewers visited other streaming platforms. In short, viewers go where the content is, and by attracting popular streamers and event organizers, Twitch will naturally draw in viewers.

Retaining Streamers

There are two types of content on Twitch: organized events and individual streamers. Twitch has long-standing relationships

"YOUTUBE GAMING STANDS OUT FROM ALL OF TWITCH'S PAST UPSTART COMPETITORS BECAUSE OF ITS ESTABLISHED BRAND. "



Gaming Video Content Audience (Millions)

with event organizers, thus there is little risk in losing the former type of content. However, because the largest gaming events stream on multiple platforms internationally Twitch is not unique in this aspect. Twitch differentiates itself because the most popular hardcore personalities are on Twitch and not elsewhere.

Twitch currently has a strategy for retaining streamers that involves 11,000 contracts with exclusivity clauses prohibiting top streamers from using other platforms. However, these contracts are unreliable as they are always subject to efficient breach by streamers and only serve to damage Twitch's reputation as a customer-first company. Twitch must focus on satisfying streamers' needs and wants to create pull-factors and the desire for streamers to voluntarily stay on Twitch.

Streamers are gamers at heart who enjoy playing games and sharing the experience with other gamers. They have two key motivators: personal enjoyment and money. While money is secondary, it is still important. Full-time streamers make trade-offs between streaming versus pursuing another career and income is an easily-quantifiable way to compare different opportunities and platforms. In addition, streamers will likely leave for new opportunities as they age, making way for new streamers to replace them. Thus, to create value for streamers, Twitch needs to add new forms of entertainment, facilitate more innovative means of user interactions, and provide competitive incomes.

Collecting the Coins

As the industry becomes increasingly competitive, streaming as a service will become commoditized and platforms will reach a point in the long-run where price competition is not a feasible way to retain streamers. Therefore, Twitch will need to find new ways to generate revenue to match these prices and create a unique competitive advantage to retain streamers that cannot be easily replicated.

Within a standardized streaming space, cross-selling presents Twitch with a new way of generating revenue. Although Twitch only represents 1.8% of Amazon's revenues, it holds a user base of 100M people, consisting of many hardcore gamers that can be monetized. Hardcore gamers spend over $128 on gaming products every month and Twitch can use promotions to move spending from competitors to Amazon. While Twitch currently provides streamers with a merchandising platform on the website, these offerings can be extended by linking to Amazon's online retail, making merchandising more convenient for streamers. For example, Twitch can advertise discounts for headsets, keyboards, mobile games, console games, and other products that viewers would already want to purchase. Amazon can further take advantage of the specific genre of video content prevalent on Twitch and target advertisements of the aforementioned gaming accessories and peripherals directly to the gaming community. Thus, the introduction of cross-selling presents a $3B opportunity, which is almost double Twitch's current revenues. In addition, Twitch can collect data on viewer spending and use it to offer more targeted advertisements at higher rates. However, Twitch and Amazon must make sure that both stay true to their customer-centric philosophy. Twitch should be cautious not to bombard users unaccustomed to such advertising with an excessive amount of cross-selling offerings.

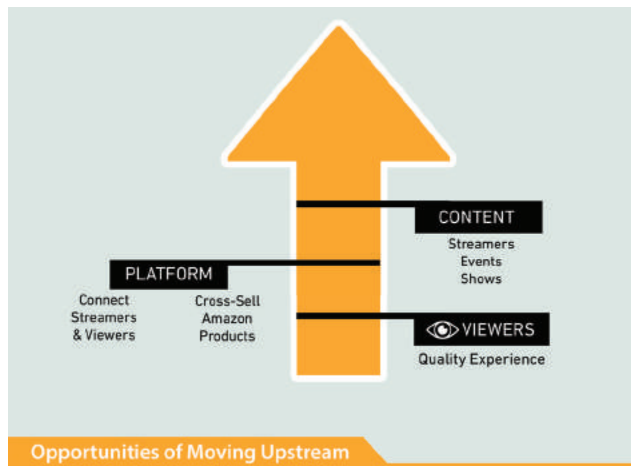
These new revenue streams allow Twitch to be more flexible with regard to profit margins in comparison to competitors. The ability to monetize each streamer directly influences how much Twitch can pay streamers. Thus, as other platforms compete for streamers, Twitch will always be able to offer higher revenue shares, which protects it against price competition.

However, the gaming industry is susceptible to a quick and constant generational flush effect of gamers leaving and new gamers moving in. In this landscape of increasing competition, Twitch's biggest risk is that its unique content is heavily dependent on a constantly changing streamer base. Twitch needs to find a way to ensure viewer retention long-term that is not susceptible to streamer churn.

Levelling Up(Stream)

To help mitigate the risk of streamer generational flush, Twitch should grow beyond a streaming platform and move upstream into content creation. This strategy will further establish Twitch as a hub of eSports and build brand equity. If streamers and viewers recognize exclusive quality content as originating from Twitch, it will create customer loyalty as users develop preferences for their favorite content and by extension the content creator. Moreover,

"IF TWITCH DOES NOT ADDRESS ITS COMPETITION ACCORDINGLY, AMAZON'S BILLION-DOLLAR INVESTMENT COULD BE RUN INTO THE GROUND."



Opportunities of Moving Upstream

the introduction of unique content will attract new viewers to which Amazon can cross-sell products.

As Twitch already streams many large gaming tournaments and conventions, it should organize some of its own events as well. Twitch has close relationships with game developers and event organizers, and the success of TwitchCon, which attracted 20,000 visitors in September 2015, proves Twitch's capabilities. These events will be streamed exclusively on Twitch, which creates a new channel of unique content apart from streamers.

Unique content has been shown to successfully increase viewership. Netflix's largest growth period to date was in 2011 when they began producing their first original show House of Cards and grew revenues by 48%. Similar to Netflix, Twitch has established a large audience which secures an initial viewer base for newly produced content to grow off of. Twitch's advertising charges based on number of impressions, thus an increase in viewership directly translates into increases in advertising revenue.

Upstream movement addresses the issues created by the generation flush by providing a sustainable source of unique content that is not affected by a changing viewer base. It also creates a competitive advantage that will be difficult to replicate. If Twitch is proactive in undertaking this content creation while operating as the most prominent service among hardcore gamers, the degree of loyalty it accumulates will serve as a sustainable leadership position.

TwitchCup: a Twitch Original

Currently, the most popular games such as DotA 2 can have a standalone tournament and attract 3M concurrent viewers worldwide. On the other hand, less popular games like Hearthstone and Call of Duty only attracted 80,000 to 135,000 concurrent viewers at their events, despite being supported by the powerhouse Blizzard. There are also many games that only have online tournaments because there is not enough interest to support a physical event. In comparison, Twitch hosted the inaugural tournament for H1Z1, a much lesser-known game at TwitchCon, and drew 140,000 concurrent viewers.

In TwitchCon, Twitch's large community allowed it to consolidate several small events and draw an overall larger audience. This can be applied to consolidate mid-sized tournaments for games such as Hearthstone and Street Fighter, as well as intercollegiate tournaments that have little organizational support. Twitch can host the "TwitchCup" throughout two days where several gaming tournaments are held, and add in panels and mini-events similar to how it did in TwitchCon. Doing so will generate a larger audience for each tournament, which benefits all partnering organizations. As for Twitch, merchandise shops, sponsorships, and ticket sales can generate over $1M in revenue for the inaugural TwitchCup, which will grow every year. Increasing involvement and further investing in the gaming community will cement Twitch as the preferred streaming platform.

Creating the Next Gen

By recognizing the changing landscape of the live game-streaming industry and reacting accordingly, Twitch will be able to build upon a foundation of new revenue streams and unique upstream content creation. The exclusive content, rich community interaction, effective monetization, and brand equity will serve as pillars of differentiation that allow Twitch to provide a unique value proposition that captures gamers. This strategy will build a defensible competitive advantage for Twitch, and thus sustain its growth in the long run. At the rate that the gaming industry is growing at, Twitch is on track to become the best acquisition Amazon has made to date.

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