

# **BLACKBERRY LIMITED: IS THERE A PATH TO RECOVERY?**

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## **CASE DESCRIPTION**

*This case is primarily intended for use in the corporate strategy section of a business policy or competitive strategy course. It can be used as an overview of the many decisions and actions that an organization has to undertake to sustain a competitive advantage. This case can also be used to augment discussions of strategic analysis, specifically both internal and external environmental analysis and strategic formulation.*

*The case is rich enough for advanced and graduate students, and has been developed in a manner that will allow students to diagnose the root(s) of the company's issue(s) as detailed in the case, and then form opinions and suggestions for any strategy that the company should pursue. In doing this, students should consider the activities, history, and goals of the company as presented.*

*It would be effective at the business strategy level, especially, to discuss the implications of industry life cycles, and at the corporate strategy level to discuss implications of diversification. The case also lends itself to discussions of strategic implementation and the effect of leadership on innovation.*

## **CASE SYNOPSIS**

*In late 2016, Blackberry stock has been trading for less than \$7.9 a share that is only a fraction of \$139, which is a drop of 94% since 2008.<sup>1</sup> The competitive landscape shifted in recent years, and BlackBerry lost its strong position in the industry. The company faced a severe reduction in hardware revenues and mobile subscribers.<sup>2</sup> BlackBerry Limited hired John Chen, a turnaround specialist, as its new CEO to get former dominating smartphone producer back to profitability.<sup>3</sup> Soon after joining the company, Mr. Chen formulated a turnaround plan that emphasized focus on corporate and government enterprises. This new plan significantly reduced the company's operating costs.<sup>4</sup> After Mr. Chen started turning the wheel, BlackBerry appeared to be stabilizing, but the sustainability of his strategy was still a big unknown.*

## **INTRODUCTION**

In mid-2017, Blackberry stock was trading for less than \$7 a share that is only a fraction of \$139, which was a drop of more than 94% since 2008.<sup>1</sup> The competitive landscape shifted in recent years, and BlackBerry lost its strong position in the industry. The company faced a severe reduction in hardware revenues and mobile subscribers.<sup>2</sup> BlackBerry Limited hired John Chen, a turnaround specialist, as its new CEO to get former dominating smartphone producer back to profitability.<sup>3</sup> Soon after joining the company, Chen formulated a turnaround plan that emphasized on corporate and government enterprises. This new plan significantly reduced the company's

operating costs.<sup>4</sup> After Chen started turning the wheel, BlackBerry appeared to be stabilizing, but the sustainability of his strategy was still a big unknown. Nonetheless, there have been rumors regarding a potential sale of the company to Samsung Group, privatization of operations to reduce the risk of shareholder activism, hostile takeovers as well as about the company to remain focused only on software and licensing agreements.<sup>5</sup> Each of these would be a very different scenario as compare to what the Canadian tech giant faced just a few years ago. Although BlackBerry's adequate performance led many industry experts to speculate on what lies ahead, the company's new CEO Mr. Chen seems to be optimistic about the future of Blackberry.

Looking at Blackberry smartphone division's struggle to compete, it remained a question as to what strategy the company should adopt to revive the admiration and boost demand for Blackberry smartphones. Smartphone industry had become immensely competitive with giant competitors like Apple Inc. and Samsung Group as the two companies held most of the market share in smartphone industry. The success of Blackberry in smartphone industry may sound farfetched but was not impossible. While Blackberry had previously held significant market share in smartphone space, the landscape had changed as Blackberry would have to fight with two very large competitors. By adopting a rigorous and innovative strategy, it was possible for the company to regain popularity among customers. Moreover, due to Blackberry's specialization in data & mobile security there seemed to be potential in Blackberry's software security enterprise division, which perhaps had not grasped as much attention and resources of the company as the smartphone division. Therefore, had the company restructured its overall business strategy and utilized all the resources to recognize and capitalize its competitive advantage in any particular product or service that it offers, Blackberry Limited would possibly perform better, become more competitive and experience increasing profit margins.

## RESEARCH IN MOTION

Milhal "Mike" Lazaridis and his childhood friend Doug Freign founded Research in Motion (RIM) in 1984. Lazaridis was born in Istanbul in 1960 and came from a Greek working class family. His father's aspirations to become a tool-and-die maker led the family to relocate to Ontario, Canada. Lazaridis displayed remarkable intelligence at an early age and excelled in both reading and science. Lazaridis was frequently exposed to electrical engineering and sharpened his intuitive understanding of the basic science behind every electrical innovation.<sup>3</sup> After graduating High School, Lazaridis decided to attend the University of Waterloo. However, he dropped out before graduation and decided to try his luck in business at the age of 23. The Canadian government enabled the formation of RIM by granting Lazaridis and Freign a \$15,000 loan. The duo set up RIM headquarters in Waterloo, Canada, as an electronics and computer science consulting company. According to Lazaridis, the name Research in Motion meant, "we never stop, we never end"<sup>3</sup> signaling innovation that would drive RIM forward.

During the company's early years, Lazaridis accepted all sorts of contracts, most of which entailed writing code or making small insignificant technological gadgets. None of the early projects proved to be a commercial success, but they generated enough revenue to keep the company viable for more than a decade.

However, the company's game changer was introduction of e-mail and data devices. Lazaridis had been exposed to e-mail while in college, at a time when only professors and scientists were using the service. Lazaridis was convinced that data will become extremely important in the near future, but it was hard to find the funding for a project involving e-mail, because the early

1990's was a time when major mobile carriers were interested in devices with voice capabilities and in selling as much as possible until the market would become saturated. Reading e-mails on a handheld device was unheard of. A nonexistent demand for devices with e-mail support did not loosen Lazaridis' determination; hence, he developed initial prototypes by writing gateway codes hooked up to a HP Palmtop, the company's first device with "e-mail on a belt". Although the device was not commercially applicable, it became extremely popular with RIM employees. Lazaridis recalls that "employees started taking these things home, and they wouldn't return them".<sup>3</sup> What he then understood was that the idea of "e-mail on a belt" had the potential to generate a high demand, but the challenge lied in making such a product practical enough for consumers to use on daily basis.

The business aspect of RIM was made easier by the emergence of Harvard graduate Jim Balsillie. In 1990's, Balsillie was an employee of a small technology company called Sutherland and Schultz, which would become one of RIM's clients. Lazaridis and Balsillie first crossed paths when Sutherland and Schultz tried to acquire RIM. Lazaridis passed the offer, but he got a chance to see Balsillie in action that was impressive. Lazaridis wanted someone to help out with the business aspect of the company. When a company from the Netherlands bought Sutherland and Schultz in 1992, Balsillie was left without a job. Lazaridis was quick to pick up the phone and invite Balsillie to join his company.<sup>3</sup> Due to RIM's small size and limited resources, Balsillie had to accept a severe salary reduction and to spend \$250,000 to acquire 33% of RIM. Balsillie believed in Lazaridis' abilities and potential for the company, so he agreed to the terms.<sup>3</sup> The two shared duties as co-CEOs and formed a powerful leadership team in which Lazaridis focused on product development, and Balsillie took responsible for the business part of the company. Balsillie was clear about different responsibilities and said, "My job is to raise money, and Mike's job is to spend it".<sup>3</sup>

With limited success up until 1992, RIM made a conscious decision to leave its comfort zone and pursue home run products such as wireless data. Balsillie truly believed that the future could be great for RIM, and according to former Senior VP Patrick Spence, "Balsillie was really strategic in terms of how he was thinking and really ambitious in terms of what he wanted to do".<sup>5</sup> Introduced in 1996, the Interactive Pager 900 contained peer-to-peer messaging and also an e-mail gateway. Unfortunately, the device had several deficiencies and operating errors. Also, the device was also too big and bulky to gain commercial acceptance.<sup>3</sup> Due to its size, Lazaridis nicknamed it "the Bullfrog".

Following "the Bullfrog" came "the Leapfrog". The revolutionary component of "the Leapfrog" was its ability to send e-mails at any time from any place. This product set the stage for the eventual, hugely popular signature product we know today as BlackBerry. The product was a success: BellSouth, which had spent over \$300 million in building its mobile "Mobitex" network ordered Leapfrogs worth \$60 million in 1997.<sup>3</sup> In order to get the necessary funds to continue its product development, RIM went public at the Toronto Stock Exchange in 1997, and the IPO raised more than \$115 million.<sup>6</sup>

## **THE BLACKBERRY AND ITS SUCCESS**

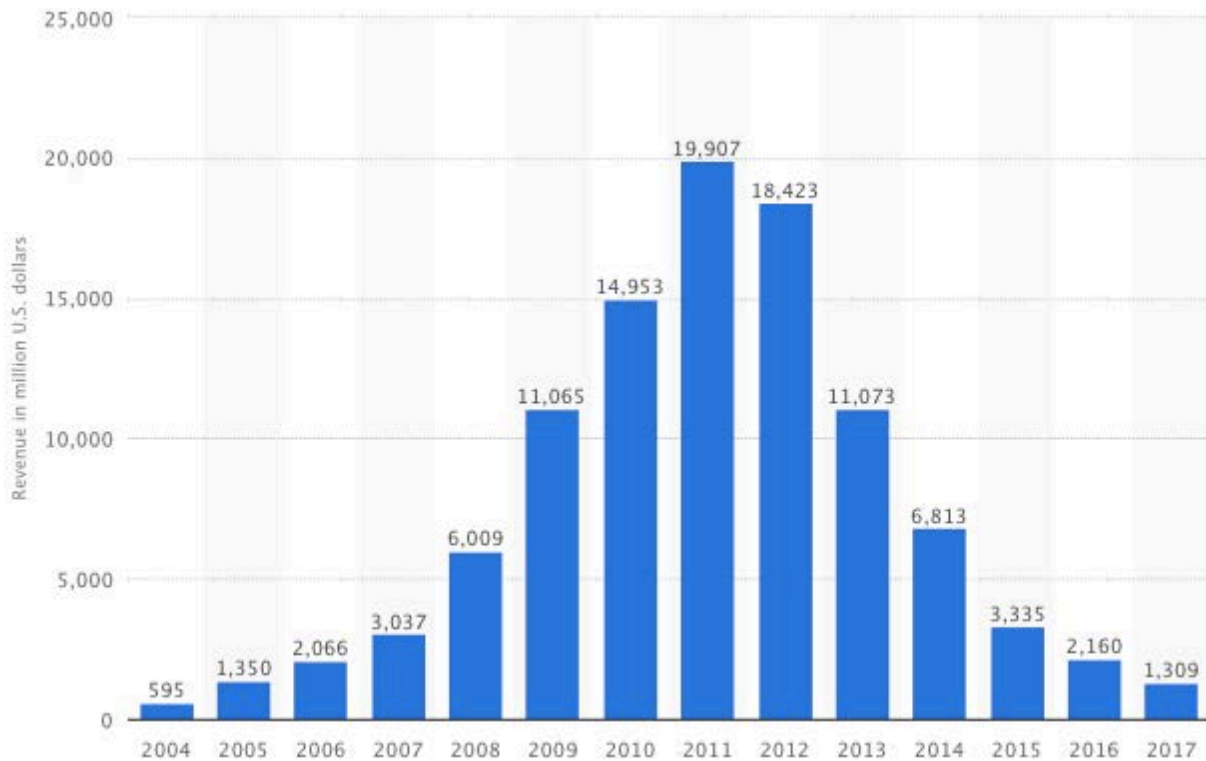
Lazaridis was responsible for developing RIM's next version of a wireless data device that would have better parts, longer battery power, and a bigger screen. RIM hired Lexicon, the company that was credited for naming Apple's PowerBook and Intel's Premium brands to come up with a name for the device. The buttons on the new device looked like tiny seeds. Lexicon

played around with different fruit names such as strawberry and melon, before it eventually settled on BlackBerry.<sup>3</sup> Thus, RIM had a great product with a catchy name, and it became Balsillie's responsibility to spread the word on the new offering.

The BlackBerry 850 hit the market in 1999, with wireless data, e-mail, and a tiny QWERTY keyboard.<sup>6,7</sup> Initially, the Leapfrog and the early BlackBerry device was mostly used by law enforcement, firefighters, and ambulance workers. One of the things that this niche group greatly valued was the product's extreme reliability and security features. Balsillie thought this would resonate well with corporations on Wall Street. He knew that corporate IT departments often made decisions regarding companywide hardware and purchased the same devices for all their employees. RIM next resorted to a guerilla marketing strategy, in which hundreds of devices were given away to ground level employees at Wall Street. The strategy became an instant success as Wall Street employees got hooked on the device and subsequently pressured IT departments to make BlackBerry the official device for their companies. Big corporations like Credit Suisse and Merrill Lynch gave in to this pressure and ordered BlackBerrys by the thousands.<sup>3</sup> The success led RIM to go public on the NASDAQ in 1999 and raised an additional \$250 million to invest in the development of its technology.<sup>8</sup> Revenues increased from \$47.34 million in 1999 to \$84.96 million in 2000, with BlackBerry accounting for 41% of the revenues.<sup>9</sup> Balsillie, along with his management team, utilized the same guerilla tactic at the Capitol, where security and reliability are perhaps even more desired features than they were in corporate world. Soon, a large number of politicians and congressional staffers were ordering BlackBerrys.

RIM's reputation was also seriously enhanced during the tragic events that transpired on September 11, 2001. Instead of relying on cellular telephone systems BlackBerry functioned on data systems that held up extraordinarily well. Data systems could be used exclusively to communicate data in the form of text messages or emails by using dedicate data networks which were abundant in lower Manhattan. Almost all cellular networks shut down during the terrorist attacks, which disabled both incoming and outgoing telephone calls. However, the BlackBerry and its network remained operational, enabling victims to call loved ones and keeping vital communication lines between law enforcement and rescue workers open. One of the sufferers of tragic event, Ms. Federman recalled, "I had my cellphone in one hand, and it was useless, and my BlackBerry in the other, and it was my lifeline that day".<sup>10</sup> In the eyes of the government there was no doubt that BlackBerry's features were important for public servants. Therefore, almost directly after the events on 9/11, the American government ordered three thousand BlackBerrys for representatives, staffers, and senators.<sup>3</sup>

This initial success meant that growth was rapid at RIM in this period, and it was enhanced by something that the company did not anticipate. All of a sudden, actors, athletes, and other high profile individuals were spotted using BlackBerrys. Among other organizations, the BlackBerry was standardized for 31 out of 32 teams in the NFL.<sup>5</sup> This created a demand among the general consumers, who wanted to use the same device they saw their favorite celebrities using. The increase in demand resulted in rapidly expanding sales and market share; RIM had more than 2 million users in 2004 and sold devices in 40 countries through 80 carriers.<sup>5</sup> The massive popularity in the 2000's saw RIM emerge as a dominant producer of smart phones, and at its peak in 2009 it had acquired 20.1% market share (see Exhibit 1) and sold nearly 15 million devices per quarter.<sup>3,11</sup>

**Exhibit 1 - RIM (BlackBerry) Revenue 2004-2017.**

**Source: Statistica 2017**

According to former account and carrier manager Chris Key, the BlackBerry became so popular with major companies that CTO's often referred to it as "digital heroin",<sup>5</sup> and many started calling it "CrackBerry". With competition from Google, Samsung, and Apple mounting in the mid 2000's, RIM decided to focus on its core competencies in security and reliability. Lazaridis and Balsillie were convinced that enterprises would continue to drive the market, and therefore continued to create devices that primarily appealed to professionals.<sup>3</sup>

### **PATENT TROLLS**

Despite RIM's success, all was not rosy because its management failed to keep an efficiency check on product and service development, which led the company into trouble with patent trolls. A critical component of tech industry is presence of companies called patent trolls. These are companies that do not manufacture or provide services but instead seek to make money on patent infringement claims. These companies often have no other assets than a portfolio of patents, and the patents are usually purchased from others. RIM got tangled up with one of such patent trolls. NTP Inc. was a company with a portfolio of 50 patents, one of which was in the field of mobile e-mails. NTP took the Canadian tech giant to court, where RIM successfully proved that its e-mail system was invented before the patent in question.<sup>3</sup> However, NTP's attorneys persisted and uncovered that an enhanced version of SAM software being used by RIM was launched after NTP's invention. The judge subsequently disregarded RIM's initial explanation. The case was long and complicated, and it consumed considerable amount energy and resources of RIM. Consequently, Lazaridis and Balsillie accepted a \$600 million settlement to close the case in 2006.<sup>3</sup>

This was a huge financial setback to the company. As RIM was experiencing exponential growth after the success of BlackBerry, the company needed all its funds and resources to keep pace with the growth. This setback experienced by RIM also became one of the reasons that made managerial and financial obstacles for the company in the long run.

## INDUSTRY LANDSCAPE

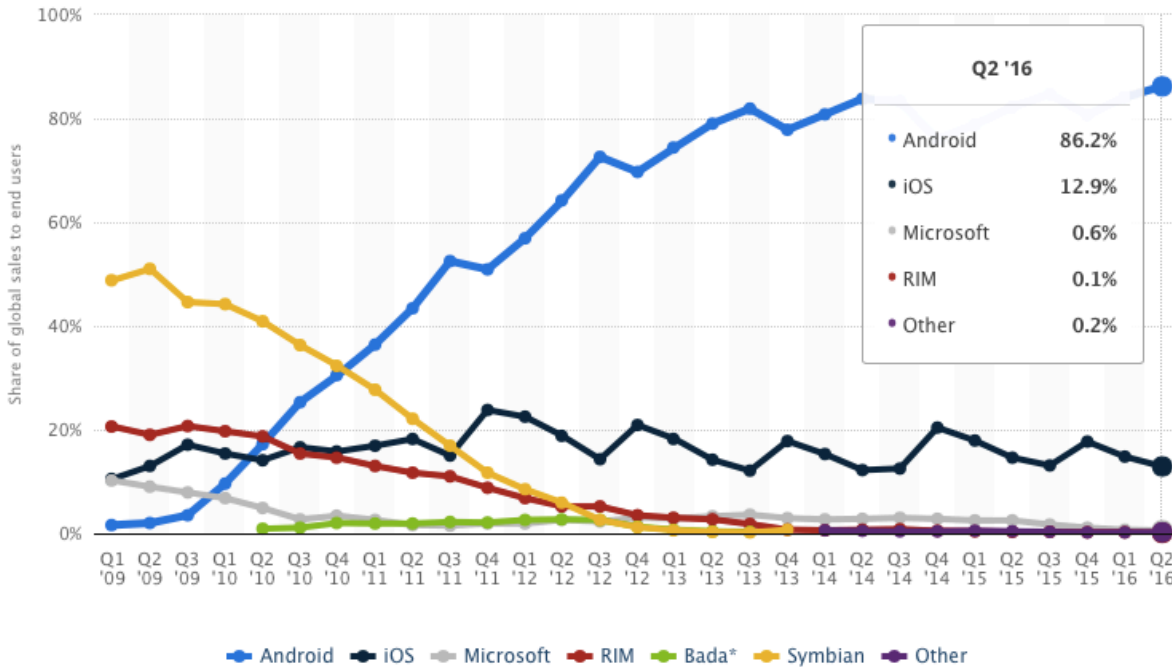
Apple Inc. entered the smartphone industry in 2007 when its CEO, Steve Jobs, introduced the world to the company's newest innovation, the iPhone. Apple had a completely different strategy than that of BlackBerry's. Apple's strategy was to cater to all the smartphone customers and not just the corporations. Steve Jobs and management at Apple believed that the individual consumer would drive the next surge in the market.<sup>3</sup> Clearly, RIM's management did not believe that the market was shifting, and BlackBerry continued to enhance what it thought made its product great —enhanced battery life, security, and e-mail. In 2006, corporations accounted for the majority of RIM revenues, and the company intended to keep enterprises as its main target market.<sup>3</sup> Lazaridis believed that the iPhone would be a fad and could not understand why anyone would want an iPhone, given its poor battery life and capacity. He was also extremely skeptical of the touchscreen keyboard. In an interview in 2007, Lazaridis said, "As nice as the Apple iPhone is, it poses a real challenge to its users. Try typing a web key on a touchscreen on an Apple iPhone, that's a real challenge. You cannot see what you type"<sup>12</sup>. BlackBerry's inventor believed that consumers prefer typing e-mails and messages using a physical keyboard rather than using a touchscreen. Co-CEO Balsillie declared that the iPhone was "not a sea-changer for BlackBerry".<sup>11</sup>

With further developments in touchscreen phones, consumers cared more about iPhone and Android phones' access to applications rather than battery life, security features, and QWERTY keyboards. The touchscreen smartphones also gained traction among suppliers. Software developers found it easier to work with Android and iPhone systems as compare to BlackBerry's complex Java based system.<sup>3</sup> Consequently, iPhone and Android phones experienced rapid growth and market acceptance, which created internal tensions within RIM. There were those who thought that the company should change its strategy, but the co-CEO's unanimously rejected that notion.

The competitive landscape changed further when the "Bring Your Own Device" (BYOD) trend emerged in 2009, when consumers started to take their personal devices to the workplace.<sup>13</sup> The BYOD trend had been directly related to the BlackBerry and the way device became popular in the first place. It was the pressure from ground level employees that led IT departments to adopt the BlackBerry - a bottom up rather than a top down process. When all of a sudden those same employees started bringing iOS and Android devices to work, RIM lost its incentive to procure large numbers of BlackBerry. Consumers valued the additional features in iPhone and Android phones, such as cameras, games, and Internet browsing.<sup>3,5</sup>

In several instances, corporations abandoned BlackBerry as the company phone, because products like the iPhone also had e-mail capabilities. Android-based smartphones overtook RIM in terms of market share in Q2 of 2010, and iOS (iPhone) followed shortly in Q3 of 2010 (see Exhibit 2).

**Exhibit 2 - Global smartphone market shares 2009-2016. Source: Statista.com**



**Source: Statistica 2017**

When it was unable to acquire a license to sell iPhones, Verizon contacted RIM with an offer to collaborate on developing an “iPhone killer”, which meant a smartphone with touchscreen capabilities and no QWERTY keyboard. The result of this partnership was the “BlackBerry Storm”, which unfortunately could not gain popularity among consumers because the Storm’s touchscreen was not easy to use, and the device was slow and full of bugs.<sup>3</sup> Verizon subsequently shifted its focus towards Google and its Android operating system, and launched a gigantic marketing campaign for Motorola’s Droid smartphone that operated on Google’s Android platform. The new campaign called “iDont” highlighted the iPhone’s shortcomings.<sup>3</sup> However, instead of hurting Apple, the campaign enabled Android phones to steal market share from companies like Palm, Microsoft, and eventually RIM. The Blackberry Storm debacle therefore ended up hurting the company considerably.

RIM tried its luck with a touchscreen phone once again in 2010, when AT&T contracted the company to make a competitor to the iPhone. This could help AT&T to differentiate itself from Verizon, which now had obtained licenses for the sale of the iPhone. The result was the “Blackberry Torch”, but this too was not a commercial success.

Even though iPhone and Android phones were gaining market share rapidly, Lazaridis remained optimistic of the BlackBerry’s sustainable advantage. He warned his fellow RIM directors in a board meeting that trying to sell all-touch smartphones in a crowded market would be a huge mistake.<sup>14</sup> Lazaridis maintained full confidence that RIM would catch up to Apple and Google (Android) with their newest device, the BlackBerry 10. When developing the BlackBerry 10, Lazaridis decided to acquire QNX Software, a leading edge software maker. QNX had the technology that the BlackBerry 10 operating system needed.

However, tensions were now growing between Balsillie and Lazaridis. Lazaridis was certain that the BlackBerry 10 would resurrect the company while Balsillie was doubtful.<sup>14</sup> One of

the keys to the company's early success had been the co-CEO structure: where Lazaridis was responsible for engineering, product management and supply chain, while Balsillie focused on sales, finance and other corporate functions.<sup>3</sup> This complementary leadership structure was successful for a long time, as Lazaridis and Balsillie worked well together. However, the growing tension between the two led to a breakdown of communication, and RIM missed internal deadlines for launch dates as confusion and doubt spread among the company's employees.<sup>3</sup>

In order to fix the problem, Lazaridis decided that for their turnaround project, the BlackBerry 10, the development team would report directly to him and circumvent other top-executives like Balsillie. The breakdown of communication and friction between management led to a disastrous 2011 for the company, where RIM's network experienced tremendous difficulties for the first time, and the company was forced to undertake substantial layoffs due to rapidly decreasing sales. Balsillie also started to separate himself from the company. He established an academic institution that focused on international affairs and tried to buy a National Hockey League team, but the move opposed by the NHL. At an icebreaker in a weeklong seminar regarding arctic issues in 2010, Balsillie said that BlackBerry's success was due to extraordinary luck in key moments and voiced his concerns regarding the future by saying "This is a rapidly expanding market. We have a diminishing share of that market, but who knows?"<sup>6</sup> To end the managerial issues, the board at RIM finally decided to relieve Balsillie and Lazaridis from their duties as co-CEOs in January of 2012 but allowed them to remain on the Board of Directors. Thorsten Heins replaced Lazaridis and Balsillie as CEO in 2007. Mr. Heins had previously held an executive position at Siemens before joining RIM.<sup>14</sup>

## THE BBM MESSAGING SERVICE

To generate revenue for RIM, former co-CEO Balsillie saw great potential with the BBM messaging service. The BBM messenger was developed as an application for the BlackBerry in 2005, and it enabled users to communicate by using their devices' PIN numbers. The BBM was innovative and is credited with being the first instant messaging service on wireless devices.<sup>14</sup> Among the BBM's key strengths were its reliability and the fact that users could send an unlimited number of messages without any extra cost, unlike standard SMS text messaging. Further, the messaging service was very secure and gave users the privacy they sought.

With increasing competition and decreasing sales and market share of Blackberry, Balsillie wanted to make the BBM platform available on all devices. He envisioned that telecom carriers could integrate BBM as their own enhanced version of SMS text messaging. This could generate additional sales for the carriers, which would get RIM a percentage of the carrier's revenues.<sup>14</sup>

Balsillie's plan created a divide at RIM's management, particularly because BBM was still a key driver of sales of BlackBerry devices. Making the BBM service available to competitors could lead to market cannibalization. As Balsillie continued his push for the BBM strategy, the new CEO squashed it a few weeks after taking office. Lazaridis showed full support for the CEO's decision, whereas Balsillie subsequently resigned from the Board of Directors in March 2012 and sold entire stock of the company that he possessed.<sup>14</sup> In a statement to Canadian newspaper, *Globe and Mail*, Balsillie left no doubt as to why he left: "My reasons for leaving the RIM board in March 2012, was due to the company's decision to cancel the BBM cross-platform strategy."<sup>15</sup>



## THE BLACKBERRY 10

During Heins' tenure as CEO, BlackBerry finally released the BlackBerry 10 in to the market in January 2013 and changed the company name from Research in Motion to BlackBerry Limited. The BlackBerry 10 was not a commercial success, and the company continued spiraling downwards. Despite a number of good reviews, the new phone did not sell very well. Afterwards, Blackberry decided launched the Z10, an all touchscreen version to compete in smartphone market. When the Z10 launched, BlackBerry had a confusing marketing campaign and was unsuccessful in communicating the new device's distinctive competencies.<sup>14</sup> The Z10 was also late to market and was launched at a time when the market was crowded, and there was low demand for new touchscreen smartphones. In fact, the people that were willing to buy new editions of BlackBerrys were consumers who still valued the QWERTY keyboard. Also, many loyal BlackBerry customers thought the new system was far too different from the classic BlackBerry design, and that the new phones seemed to have relinquished all ties to old BlackBerry devices. The company incurred a quarterly loss of \$965 million in second quarter of 2013, mostly due to a huge number of BlackBerry Z10 phones that were not sold.<sup>14</sup> As a result of the company's underperformance, Toronto based Investment Company, Fairfax Financial Holdings Ltd, tried to take over Blackberry Limited by offering a price of \$4.7 billion, but the deal did not materialize.<sup>16</sup>

Despite RIM's diminishing position in the industry, its management continued to remain optimistic. Former managing director for the U.S and Canada, Andrew MacLeod, stated, "I am heartened by the fact that we have tons of assets – IP assets, technology assets. We have a culture that at its core is about innovation and are in an industry that moves incredibly fast".<sup>5</sup> This signaled that there was a belief internally at BlackBerry that its core competencies could redefine the industry with new innovations. Lazaridis solidified this notion in an interview to Globe and Mail, "Many companies go through cycles. Intel experienced it, IBM experienced it, and Apple experienced it". He further went on to say, "People counted IBM, Apple and other companies out only to be proven wrong. I am rooting that they are wrong on BlackBerry as well".<sup>14</sup>

In order to prove naysayers wrong, BlackBerry needed to address the immense reduction in sales that it experienced since FY 2011. The company sold \$1.431 billion worth of hardware in FY 2015 (see Exhibit 3), a reduction of 91% since FY 2011. Further, the sale of services reduced 49% while software performed better with a reduction of 20% for the same period.<sup>17, 18, 19, 20</sup>

**Exhibit 3 - BlackBerry revenue mix in millions USD 2010-2014.**

Revenue mix	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Hardware	15,956	13,794	6,648	3,785	1,431
Service	3,197	4,086	3,910	2,698	1,620
Software	294	318	261	235	234
Other	460	237	254	95	50
<b>Total</b>	<b>19,907</b>	<b>18,435</b>	<b>11,073</b>	<b>6,813</b>	<b>3,335</b>

Source: BlackBerry (RIM) annual reports

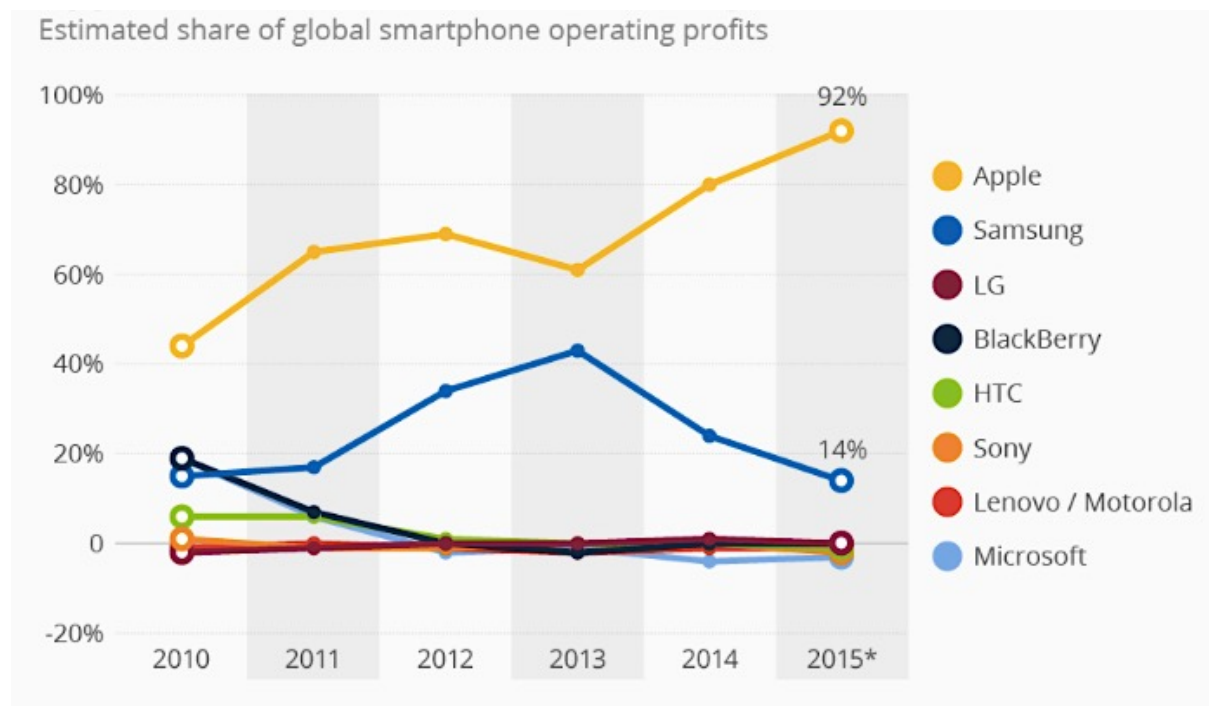
## FUTURE OF THE SMARTPHONE INDUSTRY

The smartphone industry had been experiencing rapid development and high growth during past decade. There were over a billion units of smartphones shipped worldwide, which constituted more than half of total mobile phone shipments. The industry was a large one, with total industry

sales revenue reaching \$429 billion in 2016. Although it was a flattering number, but new trends showed that smartphone industry growth rate had started declining. Growth in smartphone shipments was 40 percent in 2014, down from 46 percent in 2013.<sup>21</sup> This trend was expected to increase in future, as growth in smartphone shipments was forecast at a 9.8% compounded annual growth rate for the period 2014-2018, which constitutes 1.9 billion units in 2018.<sup>22</sup> The primary culprit for this decrease was the low growth in North America and Western European markets. Most individuals in these countries already had existing smartphones, so growth was driven by replacement sales due to a low number of first time buyers. Research showed that as much as 60 percent of sales were expected to be replacements in North America and 40 percent in Western Europe. Along with the increase in reliability and lifespan for smartphones, such replacement sales put a downward pressure on the growth rate. More importantly, only 25% of smartphone shipments will reach mature or developed markets by 2018.<sup>21</sup> As a rational response to the conditions in developed markets, smartphone manufacturers were shifting their focus towards emerging markets, for instance China and India was the most lucrative of the emerging markets.<sup>21</sup>

Recent developments had made the industry much more complex and competitive. The most significant development had been the vast reduction in entry barriers, enabling emerging manufacturers to collectively become a significant force in the industry. Low entry barriers were propelled by two trends that were expected to continue. Firstly, Google's Android operating system was open source software that allowed mass adoption and customization. Secondly, turnkey reference designs from chipset companies like Qualcomm and MediaTek were shortening the design and manufacturing process.<sup>21</sup> This was due to the expertise of such tech companies to provide fully packaged solutions with certified and tested components that were ready to go.

Most emerging manufacturers originated out of Shenzhen, China, that were taking advantage of the low cost supply chain of their home market and expanding sales beyond their borders. In December of 2014, Chinese smartphone producer, Xiaomi, cemented its position as the world's most valuable tech startup, with value exceeding \$46 billion.<sup>23</sup> The emergence of low cost Chinese manufacturers had segmented the market into a two-tier pricing strategy. Xiaomi, Vivo, Huawei, and countless other Chinese, no-name brands were making very affordable products with attributes that were good enough for most consumers. Apple had branded its iPhone as a luxury good, where a huge selection of well-implemented apps and other services went a long way of differentiating the iPhone from other smartphones. Due to these features, Apple was charging a premium for its product, which resulted in positive operating margins (see Exhibit 4).<sup>21</sup> The emergence of Chinese players had put everybody else virtually in a "no-man's land" between Apple and low-cost providers. As a result, average prices on Android phones had dropped, a trend that was likely to continue. Industry forecasts projected smartphones to have an average selling price of \$241 worldwide by 2018.

**Exhibit 4 - Smartphone manufacturers operating margin 2010-2015.**

Source: Statistica.com

In many respects, the smartphone industry resembled a duopoly. Apple and Samsung accounted for the vast majority of industry sales and for most of the profits generated by the top 10 manufacturers.<sup>21</sup> Nonetheless, Apple and Samsung's dominance and profit margins would be challenged in the future, primarily because of the competition emerging from China. Chinese manufacturers were expected to ship more than 350 million smartphones in 2018. The increase in competition was squeezing industry incumbents such as Motorola, Nokia, and BlackBerry, and such competition was rigorously pressuring their profit margins.

Most existing smartphones were similar in design, had touchscreen capabilities, ranging from four to seven inches. The similarity in design meant that innovation in hardware was at a historic low, because new hardware had to fit existing design models.<sup>21</sup> Curtailed difference in hardware had increased the importance of marketing expenditures, and leading industry incumbents in Western markets were allocating more and more resources to brand building and advertising. Another critical success factor in the industry was intellectual property. IP strength not only protected against infringement claims, but also constituted a significant source of revenue due to licensing agreements.

By 2017, in operating systems, Android dominated with 81.7% market share. Apple's iOS ranked at number 2, with 17.9% market share.<sup>24</sup> The main difference between iOS and Android operating systems was that Android was spread across a broad range of manufacturers and prices, while iOS was Apple's exclusive operating system designed only for Apple products. Windows phones were also generating some momentum and had a market share of 0.3% in 2017 and ranked at number 3 in the industry.<sup>24</sup> Mobile network carriers functioned either with or without subsidies. It was a norm for mobile network operators (such as AT&T and Verizon) to subsidize, or pay to the manufacturer of smartphones to carry their products. In unsubsidized markets, the competition

was higher, and the markets were characterized by a more open supply profile in which manufacturers had the incentive to sell directly to the end consumer and circumvent network operators. It might be beneficial for the market if carriers commit to offering many operating platforms, because doing so would increase competition and reduce the duopoly features of Android and iOS. However, having iOS and Android in their portfolio was ultimately beneficial for carriers because it means that they distribute the vast majority of competition among manufacturers.<sup>21</sup>

## SMART PHONE INDUSTRY COMPETITOR ANALYSIS

### Apple Inc.

A major player in the smartphone industry is iPhone by Apple Inc. The company had a core competence in product design, software development, application development, and hardware. Apple Inc. not only targeted corporations and governments as potential customers but also targeted general consumer, academic institutions, SMEs. Most of the Apple products were sold through Apple's own retail and online stores; however, the company also utilized indirect distribution channels such as telecom carriers, wholesalers, retailers, and value-added resellers. Another core competence for Apple was a continuous focus on R&D, in order to keep up with and lead technological advancements. Apple Inc.'s R&D expenditure was about \$10 billion by 2017<sup>25</sup> which is more than most smartphone companies were worth. A significant source of Apple's competitive strength was its ecosystem.<sup>26</sup> Apple's iCloud service enabled users to sync a particular file or data on all Apple devices, so if one edits a photo on iPhone, the changes would be made automatically on all other devices.<sup>26</sup> These features gave Apple users an incentive to purchase other Apple products, because benefits and convenience of use brought value to the consumer. Following are the four most popular iPhone models that are in market. (See Exhibit 5 for information on iPhone models.)

**Exhibit 5 - Selected information Apple iPhones (without carrier contract)**

Model	iPhone 7 Plus	iPhone 7	iPhone 6s Plus	iPhone 6s	iPhone SE
Price	\$749	\$649	\$649	\$549	\$399
Capacity	32, 128 or 256 GB	32, 128 or 256 GB	32 or 128 GB	32 or 128 GB	16 or 64 GB
Display	5.5" Retina HD	4.7" Retina HD	5.5" Retina HD	4.7" Retina HD	4" Retina
Talk time	Up to 21 hours	Up to 14 hours	Up to 24 hours	Up to 14 hours	Up to 14 hours
Intelligent Assistant	Siri	Siri	Siri	Siri	Siri

Source: Company websites

### Samsung Electronics Co.

The other major player in the smartphone industry was the South Korean tech giant Samsung Electronics Co. Samsung maintained its leadership status across multiple sectors by investing heavily in R&D. In recent years, Samsung invested \$13 billion in R&D, which led to 4,676 new patents in the United States alone.<sup>27</sup> Samsung had strategic resources that competitors found hard to replicate such as substantial economies of scale, which drove down per unit cost.

The company had a very favorable cost structure due to its great efforts in vertical integration. Samsung had an aggressive pricing strategy and allocated a large amount of resources towards marketing expenditures.<sup>27</sup> The company was a dominant force in the Android operating system. With Android, consumers could purchase and download multiple applications, which was similar to Apple's app store. Samsung sold products to authorized distributors, mainly through mobile network carriers or large electronic outlets like BestBuy. Samsung offered a wide range of smartphones with low, medium and high price points. Following are the four most popular Samsung smartphones that were competitors of iPhone. (See Exhibit 6 for information on Samsung smartphones)

**Exhibit 6 - Information on selected Samsung Smartphones (by Verizon)**

Model	Galaxy S8 plus	Galaxy S8	Galaxy S7 Edge	Galaxy S7
Price	\$840	\$756	\$670	\$570
Capacity	64 GB	64 GB	32 GB	32 GB
Display	6.2" Quad HD+ & Dual Edged Superv AMOLED	5.8" Quad HD+ & Dual Edged Superv AMOLED	5.5" Quad HD Superv AMOLED	5.1" Quad HD Superv AMOLED
Talk time	Up to 34 hours	Up to 30 hours	Up to 28 hours	Up to 28 hours
Intelligent Assistant	S Voice	S Voice	S Voice	S Voice

Source: Samsung<sup>28</sup>

## RESTRUCTURE AND FUTURE OPERATIONS OF BLACKBERRY

In March of 2013, BlackBerry announced the retirement of Lazaridis as Vice Chair<sup>29</sup> After the board at BlackBerry abandoned the buyout deal from Fairfax Financial Holdings, Mr. Heins was also ousted, and Mr. John S. Chen was brought in as CEO. Mr. Chen was previously the chairman and CEO of Sybase Inc., and his background also included executive positions at Siemens AG, Pyramid Technology Corp. and Burroughs Corp.<sup>1</sup> In 2014, the company announced a joint venture with Foxconn to develop a consumer smartphone tailored for Indonesia and other growth markets.<sup>30</sup> By 2017, the company carried six different versions of BlackBerry smartphones. Three out of the six smartphones were Android operated while remaining half supported BlackBerry's operating system. BlackBerry's recent smartphone models that supported company software had the ability to download apps, through the company's own app store "BlackBerry World", or through the Amazon Android app store<sup>31</sup> (see Exhibit 7 for information regarding BlackBerry smartphones).

**Exhibit 7 - Select info on selected BlackBerry models (without carrier contract)**

Model	Passport	Leap	DTEK 60	KEYone
Price	\$549	\$218	\$440	\$225
Capacity	32 GB	16 GB	32 GB	32 GB
Display	4.5" Square touch display	5" Touch Display	5.2" or 5.5" Fully Touch Display	4.5" Partially Touch Display with Key Hard Board
Talk time	Up to 14 hours	Up to 12 hours	Up to 26 hours	N/A
Operating System	BlackBerry 10 OS	BlackBerry 10 OS	Fully Android	Fully Android

**Source: BlackBerry**

According to Chen, the company was in a far better position than industry experts' claimed. Under his leadership, BlackBerry intended to return to its core strengths that catered to enterprises with security and efficiencies. Chen's first task as CEO was to restructure the operating units. By 2017, the company had four distinct operating units: Enterprise Software, Secure Communications, Technology Solutions and Secure Smartphones.<sup>32</sup> Chen believed this structure would lead BlackBerry to an increased focus on software services and would make the smartphones unit more efficient. The company was still the leader when it came to enterprises, with a customer base exceeding 80,000. BlackBerry also continued to remain popular with governments; seven out of the seven G7 countries' governments were BlackBerry customers. Furthermore, the company's BBM messaging service was released for Android and iOS users through their respective app stores. BBM had generated more than 40 million users on Android and iOS devices.<sup>32</sup> Chen saw great potential with BBM, and BlackBerry was expected to continue reinvesting in this technology to update features and channels.

Looking at the revenue trajectory of BlackBerry over past few years, a dramatic drop in the company's revenues couldn't be ignored. Company revenues dropped from \$19.9 billion in FY 2011 to \$935 million in FY 2017 (see Exhibits 8 and 9 for detailed info regarding BlackBerry's financial situation). Nonetheless, in April 2017, BlackBerry's shareholders received a momentous news when company was awarded \$815 million in an arbitration against Qualcomm, which surged the company's share price more than 18 percent.<sup>33</sup>

**Exhibit 8 – BlackBerry Consolidated Statement of Operations, 2017**

**BlackBerry Limited**  
(United States dollars, in millions, except per share data)

**Consolidated Statements of Operations**

	For the Years Ended		
	February 28, 2017	February 29, 2016	February 28, 2015
<b>Revenue</b>			
Software, services and service access fees	\$ 935	\$ 1,276	\$ 1,854
Hardware and other	374	884	1,481
	<u>1,309</u>	<u>2,160</u>	<u>3,335</u>
<b>Cost of sales</b>			
Software, services and service access fees	109	247	287
Hardware and other	433	936	1,349
Inventory write-down	150	36	95
	<u>692</u>	<u>1,219</u>	<u>1,731</u>
<b>Gross margin</b>	<u>617</u>	<u>941</u>	<u>1,604</u>
<b>Operating expenses</b>			
Research and development	306	469	711
Selling, marketing and administration	553	653	769
Amortization	186	277	298
Impairment of goodwill	57	—	—
Impairment of long-lived assets	501	—	—
Loss on sale, disposal and abandonment of long-lived assets	171	195	169
Debentures fair value adjustment	24	(430)	80
	<u>1,798</u>	<u>1,164</u>	<u>2,027</u>
<b>Operating loss</b>	<u>(1,181)</u>	<u>(223)</u>	<u>(423)</u>
Investment income (loss), net	(27)	(59)	38
<b>Loss before income taxes</b>	<u>(1,208)</u>	<u>(282)</u>	<u>(385)</u>
<b>Recovery of income taxes</b>	(2)	(74)	(81)
<b>Net loss</b>	<u>\$ (1,206)</u>	<u>\$ (208)</u>	<u>\$ (304)</u>
<b>Loss per share</b>			
Basic	\$ (2.30)	\$ (0.40)	\$ (0.58)
Diluted	\$ (2.30)	\$ (0.86)	\$ (0.58)

Source: BlackBerry Financial Documents, BlackBerry Inc. 2017

**Exhibit 9 – BlackBerry Balance Sheet, 2017**

<b>BlackBerry Limited</b>		
Incorporated under the Laws of Ontario (United States dollars, in millions)		
<b>Consolidated Balance Sheets</b>		
	As at	
	February 28, 2017	February 29, 2016
<b>Assets</b>		
<b>Current</b>		
Cash and cash equivalents	\$ 734	\$ 957
Short-term investments	644	1,420
Accounts receivable, net	181	338
Other receivables	34	51
Inventories	26	143
Income taxes receivable	17	—
Other current assets	55	102
	1,691	3,011
<b>Long-term investments</b>	269	197
<b>Restricted cash and cash equivalents</b>	51	50
<b>Property, plant and equipment, net</b>	91	412
<b>Goodwill</b>	559	618
<b>Intangible assets, net</b>	602	1,213
<b>Deferred income tax asset</b>	—	33
	\$ 3,263	\$ 5,534
<b>Liabilities</b>		
<b>Current</b>		
Accounts payable	\$ 103	\$ 270
Accrued liabilities	258	368
Income taxes payable	—	9
Deferred revenue	245	392
	606	1,039
<b>Long-term debt</b>	591	1,277
<b>Deferred income tax liability</b>	9	10
	1,206	2,326
<b>Shareholders' equity</b>		
<b>Capital stock and additional paid-in capital</b>		
Preferred shares: authorized unlimited number of non-voting, cumulative, redeemable and retractable	—	—
Common shares: authorized unlimited number of non-voting, redeemable, retractable Class A common shares and unlimited number of voting common shares		
Issued - 530,497,193 voting common shares (February 29, 2016 - 521,172,271)	2,512	2,448
<b>Retained earnings (deficit)</b>	(438)	768
<b>Accumulated other comprehensive loss</b>	(17)	(8)
	2,057	3,208
	\$ 3,263	\$ 5,534

Source: BlackBerry Financial Documents, BlackBerry Inc. 2017



## SOFTWARE SECURITY COMPETITOR ANALYSIS

Blackberry's software security division had a limited competition in software security industry as compare to the competition that the company faced in smartphone (hardware) industry. There was a long list of companies providing a wide range of different types of enterprise securities. However, Blackberry Limited specialized in Mobile and Data Security for Enterprises. A few of Blackberry Limited's close competitors in mobile & data security industry were Symantec, Verizon Enterprises and Imperva.

### **Symantec (Mobile Security)**

Symantec was a California based public limited company founded in April 1982 that offered a variety of mobile security solutions, and its security software was most popularly known as Norton.<sup>34</sup> Symantec was particularly specialized in mobile (software) security, and its information security revenue was about \$3.77 billion by 2017. Symantec was a large size company and employed about 11,000 people around the world.<sup>35</sup> Symantec was a tougher competitor for Blackberry. Nevertheless, by maximizing the allocation of resources to its software business, Blackberry might be able to do better than it was doing by the second quarter of 2017.

### **Verizon Enterprises (Data Security)**

Verizon Enterprise security was a unit of New Jersey based company known as Version Communications that offered mobility and data security solutions. It was founded as Verizon business in 2006 but was renamed as Verizon Enterprise Solutions in 2012.<sup>36</sup> Although Verizon Communications was a big player in its competitive market of wireless networks, but in order to compete Blackberry in enterprise security business, Verizon Enterprise Solutions was relatively a new company in software security industry. There was no doubt that competing with a company backed by such a giant market player was a challenge for Blackberry Limited, yet a well thought strategy might turn out to be a success in long run.

### **Imperva (Data Security)**

Imperva was a California based public limited company that provided a variety of data security solutions and was founded in 2002.<sup>37</sup> It employed almost 1000 people and operated in approximately 100 countries. Imperva's revenue for fiscal year 2017 was about \$264 million. Imperva was also experiencing financial difficulties as its stock performance had been volatile over the past years.<sup>38</sup> Hence, as a competitor, this could be a competitive advantage for Blackberry to cater to the market share that Imperva was not able to access.

## FUTURE OF BLACKBERRY

Industry experts believed BlackBerry's sales were yet to bottom out, putting a strain on the company's cost structure. In a very crowded and highly competitive industry, the road to profitability would not come easy for Blackberry and will certainly test the company's managerial skills as well as strategic thinking at higher levels. With rumors and speculations surrounding the Canadian tech giant's future reaching an all-time high, Chen released an open letter to BlackBerry

users: highlighting the company's strengths, commitment to innovation and dedication to "earning your business – or earning it back".<sup>39</sup> The letter reduced speculations regarding a potential sale of the company, but a profitable future is still uncertain where Mr. Chen has difficult strategic choices to make. Nonetheless, on December 20, 2016, BlackBerry reported GAAP gross margin of 67% driven by tremendous growth in software and service revenue<sup>40</sup>. Looking at the changing momentum of BlackBerry's leadership and financial inflow, perhaps it was possible for BlackBerry to keep improving the gross margins and optimizing the company's cost structure.

## ENDNOTES

- <sup>1</sup> Bloomberg Business, "BBRY:US", Bloomberg LP. September 22, 2016. From the web: <http://www.bloomberg.com/quote/BBRY:US>
- <sup>1</sup> Allan Tsai, "The True Story Behind the Rise and Fall of BlackBerry". 2machines Corp. 2013. From the web: <http://2machines.com/184127/>
- <sup>1</sup> Silcoff, Sean, McNish, Jacquie, and Erman, Boyd. "BlackBerry financing aims for a new lease of life". The Globe and Mail Inc. November 4, 2013. From the web: <http://www.theglobeandmail.com/report-on-business/blackberry-fairfax-deal-dies-thorsten-heins-out/article15240310/>
- <sup>1</sup> CBC News, "BlackBerry CEO Chen on his turnaround strategy". CBC/Radio-Canada, March 28, 2014. From the web: <http://www.cbc.ca/news/business/blackberry-ceo-john-chen-on-his-turnaround-strategy-1.2590576>
- <sup>1</sup> Felix Gillette, Diane Brady, Caroline Winter, "The Rise and Fall of BlackBerry: An Oral History". December 5, 2013. From the web: <http://www.bloomberg.com/bw/articles/2013-12-05/the-rise-and-fall-of-blackberry-an-oral-history#p3>
- <sup>1</sup> CBC News, "BlackBerry timeline: A tech titans roller coaster ride". CBC/Radio-Canada. March 17, 2014. From the web: <http://www.cbc.ca/news2/interactives/timeline-rim/>
- <sup>1</sup> Global News Staff, "BlackBerry timeline: A look back at the tech company's history". September 24, 2013. From the web: <http://globalnews.ca/news/860689/blackberry-timeline-a-look-back-at-the-tech-companys-history/>
- <sup>1</sup> The Telegraph. "BlackBerrys Timeline: From RIM to RIP?" August 12, 2013. From the web: <http://www.telegraph.co.uk/technology/blackberry/10237847/BlackBerry-timeline-from-RIM-to-RIP.html>
- <sup>1</sup> Research in Motion, "Annual Report Fiscal 2000". Research in Motion. From the web: [http://us.blackberry.com/content/dam/bbCompany/Desktop/Global/PDF/Investors/Documents/2000/2000rim\\_ar.pdf](http://us.blackberry.com/content/dam/bbCompany/Desktop/Global/PDF/Investors/Documents/2000/2000rim_ar.pdf)
- <sup>1</sup> <http://www.nytimes.com/2001/09/20/technology/the-right-connections-the-simple-blackberry-allowed-contact-when-phones-failed.html>
- <sup>1</sup> TheAtlas, "Global smartphone market share held by RIM (BlackBerry) from 2007 to 2015". TheAtlas. September 27, 2016. From the web: <https://www.theatlas.com/charts/4kkGhxGWx>
- <sup>1</sup> Arthur, Charles. "RIM Chiefs Mike Lazaridis and Jim Balsillie's best quotes. Guardian News and Media Limited. June 29, 2012. From the web: <http://www.theguardian.com/technology/2012/jun/29/rim-chiefs-best-quotes>
- <sup>1</sup> Information Security Media Group Corp. "Mobile: Learn from Intel's CISO on Securing Employee-Owned Devices". May 10, 2015. From the web: <http://www.govinfosecurity.com/webinars/mobile-learn-from-intels-ciso-on-securing-employee-owned-devices-w-264>
- <sup>1</sup> Silcoff, Sean, McNish, Jacquie, and Laudrantaye, Steve. "Inside the BlackBerry: How the Smartphone inventor failed to adapt". The Globe and Mail Inc. September 27, 2013. From the web: <http://www.theglobeandmail.com/report-on-business/the-inside-story-of-why-blackberry-is-failing/article14563602/>
- <sup>1</sup> CBC News. "Balsillie quit BlackBerry over mixed BBM plan". CBC/Radio-Canada. September 30, 2013. From the web: <http://www.cbc.ca/news/canada/kitchener-waterloo/balsillie-quit-blackberry-over-nixed-bbm-plan-report-1.1872572>
- <sup>1</sup> Zettel, Jonathan. "BlackBerry links US\$4.7 billion deal with Toronto-based Fairfax. Bell Media. September 23, 2013. From the web: <http://www.ctvnews.ca/business/blackberry-inks-us-4-7-billion-deal-with-toronto-based-fairfax-1.1466420>
- <sup>1</sup> BlackBerry Limited, "Form 40-F Fiscal 2015". BlackBerry Limited. From the web: [http://us.blackberry.com/content/dam/bbCompany/Desktop/Global/PDF/Investors/Documents/2014/Q4\\_FY14\\_Filing.pdf](http://us.blackberry.com/content/dam/bbCompany/Desktop/Global/PDF/Investors/Documents/2014/Q4_FY14_Filing.pdf)

- <sup>1</sup> BlackBerry Limited, “Form 40-F Fiscal 2014”. BlackBerry Limited. From the web: [http://us.blackberry.com/content/dam/bbCompany/Desktop/Global/PDF/Investors/Documents/2014/Q4\\_FY14\\_Filing.pdf](http://us.blackberry.com/content/dam/bbCompany/Desktop/Global/PDF/Investors/Documents/2014/Q4_FY14_Filing.pdf)
- <sup>1</sup> Research in Motion, “Form 40-F Fiscal 2013”. Research in Motion. From the web: [http://press.blackberry.com/content/dam/rim/press/PDF/Financial/FY2013/Q4FY13\\_final\\_filing.pdf](http://press.blackberry.com/content/dam/rim/press/PDF/Financial/FY2013/Q4FY13_final_filing.pdf)
- <sup>1</sup> Research in Motion, “Form 40-F Fiscal 2012”, Research in Motion. From the web: [http://us.blackberry.com/content/dam/bbCompany/Desktop/Global/PDF/Investors/Documents/2012/2012rim\\_ar\\_40F.pdf](http://us.blackberry.com/content/dam/bbCompany/Desktop/Global/PDF/Investors/Documents/2012/2012rim_ar_40F.pdf)
- <sup>1</sup> CCS Insight, “Global Smartphone Market Analysis and Outlook: Disruption in Changing Market”. CCS Insight. July 2014. From the web: <http://www.lenovo.com/transactions/pdf/CCS-Insight-Smartphone-Market-Analysis-Full-Report-07-2014.pdf>
- <sup>1</sup> Ramon Llamas, Melissa Chau, Michael Shirer, “Worldwide smartphone growth forecast to slow from a boil to a simmer as prices drops and markets mature”. IDC Corporate USA. From the web: <http://www.idc.com/getdoc.jsp?containerId=prUS25282214>
- <sup>1</sup> Christopher Mims, “In smartphone market, its luxury or rock bottom”. The Wall Street Journal. February 1, 2015. From the web: <http://www.wsj.com/articles/in-smartphone-market-its-luxury-or-rock-bottom-1422842032>
- <sup>1</sup> <https://www.statista.com/statistics/266136/global-market-share-held-by-smartphone-operating-systems>
- <sup>1</sup> <http://www.businessinsider.com/apples-cfo-explains-the-companys-10-billion-rd-budget-2017-2>
- <sup>1</sup> Eric Jackson, “Apple isn’t a hardware or software company – it’s an ecosystem company”. Forbes.com LLC. June 3, 2014. From the web; <http://www.forbes.com/sites/ericjackson/2014/06/03/apple-isnt-a-hardware-or-software-company-its-an-ecosystem-company/2/>
- <sup>1</sup> Samsung, “About Samsung – The way forward”. Samsung Group. From the web: [http://www.samsung.com/us/aboutsamsung/samsung\\_group/download/2014-aboutamsung-eng.pdf](http://www.samsung.com/us/aboutsamsung/samsung_group/download/2014-aboutamsung-eng.pdf)
- <sup>1</sup> Samsung Electronics, “Cell Phones”. Samsung Group. From the web: <http://www.samsung.com/us/mobile/phones/galaxy-s/galaxy-s8-plus-64gb--verizon--midnight-black-sm-g955uzkavzw/#specs>
- <sup>1</sup> Tibken, Share. “BlackBerry co-founder Lazaridis to retire May 1<sup>st</sup>”. CBS Interactive Inc. March 28, 2013. From the web: 28 Samsung Electronics, “Cell Phones”. Samsung Group. From the web: <http://www.samsung.com/us/mobile/cell-phones>
- <sup>1</sup> Cochrane, Joe, and Austen, Ian. “BlackBerry’s partnership with Foxconn signals shifting priorities”. The New York Times Company. May 18, 2014. From the web: [http://www.nytimes.com/2014/05/19/technology/blackberrys-partnership-with-foxconn-signals-a-shift.html?\\_r=0](http://www.nytimes.com/2014/05/19/technology/blackberrys-partnership-with-foxconn-signals-a-shift.html?_r=0)
- <sup>1</sup> BlackBerry, “Smartphones”. BlackBerry Limited. From the web: <https://us.blackberry.com/smartphones>
- <sup>1</sup> Chen, John “BlackBerry: The way forward”. CNBC LLC. December 30, 2013. From the web: <http://www.cnbc.com/id/101300396>
- <sup>1</sup> <http://www.cnbc.com/2017/04/12/blackberry-awarded-815-million-in-arbitration-case-against-qualcomm.html>
- <sup>1</sup> See <https://www.symantec.com/content/dam/symantec/docs/data-sheets/corporate-fact-sheet-en.pdf>.
- <sup>1</sup> Verizon enterprise website, solutions <http://www.verizonenterprise.com/solutions>.
- <sup>1</sup> See [https://www.imperva.com/docs/Imperva\\_Company\\_Overview.pdf](https://www.imperva.com/docs/Imperva_Company_Overview.pdf).
- <sup>1</sup> See <https://finance.yahoo.com/quote/impv/financials?ltr=1>.
- <sup>1</sup> Chen, John, “An open letter from John Chen.” September 29, 2014. BlackBerry Inc. From the web: <http://blogs.blackberry.com/2014/10/classic-john-chen/>
- <sup>1</sup> <https://us.blackberry.com/company/newsroom/press>