ASHESI UNIVERSITY COLLEGE

DESIGNING A STRATEGIC INVESTMENT FRAMEWORK FOR BANQMONI LIMITED

APPLIED PROJECT

By

MERCY ASANTE

Applied Project Report submitted to the Department of Business Administration, Ashesi University College in partial fulfillment of the requirement for the award of Bachelor of Science degree in Business Administration

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DECLARATION

I hereby declare that this applied project report is a result of my own work and that no part of it has been presented for another degree in this university or elsewhere.

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I hereby declare that the preparation and presentation of the Applied Project Report were supervised in accordance with the guidelines of applied projects laid down by Ashesi University College.

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Supervisor's Name: Mr. Anthony Essel-Anderson

Date: …………………………………………………………………………………………..

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EXECUTIVE SUMMARY

BanqMoni Limited is a financial technology service provider that started operations in August 2017 with a mission to making banking convenient for Ghanaians. This mission is achieved through its platform that allows individuals to directly make instant deposits into any bank account within Ghana at any time from their mobile money account.

The firm has a reliable source of funding from shareholders that ensure that cash outflows for the year are budgeted and catered for. Owing to this, revenue earned through the platform sits in a zero-interest current account with the firm’s settlement bank unproductive. Thus, BanqMoni is unable to deploy its surplus cash efficiently. According to the CEO, this problem tends to erode the firm's future earnings as the bank continues to deduct bank charges.

Insights from literature reviewed affirms that there is a tradeoff between profitability and liquidity. Maintaining unproductive surplus cash has an implicit cost in the form of losing out on possible investment income. Hence, it is essential for firms to hold an optimum level of cash to avoid the adverse effects of keeping excess cash or low cash levels.

Based on in-depth research, cash management and investment analysis framework that replicates the Miller-Orr cash management model was designed in Microsoft Excel to ascertain the firm’s optimal cash as well as how much funds to invest and returns to expect from the investment. An investment policy was also documented to enable the firm to make prudent investment decisions. Through this framework, the firm will be able to maximize its surplus cash and earn additional investment income that will improve the overall profitability of the firm.

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CHAPTER 1: INTRODUCTION

1.0 Purpose of the Project

This applied research project seeks to develop a cash management and investment analysis framework for BanqMoni Limited. The tool will assist the firm in determining its optimal cash balance, as well as when and how much the firm must invest or redeem, to reach the optimal level.

An investment policy statement will also be documented for the firm. The policy will detail strategies for prudent investment of the firm's surplus funds while maximizing the efficiency of the firm's cash management activities. The policy is intended to be specific and meaningful for the firm, yet flexible for future use.

1.1 Scope of the Project

There are five sections in this report. The introductory chapter gives a profile of BanqMoni Ltd. and an evaluation of the company’s strengths, weaknesses, opportunities, and threats (SWOT). The chapter also explores the macroenvironment and microenvironment in which the firm operates. Chapter two looks at assessing the operations of BanqMoni Ltd to identify a business gap and propose solutions. To fill that gap, chapter three reviews existing literature to understand the problem identified and ascertain the viability of the proposed solutions. Chapter four primarily looks at the designed solution or tool, as well as the plan for implementation. The final section looks at limitations, conclusions, and recommendations drawn from the project.

1.2 Profile of BanqMoni Limited

BanqMoni is a financial technology (FinTech) service provider, fully registered under the laws of Ghana as a limited liability company. BanqMoni was launched in

August 2017. Its goal is to support banks in their efforts to build a thriving and cash-lite economy. The firm seeks to achieve this through its insurance-backed platform in partnership with GT Bank, which enables anyone to deposit money into any bank account within Ghana at any time by visiting any mobile money agent or from their mobile money wallet.

The firm wishes to leverage the growth of mobile money services among Ghanaians to help achieve financial inclusion. The vision of the startup is to innovate the banking and payment sector, to enhance financial inclusion through its simple mobile solutions. Thus, its mission is to make banking convenient and easy for Ghanaians, through its platform that frees depositors from the hassle of visiting bank branches.

BanqMoni exudes three core values: world class, integrity, and reliability. Their service and employees deliver world-class standards in every aspect of the business. They also ensure honesty in all their dealings, as they uphold ethical standards in all their operations. The firm's clients, partners, and employees can rely on them, as their empathetic strength enables them to provide and support their stakeholders throughout any process.

Beyond instant bank deposits, BanqMoni seeks to pioneer innovative solutions in the money transfer and payment space. These innovations include building an electronic cheque solution that eliminates the use of paper cheques for withdrawals and ensures that the environment is protected by reducing the printing of chequebooks.

1.3 Rationale for Selecting BanqMoni Limited

The role of BanqMoni Ltd in the society cannot be overlooked. As a player in the FinTech industry, its services are core to transforming the traditional mode of banking into a modern and digitized one. Partnership with GT Bank ensures that funds deposited using the platform reflect in the bank account within few hours of deposits, hence doing away with delays in crediting of funds to accounts.

Unfortunately, in an interview with the firm, it was gathered that because of funds provided by shareholders to cover operational expenses, the firm saves its revenue made on its platform in a zero-interest current account, which attracts bank charges. This decision orchestrated by the Board of Directors is an opportunity cost to the firm as they are holding idle cash, which could be better invested to generate profit for the company. Besides, this decision may also increase overall risk by damaging business value and making management excessively confident (Lee & Powell, 2011).

According to the Miller-Orr model of cash management, firms need to find out their optimal level of cash balance to manage tradeoffs between opportunity cost of holding cash and trading cost of selling and buying marketable securities (Stone, 1972). The firm's productive edge may be eroded by holding surplus cash balance (Lee & Powell, 2011). The firm also faces an inflation risk as its purchasing power decreases year after year as inflation rates increases. These challenges can impede the ability of the firm to continually be in business (Oler & Picconi, 2013).

Considering that BanqMoni Ltd does not have an optimal cash level highlights the need for this project to ensure efficient deployment of idle funds by investing surplus cash in short-term securities. Hence, cash management and investment analysis tool, which will enable the firm to determine its optimal cash balance and invest surplus cash profitably will be designed in Excel. Successful completion of the project will ensure that available funds at BanqMoni are managed and invested in a productive manner while improving profitability and maximizing shareholders' wealth.

1.4 Internal Context Analysis

This subsection provides a SWOT analysis of the firm. It is a simple tool that provides insights on the strengths, weaknesses, opportunities, and threats of an organization (Downey, 2007). It defines the goals of the firm and identifies the internal and external factors that are central to achieving that goal. Data for this analysis was gathered from interactions with employees of BanqMoni Ltd and a review of the industry.

Strengths	**Weaknesses**
• Great Organizational culture • Expertise in software development • Lower rates than competitors • Simple and convenient service • Reliable operational funds	• Little market presence and brand reputation • A small staff with little work experience • Idle cash • Loose recruitment procedures
Opportunities	**Threats**
• Government support for a cashless economy • Tax incentives for private sector businesses • Growing savings and investment culture among Ghanaians • Increasing demand for FinTech services	• Mobile money fraud • Unstable mobile networks • System breakdowns from partner financial institutions • Technological advancement and imitability among industry players

Strengths

- Organizational culture: The working atmosphere is one of a conducive kind that allows the employees to feel like a part of the firm. Since BanqMoni is a startup with small staff strength, the firm represents the shared values and principles of each employee. The directors also ensure that employees voice out their concerns through their weekly progress reports, which enable the executives to understand what is happening on the grounds.
- Organizational culture: The working atmosphere is one of a conducive kind that allows the employees to feel like a part of the firm. Since BanqMoni is a startup with small staff strength, the firm represents the shared values and principles of each employee. The directors also ensure that employees voice out their concerns through their weekly progress reports, which enable the executives to understand what is happening on the grounds.
- Lower Transaction Rates: Relative to its competitors, BanqMoni charges lower rates on the use of its platform to deposit electronic money to any bank account.
- Fast and straightforward deposit transactions: Unlike the usual bank deposits that take a day to reflect in the client's account, BanqMoni's platform enables customers to make instant special deposits into any bank account. The platform ensures that the amount transferred is credited to the client's account within a few hours of transacting on the platform, without having to wait for the next day to receive the fund.
- Expertise in software development: The firm has dedicated experts in software development, who can ensure the introduction of new and innovative digital solutions to outcompete its competitors and protect its competitive advantage.

- Operational Funds: BanqMoni Ltd has a steady cash inflow from shareholders that ensures that the firm can carry out its operational activities smoothly without hitches. As a result, the revenue streams of the firm are not relied on by management.

Weaknesses

- Little market presence: Since the company is new in the market, they have little market presence or reputation because no one knows about the company yet. This weakness is a setback as the firm lacks experienced marketing personnel that will help the firm register its name in the minds of consumers.
- Small staff: The firm has a weak staff strength, with a shallow skill base in marketing. This issue makes it very difficult for the firm to efficiently carry out its marketing plan, to safeguard the profitability and growth of BanqMoni Ltd.
- Idle Cash: Because the firm has reliable access to funds for operations, they do not make plans for the use of its revenue, thus leaving the income in a current transactional account that is subject to bank charges and no interest.

Opportunities

- The government has shown its willingness to attain a cash-lite Ghanaian economy through digital payment platforms built by FinTechs. As such, it introduced the National Digital and Property Addressing System as well as revised the Payment Systems and Services Act (Bank of Ghana [BOG], 2017), which will enable customers to efficiently use electronic payment systems with ease and without fear of fraud. This system is an opportunity for BanqMoni to continue operating and growing its business as a FinTech player.

- Tax Incentives for Private Sector Businesses: As part of the current government's plan to encourage private sector participation, she has promised to reduce corporate tax to 20% (Larnyoh, 2017). This tax savings provide the avenue for businesses, including BanqMoni, to generate enough earnings to embark on their operational activities. Aside from this promise, the 2018 budget highlighted that start-ups would enjoy a tax holiday period, whereafter, a preferential tax rate will apply for a period between three to five years (PwC, 2017). These businesses will also be able to carry forward tax losses for up to five years. This incentive will reduce the likelihood of BanqMoni and other startups folding up in their infancy.
- Growing savings and investment culture among Ghanaians. The upsurge of mobile money and the growing number of savings and loans corporations in the country has made it convenient for people to save their surplus income. Coupled with the desire of the populace to invest, BanqMoni is better positioned to generate turnovers as this is an indicator of potential clients.
- Growing demand for FinTech services: Mobile money is gradually becoming a significant means of payment for the unbanked and the underserved in Ghana. Its rapid growth is due to the increasing use of mobile phones, particularly in rural areas. These digital payment systems are convenient and fast, hence preferred by users (BOG, 2017). With the increased usage of Mobile Money, BanqMoni can generate revenue to sustain its operations and achieve its growth objectives.

<u>Threats</u>

- Unstable network from Telecommunication firms: Mobile money operators depend on the smooth running of the telecommunication network to complete transactions on behalf of BanqMoni. Accordingly, network breakdowns from the Telecommunication firms can impede the operations of the mobile money operators leading to lost sales.

- System breakdowns from partner finance institution: BanqMoni has partnered with GT bank to facilitate the transfer of funds from one bank or system to another. This medium suggests that the completion of transactions is dependent on the efficacy of the network systems provided by GT bank. Thus, any breakdowns or delay in this system can affect the completion of transfers and hurt the firm's turnover and survival.
- Technological advancement and imitability of services by FinTech players: Technology is fast moving, and an inability to keep up can leave any firm obsolete. Thus, BanqMoni must do well to keep an open mind to changing needs of individuals and institutional clients. Besides, due to low differentiation of products in the FinTech industry, it is effortless for players of the firm to replicate services of each other. Hence, BanqMoni must work up to sustain its competitive edge by introducing innovations and making improvements to its digital solutions to ensure it is still a go-to choice for its clients.
- The constant growth of mobile money services in the country has also increased fraudulent activities in the economy, as fraudsters send mobile money scam messages to users with the intention of deceiving them into sending their monies to them (Morttley, 2017). Despite Telecommunication networks strengthening their internal controls, this problem persists, thus robbing subscribers of the joy of using this innovative way of transacting business. This issue may affect the ability of BanqMoni Ltd to generate enough revenue on its platform.

1.5 Overview of the External Environment

A PESTLE analysis is a framework used to diagnose the external environment within which a firm operates (CIMA, 2007). It is beneficial for this project because it is essential to have sufficient understanding of how the macroenvironment may affect the operations of the business and in effect its cashflows. The PESTLE analysis will help to assess the financial technology environment and decide whether it is lucrative to transact business. The factors used in the study of the external environment include political, social, economic, technological, legal, and environmental factors.

1.5.1 Political Factors

Ghana is politically stable when compared to its neighbors. This status affords investors with the right atmosphere to conduct business peacefully. In December 2016, Ghana experienced a peaceful change of power from one political party to another. According to African Economic Outlook, this has boosted the confidence of local and foreign investors to do business in Ghana (Okudzeto, Lal, & Sedegah, 2017). The peaceful political environment assures investors and fund providers about the safety of their investments and the potential to continually invest in BanqMoni Limited.

The Ghanaian government is committed to promoting a cash-lite society. This objective gives BanqMoni added advantage as an industry player seeking to fast-track Ghana's economy into a cashless economy and supports the business to operate as a going concern. Furthermore, the government of Ghana recently introduced a National Digital and Property Addressing System, which will assist the digital payment space by enabling Ghanaians to efficiently use mobile money payment systems (Yeboah, 2017). On the regulatory side, the central bank has also revised the Payment Systems and

Services Act, to support digital payments, given the increasing role of FinTech and Telecommunication firms in the digital payment space (Graphic Online, 2017). These provisions provide an avenue for BanqMoni Limited to operate profitably with full government support.

1.5.2 Economic Factors

The service sector, the largest in the country, contributed about 56% to the Gross Domestic Product (GDP) of Ghana in 2017 as the industry grew by 4.7% in 2017 (Ministry of Finance, 2017). Ghana also recorded an overall real GDP growth rate of 7.8% in 2017, which is an improvement from the subsequent years. The government of Ghana has also abolished the 17.5% Value Added Tax (VAT) on financial services, to enhance the growth of financial transactions and mobile money payment systems (Ghana Revenue Authority [GRA], 2017). With some taxes reduced and abolished, investment in the private sector is projected to increase and create a business-friendly environment (PwC, 2017).

Ghana's total debt increased from USD29.2 billion (73.1% of GDP) at the end of 2016 to USD 31.7% billion (68.6% of GDP) at the end of September 2017. This reflected a decline in the rate of external debt accumulation as a percentage of GDP, due to higher GDP growth (The World Bank, 2017). The inflation rate remained moderate in 2017, allowing the central bank to reduce its policy rate. Inflation rate decreased to 11.6% as at October 2017 relative to 15.8% in October 2016 (Ministry of Finance [MOF], 2017). This improvement led to the cutting of the policy rate to 20% in November 2017 (Bank of Ghana, 2017). The cedi also depreciated by 4.42% against the dollar in September 2017, compared to a depreciation of 4.44% in 2016 (MOF, 2017).

With a decrease in inflation, there would be savings on individual disposable incomes to facilitate the use of services provided by BanqMoni. Again, the positive macroeconomic fundamentals stimulate economic activities which have the potential of increasing the turnover of BanqMoni because of increased patronage by clients.

1.5.3 Socio-cultural Factors

The banking sector cuts out a considerable proportion of Ghanaians from playing in the industry (GhanaBusinessNews.com, 2016). However, with the rising penetration of smartphones, as reported by Jumia Ghana, an opportunity to explore other innovative ways of providing financial services to underserved communities presents itself. The report asserts that there is an increase in demand for phones built on operating systems that enable users to use mobile applications and surf the internet (B&FT, 2017). Owing to the rising number of mobile phone users, BanqMoni will be able to advance digital and economic inclusion using its digital payment and deposit platform through mobile money.

Despite this advancement, mobile money payment platforms have experienced loopholes often used by fraudsters who target mobile phone users. This problem has made it difficult for Ghanaians to enjoy the benefits of mobile money transactions. The situation may affect the cash flows and the ability of BanqMoni to operate as a going concern. However, with an innovative technology that promises security of financial transactions, the firm can be a significant market player in the FinTech industry.

1.5.4 Technological Factors

Unstable mobile networks are a norm in specific areas in Ghana. This drawback is mainly due to poor network coverage, a factor which BanqMoni has no control over. This situation is a threat to the firm as mobile money services rely on the network to serve their subscribers faster and conveniently. The introduction of 4G LTE network in Ghana has also accelerated the increase in internet usage (MTN Ghana, 2016). The high-speed connectivity of the 4G LTE will help promote business growth by increasing productivity and enriching social lives.

Ghana suffers perennial electricity shortages which tend to hurt the profitability of businesses. This is because institutions' connectivity to the internet is dependent on the availability of electricity. Thus, when the power supply is intermittent, firm activities are curtailed in the sense that if their transactions are dependent on the internet, few sales will be made when the power supply is low. BanqMoni, like other financial technology companies, stands to undergo this risk as their services augment around internet connectivity.

1.5.5 Legal Factors

The central bank of Ghana issued new Guidelines – the Electronic Money Issuers (EMI) and Agent Guidelines- to regulate Mobile Financial Services in the country (GOG, 2017). These guidelines will create a regulatory environment that will ensure convenient and safe retail payments and fund transfer. Thus, FinTechs have an obligation to protect customers by operating in conformity to the rules set out in the EMI Guidelines. There are also some strict data protection laws which are regulated by the National Communications Authority (NCA) to safeguard the privacy of individuals in the country (BOG, 2017).

1.5.6 Ecological Factors

The advent of FinTech companies has positively influenced the natural environment within which financial sector operates. This is because FinTech companies hardly use paper in their daily operations. As such, they are at the forefront of the preservation of nature through sustainable practices such as paperless offices.

The need for higher population coverage by telecommunication companies and the growing demand for data transfer by mobile phone users is increasing the number of cell phone towers. This has also increased the radiation emission levels due to the use of new and more rapid emission technologies. Attention has been drawn to the hazardous effects of the radiation on human health and the environment.

1.6 Ghana's Financial Technology Industry

The FinTech Industry relies on technology to make financial services more efficient and user-friendly. It is characterized by small startups that seek to change the traditional financial services, in areas such as mobile payments, loans, and money transfers. The FinTech industry is still evolving in Africa, especially in Ghanaian.

According to payment statistics from Bank of Ghana, mobile money transactions were worth GHS 78 billion in 2016, which is a significant increase of over GHS 35 billion, relative to 2015 (Myjoyonline, 2017). The industry has made it possible to capture transactions that are made outside of banks and has also made banking more accessible and convenient. Competitors within the sector include Mobile Money services provided by Telecommunication companies, ExpressPay, Slydepay, MyGHpay, IT Consortium, Zeepay, Interpay, BanqMoni Ltd, Sika Ltd, Nsano Ltd., etc.

Curtis Vanderpuije, CEO of ExpressPay confirmed that there are gains in the FinTech industry, yet growth within the industry is complicated. According to him, the sector will thrive when cash-lite transactions become a norm for ordinary Ghanaians and Africans (Myjoyonline.com, 2017). Players of the industry must be innovative and provide unique service experiences, to become the go-to choice for consumers. Thus, unceasing innovation within the industry will ensure that business is swift, efficient, and ultimately bring more people into the digital era (Myjoyonline.com, 2017).

Currently, the Bank of Ghana has guidelines that regulate Mobile Financial Services in the country. Players in the industry thus are required to collaborate with banks when doing transactions that require depositing. This implies that the banks indirectly regulate FinTechs (Myjoyonline.com, 2017).

The most prominent challenge the industry faces, however, is getting consumers to patronize the exciting new solution introduced by FinTech firms and ditch cash. Ghana is progressing with its desire to create a cashless society. However, a clear national policy is absent, to bring on board all stakeholders. Also, most of the innovations that the industry comes up with are usually done in collaboration with the Banks and telecommunication firms. Hence, it becomes difficult to roll out a product without the consent or partnership with a bank.

1.7 Competitive Analysis

The Porter's five forces analysis is a management analysis tool used to examine the industry and understand the fundamental forces of profitability in a sector. This analysis will enable BanqMoni Ltd to know how the five competitive forces influence profitability and develop a strategy for enhancing its competitive advantage and long-term profitability in the Financial Technology industry.

1.7.1 The threat of New Entrants

Threats of new entrants in the industry are moderate. This is because it takes a lot of money and time to build a platform and partner with a firm to help serve millions of Ghanaians. Furthermore, brand loyalty discourages new entrants from entering the market unless they are targeting an entirely new market. Despite these factors, there are virtually no entry barriers for starting new firms in this sector, and this intense rivalry compels firms to be competitive not only on costs but also to upgrade and innovate their products regarding simplicity and convenience. Thus, this threat of potential entrants can drive down profits, as incumbent firms wanting to keep their market position would embark on marketing and investment activities, which involves funds.

1.7.2 Bargaining Power of Suppliers

Suppliers to financial technology firms consist of banks and telecommunication companies who wield a lot of power. These FinTechs are required to collaborate with banks to come up with their innovations (GOG, 2017). Once installation of a telecommunication company’s internet infrastructure has been done, switching cost becomes high. This inadvertently gives the partnered firms unwarranted power, hence increasing the bargaining power of such suppliers. The industry's profitability is threatened, as any breakdown of the systems of the partnered firms may significantly reduce the profits generated by the industry players.

1.7.3 Bargaining Power of Buyers

Bargaining power of customers is moderate. Just because, more Ghanaians have little access to information, therefore little knowledge about the options available causing the price to be inelastic even though the majority of Ghanaians are sensitive to price. Also, because the digital payment system is convenient and fast, users may prefer convenience over pricing. Another reason bargaining power of customers is moderate can be attributed to brand loyalty attached to specific telecommunication networks. Thus, the profitability of BanqMoni can be positively impacted when they collaborate with banks and telecommunication firms that clients can associate more with.

1.7.4 The Threat from Substitute Products

The mobile money payment system ran by the four telecommunication companies has seen tremendous growth over the past few years. There have been about 35 billion transactions with well above 100,000 mobile money agents across the country (BOG, 2017). The increasing rate of mobile money transactions shows the fast pace in which Ghanaians are adapting to mobile financial solutions. Since the digitized solutions of FinTech firms rely on mobile money services to transact, telecommunication firms are not a significant threat to the industry, hence a relatively low threat of substitutes. However, mobile banking platforms created by banks are substitutes that can reduce the profit of the industry, as they are becoming relatively like the platforms of FinTech firms, except that most of those platforms may need internet connectivity.

1.7.5 Rivalry among the existing players

Rivalry among competitors in the industry is high. This is because there is little product differentiation for these digital payment platforms, therefore intensifying competition. Firms that have been able to build a great brand among consumers can increase their profitability in the industry, as they do not have to engage in a lot of marketing activities. This, however, makes it difficult for the small firms in the industry to compete, hence reducing their profit as they decrease price to be able to sell more.

Overall, the industry is very competitive as most of the factors discussed were moderate, hence posing a threat to the profitability of BanqMoni in the industry.

CHAPTER 2: NEEDS ASSESSMENT

2.0 Chapter Overview

This chapter discusses the problems faced by BanqMoni Limited in the Financial Technology industry as an emerging firm. The section explains the data gathering procedures employed in identifying the need for the project. It also discusses the sampling techniques used with reasons for the use of such techniques.

2.1 Needs Assessment

A need is “anything that is necessary but lacking” (Free Dictionary, n.d.). Kimpston and Stockton (1979) define it as a gap between the present and desired outcomes. In identifying this need, a needs analysis was conducted. This is the process of gathering and examining information to get a more accurate picture of a challenge, to fill a gap (McCawley, 2009). The assessment can be done either by interviewing key informants, organizing focus group discussions, or administering questionnaires (McMillan et al., 2017). According to Kimpston and Stockton (1979), the steps to determining a need or problem involve generating needs and assigning ranks to such discrepancies. This prioritized order guides decisions about which gap to close first. From this project, performance analysis will be performed to determine whether there are inefficiencies at BanqMoni.

2.2 Methodology

The objective of conducting the needs assessment is to identify deficiencies in the cash management activities of BanqMoni Limited. The respondents for this study are the employees of BanqMoni. The project uses the exploratory research design, which provides the researcher with insights and understanding of the problem studied. The qualitative research approach was employed. This is because data was collected in the form of verbal description. The qualitative research approach investigated the why and how behind the current operations of the firms.

Primary data collection was achieved through face-to-face, semi-structured interviews. This is a very flexible technique for small-scale research, which allows the interviewer to set up a general structure by deciding in advance the areas to be covered and the central questions to be asked (Drever, 1995). It also gave the interviewer the freedom to diverge from the interview guide and probe further on a subject matter (McLeod, 2014).

The sampling technique employed was purposive sampling. Purposive sampling is a technique used in qualitative studies, where the sample is selected based on specific characteristics identified concerning finding answers to research questions (Tongco, 2007). In this regard, since BanqMoni is a startup with nine employees, four primary informants were engaged, which included the managing director, the marketing and sales officers, and finance director. This is because they were well equipped with knowledge about the company's operations and current situation due to their primary role in the firm. The respondents were asked similar questions, which were recorded for later analysis. This was done to provide valid and reliable data for the project. Secondary sources, such as published literature was also considered to give a broad and balanced comprehension of the subject. Literature to be reviewed includes those on cash management, investment policy and the deployment of idle or excess cash. Reference to research and the current outcomes of the firm, a solution is put forward and designed.

2.3 Problem Statement

As per BanqMoni's business model, the firm's revenue comes from fees charged from transactions on its platform. These fees sit idle in a current transactional account with its settlement bank without bearing any interest, even though the firm has profit target to meet. This account attracts bank charges, which serve as an additional expense to the firm, hence reducing the firm's net earnings. As a startup, the firm is unable to deploy its excess cash efficiently to earn additional income. The firm also loses out on possible investment opportunities because of not holding optimum cash levels. This is an opportunity cost of carrying cash. It would be very profitable if these revenues could be invested in short-term securities to improve future returns.

2.4 Key Findings

Low Market Presence

From the interviews with management, it was established that low market presence might inhibit the firm from meeting its sales target, as consumers in the industry are not aware of the existence of BanqMoni Limited.

Staff Strength (Marketing Team)

BanqMoni Ltd also has a small staff strength who have little experience in marketing. On account of this, the team has not been able to implement its detailed marketing plan thoroughly to ensure that the firm continues to hold on to its competitive edge in the market. These findings were discussed as weaknesses earlier under the SWOT analysis.

Operational Funds from Shareholders

According to the CEO, the firm has two types of accounts: the operational account and the transactional account. The operational account holds budgeted funds from shareholders to cover annual operational expenses like salaries, rents, and marketing. Hence, the day-to-day cash needs of the firm are funded from this account. Since BanqMoni is an unlevered firm, all its operational funds come from shareholders, and its Board of Directors ensure that there is a consistent supply of funds for operational activities in the future.

Revenue from Sales

The transactional account, on the other hand, holds income made by the firm. The firm's business is such that each transaction performed on the platform by clients constitute a transaction fee, which is recorded as revenue from sale by BanqMoni. Therefore, this revenue is saved in this account, which is a zero-interest current account. However, due to sufficient funds available in the operational account, Board of Directors do not see the need to use the money in the transactional account, hence, prefers to leave the cash in the current account with their settlement bank. This account, however, incurs bank charges, which reduces the earnings made by the firm. As idle as this revenue is in the account, the firm still does not have any possible ways of deploying this cash to yield extra earnings for the firm.

Inefficient deployment of excess cash

As a startup that seeks to introduce more innovative digital solutions, while still unsure of its success in the FinTech industry, it is inefficient to hold idle cash in a current account. This is because this decision will eventually erode the firm of its earned revenue in the future (Oler & Picconi, 2013), as the bank will continually deduct bank charges. In establishing a way to deploy the revenue made profitably, a cash management and investment analysis framework can be developed to eliminate the opportunity cost of holding excess cash (Rehn, 2012).

The various needs identified are arranged in a prioritized order based on weights assigned to them using factors that help explain the severity of the gap. The factors include the impact on operations, profitability, and shareholder value. A higher market share can help a firm to attain grander scale in its operations. Wernerfelt (1986) revealed that there is a direct relationship between market share and profitability, thus with a lower market presence, a firm will be unable to maximize its profit. Moreover, consumers' relationship with brands also drive purchases and their loyalty (Aspillera, 2016). This implies that with a high market presence, the firm may be able to increase its revenue, which may translate into higher profit (Buzzell, Gale, & Sultan, 1975). The opposite is true for a firm with weak brand awareness. Likewise, de Mortanges (2003) emphasizes that a firm's brand value reflects the market value of the firm, and thus has an impact on shareholder value.

On the effect of an inexperienced workforce on operations, Quinones, Ford, and Teachout (1995) state that employees with little work experience are likely to have a lower level of job performance, which may eventually affect productivity. Besides, when efficiency is lost in the firm, the firm's profitability and smooth operations may also be impacted.

Deloitte (2015) on the other hand infers that when a firm is faced with issues of how to deploy its cash, it becomes difficult for such a firm to improve its profitability and improve its operations. This is because firms with excess cash holdings become overconfident, which may affect productivity that is assigned to operational activities. Also, firms forfeit profit when they maintain excess cash balances (Mungal, 2014). This is supported by Lee and Powell (2010), who states that the market penalizes firms who hoard cash and that the marginal value of cash also decreases with a large cash balance.

On account of the above review of the literature on the factors, the following ratings of the needs under review have been provided.

(1 = little significance, 2 = somewhat significant, 3 = extremely significant)				
Key Findings	**Impact on operations**	**Impact on profitability and firm value**	**Implication on shareholder wealth**	**Total**
Little market presence	1	3	2	6
Inefficient deployment of surplus cash	2	3	3	8
A workforce with little work experience	3	2	1	6

A score of 1 means that if the need is not addressed, it will have little influence on the factor, while three indicates that the gap has the potential to impact the element significantly and negatively. From the table above, the need with the highest score is the inefficient deployment of surplus cash. This implies that if an investment framework is developed to ensure the management of money in the firm, it will help generate more earnings for the firm and save the firm from eroding its profitability through bank charges and loss of investment income. The framework will have a moderate relevance on the operations of the firm, as the cash activities of the firm will be efficiently managed, while still ensuring that there is an optimal level of funds for operations. A score of 3 accredited to impact on shareholder value means that the framework will be very significant in improving the overall worth of shareholders.

CHAPTER 3: MASTERY OF SUBJECT MATTER

3.0 Chapter Overview

This chapter discusses critical areas relevant to the current menaces identified with BanqMoni Ltd concerning lack of an efficient cash management system, holding of excess cash, the opportunity cost of lost investment avenues and returns among others. An analysis of the literature using scholarly articles will expound the extent to which the problems indicated will affect the firm's ability to exist as a going concern, its value and propose a solution.

3.1 Working Capital Management

The moment a firm starts to operate and grow, there is an urgency to decide how to invest funds, the amount of cash and inventory to hold, how much credit sales to allow to customers, and how much external financing to take on (Preve & Sarria-Allende, 2010). The cash flows and profitability of the firm depend on how these decisions are made. Working capital management focuses on monitoring and utilizing a firm's inventories, account receivables and payables, and cash, to safeguard the firm' operations financially (Gill, Biger, & Mathur, 2010). The goal is to ensure that the firm maintains sufficient cash flow to meet its short-term expenses and obligations, while at the same time making sure that assets are invested in the most productive way (Brealey, Myers, & Allen, 2014). For this project, the cash component of working capital will be investigated.

3.2 Motives for Holding Cash

Cash is considered as the "lifeline of corporate financial management" (Borici & Kruja, 2016) since it is at both the beginning and end of working capital production cycle

– cash, inventories, receivables, and cash (Brealey, Myers, & Allen, 2014). Determining and holding an optimal level of cash is crucial to the success of every corporation, as it is the basis of business solvency. Borici and Kruja (2016) emphasize this by stating that sufficiently liquid companies may escape the need to utilize costly and restrictive funding opportunities available in the credit market. Several other reasons underlie the holding of cash by a firm.

Keynes pointed out three motives for holding cash: precautionary motive, transaction motive and speculative motive (Davidson, 1965, pp.47). The transaction motive provides the firm with an internal financing capacity, which enables a firm to take care of its day-to-day operational expenses. The precautionary reason, on the other hand, arises because of unforeseen or unexpected disbursements that may need to be met (Davidson, 1965). Thus, to avoid any liquidity threat, firms hold cash to cushion themselves against volatility. Firms may also keep cash to take advantage of unexpected profitable opportunities that do not happen to exist in the regular course of business. This is known as the speculative motive of holding cash (Davidson, 1965).

The pecking order theory and trade-off theory stipulates some benefits and costs of holding cash. Holding cash will enable a firm to achieve its liquidity needs, provide a safety buffer and avoid the cost of external financing. However, it compels firms to forgo additional earnings (Yan, Yi-Tsung, & Chi-Wing, 2015). Therefore, the appropriate level of cash should be deduced and implemented to avoid the adverse effects of holding excess cash or low cash levels.

3.3 Cash Management

Business Dictionary defines cash as “ready money in the bank or the business." Cash management relates to the efficiency of the collection, disbursement, and short-term investment of cash (Aliet, 2012). It is a form of working capital management technique that enhances the firm’s ability to tackle or meet its short-term obligations with prime focus on cash, without sacrificing profit owing to idle cash holdings (Mungal, 2014). In brief, cash management is related to meeting planned and unexpected demands on the firm’s cash, while minimizing unproductive cash balances and investing short-term excess cash profitably.

Cash management is particularly important for improving the financial performances of new and growing businesses (Prose, 1983). Duarte (2013) observed that liquid firms have stronger growth opportunities, as they can undertake diversified projects. She, however, argued that such firms are more likely to engage in value-destroying activities; thus, have a higher business risk (Duarte, 2013).Without closely monitoring cash, a business can become insolvent, because it does not have ready cash to take care of regular or unforeseen expenses. It is estimated that between 70% and 80% of SMEs in South Africa fail and poor cash management has been identified as one of the primary reasons for their failure (Mungal, 2014). As BanqMoni falls in the SME category, it is prudent that measures are put in place to ensure its sustainability in the FinTech industry.

3.4 The Optimal Level of Cash Balance

Determining an appropriate cash balance is a persistent problem in managing a firm’s finances. Due to the existence of a tradeoff between the cost of holding excess cash and insufficient cash, it is necessary to keep an optimum level of cash to meet the financial obligations of a firm. According to Bari (1980), maintaining surplus cash that is unproductive is a bad sign of cash management. He affirms that such a practice has an indirect cost in the form of the opportunity cost of interest forgone (Bari, 1980). Likewise, holding insufficient cash is associated with high trading and borrowing costs (Borici & Kruja, 2016).

Due to this tradeoff, it is vital for firms to concentrate on maintaining sound liquidity positions. This is when a balance is established between liquidity and profitability (Borici & Kruja, 2016). According to Lee and Powell (2011), the monetary value of cash decreases as a firm holds increasing amount of cash. When the firm has only a small proportion of its wealth in cash, a little extra can be handy. However, when the firm has a substantial holding of cash, any additional liquidity is not worth much. As such, forecasting cash flows is essential to allow for adequate management of working capital accounts (Lee & Powell, 2011). Therefore, the financial manager of a firm needs to hold cash up to the point where the marginal value of the liquidity is equal to the value of the investment interest forgone (Lee & Powell, 2011). This is the optimal level of cash that will be able to settle obligations in time.

3.5 Models of Cash Management

3.5.1 The Baumol Model:

The use of models in identifying the optimum level of cash originates from the work of Baumol in 1952 (da Costa Moraes et al., 2015). He explains the level of cash that is optimum using the inventory model, which considers the financial resources available as inventory (Baumol, 1952). In this way, the Economic Order Quantity (EOQ) model of inventory management is applied to cash management. This model considers two significant costs: opportunity cost and trading cost. The opportunity cost is how much the money could make when invested. The trading cost is how much it costs to trade in securities or other investments for cash (da Costa Moraes et al., 2015). Thus, the model tells how much cash to order at a time, to minimize holding (losing out on investment returns) and order costs (cost of selling and buying securities).

With this model, future cash flows are known with perfect certainty, and cash is evenly used over a period. Thus, a certain amount of money is credited to the cash account at regular intervals (Baumol, 1952). The imperfections of this model are that it assumes a constant disbursement rate of cash and does not allow for any buffer cash (da Costa Moraes et al., 2015). Cash outflows, however, occur at different times, hence are mostly unpredictable. Besides, transaction cost is difficult to measure prior to the actual transaction since it depends on the type of investment as well as the maturity period.

3.5.2 The Miller-Orr Model:

The Miller-Orr Model is also a cash management tool used to ensure that firms operate within an upper limit and lower limit for cash balance, so that they do not have too little or too much cash sitting idle (Miller-Orr, 1966). This model assumes uncertain cash flows, and that cash balances randomly fluctuate between a minimum and maximum bound. Therefore, there is an optimal cash balance between the minimum and maximum that the firm ideally ought to hold (Stone, 1972). When the cash balance hits the maximum level, the firm invests the difference between the optimal balance and the maximum cash balance in marketable securities like Treasury bills or commercial papers, to bring the cash balance back to the optimal bound (Stone, 1972). Also, if the cash balance reaches the minimum limit, it is an indication to the firm to redeem its investment securities by the amount that increases its cash balance to the optimal level (Stone, 1972). However, as long as the cash balance remains within the control limits, the firm will not trade in securities.

In using the Miller-Orr model, the firm must first determine its lower cash limit. Second is for the firm to estimate standard deviations of daily cash flows, then third determine the interest rate of investing in a security. The final step is for the firm to assess the transaction costs of buying and selling marketable securities (da Costa Moraes et al., 2015). The financial manager could consider the use of less liquid, potentially more profitable securities as investments for its surplus cash. The Miller-Orr model is deemed to be superior to the Baumol model in the sense that it does not assume a constant rate of use of funds, as is done by Baumol (da Costa Moraes et al., 2015). Also, the Miller-Orr model is based on the fact that the actual cash balance may fluctuate over the period; thus, rendering the model more realistic.

3.6 Investment of Surplus Funds

Idle cash is the excess of cash inflows over cash disbursements, which do not have any specific use currently. The problem with holding idle cash is that it contributes nothing towards profitability of the firm as it yields nothing (Aliet, 2012). Despite that, such cash cannot be permanently disposed of, as cash may be needed in the future to finance obligations. The surplus cash can thus be deposited with a bank to earn interest on the account (Berk & DeMarzo, 2014). Also, firms can invest their idle cash through a sweep program with their banks, where excess funds are automatically swept from the account into an interest-bearing investment, such as a money-market fund (Brealey, Myers, & Allen, 2014). Furthermore, such idle funds can be directly invested in highly liquid, less risky, and short maturity investment instruments such as Treasury bills, commercial papers, certificates of deposits, and money market funds (Berk & DeMarzo, 2014).

According to Berk and DeMarzo (2014), in selecting from these varieties of short-term securities, a firm has to consider the default and liquidity risk associated with the investment vehicle under review. The riskier an investment instrument is, the higher the expected return on the investment. Hence, the financial manager must decide how much risk the firm is willing to accept in return for higher yield (Berk & DeMarzo, 2014). This implies that if the firm expects to use the funds within the next 90 days, the firm will have to avoid investing in the less liquid options and choose a marketable securities.

More returns than the bank interest can be expected if a company deploys idle cash in money market securities. This supports the study of Pandey (2002) (as cited in Mungal, 2014) who argued that businesses should focus on maximizing cash inflows and minimizing cash outflows so that the surplus cash could be managed into an investment portfolio. This would, in return, increase a business's sales and ultimately improve profitability (Mungal, 2014). Even though idle cash in the form of revenue sits in an account with BanqMoni’s bank, it does not earn any nominal interest as the account is a current type. This implies that the firm is not deploying its cash efficiently using the various ways that have been proposed by reviewed literature.

In ensuring that firms invest in the right investment vehicle by looking for a balance between profitability and liquidity, firms need to develop guidelines, which may ensure the investment objectives of the firm are achieved.

3.7 Investment Policy

An investment policy statement is a document designed to ensure that the goals and objectives for a firm's investment portfolio are met (BlackRock, 2013). The policy includes specific information about the company's risk profile, return requirements and liquidity needs, as well as asset allocation for achieving the stated goals (Schacht, Allen, & Dannhauser, 2010). In summary, the policy provides strategies that afford a firm with an effective way of attaining an optimal liquidity and profitability through its surplus cash investment practices.

Developing a robust investment policy statement requires an understanding of how the market works, as well as familiarity with investment principles and practices (BlackRock, 2013). Before developing the policy, it is necessary to assess the firm's cash needs thoroughly and also to determine its risk profile. By forecasting its liquidity needs accurately, the firm will be able to quantify how much cash is available for strategic investment, while achieving excess returns (BlackRock, 2013). BanqMoni Limited evaluates its cash needs by preparing a budget, which highlights their expected cash outflows for each month of the year. This practice will enable the firm to decipher the cash balance to maintain.

Another essential evaluation to perform is to determine the types of risk that the firm may be exposed to. Thus, a firm needs to assess if its priority is to preserve its capital or to maximize returns (BlackRock, 2013). Depending on its cash investment objective, the firm needs to consider risks such as credit risk, interest rate risk, and liquidity risk (BlackRock, 2013). In performing the various assessments necessary to build an effective cash investment policy, the policy statement needs to identify and define the functions of the parties to the investment process (BlackRock, 2013). The financial advisor has a responsibility of acting in conformity to guidelines provided in the investment policy while ensuring that the firm's investment objectives are attained (Federated Investors, 2018).

3.8 Case Study

Enow and Kamala (2016) investigated the cash management practices of 200 SMMEs in the Cape Metropolis, South Africa. The study used a cross-sectional survey research design, which allowed for the collection of primary quantitative data through a closed-ended questionnaire survey. The study sought to find out if the respondents determined in advance their cash surplus or shortage, prepared cash budgets and invested cash surpluses, monitored their cash flows regularly and also held cash for speculative purposes (Enow & Kamala, 2016).

Overall, it was concluded that most SMMEs manage their cash efficiently. However, the findings of the study revealed that about 59% of SMMEs did not invest their cash surpluses, which implied that they were not maximizing the use of their cash resources (Enow & Kamala, 2016). Also, only a minority of these firms held cash for speculative purposes. This may imply that perhaps few firms are aware of the short-term investment opportunities available.

The authors recommended that the SMMEs invest their cash surpluses in profitable investments to optimize their cash management activities, which will further enhance the wealth of their businesses (Enow & Kamala, 2016). According to them, there is a need for the firms to maintain a balance between profitability and liquidity, which may be possible if the firms have optimal cash balances (Enow & Kamala, 2016).

3.9 Conclusion from Literature Review

With regards to the above findings from the review of the literature as well as results from needs assessment, BanqMoni Ltd needs to identify a way of efficiently deploying its excess cash. This is because they may lose out on earning investment income when they are unable to manage cash properly. Thus, the firm has to ensure that it maintains an optimal cash balance by using either the Baumol model or Miller-Orr model of cash management. The literature also emphasized that firms with surplus cash should invest it in highly liquid and less risky securities, to benefit from investment returns, which improves profitability.

Therefore, a cash management framework will be designed in Microsoft Excel to simulate the Miller-Orr model due to its advantages over the Baumol model. This is because the cash outflows of BanqMoni Ltd fluctuates, as it depends on the use of its platform. This tool will enable the firm to determine its maximum and optimal cash balance. Also, an investment analysis tool designed in Excel will be developed to assist BanqMoni to know how much surplus cash it has to invest and the returns that it will enjoy when it invests.

CHAPTER 4: SOLUTION AND IMPLEMENTATION PLAN

4.0 Chapter Overview

This section highlights the solution that needs to be developed to correct the problem available at BanqMoni Limited. The lack of a system to ensure efficient deployment of surplus cash at BanqMoni indicates an apparent gap that the solution will address. The chapter also portrays the framework to be developed, its components, and demonstrates the guidelines and implementation plan.

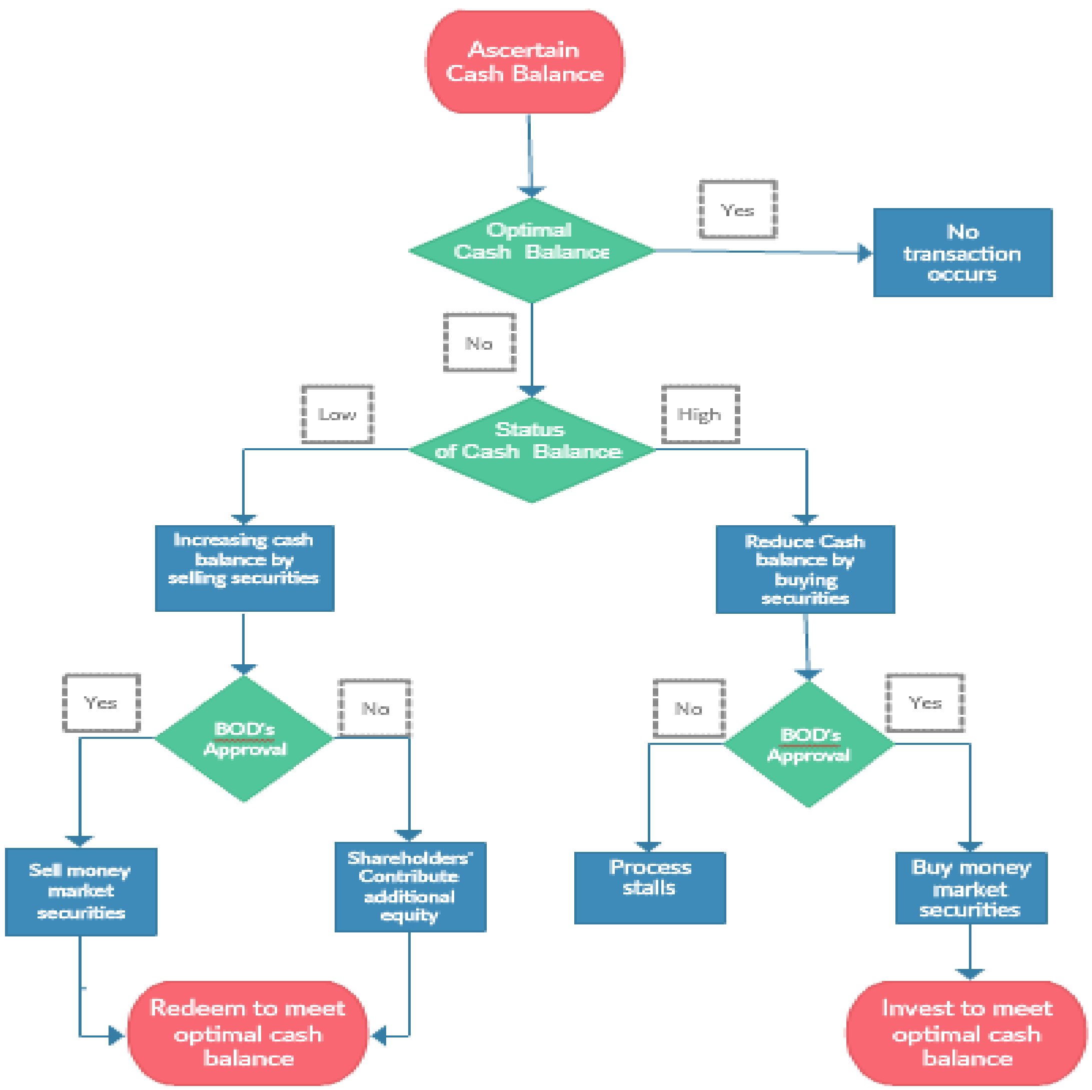
4.1 Background to the Solution

Grounded on intuition from interviews conducted and the study of literature, the frameworks that have been created to tackle the problems facing BanqMoni Limited are categorized into three principal parts and summarized below:

1. **Cash Management and Investment Analysis Framework (Designed in Excel):** According to findings from the literature, a firm is at risk of having either surplus cash or lower cash levels. This situation may force the firm to trade off either liquidity or profitability for the other, and an imbalance between these two options comes at a cost. Thus, a cash management framework was designed in Microsoft Excel to help BanqMoni Limited cushion itself against having too much cash on hand or a lower level of cash. The tool will enable the firm to ascertain the optimal cash balance that it needs to maintain at any point in time. BanqMoni will also be able to determine the times at which they should invest surplus cash or convert their investment in securities into cash to restore their cash level to optimal, using the framework. The framework will also help BanqMoni to know how much cash to invest and the expected returns from their investments.

2. **Investment Policy**: An investment policy statement will be documented to highlight the firm's investment objective and the investment instruments to invest BanqMoni's surplus cash, based on the firm's risk-return profile. The policy will ensure that BanqMoni invests its excess cash in highly liquid, less risky, and short maturity securities, to meet its short-term obligations, while still improving profitability. Also, a formalized criterion to evaluate the performance of the portfolio on a regular basis will be established through the creation of an investment committee.

The framework designed is condensed in the figure below:



When the cash balance is optimal, there will be no trading in securities. However, when the cash level reaches the upper limit, it means the company has excess cash. It then should invest its excess cash in marketable securities to bring the balance back to its optimal cash level. When the cash balance hits the minimum limit, the company has insufficient cash. Thus, the firm should redeem some of its investment to bring the cash balance back to optimal cash level. The trading of the securities needs the approval of the Board of Directors, who will through the guidelines provided in the investment policy, determine which investment instrument to purchase and redeem when the firm has surplus cash or is little cash respectively.

4.2 Solution and Tool

4.2.1 Cash Management Framework using the Miller-Orr Model

Per discussions in the previous chapter, the Miller-Orr Model of cash management assumes that firms operate within a lower and upper cash balance boundaries. This cash balance bracket helps firms to determine when they have a surplus or deficit cash balance other than the optimal and to know when to either invest and redeem their investment (Stone, 1972). BanqMoni Limited has not set an official minimum cash balance it operates with, thus before the firm can replicate the Miller-Orr model, it must ensure that it has a minimum cash balance, based on the daily, weekly or monthly cash flows of the firm.

Treasury rates on the Bank of Ghana website indicates that interest rate for the 182-Day Treasury bill purchased between March 26th, 2018 and April 2nd, 2018 was 13.9003% (BOG, 2018). Comparably, the treasury bill yields are attractive than interest rates provided on deposits by Ghana’s major banks. The average industry interest on savings or deposits was 10.1% per annum as of 28th February 2018 (BOG, 2018). Based on this, BanqMoni needs to set a maximum cash balance that will permit it to benefit from these moderately high-interest rates in risk-free securities or preferably in other less risky short-term investment instruments.

Apart from knowledge of the current interest rate on securities and the minimum cash balance of the firm, other inputs needed for the Miller-Orr model simulated in Excel are the standard deviation of daily cash flows and the trading cost of either buying or selling a security. The trading costs are expenses incurred when buying or selling an investment instrument. This may include the broker's commission, bank charges while buying the security and phone and transport cost. According to a published study in the Financial Analysts Journal, investors pay an average of 1.44% per year in trading costs alone (Carson Wealth, 2017). Also, the standard deviation can be estimated from daily cash flows of the firm. BanqMoni Ltd must gather its cash flow history for the period and then calculate the value using Excel's STDEV formula. Standard deviation relies on finding the average of the data; thus, the more cash flow history the firm has, the more accurate the calculation will be.

Fig 1.2: Cash Management Framework modeled in Excel

Inputs for the Miller-Orr Model			
Standard Deviation in daily cash balance =	GHS	122.12	
Miniumim Cash balance =	GHS	12,358.66	
Cost per buy/sale of securities =	GHS	20.00	
Daily interest rate =		0.0367%	
			Formulas
Spread between upper and lower limit =	GHS	2,543.25	3*(((3/4)*TC*sd^2)/rf)^(1/3)
Upper limit for cash balance =	GHS	14,901.91	lower cash balance + spread btn upper and lower limit
Lower limit for cash balances =	GHS	12,358.66	
Return point for cash balance =	GHS	13,206.41	lower limit + (spread/3)

The cash management framework developed for BanqMoni limited is displayed above. Once BanqMoni records the four inputs (minimum cash balance, standard deviation, the transaction cost of selling or buying security and the interest rate) in their various cells, the output for the spread between the minimum and maximum cash balance will be obtained from the framework. Because the cells have been linked to each other using formulas, automatically, the tool also calculates the maximum cash balance, as well as the optimal cash balance or return point. From the simulation, it can be noted that the return point for cash balance lies between the upper limit and lower limit. This is the optimal cash level, which the firm has to maintain.

4.2.2 Investment Analysis Tool

An essential input for the analysis of BanqMoni's investment yield is the rate of return on the investment in question. For simplicity sake, this project assumes an investment in 182-Days Treasury bills. Data on treasury rates can be found on the Bank of Ghana website. This rate changes every week, thus, it is essential for BanqMoni to visit the link https://www.bog.gov.gh/markets/treasury-bill-rates to check for the prevailing interest rates for the week it chooses to buy the Treasury securities. This practice will help the firm to estimate its expected return on the investment correctly and avoid loses.

RESULTS OF TENDER 1583 HELD ON 23RD MARCH 2018 FOR GOG SECURITIES TO BE ISSUED ON 26TH MARCH, 2018		
Weighted Avg. Rates for the Week 26th - 30th Mar. 2018 (%P.A)		
Securities	Discount Rate	Interest Rate
91 Day Bill	12.9322	13.3642
182 Day Bill	12.997	13.9003
1 Year T/Note		15.0000
3 Yr Fxr Bond		16.5000

The investment analysis framework also makes use of information generated through the cash management tool, such as minimum and maximum cash balance, as well as the optimal cash balance. Below is the investment analysis framework designed in Excel.

Fig 1.3: When the firm has a surplus cash balance

AMOUNT TO INVEST		Formulas
Minimum Cash Balance	GHS 12,358.66	Arbitrary value
Maximum Cash Balance	GHS 14,868.79	Computed with the Miller-Orr Model
Optimal Cash Balance	GHS 13,195.37	Computed with the Miller-Orr Model
Current Cash balance	GHS 15,000.00	From firm's financial books
Amount to invest (Surplus Cash)	GHS 1,804.63	Current cash balance - optimal cash balance
Treasury bill rate (182-Day T-Bill)	13.90%	
Time in Days	182	
Maturity Value	GHS 1,925.98	Amount to invest *(1 + Interest Rate) ^ (time in months/364)

The minimum and maximum cash balances, and the optimal cash balance are taken directly from the cash management tool described earlier. The current cash balance on the other hand, which will be known by the firm is also entered for comparison and to inform BanqMoni of its investment decisions. When the firm’s current cash balance reaches its maximum limit, BanqMoni Ltd must proceed to invest the surplus between the current cash balance and its optimal cash balance in Treasury securities or a money market fund. This decision depends on the firm's risk profile and investment objective, to enjoy returns on its investment and bring cash levels back to an optimal level. The surplus cash to be invested can be computed as:

Surplus Cash = current cash balance – optimal cash balance

From the framework displayed, with a current cash balance of GHS 15,000, and an optimal cash balance around GHS 13,000, BanqMoni has GHS1,804 surplus cash sitting idle in its account. From our simulation, it is assumed the firm invested in a 182-days treasury bill at an interest rate of 13.9003%; hence the time to maturity of this investment is 182 days. Given that the interest rate is an annual rate, the maturity value is calculated using the formula below:

Maturity Value = Principal amount *(1 + Annual Interest Rate) ^ (time to maturity in days/364)

Thus, the investment of GHS 1,804 in a 182-days treasury bill will yield an expected return of GHS 1,925, per the analysis in Fig 1.3. The firm can invest its funds for at least 182 days to enjoy a higher maturity value. Also, a higher return on the firm's portfolio may depend on its consistency in investing surplus cash.

Equally, when the firm's cash balance reaches its lower limit, proceeds from investment, which equals the difference between the minimum and optimal level, should be redeemed from investment securities to bring the firm back to its optimal cash balance, so as to enable BanqMoni meet its cash obligations. Using the same framework as in Fig 1.3, BanqMoni Ltd will be able to determine if it has deficit cash.

Below is the framework in Excel which enables BanqMoni Ltd to determine which amount to redeem.

Fig. 1.4: Investment Security to be redeemed

AMOUNT TO BE REDEEMED		Formulas
Minimum Balance	GHS 12,358.66	
Current Cash Balance	GHS 12,000.00	From firm's financial books
Optimal Cash Balance	GHS 13,195.37	
Amount to be redeemed	-GHS 1,195.37	Current cash balance - optimal cash balance

Given the firm's current balance, Excel calculates the cash that is needed to reach the optimal cash balance. This amount is calculated as:

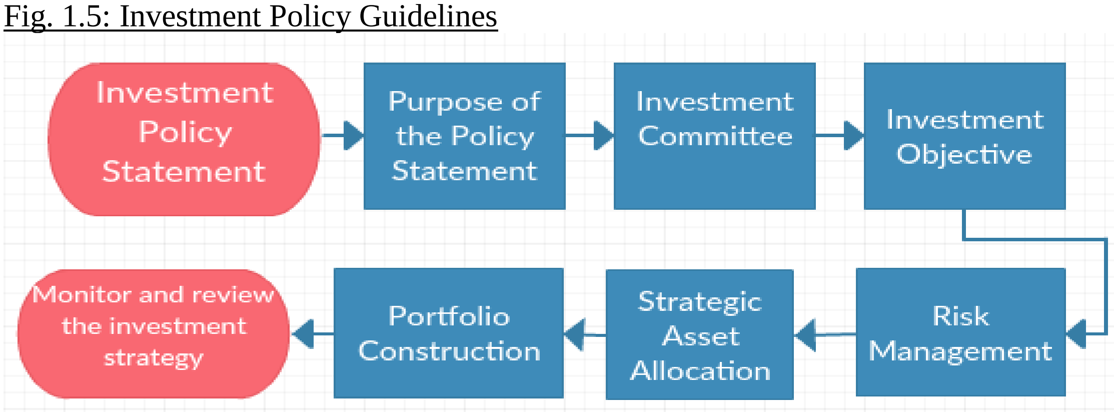
Cash to be redeemed (deficit) = current cash balance – optimal cash balance

This is highlighted in Fig 1.4 above, where the amount to be redeemed is negative, implying that the current cash balance is below the optimal cash balance. Thus, BanqMoni will have to convert GHS 1,195 worth of investment into cash to meet its optimal cash balance.

4.2.3 Investment Policy for BanqMoni Limited

The policy statement is developed below in the following order as displayed in the chart below. The various components presented beneath will be explained in detail.

Fig. 1.5: Investment Policy Guidelines



4.2.3a Purpose of the Investment Policy Statement

The purpose of the policy is to ascertain strategies for the management of BanqMoni's investment portfolio while conforming to company regulations. Therefore, this investment policy provides guidelines as to how the investment collection of the firm, created through the investment analysis framework should be monitored. The policy will help analyze investment vehicles which BanqMoni Ltd can invest in at any point in time given prevailing interest rates, and the investment to convert into cash when the firm is illiquid.

4.2.3b Investment Committee

Responsibility for investment activity may not be delegated to a brokerage house due to cost. However, the investment policy shall be managed by an investment committee decided on by the Board of Directors. The committee shall comprise of the VP of Finance, the Chief Executive Officer and one well-qualified member of the Board of Directors. The committee shall act with respect to the investment portfolio of BanqMoni and is accountable to the Board of Directors of the firm for overseeing the investment of surplus funds and the redemption of investments owned by BanqMoni Limited.

Moreover, the committee shall:

- Warrant that all investments are formed in conformity with these guidelines.
- Prudently diversify its investments to achieve a fitting risk-return profile.
- Carefully select investment instruments to invest the firm's surplus cash
- Monitor investments and account for all investments returns and expenses associated with the portfolio.

- The Board of Directors shall appraise and update this investment policy at least semi-annually, when necessary.

4.2.3c Investment Objectives

The objectives of the policy are highlighted below:

- To minimize interest rate risks and other risk factors such as default and liquidity risk
- To maximize returns on surplus funds without compromising the other objectives.
- To ensure that the types of investments held are well diversified to provide sufficient liquidity to cater for future obligations.

The board will annually review this policy to ensure that the guidelines provided continue to meet the objectives of the firm.

4.2.2d Risk Exposure Management

In allocating funds, the investment committee should aim at earning high returns without forfeiting safety against risk and liquidity. Security of investment is affected by the creditworthiness of the issuer and the sensitivity to interest rate variations. The investment committee must take into consideration the following risk in determining which instrument to invest its surplus cash identified through the investment analysis tool in Excel:

- Liquidity Risk: This is the inability to fulfill its current liabilities. A liquid investment is one that can be converted to cash quickly at little or no cost. The investment committee shall consider the investment maturity with references to its cash flows, mainly when the firm has excess cash and when it will need money for its expenditure. The committee must also minimize the amount of time required to convert the securities into cash by considering how easy it is to turn the securities into cash.

- Interest rate risk: This is a risk that a security's value will change due to a change in interest rates. The investment committee must examine the sensitivity of a security to interest rate changes before purchase and on a regular interval analyze variations that may influence the movement of interest rates.
- Default Risk: This refers to the probability that the interest and principal amount will not be paid as promised on the maturity dates. The committee shall avoid investments with high default risks as an avenue for BanqMoni's surplus cash. The investment instrument should be less risky to offer cash for future disbursements.
- Concentration risk: In reducing BanqMoni's exposure to unexpected risks, the investment portfolio shall be adequately diversified to include different marketable securities. This policy, therefore, establishes thresholds on the maximum amounts that may be committed to an investment instrument at the time that the investment is made.

4.2.3e Strategic Asset Allocation (Investment of Surplus Cash)

Based on the various risks discussed above, money market securities, particularly Treasury securities and money market funds issued prove the best fit to invest BanqMoni's excess cash. These are short maturity, minimal default risk, and highly liquid securities. Surplus cash, which may not be needed for urgent future obligations shall be invested in interest-bearing investments, per the requirements and limits of this investments policy.

Given liquidity considerations, the firm shall allocate its surplus cash to investment vehicles that are readily convertible to cash and have short-term maturities below a year. For this policy, marketable investments include all the following:

- Treasury securities: Surplus funds invested in this category should not comprise more than 50 percent of the whole investment portfolio. This is to ensure a balance between liquidity and profitability while diversifying the portfolio to minimize the risk substantially.
- Money Market Funds: The committee shall invest in a mutual fund that invests in short-term securities such as the Databank's MFund, so long as the securities within the fund are permissible for the firm at the time of investing. Investment in money market mutual funds shall not exceed 30 percent of the investment portfolio. This is because, aside treasury securities, money market funds are regarded as safe as bank deposits, and yet provides a relatively high return.
- Certificate of Deposits: The total investment in this category shall not exceed 20 percent of the investment portfolio.

4.2.3f Monitoring and Reviewing the Investment Strategy

The investment committee will formally review and monitor BanqMoni's investment strategy on a semi-annual basis through assessing the appropriateness of asset allocation and the potential inclusion of new asset class investments in the portfolio and by also confirming that the investment objectives are appropriate.

The committee may also evaluate the investment performance and investment risk monthly triggered by the underperformance of investment options and macroeconomic changes in the external environment. Through the assessment of returns computed by the investment analysis tool in Excel, the investment committee shall analyze the performance of the firm's investment over time.

4.3 Implementation Plan

The implementation plan gives an overview of the needed resources, the parties responsible for implementing the framework designed, and how they will go about ensuring its implementation. The purpose of the tools created is to help the organization in determining its optimal cash level, and when and how much surplus cash to invest in money market securities. The investment policy will ensure the success of BanqMoni's investment portfolios in the future, through regular evaluations of its performance.

FRAMEWORK	PARTIES RESPONSIBLE	METHOD OF IMPLEMENTATION
Cash management framework	VP of Finance	Using the Miller-Orr model built in Excel, the VP of Finance should input the relevant information such as minimum cash balance, interest rate, standard deviation, as well as trading cost into the model, to calculate BanqMoni's maximum and optimum cash balance. These computations will enable the firm to know how much surplus cash it may have. The cells which contain the calculation of the spread, maximum cash level, and optimal cash level should not be tampered with since those cells have been programmed.
Investment Analysis	VP of Finance & Chief Executive Officer (CEO)	With the use of the coded Excel sheet, BanqMoni Ltd can calculate its expected returns on investments in risk-free securities when it has excess cash. The VP of Finance has to key into the model the firm's current balance, which will calculate either the surplus cash to be invested or amounts to redeem when the firm is not

		sufficiently liquid. The Finance Director and the CEO will have to seek approval of the transaction from the Board of Directors. The flowchart in the appendix (figure 1.5) portrays the decision-making process involved in maintaining the optimal cash balance at all times.
Investment Policy	One qualified member of the Board of Directors, VP of Finance & the CEO	With the help of the guidelines provided in the policy statement, the responsible parties will monitor and assess the performance of the investment portfolio that is owned by BanqMoni on a regular basis. This review will be done by investigating current market interest rates for the various short-term investment instruments, its cash balance, and cash needs, as well as the risk tolerance of the firm. This is to ensure that the firm hedges itself against the exposure of liquidity risk, default risk, and interest rate risk. When the policy statement needs to be revised to meet the current investment objectives of the firm, these responsible parties would supervise and be responsible for the revision. The policy should be reviewed when the components of the firm's cash flow change over time. The policy would be used whenever there is surplus cash or cash deficit, thus demands the need to invest or redeem investment respectively. The investment policy should be used following the step-by-step guidelines outlined in section four of this report.

4.4 Resources Needed

The essential resource needed for the use of the framework is Microsoft Excel, which will compute the necessary information required to make an investment decision.

4.5 Solution Analysis

4.5.1 Benefits

The investment policy documented as well as the cash management model developed are to incorporate structure to the management of BanqMoni's cash. The firm lacks a strategic way of maintaining an optimal cash balance to ensure it does not lose out on investment income while enjoying liquidity. Due to this, the firm recorded surplus cash, which was not deployed efficiently to improve its profitability. With this framework, BanqMoni will be able to monitor its cash balance to determine when and how much surplus cash to invest in short-term investment instruments. Thus, the cash management framework ensures that BanqMoni is liquid enough to meet current liabilities, whiles enjoying some investment income.

4.5.2 Limitations

The main limitation of this framework is that it requires the firm to estimate minimum cash balances, which may depend on observed variations in cash flows. Since BanqMoni is a startup, it will typically have irregular cash flows from year to year, hence making it difficult to predict what future cash flows would be reasonable. Besides, the computation of the standard deviation for daily cash balance may be a challenge or may not be accurate if the above situation exists. These predictions may affect the computation of the optimal cash balance when care is not taken.

CHAPTER 5: RECOMMENDATIONS AND CONCLUSIONS

5.0 Chapter Overview

This section provides recommendations for BanqMoni Limited based on the findings of this project and summarizes vital insights from the study of this topic. The chapter also outlines the project limitations.

5.1 Recommendations

- The frameworks developed for use by the firm is not absolute. Hence, it is recommended that BanqMoni takes its time to review and update semi-annually the framework designed, especially the policy to meet changes in the market and its risk profile. Also, the finance director and managing director should make it a point to crosscheck inputs made into the framework for the computation and analysis of the cash and investment, to avoid inaccuracies and errors in forecasted values.

- The company should hire a marketing expert or salesperson to execute its marketing activities and plan. The person must be conversant with marketing techniques that apply to the Ghanaian economy and understand the services of the FinTech industry, as well as, has experience in selling financial services. The marketing personnel should also be persuasive with pitches and be able to effectively communicate in English and at least one local language. BanqMoni may also provide marketing training for its staff, to equip them with the needed skills required for the success of the firm.

- Aside from the on-boarding of agents to ensure the continued use of the platform, as part of the firm's marketing plan, BanqMoni should make regular visits to schools and perhaps sit in a Parents-Teacher Association (PTA) meetings. These visits are purposed to pitch to such institutions about the benefits and convenience of the BanqMoni platform.

5.2 Project Limitation

Since BanqMoni Limited started operations last year, the firm did not have adequate financial documentation to facilitate accurate computations produced in Excel. However, the model built as well as the investment policy are flexible for future use to accommodate actual financial data as the firm grows and creates its financial accounting statements.

5.3 Conclusion

Per the business model of the firm, BanqMoni makes its revenue from fees charged for the use of its platform. The platform enables individuals to deposit money or make payments from their mobile money accounts into any bank account with the help of a partnership with GT Bank. In addition to its revenue earned, the firm has a reliable annual cash inflow from its shareholders for the smooth day-to-day operations of the firm. Because of this, the firm has excess cash, which sits idle in its zero-interest current account with its settlement bank. This, in essence, implies that BanqMoni lacks an efficient way of deploying its excess cash, hence loses out on investment income, and increases its costs recorded as bank charges.

As a result of this problem, a model designed in Excel to ensure that BanqMoni Ltd manages its cash efficiently by holding an optimal cash balance was built. Also, an investment policy statement, which provides guidelines on how the firm should go about its investment decisions have been created. By incorporating the proposed framework in Excel and the investment policy efficiently, BanqMoni stands a chance to eliminate surplus cash and enjoy some investment income, while maintaining an optimal liquidity ratio. The framework will help the company determine when to invest and redeem its investment income, as well as the principal amount involved in such decisions.

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APPENDICES

List of Tables

Table 1.1: Consent form for Research Participants

Consent Form

ASHESI

This study and consent form has been reviewed and approved by the Ashesi University's IRB Committee for Human Subjects Research. If you have questions about the approval process, please contact the committee through irb@ashesi.edu.gh

I, ____, confirm that (please tick box):

1.	I understand all information related to this project is expected to span till April 2018	☐
2.	I have granted permission to be asked questions related to this project	☐
3.	I have agreed to voluntarily participate	☐
4.	I may withdraw at any time without providing reasons, hence, not attracting any penalty for my withdrawal.	☐
5.	There has been an agreed procedure to ensure confidentiality of participant (e.g. age, names etc.)	☐
6.	I understand that the purpose of this project is to develop a strategic investment plan for BanqMoni Limited to ensure an efficient cash management solution	☐
7.	I understand that this project will ensure that BanqMoni Limited manages and invest its available funds in a productive manner, to earn additional revenue and improve its cashflows.	☐
8.	I understand that to get more information about the project, I can consult the supervisor of the researcher on aeanderson@ashesi.edu.gh	☐
9.	I agree to sign and date this consent form along with the researcher.	☐

Participant:

Name of Participant ____________ Signature ____________ Date ____________

Researcher:

Name of Researcher ____________ Signature ____________ Date ____________

Table 1.2: Interview Guide

Interview Guide

I need your permission to be interviewed for my applied project. The purpose of the project is to develop a strategic investment policy for BanqMoni Limited, which will enable the firm to manage and invest its available funds in a productive manner to earn additional revenue. Your participation will be essential because it will broaden my understanding and knowledge in cash management and investment at BanqMoni. Your participation is entirely voluntary, and you are free to withdraw from the study at any point in time without permission. However, there is no risk involved in being part of this study. The benefit derived from this project is that BanqMoni Limited will be provided with investment policies that will maximize the efficiency of the firm's cash management activities. For further information, please contact my supervisor, Anthony Essel-Anderson, an Accounting and Finance lecturer at Ashesi University College. Ashesi IRB for Human Subjects research has reviewed this study and consent form. For further information, contact the committee through irb@ashesi.edu.gh.

1. What is the mission and vision of BanqMoni Limited?
2. What are the strengths of the firm?
3. How have these contributed to the success of the firm?
4. What is the source of your competitive advantage? How does the firm plan to sustain this strategy in the long run?
5. What internal and external factors do you think can impede the day-to-day operations and sales of the firm?
6. How will a significant change in sales volumes affect cashflows?
7. What data can affect the level of cash on the balance sheet? (This is to help quantify how much cash is available for strategic investment)
8. Where is cash likely to be deployed? (to fund operations, acquisition, towards capital expenditure)
9. Are there situations of surplus cash, probably due to timing differences of inflows and outflows of cash?
10. How does the firm deploy idle cash to yield enough earnings for the firm?
11. What drives cost within the firm?
12. Do you experience wide deviations between your budgeted and actual cashflow results?
13. If yes, what accounts for that?
14. What is the capital structure of the firm like?
15. Is there any form of external financing arrangement made for the firm?

List of Figures

Fig 1.1: Competitor Analysis (Porters Five Forces)

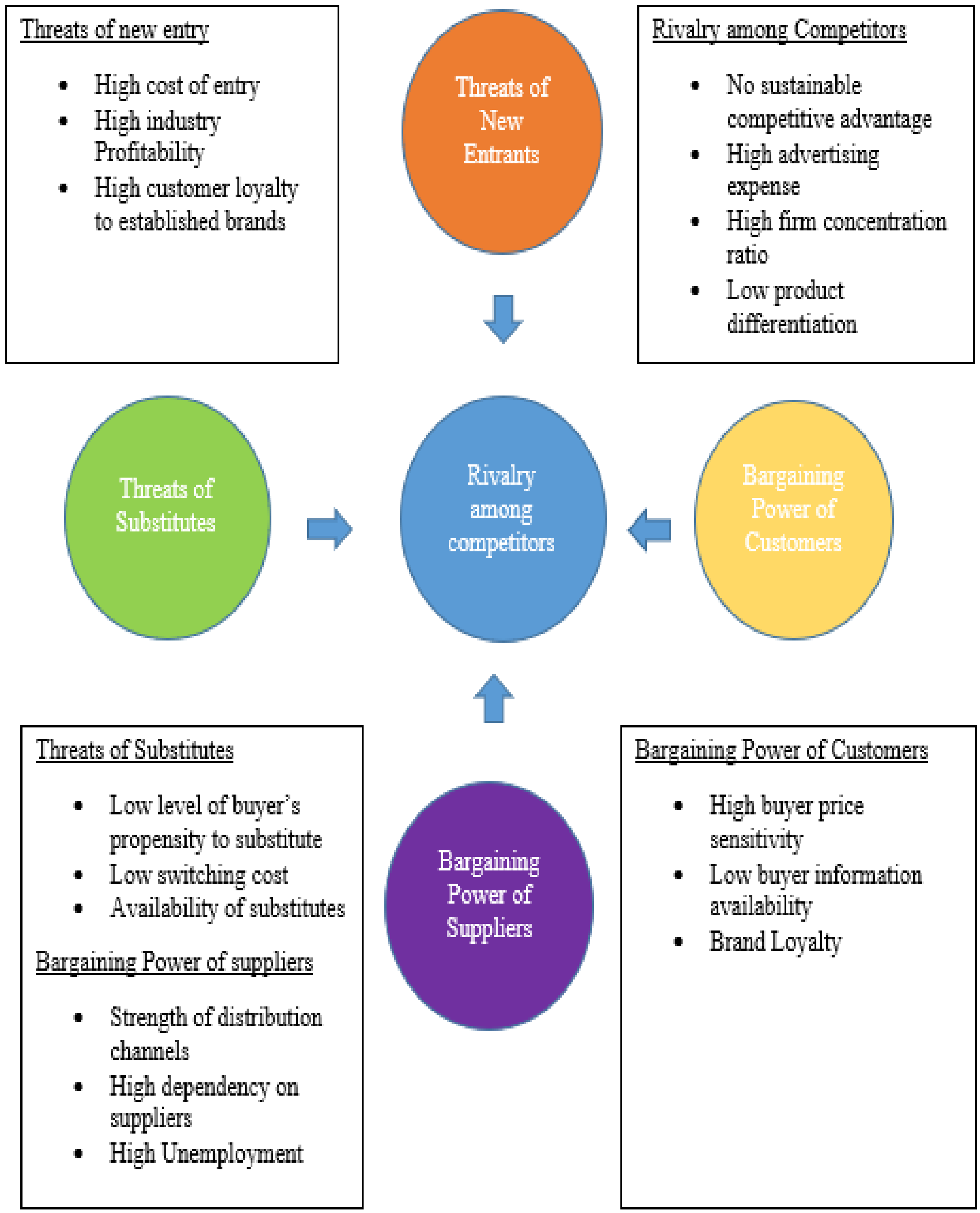

Fig 1.2: Cash Management Framework (the Miller-Orr Model)

Inputs for the Miller-Orr Model

Standard Deviation in daily cash balance =	=N15
Miniumim Cash balance =	=K15
Cost per buy/sale of securities =	=P15
Daily interest rate =	=O15
Spread between upper and lower limit =	=3*(((3/4)*R5*R3^2)/R6)^(1/3)
Upper limit for cash balance =	=R4+R9
Lower limit for cash balances =	=R4
Return point for cash balance =	=R11+(R9/3)

Inputs for the Miller-Orr Model

Standard Deviation in daily cash balance =	GHS	122.12	
Miniumim Cash balance =	GHS	12,358.66	
Cost per buy/sale of securities =	GHS	20.00	
Daily interest rate =		0.0382%	
			Formulas
Spread between upper and lower limit =	GHS	2,510.13	3*(((3/4)*TC*sd^2)/rf)^(1/3)
Upper limit for cash balance =	GHS	14,868.79	lower cash balance + spread btn upper and lower limit
Lower limit for cash balances =	GHS	12,358.66	
Return point for cash balance =	GHS	13,195.37	lower limit + (spread/3)

Fig 1.3: Formulas for Investment Analysis (Cash to be Redeemed)

AMOUNT TO BE REDEEMED		Formulas
Minimum Balance	GHS 12,358.66	
Current Cash Balance	GHS 12,000.00	From firm's financial books
Optimal Cash Balance	GHS 13,195.37	
Amount to be redeemed	-GHS 1,195.37	Current cash balance - optimal cash balance

Fig 1.4: Formulas for Investment Analysis (Surplus Cash to be Invested)

AMOUNT TO INVEST		Formulas
Minimum Cash Balance	GHS 12,358.66	Arbitrary value
Maximum Cash Balance	GHS 14,868.79	Computed with the Miller-Orr Model
Optimal Cash Balance	GHS 13,195.37	Computed with the Miller-Orr Model
Current Cash balance	GHS 15,000.00	From firm's financial books
Amount to invest (Surplus Cash)	GHS 1,804.63	Current cash balance - optimal cash balance
Treasury bill rate (182-Day T-Bill)	13.90%	
Time in Days	182	
Maturity Value	GHS 1,925.98	Amount to invest *(1 + Interest Rate) ^ (time in months/364)

Fig 1.5: Flowchart showing processes of cash and investment analysis

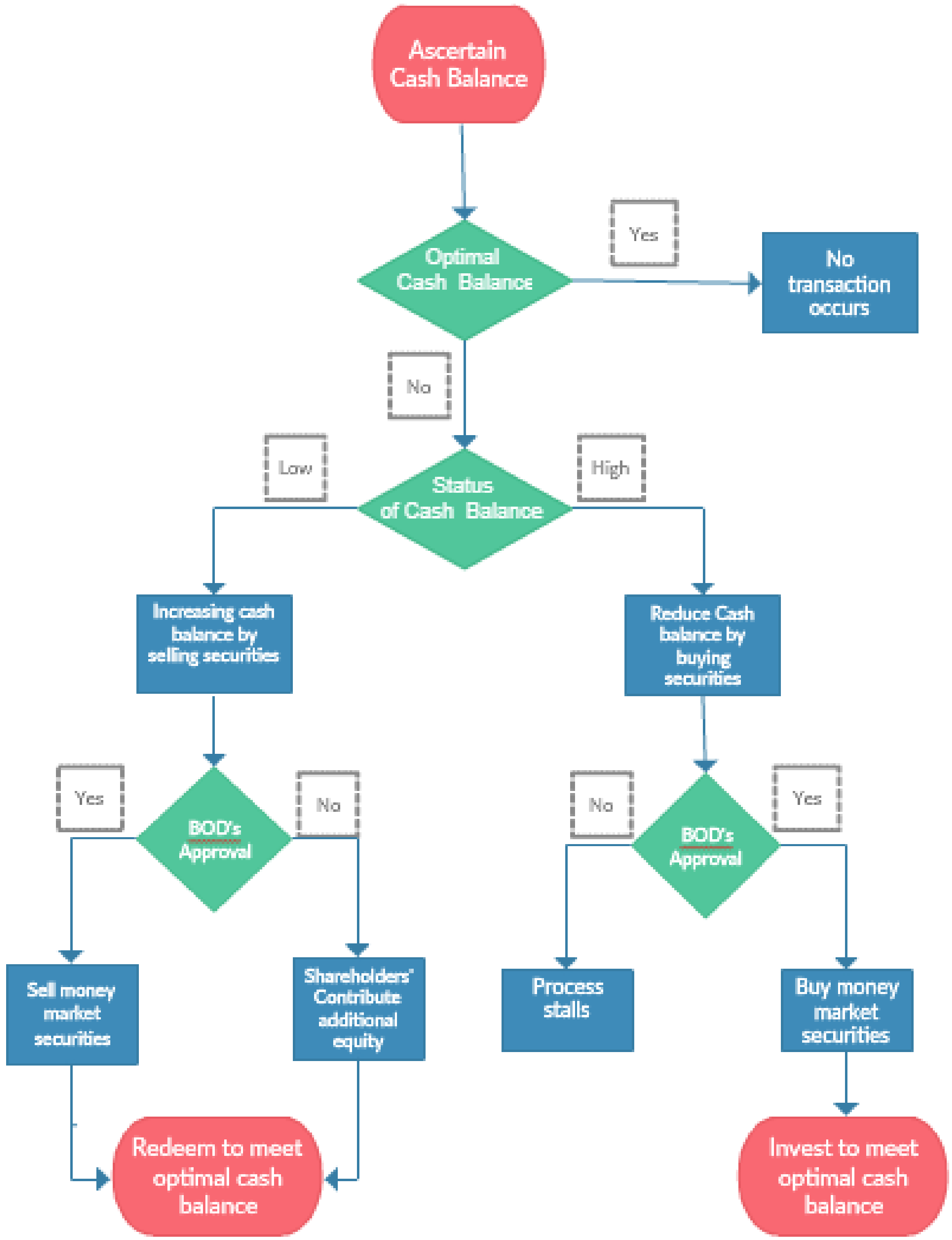

Fig 1.6: Investment Policy Guidelines