2018
Journal of Community Bank Case Studies
Preface

Journal of Community Bank Case Studies

Volume 3

The Journal of Community Bank Case Studies is an independent, adjudicated journal of case studies authored by undergraduate college students. The goal of this journal is to showcase the work of the top undergraduate student teams that participate in the annual Community Bank Case Study Competition, a national competition facilitated by the Conference of State Bank Supervisors. The competition partners undergraduate student teams with community banks to conduct original case studies focused on various topics. This year’s competition focuses on how community banks utilize technology to streamline their work and engage consumers.

This third volume of the Journal of Community Bank Case Studies includes the top three written submissions from the 2018 Community Bank Case Study Competition. The authors of the papers represent student teams from Eastern Kentucky University, University of Missouri – Kansas City, and Southeastern Louisiana University.

About

Conference of State Bank Supervisors

The Conference of State Bank Supervisors (CSBS) is the nationwide organization of banking and financial regulators from all 50 states, the District of Columbia, American Samoa, Guam, the Northern Mariana Islands, Puerto Rico, and the U.S. Virgin Islands.

Established in 1902 as the National Association of Supervisors of State Banks, CSBS is uniquely positioned as the only national organization dedicated to protecting and advancing the nation’s dual-banking system.

For more than a century, CSBS has given state supervisors a national forum to coordinate supervision and develop policy related to their regulated entities. CSBS also provides training to state banking and financial regulators.
On behalf of the Conference of State Bank Supervisors, I am pleased to present the Journal of Community Bank Case Studies, Volume 3.

This publication showcases the outstanding work of the top undergraduate student teams from the 2018 Community Bank Case Study Competition.

I believe you will find the information to be valuable. The case studies looked at how community banks are using technology to streamline processes and better serve customers and communities. And what you will see are varied approaches. As customers become more comfortable with using technology in personal finance, banks must reconsider their customer experience. At the same time, banks have to consider cost and compliance issues in their approaches.

This year, the Case Study Competition attracted 51 undergraduate teams. I am so pleased that our competition encourages young adults to engage with community banks. And I am equally pleased that the community banking industry can help us provide, and gain, insight into emerging issues such as the use of technology in financial services.

It is for these reasons that I present student papers in this Journal of Community Bank Case Studies.

Sincerely,

John W. Ryan
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Central Bank achieved record performance in 2017. An analysis of profitability suggests that Central Bank’s average ROA being 0.20 lower compared to the peer group average ROA was not a statistically significant difference when adjusted for the growth incurred by Central Bank over the same period. Central Bank is an early adopter of technology, with technology expense to assets percentage over two times higher than its peers. Further analysis reveals that investments in technology for $1 Billion - $3 Billion U.S. Community Banks result in profitability in the two-year period following the investment that is twice as high as the decline in the year the investment was made.

Technology has transformed the banking industry and customer expectations for banking services. Early adoption of new technology is a vital, ongoing goal for Central Bank. Superior customer service paired with timely strategic investments in industry-leading technology have resulted in above-average customer retention of 13 years. Technology also complemented the development and marketing of Central Bank’s lowest cost product offering that effectively targets teenagers through their parents which resulted in a 50 percent increase in millennial customer base. Successful technological innovations employed by Central Bank include employee single sign-on and online/mobile apps.

Central Bank benefits from the cost-savings, technical expertise, and well-developed systems from third-party technology vendors. Fiserv core system implementation streamlined most of the customer-facing technology of Central Bank. Employed vendors undergo extensive screening before and after selection as part of the risk assessment process of Central Bank. Emerging third-party vendor trends that may expand business lines and create frictionless internal processes include artificial intelligence and digital lending.
This paper is intended to discuss how Citizens Bank & Trust uses existing and emerging financial technology to tailor services to their unique communities and perform daily operations.

In order to come to a well-developed conclusion on Citizens Bank’s position, please allow for a brief digression into the history of the bank. In September of 1889, Citizens Bank planted its roots in Chillicothe, Missouri. Over time, their growth strategy gradually attracted Citizens to Kansas City, Missouri’s competitive urban market—dense with commercial lending opportunities—from 2004 to 2007. Although they encountered difficulties as a consequence of the Great Recession in 2007, expansion into the Kansas City metropolitan market continued unabated. They since have been headquartered in Kansas City, Missouri—hence, the official move of their charter in 2015.

Today, Citizens Bank finds themselves in a unique position, straddling both rural and urban markets. They consider themselves a “fast follower” of the industry’s technological trends and prioritize technology implementation based on market trends, cost effectiveness, strategic direction, and their relationship with the community. They must rely heavily on technology service providers, such as Jack Henry and Associates, for core processing and ancillary technologies in order to provide services that fulfill customer expectations and to stay relevant in the market. Due to this, Citizens employs an extensive vendor management program that assesses the criticality of vendors and their associated risks on an initial and ongoing basis.

Without further ado, on behalf of the University of Missouri-Kansas City’s Henry Bloch School of Management, this team proudly presents the following case analysis on technology usage at Citizens Bank in their unique community markets.
In partnership with Gulf Coast Bank & Trust (GCB), this study breaks down the bank’s financial performance and banking trends by making a connection to financial technologies (FinTech). Furthermore, this report analyzes how FinTech impacts bank relationships and how GCB plans to manage FinTech and their third-party vendors.

- GCB has grown assets to $1.6B while maintaining benchmark liquidity and constant leverage; their high-earnings performance drives their success despite the negative impact of natural disasters.

- Team Southeastern’s survey of banking customers in 14 states finds evidence that customers want banks to provide the technology of “Big Banks” but also convenient physical branch locations, even though many customers do not commonly go to the branch locations.

- A proprietary early-warning system designed to enrich loan quality may reduce charge-offs and enhance gains from GCB’s loan sales strategy, thereby increasing the revenue efficiency.

- Statistical analysis provides evidence that multiple FinTech adopted in 2015, including a proprietary early-warning system, improves both the income generation from assets and cost efficiencies, influencing the bank’s noninterest income, net income, profit margin, return on assets, and return on equity.

- FinTech has been a theme at GCB since inception; the bank implements FinTech when it offers demandable services to customers or increases internal efficiencies. Many short-term goals revolve around automation: Optical Character Recognition (OCR), electronic signatures, and targeted marketing campaigns.

- GCB creates symbiotic relationships with third-party venders who are willing and able to provide innovative, flexible software solutions for internal operations and customer needs.
Central Bank: Utilizing Technology in the Transformation of Superior Customer Service

Introduction

Founded in 1938 as the Southern Industrial Loan Company, Central Bank received its current name when it was acquired by Garvice D. Kincaid in 1946. His daughter, Joan Kincaid, is the majority shareholder and an active Director. Headquartered in downtown Lexington, Kentucky, Central Bank's precedence in putting people first has translated into consistent, superior service and adding value to its customers, shareholders, and communities. These fundamental endeavors garnered national and local accolades including American Banker’s Best Banks to Work For since 2013 and voted Lexington’s Best Bank by readers of the Lexington Herald-Leader for the past nine years.

Among other community banks, Central Bank is an early adopter of technology to remain competitive in the complex, dynamic financial services industry. The purpose of this study is to observe Central Bank’s
activities involving due diligence to ensure the most innovative community banking technologies are integrated, strategically aligned, secure, and compliant with regulations.

Part I: Financial Analysis

A. Earnings Performance

Central Bank’s 2017 net income set a new record at $17,714,000 with 8.75 percent growth over 2016 net income. Pre-tax net operating income grew 46.25 percent from $19,863,000 to $29,049,000 in 2017 primarily due to an increase in net interest income. This increase in net interest income is due to two factors: overall growth in the loan portfolio and the addition of net interest income, both impacted by the merger of the previously separate charter, Central Bank of Jefferson County, Inc. (Louisville) in June 2017. Central Bank is positioned to repeat record earnings in 2018 due to a combination of expected growth, increased efficiency, and a reduction in taxes enacted by the 2018 Tax Cuts and Jobs Act.

When compared to the mean ROA of Peer Group 2 (U.S. Banks with Assets of $1 Billion to $3 Billion), Central Bank’s ROA is lower than peers (see Table 1). However, Central Bank incurred approximately 5 percent annual growth in assets from 2012-2016 while peer assets remained roughly constant.

For a closer analysis of profitability, a simple regression analysis was performed. Instead of comparing mean ROA, the median ROA was used and the peer group was narrowed to U.S. banks with asset size of $1.5 Billion to $2.5 Billion for years 2013-2017. Table 2 shows coefficient estimates for the model of the determinants of bank profitability (equation 1).

\[
\text{Equation 1}
\]

\[
\text{Bank profitability}_{i,t} = \alpha + \beta_1 \text{Central_bank} + \beta_2 \text{Profitability}_{i,t-1} + \beta_3 \text{No_Offices}_{i,t} + \beta_4 \text{Asset_growth}_{i,t} + \beta_5 \text{Total_Assets}_{i,t} + \epsilon_{i,t}
\]

<table>
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<tr>
<th>Variable</th>
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<tr>
<td>Constant</td>
<td>0.0037**</td>
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<tr>
<td>Central_bank</td>
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<tr>
<td>Profitability_{i,t}</td>
<td>0.6581***</td>
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<tr>
<td>No. of Offices</td>
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<tr>
<td>Assets growth</td>
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<tr>
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<td>No. of Observation</td>
<td>1,443</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.52</td>
</tr>
</tbody>
</table>
is not statistically significant. This means that, controlling for the other variables that might affect profitability of banks, the ROA of Central Bank over the period 2013-2016 is not statistically different from the ROA of $1.5 Billion - $2.5 Billion banks. Results suggest that bank profitability is positively associated with previous-year profitability. Further, the coefficient estimate on Asset\_growth, the measure of bank growth, is negative and statistically significant at the 1% level, indicating that banks’ profitability declines during its growth stage. This finding lends some preliminary support to our speculation that the lower ROA of Central bank is partially due to its steady growth from 2013 - 2016.

According to Edward Barnes, Central Bank Chief Financial Officer, Central Bank technology expense to total assets is more than two times the industry median for community banks. To further investigate the association between bank growth and profitability for all banks in peer group 2, specifically the growth related to investment in bank facility and technology, we run the following model:

**Equation 2**

\[
\text{Bank profitability}_{i,t} = \alpha_{i,t} + \beta_1 \text{Profitability}_{i,t-1} + \beta_2 \text{No. Offices}_{i,t} + \beta_3 \text{Total Assets}_{i,t} + \beta_4 \text{expenditures\_premises}_{i,t} + \beta_5 \text{expenditures\_premises}_{i,t-1} + \beta_6 \text{expenditures\_premises}_{i,t-2} + \epsilon_{i,t}
\]

In this table we present coefficient estimates of the ordinary least square regression (OLS) of the determinants of bank profitability. Our dependent variable is bank ROA, measured as net income divided by total assets. We control for Profitability\_t-1 which is the lag value of return on assets. We also control for banks total assets and number of offices. We also control for expenses on banks’ facility including technology, Facility\_Expenditures, as well as two lag values of the same variable, namely Facility\_Expenditures\_t-1 and Facility\_Expenditures\_t-2. We present p-values in parentheses. ***, **, * indicate significance at a 1%, 5%, and 10%, respectively.

**Table 3: The impact of investment in facility (including technology) on bank profitability.**

<table>
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<th>Variable</th>
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<td>Constant</td>
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<tr>
<td>Profitability_t-1</td>
<td>0.5302***</td>
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<tr>
<td>No. of Offices</td>
<td>-0.0001***</td>
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<tr>
<td>Total_assets</td>
<td>-0.0000</td>
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<tr>
<td>Facility_Expenditures</td>
<td>-0.0003*</td>
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<tr>
<td>Facility_Expenditures_t-1</td>
<td>0.0001</td>
</tr>
<tr>
<td>Facility_Expenditures_t-2</td>
<td>0.0005*</td>
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<tr>
<td>No. of Observation</td>
<td>1,443</td>
</tr>
<tr>
<td>Adjusted R(^2)</td>
<td>0.52</td>
</tr>
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</table>
Table 3 reports the results of the model of the determinants of bank profitability. In this model, we attempt to capture possible delays in the impact of investment in improving facility and technology of banks on their profitability. To capture the delay in that impact, we include in our model two lagged variables for spending on banks facility, our proxy for spending on facility and technology improvements.

Results presented in Table 3 lend strong support to our conjecture. Spending on facility and technology improvements might hinder profitability in the short-run. However, these investments certainly pay off. Specifically, the coefficient estimate on the measure of expenditures, Facility_Expenditures, is negative (-0.0003) and significant at the 10 percent level, indicating that a $1 million investment on facility and technology improvements will reduce profitability by 0.03% during the same year. However, the coefficient estimates of the 1-year (2-year) lagged values of facility expenditures, Facility_Expenditures, (Facility_Expenditures) are positive 0.01% (0.05%).

Further, the coefficient estimate on the 2-year lag value is statistically significant at the 10% level. Interestingly, the size of the ROA improvement in the two-year period is twice as high as the decline in the year the investment is made (0.05% + 0.01% as compared to -0.03%).

Central Bank’s financial performance, like most banks during the financial crisis, sharply declined from 2007-2009. However, its conservative financial management did not allow for many of the mortgage backed securities or risky lending practices that plagued other banks during that time. As a result, Central Bank’s ROA...
Central Bank has seen growth over the last two years in all categories with significant growth in the commercial real estate category.

and ROE were much less volatile than peers throughout the economic crisis.

Central Bank’s Net Interest Margin has remained above peer average since 2008. Net Interest Margin increased 34 basis points from 3.73 to 4.07 percent in 2017. After three consecutive years of decline in percentage of total income, interest income increased. Loan volume was the largest driver of the improvement in net interest income as average loans increased by 9.34 percent and the average rate on loans increased 7 basis points (“2017 Annual Report”, 6). It is apparent that Central Bank Asset and Liability Committee strategically manages its interest rate risk.

B. Loan Portfolio Composition

Central Bank manages exposure to credit risk through diversification of the loan portfolio not only by loan type, but by industry and by customer. Concentrations are monitored regularly to ensure there is no excessive concentration in any sector.

Central Bank has seen growth over the last two years in all categories with significant growth in the commercial real estate category. The Commercial Real Estate loan portfolio is carefully monitored by management to ensure that there is balanced allocation among industry sector and project type. Loan growth is expected to continue through 2018 and 2019 as Central Bank expands its presence in two growth markets, Louisville and Northern Kentucky.

<table>
<thead>
<tr>
<th>Year</th>
<th>Commercial</th>
<th>Commercial Real Estate</th>
<th>Residential Real Estate</th>
<th>Installment</th>
<th>Credit Card Receivables</th>
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<tbody>
<tr>
<td>2013</td>
<td>$0.2</td>
<td>$0.2</td>
<td>$0.4</td>
<td>$0.1</td>
<td>$0.2</td>
</tr>
<tr>
<td>2014</td>
<td>$0.2</td>
<td>$0.2</td>
<td>$0.4</td>
<td>$0.1</td>
<td>$0.2</td>
</tr>
<tr>
<td>2015</td>
<td>$0.2</td>
<td>$0.2</td>
<td>$0.4</td>
<td>$0.1</td>
<td>$0.2</td>
</tr>
<tr>
<td>2016</td>
<td>$0.2</td>
<td>$0.2</td>
<td>$0.4</td>
<td>$0.1</td>
<td>$0.2</td>
</tr>
<tr>
<td>2017</td>
<td>$0.2</td>
<td>$0.2</td>
<td>$0.4</td>
<td>$0.1</td>
<td>$0.2</td>
</tr>
</tbody>
</table>

Central Bank Loan Composition - 2017

Central Bank Loan Composition
C. Asset Quality and Growth

Central Bank has impressive asset quality that has continued to improve over the past five years. This is a result of the composition and strategic management of its loan portfolio. Central Bank’s past due loans dropped in half from year end 2016 to year end 2017 and this trend continues into early 2018. Non-performing assets dropped as well and are lower than peer group averages. Central Bank works with past due borrowers to negotiate a workout payment plan, resulting in a longer loan cycle, instead of cutting losses. Robin Oliver, Controller and Senior Vice President of Financial Planning, explains that Central Bank focuses on making quality loans, subsequently decreasing the amount of losses the bank would take in an economic downturn.

Asset Growth

Central Bank’s assets have seen organic growth over the last decade, except for the 2017 merger of charters. Central Bank saw an increase of 60% in total assets over the past 12 years with a total of $2.4 billion in assets at year end of 2017. Loan demand increased in all segments of loans during 2017. Gross loans outstanding totaled $1.99 billion at the end of 2017. Earning Assets grew from $1.17 billion in 2005 to $2.28 billion in 2017; an overall increase of 94 percent since 2005. The expansion of bank presence in the Louisville and Northern Kentucky markets over this time period has contributed to the asset growth, in addition to maintaining strong customer relationships in all markets.

D. Capital Levels

Central Bank has always remained well-capitalized compared to the minimum capital requirements. According to the current Basel III requirements, banks and holding companies must maintain the following minimum ratios to be considered well capitalized:
• Common equity tier 1 capital to total risk-weighted assets ratio of 6.5 percent
• Tier 1 capital to total risk-weighted assets ratio of 8 percent
• Total capital to total risk-weighted assets ratio of 10 percent
• Tier 1 capital to average total assets ratio (tier 1 leverage ratio) of 5 percent

As of December 2017, Central Bank is well above its minimum capital requirements, and surpasses or remains very close to peer group averages in each category. Central Bank has a healthy cushion in the event of shocks to the market.

E. Liquidity

Central Bank remained highly liquid after the recession of 2009 due to the decrease in loan demand causing an excess of cash from deposits. Since the economic crisis recovery, Central Bank has seen increased quality loan opportunities in its current markets but as a market leader in its largest market of Lexington, Kentucky, opportunities for deposit growth are more challenging. Deposits increased by $75 million in 2017. Management deployed these funds as well as some federal funds sold and securities into loans. Central Bank will expand its presence in the Louisville and Northern Kentucky markets in 2018 by opening two new branches primarily focused on deposit gathering which will aid the Bank in funding loan growth from deposits.

On-balance sheet liquidity has been at all-time highs in recent years and remained strong in 2017. The Bank was able to employ more of its existing cash and short-term investments into earning assets with higher rates in 2017 ("2017 Annual Report", 6). Central Bank historically maintains an average liquidity position well above the peer group average with
Central Bank’s longstanding role in the economy of Central Kentucky has positively contributed to the economic growth and stability of the Bluegrass Region due to its consistent sound management and conservative lending and investing policies.

sufficient short-term treasury and government securities, fed funds sold and other financial institution deposits that are not pledged as collateral. Central Bank maintains this cushion so that it will not be necessary to use potential non-stable liquidity sources for growth.

Central Bank’s longstanding role in the economy of Central Kentucky has positively contributed to the economic growth and stability of the Bluegrass Region due to its consistent sound management and conservative lending and investing policies. According to Brastow, Maxey, Carpenter and Riddle, banks that can withstand undesirable economic conditions possess the following traits: 1) Commitment to conservative lending principles; 2) Presence of veteran senior management; 3) Emphasis on relationship banking based on a detailed knowledge of their markets and customers; and 4) Detailed underwriting and credit policies. Central Bank excels in all of these areas.

Part II: The Community & Technology

Central Bank’s geographic market is Boone, Clark, Fayette, Jefferson, Jessamine, Kenton, Madison, and Scott counties within Kentucky. Collectively, Central Bank has 26 full-service banking centers, including a full-service brokerage business and insurance agency (“2017 Annual Report” 6). From June 2016 to June 2017, its combined market share increased from 5.35 percent to 5.52 percent, reflecting an annual growth of 3.17 percent. The Lexington banking market is completely saturated with approximately 500 households per branch compared to the national average of 1,100 per branch suggesting
that technological innovation and exceptional customer service are key factors in acquiring and retaining customers (Kelly). Two of Central Bank’s largest regions of market share in 2016 are Lexington, Kentucky at 18.5 percent and Central Kentucky at 15.4 percent. Clark County has had the largest deposit market share growth of 2.35 percent between 2015 and 2016.

Utilizing Technology to Meet Trending Local Market Needs

Customer expectations of increased speed and convenience are factors that influence changes in customer-bank interactions. Customers visit a traditional bank branch an average of 1-2 times per year and access accounts through mobile devices 20-30 times per month on average (“How Technology Will Define Consumer Banking” 2). This change in behavior is also observed in Central Bank’s customers who average 2 branch visits per month, use online banking 15 times per month, and use mobile banking 42 times per month (Brown).

The upward trend in mobile banking can be attributed in part to an increase in smartphone ownership. According to the Pew Research Center, 77 percent of Americans owned smartphones in June 2017; an increase from 35 percent in 2011 (Rainie et al.). Smartphone ownership grows to approximately 90 percent for individuals with an annual income greater than $75,000 or who have a college education (Rainie et al.) – both of which are market segments that Central Bank actively targets. Laura Schweitzer, EVP and Director of Operations at Central Bank, recognizes that banks must react quickly and remain current with shifting market trends or risk losing its customers to the competition. Central Bank reacts to market trends through timely product offerings ahead of community bank peers.

Small Business and Agriculture Lending. There is great opportunity to automate small business financial processes. Seeing this opportunity, Central Bank complements small business lending services with online automation of accounts payable/receivable using file exports and ACH direct deposit payroll. Along with the Central at Work Program for the employees of small business customers, Central Bank was one of the first community banks in its market to offer Remote Deposit Capture and ACH Direct Deposit Payroll. Central Bank has limited participation in agriculture lending due to the strong market presence of Ag Credit and Farm Credit Services.

Commercial Real Estate Lending. The Real GDP percent change from 2015 to 2016 in Lexington, Louisville, and Northern Kentucky were 1.3%, 2.6% and 2.5%, respectively (“Gross Domestic Product by Metropolitan Area, 2016” 15, 18), suggesting the market is flush with commercial loan opportunity. Central Bank has strong community ties in these markets allowing it to selectively book the premium commercial real estate loans that fit within its risk model.

Mortgage. With historically low interest rates since 2010, mortgage lending and refinancing increased to record levels. With the rollout of digital lending, which includes online applications for consumer direct loans and online mortgage application requests, Central
Bank set a goal to increase loan applications by 12 percent (Kelly). Offering these products has resulted in a 5.35 percent increase in mortgage lending income in the first year (Brown).


During the early 1990s, Central Bank was one of the first community banks nationwide to offer the Visa Debit Card and to join national and international ATM Networks. Debit and credit card upgrades have been continually implemented. In 2015, the security enhancement of chip card technology was rolled out. Customer-driven card control and monitoring options were released in 2016 through CardValet including Visa Purchase Alerts, Central Wallet, and CardManager (Kelly).

UChoose Rewards®, another product offering competitive with national banks, gives Central Bank debit card customers rewards for their debit-card purchases (“2016 Annual Report” 4). To combat card fraud and minimize customer impact, Central Bank also offers text fraud alerts for its debit card holders.

Despite the low adoption rate of mobile payment technologies, in 2016 Central Bank grew its product offerings by joining the 24 percent of banks nationwide who currently offer Apple Pay, Android Pay and Samsung Pay as secure payment alternatives for its customers (Fitzgerald). This offering positions Central Bank for success when customer adoption rates rise.

**Deposits.** A growing number of consumers use mobile check deposit by taking a photo of a check to deposit into their account. Business Financial Manager Susan Smith-Mullins explains that a business-related trip to the bank incurs employee salary, lost productivity, and in some cases, liability risk exposure if her employee were to have an accident driving to or from the bank. Central Bank’s Remote Deposit Capture for Small Business and Corporate Clients allows customers to scan and deposit checks 24/7 without leaving the office.

Selecting technology to meet local needs resulting from market trends

Today’s consumers expect financial services that are more innovative and efficient in terms
of money and speed (Chishti & Barberis, 245-246). Community banks are often regarded as less refined than national banks when they fail to offer the products and services demanded by consumers. New technology offerings are instrumental in customer loyalty and acquisition—especially among young customers who tend to disassociate themselves from banks that do not have the latest technological offerings, whether they use the offerings or not (Kelly). By investing heavily in new technologies that ultimately provide enhanced user experience, Central Bank offers a wide range of technologies that are competitive with those of large national banks.

Central Bank has developed a systematic vendor selection process for integrating new technologies. Once customer needs are determined, Central Bank’s management team conducts research and peer studies to identify, screen, and rank vendors that offer products that meet those needs. The top three or four vendors are invited to demonstrate the product to Central Bank team members. Next, the team conducts a detailed review of contracts and company culture of the vendor and makes reference calls to other banks that use the product. Information gathered during this process is compiled into a detailed score card that assigns points for each product feature. Then the management team selects the best vendor. Several months may pass before the contract is negotiated and signed, and up to a year thereafter for product conversion and roll-out.

The effect of technology on local customer relations, particularly younger customers, or customers that have moved away since opening an account Central Bank’s introduction of mobile banking and mobile deposits in 2013 has bridged physical and time gaps between Central Bank and its customers using the internet—regardless of their physical location in the world. With all the technology enabled services provided to customers today, according to Steve Kelly, EVP of marketing and sales at Central Bank, it is easy to “live in Alaska and use Central Bank” (Kelly). These product offerings contributed to Central Bank’s low average customer loss of 12 percent per year compared to national banks average customer loss of 25 percent per year. Also, Central Bank’s average customer retention extended to 13 years—beating national banks’ customer retention average of only 6 years (Brown).
Adopting technology to attract new customer demographics to the bank

Technology has complemented the creation and marketing of Central Bank’s lowest cost product offering that targeted teenagers through their parents. The Bank has promoted this product via social media and physical presence at high school sporting events. In addition, the Bank has partnered with EVERFI’s Financial Literacy Program that uses digital learning to teach teenagers the fundamental money management skills essential for their transition into adulthood. In the first 12 months of promotion, new accounts for students increased by approximately 50 percent, accompanied by moderate, continued growth. This promotion has been a major success for Central Bank resulting in millennial demographic growth who are expected to age into the Bank’s higher yield products.

Part III: Management & Technology

Incorporating Technology into the Strategic Planning Process

Community banks must continually adopt and maintain new banking technologies to attract and retain customers, compete with national banks, and remain viable in the industry. Executing Central Bank’s strategic plan to enhance user experience is achieved by its information security engineers and application development officers; ongoing industry research and analysis on the latest technology offerings; and collaborations with user groups, advisory councils, and committees on new product offerings (Bondra).

In addition, preventative maintenance such as updates and upgrades to hardware and software, backups to an offsite location, disaster recovery plans and procedures, and network monitoring are some of Central Bank’s ongoing activities to avoid system failure. A 2016 financial services industry survey identifies the top five vectors used in attacks on respondent organizations as 55 percent ransomware attacks, 50 percent spearphishing or whaling, 32 percent advanced attacks/advanced persistent threats (APIs), 32 percent DoS attacks, and 27 percent Web application attacks (Hardy 8). Central Bank employs a cybersecurity scorecard that reports the different types and number of attempted attacks on its systems. This scorecard is presented to the Board of Directors to help them understand cybersecurity threats to the Bank and to report IT’s threat control activities (Bondra). To ensure minimal disruption of services to its customers, service level agreements with third-party vendors are used. The Bank also reviews the performance of its prevailing technologies to make plans to replace those that are waning with better alternatives.

Short-term Goals

Employee Single Sign-on. Central Bank is undergoing beta testing for its employee single sign-on authentication that reduces the number of sign-ons from 15 to 1. This authentication coupled with multi-factor authentication is quick, convenient, and adds another layer of security since the multi-factor authentication of the Bank requires something the user knows (PIN) and something the user has (a swipe card). Initial results of the beta testing indicate a
dramatic reduction of the time spent navigating through different systems and a reduction of the number of password reset requests at the help desk: 60 percent of the help desk tickets are due to password resets (Bondra).

Increasing Adoption Rates of Online/Mobile Apps Among Existing Customers. Central Bank believes customer promotion and education will increase adoption rates of its product offerings. The Technology Acceptance Model (TAM), created by Chiou and Shen, determined users’ “perceived usefulness and perceived ease of use are related to the attitude towards acceptance of new technology, which, in turn, affects the intention to accept the technology and, subsequently, acceptance behavior” (861). A 2017 study by Williams et al. that expanded on the TAM found three relevant, significant risks that correlated with user adoption rates: time, psychological, and social risks (8). If users perceive new banking technologies as easy to use and compatible with their current values, past experiences, and prevailing needs, then Central Bank could expect an increase in user acceptance and adoption of this new technology.

The Bank currently utilizes a variety of platforms to advertise products to existing customers including direct mail, email, TV ads, Facebook and digital messaging on its website and online banking products. According to Acharya et al., “increasing use of internet as an additional channel of marketing banking services has significantly improved the financial performance of community banks” (418). So far, these ads have resulted in limited success for Central Bank. Schweitzer explains that one challenge is educating customers on availability of service offerings because many customers are not aware of Central Bank’s many different product offerings (2018). This lack of awareness could be a reason for the low adoption rate of certain online/mobile apps.

Converting P2P Payments System. Central Bank presently offers Popmoney for P2P payments. Due to low customer utilization, Central Bank looks forward to conversion to Zelle. Robin Michul, electronic banking manager at Central Bank, states that the core system is not presently compatible with Zelle but upgrades for compatibility are expected by the end of 2018.

Long-term Goals

Early Adopter of Technology. One of Central Bank’s most important long-term goals is to be the leader among community banks in incorporating cutting-edge technological trends. Michul stated, “Central Bank must stay at the forefront of technology for community banks so that we can be competitive with both community and national banks.” If banks are slow to offer innovative online and mobile technologies, they can experience a decline in customer retention.

Kelly explains that “…technology is critical because it allows us to expand our total number of customers and volume of transactions without having to increase staff.” The initial investment of technology can have a relatively short payback period due to the savings generated from an increase in transactions at a lower cost and a decrease in employee salary expenditures.

Customer Single Sign-On. Central Bank wants to provide a convenient single sign-on for all
customer user interfaces. Plans are underway to roll out this feature, but there is no set date.

**Customer Retention.** When online bill payments are established, customers are more committed to their bank because they want to avoid the hassle of setting up these payments again with a new bank. Martins, Oliveira, and Popovič found that adopters of internet and online banking have a lower propensity to leave the bank and have increased banking activity, acquire more products, and maintain higher asset and liability balances (2).

**Part IV: Third Party Vendors & Technology Service Providers**

Bank’s use of third-party technology vendors and/or service providers to solve problems or meet specific needs

Central Bank acknowledges its permanent need for third-party technology vendors in its efforts to maintain competitiveness in the banking industry. Simply put, Schweitzer stated, “We cannot build a system.” With rapid changes in technology and the emergence of third-party vendors offering cost-effective solutions, community banks may not have the technological expertise and substantial funding to support the development and maintenance of custom-built systems in-house. Instead, Central Bank must rely on third-party technology vendors and service providers to fulfill its growing business needs.

One of Central Bank’s third-party technology vendors is Fiserv, implemented in 2007. This industry-leading, third-party vendor provides Central Bank’s core system that permitted the condensation of most of the bank’s customer-facing technology. It also reduced redundancy and operating costs when Central Bank merged its four bank charters into one (Kelly).

In addition, Central Bank uses third party vendors to meet both its consumer and business online banking needs. Employed in 2009 and used by the majority of the top 10 U.S. banks for consumer online banking needs, Corillian from Fiserv has been providing robust capabilities such as online access, eStatements, transfers, bill pay, and Trend, a feature that enables users to aggregate their financial information onto their dashboards that updates balances daily. Trend also allows the tracking of expenditures by type for comparison to individualized custom budgets set up by the users themselves. Fiserv has also been used since 2013 to fulfill Central Bank’s consumer mobile banking needs. To meet the bank’s business online banking needs, ACI, a leading vendor for commercial banking,
The use of third-party technology vendors and service providers brings value to Central Bank by providing access to technical expertise and well-developed, tested systems at a cost-savings.

has been providing services since 2007. ACI handles approximately $14 trillion in payments and securities each day and is currently used by 18 of the top 20 banks worldwide for corporate cash management (ACI 31 Mar. 2018). ACI’s services include online account management, eStatements, and ACH wire transfers with dual authentication.

The use of third-party technology vendors and service providers brings value to Central Bank by providing access to technical expertise and well-developed, tested systems at a cost-savings. This allows the bank to allocate more of its resources to the core competencies that make it competitive in the banking industry.

Integration of third-party vendor and/or technology provider management into the risk assessment process

Central Bank uses Nvendor, a vendor management software and service, to manage and track a total of 403 third-party vendors, 16 of which are considered technology vendors and/or technology service providers. Its strategic planning group determined the actions needed from vendors to help achieve its organizational goals.

To lessen potential complications associated with employing third-party vendors, Central Bank’s risk management program’s approach to solving these problems was to take an in-depth, holistic view. As part of the bank’s selection and monitoring processes of its current and potential third-party vendors, Central Bank utilizes search engines such as Google and TSBB to collect information about these vendors. Central Bank then analyzes the information to determine the potential risk imposed when contracting vendors. This continual monitoring process is imperative to vetting its current and potential vendors and to evaluate vendor risk.

After the bank gathers enough information about the third-party vendors from online sources, in-person meetings, and completion of a risk assessment by the vendor, Central Bank categorizes the third-party relationship into one of its three risk levels:

- critical risk – third party performs mission critical business processes or functions; and, maintains customers’ personal identifying information. If an interruption in service were to occur, then it could cause a major impact to the bank if not fully or partially restored immediately;

- high risk – third party performs essential
business processes or functions; and, has access to customers’ personal identifying information. If an interruption in service were to occur, then it could cause an impact to the bank if not fully or partially restored immediately; and,

- low-moderate risk – third party does not store or have access to customers’ personal identifying information and an interruption in service would not impact the bank (Robinson).

Annual reviews of all vendors were also conducted as part of the bank’s risk assessment process (Robinson). SOC reports, examining reports, penetration/intrusion testing, and on-site visits are just some of the items reviewed as part of the bank’s ongoing due diligence process that allows the bank to detect and correct deficiencies, as needed (Bondra). In addition to investigation of vendors, Central Bank conducts weekly meetings to compel some vendors to complete their obligations. Central Bank might not always have the edge over third-party vendors because of its small size relative to larger banks. As a result, the bank must be occasionally forceful to persuade vendors to take corrective measures, especially when compliance issues arise (Schweitzer).

Greatest challenges related to third-party vendor management.

Some of the challenges banks face in their vendor risk management programs include:

“insufficient oversight by the institution’s board of directors; lack of formal documented outsourcing policy; vague contract terms and requirements that lack specificity on a third-party vendor; third-party vendor performance review conducted by inexperienced institutional personnel; inadequate disaster recovery tests between a third-party vendor and the institution as well as tests that do not address a possible cybersecurity event; information security and cybersecurity procedures of the third-party vendor that are not adequately reviewed and assessed by the institution; and, inappropriate risk rating by the institution of its critical third-party vendors” (DaSilva, 14).

The vendor review policies and procedures implemented by Central Bank’s Risk Management Team considerably reduce the risk of occurrences. Furthermore, Central Bank contracts a third-party vendor that conducts regular penetration/intrusion testing and reports to the Audit Committee of the Board of Directors (Brown). These controls are in place to mitigate potential IT infrastructure disasters.

As part of Central Bank’s efforts to maintain compliance with FFIEC regulations, mitigating non-compliance issues with third party technology vendors is an ongoing process. According to Beth Robinson, Central Bank’s Risk Management Officer, the greatest challenge is managing third-parties when they violate regulations. The bank receives a copy of a FFIEC report containing third party vendor offenses and must pressure the vendor to increase security on its technology. This results in the Bank being in a difficult position because of the it’s diminutive influence over the vendor compared to larger banks (Robinson).
To gain influence over key third-party vendors, Central Bank carefully strategizes participation on advisory boards – placing at least one representative on each key advisory group. This provides the opportunity to network with other clients and advocate collectively for vendors to correct issues (Michul). Advisory groups are instrumental in solving problems associated with contracting third-party vendors.

Emerging third-party vendor trends that could expand business lines and streamline internal processes.

**Artificial Intelligence (AI).** AI will have a variety of applications in the banking industry. Kelly believes that AI “… will help us do what we do cheaper and more efficient.” AI could predict the quality of service that a bank customer experienced. By measuring a bank’s service quality as the time lapsed between the client’s arrival to being assisted, an AI model was built for predicting a bank’s service quality using genetic programming with semantics which resulted in improved models that indiscriminate better under unexpected occurrences (Castelli et al. 6). The information gathered from this type of machine learning could be used to create programs and applications that lead to enhanced user experiences needed to attract and retain customers.

However, because big data used in AI is extremely dependent on data quality that is sometimes inaccessible, banks will have to wait until they are able to access the quality data necessary to use big data analysis to extract meaningful insights (Morgan 26). The volume, velocity, variety, and veracity of big data are too cumbersome for most database architectures and require alternative processing for relevant information. Once this technology further develops, community banks will benefit from its use in improving customer experiences.

**Digital Lending.** Digital lending is a current technology that even small banks can implement via software-as-a-service (SaaS) or by referring current or potential customers to the digital lending partner. With lending as a key profitability driver among financial institutions, approximately 22 percent of survey respondents’ states that loan origination software is an interest (Pike). The convenience and practicality of automating loan originations online has created a strong demand for digital lending among millennials and can create new business opportunities that are not strictly limited to banks. The threat of non-bank digital lending is growing quickly with year-over-year growth of 93 percent and 58 percent in 2015 and 2016, respectively, and is expected to be $122 billion by 2020 – a ten-fold increase in only six years (“The State of Digital Lending” 21).

Central Bank has an immense interest in streamlining its online mortgage activities because its current online mortgage site is primarily capable of prequalification. Kelly wants Central Bank to have similar capabilities as Rocket Mortgage where customers can apply and receive mortgage approvals, select real estate through Zillow, and then electronically sign the mortgage paperwork – all online or on their mobile devices. This would streamline internal processes by approving the mortgage application quickly, uploading the digital
mortgage document into the system, and avoiding the clutter of filing a hardcopy of the 40-page mortgage document. Central Bank is currently looking at new technology that will significantly streamline its online mortgage application process and it hopes to implement it in late summer 2018 (Kelly).

FinTech. A recent study indicates that approximately 82 percent of U.S. commercial banks plan to increase their FinTech budgets over the next three years, contributing to the estimated $4.7 billion that U.S FinTechs will receive from their investors in 2018 (Crosman 2017).

Although Central Bank recognizes the FinTechs’ potential applications to help its business grow, the plethora of product and service offerings by numerous FinTechs can make the selection process immensely challenging. Furthermore, a lack of systems communication among the various systems employed from various FinTechs is exceedingly problematic. Central Bank believes that FinTechs need to be integrated. Lombardi et al. identified an increasing need for “greater collaboration and integration between fintech start-ups and incumbent financial institutions” (4). Currently, Central Bank’s regulators have concerns about vendor stability and the security of customer information in FinTech partnerships and in migrating data to the cloud; therefore, the Bank does not have immediate plans to modify current IT infrastructure to prepare for future FinTech partnerships (Brown).

FinTechs, like many other startups, have a high-failure rate but can initially raise significant capital with innovative ideas. If they cannot sell their products and/or services, they quickly fail (Vice). This high-failure rate deters community banks from committing to partnerships with FinTechs. Instead, many community banks prefer partnerships with well-established vendors.

Summary

In today’s fast-paced society, banks are challenged to expand from their foundations into the current technological trends that customers are demanding. Approximately 77 percent of Americans own a smart phone and the average person visits a bank branch just once or twice a year. Community banks, which have always focused on providing excellent customer service, are now forced to rethink the customer banking experience. Central Bank, located in the heart of Central Kentucky, has expanded its mission of providing superior customer service by implementing the latest banking technologies. This has resulted in record performance in 2017 and in young professionals ages 25-34 being the fastest-growing customer segment. Continuous improvements to the customer banking experience and implementation of emerging technology through carefully selected third party vendors is essential for Central Bank to achieve its goals of streamlined internal processes, timely product innovation, and exceeding evolving customer expectations to improve customer acquisition and retention.
Findings and Recommendations

Based upon the findings of this study, the following recommendations are made for Central Bank and other community banks:

1. One of the keys to continuous innovation is recruiting and hiring well-prepared millennials from undergraduate programs that prepare graduates for careers in community banking. Graduates of these well-rounded programs are professionally developed with an understanding of 1) emerging technologies and how to integrate them in an age of rapid technological development; and 2) the community banking industry. Eastern Kentucky University offers a Minor in Banking and Financial Services and will soon offer a BBA in Finance with a concentration in Banking and Financial Services.

2. Banks can improve upon perceived ease of use, perceived usefulness, product awareness, and perceived risk of using online/mobile products to increase technology adoption rate. Central Bank can concentrate on improving relations with its MVP customers when they visit a branch. We suggest that one employee provide individualized service and ask the customer if he or she is familiar with the latest technological product offering. This employee should complete the cycle of service and follow up with a thank-you note.

3. Community banks should consider the TAM model and customer perceived risks when selecting and launching new technology to achieve more desirable adoption rates. Marketing promotions with product emphasis on time efficiency, cutting-edge desirability, and security features can mitigate customer perceived risks.

4. One possible digital mortgage lending solution that is currently available for banks as a software as a service-deployed or an on-premise platform is Mortgagebot by Finastra (Morgan 23). Using loan origination software can position banks to be a first mover and increase profit margins once consumer usage increases.

5. When community banks decide to pursue a partnership with any FinTech company that integrates well with its existing system, the FinTech’s company culture should align with the culture of the bank to facilitate cooperation between the two companies especially when corrective measures are needed for regulatory compliance. Also, in preparation for FinTech partnerships, banks should upgrade their technology infrastructure by migrating data from client servers to the cloud and overhauling data architectures (Crosman 2018).

6. Community banks can expand relationships digitally by using automated, personalized emails and text messages at a frequency of approximately twice per week. Communications should be thoughtful and not directly involve sales.
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I. Financial Analysis

Citizens Bank & Trust will be analyzed using financial ratios derived from publicly available data. To benchmark its financial performance, Citizens will be compared to its national peer group in the Uniform Bank Performance Report (UBPR). The bank is currently assigned to Peer Group 3, insured commercial banks having assets between $300 million and $1 billion, by the Federal Financial Institutions Examination Council, FFIEC'.

A. Earnings Performance

Defined as net income as a percent of average assets, return on assets (ROA) shows the bank’s ability to generate revenue from the assets it controls (Chart 1). Citizens’ ROA in 2017 was 0.49'. That is, the bank
generated 49 cents of net income for every dollar of assets it controlled. The peer group’s ROA was 0.90 in 2017. Since the early 2000s, Citizens’ ROA has stayed consistent with economic trends, although it has been slightly lower than the ROA of its peers.

Changes in the ratio of loan loss provisions to assets explain the dramatic decrease in ROA at Citizens and the peer group during the financial crisis of 2007 to 2009 and the equally sharp increase in ROA in following years (Chart 2). Loan loss provisions are the funds that banks set aside to cover expected write-offs of bad loans and debt. As the economy worsened in the financial crisis, both Citizens and its peers increased their provisions due to a higher number of loan delinquencies. Citizens increased its provisions somewhat more than its peers because a higher share of its loans had become delinquent. As a result, Citizens’ ROA also fell a little more than at the other banks, reaching a low of -1.12 in 2009. As the economy recovered after 2009, loan delinquencies came down, and Citizens and its peers were able to reduce loan loss provisions back to pre-crisis levels. This caused ROA to increase sharply. By 2012, Citizens’ ROA had rebounded to 0.38, although it remained a little lower than in the peer group.

The main reason that the ROA of Citizens has been a little below that of its peers over the period as a whole is that its ratio of net interest income to average assets has been somewhat lower (Chart 3). Net interest income is tax-equivalent interest income minus interest expense. In 2017, Citizens’ net interest income
ratio was 3.04, compared to 3.59 for the peer group. Most of this difference was due to a lower ratio of interest income to earning assets, which are assets on which the bank earns interest or dividends. In earlier years, some of the difference was also due to a higher ratio of interest expense to earning assets. Chart 3 shows that Citizens’ net interest income ratio began to fall below that of the peer group about the time it entered the Kansas City market in 2004. This suggests that the decline may have been due to Citizens having to pay higher deposit rates and charge lower loan rates to attract customers in the highly competitive Kansas City market.

B. Loan Portfolio Composition

Citizens’ current loan composition differs from that of the peer group in two main ways (Table 1). The share of commercial and industrial (C&I) loans is about 8 percentage points higher at Citizens than its peers, and the share of non-farm, non-residential real estate mortgages is about 8 percentage points lower. The shares of other loan categories are similar for Citizens and the peer group. Citizens has slightly higher shares of 1-4 family residential loans (home mortgages), construction and land development loans, and multifamily residential loans. On the other hand, it has slightly lower shares of farm loans and loans to individuals. Citizens’ current loan composition also differs from before the financial crisis. To reduce the risk of its loan portfolio, Citizens has shifted heavily out of non-farm, non-residential real estate loans into C&I loans. In 2006, just before the financial crisis, almost 42% of Citizens’ loans were non-farm, non-residential real estate loans, about 12 percentage points more than its peers. At the same time, only 7% of Citizens’ loans were C&I, about 7 percentage points less than its peers.

C. Asset Growth

On average, Citizens has held about $980 million in assets over the past 16 years (Chart 4).
In 2008, the bank had a large increase in deposits, most of which were time deposits at or below the insurance limit. This inflow may have been due to a flight to safety by customers worried about the financial crisis. Since loan demand from good borrowers was low due to a weak economy, the bank invested most of the additional funds in U.S. Treasury & Agency Securities. The bank’s deposits and assets steadily declined over the next four years, with assets reaching a low of $830 million in 2012. Assets rose about $100 million in 2013 and have remained close to $900 million since then. At the end of 2017, Citizens held $880 million in assets.

D. Capital Adequacy

A good way to judge a bank’s capital adequacy is by the Tier One Leverage Ratio (Chart 5). This ratio is defined as core capital divided by total assets. Core capital includes mainly common equity and retained earnings. The higher the Tier One Leverage Ratio, the more protection the bank’s balance sheet will provide the bank against failure during an economic downturn. Generally, a community bank needs to stay above 4% to be considered safe (or “adequately capitalized” in the terms used by the bank regulators). Citizens currently has a Tier One Leverage Ratio of about 9.5%, more than twice the 4% benchmark and close to the ratio for its peers. The bank has done a good job of maintaining its capital adequacy. Even during the financial crisis, the ratio only dropped to 6%, still above the 4% mark.

E. Liquidity

Liquidity is the ability of a bank to meet an unexpected need for funds, such as sudden increase in deposit withdrawals or a sudden increase in loan requests by customers. Two measures of a bank’s liquidity are Core Deposits as a Percent of Average Assets and Loans & Leases as a Percent of Average Assets.

Core Deposits are checking accounts, money market deposit accounts, other savings accounts, and small time deposits (Chart 6). They are usually held by households and businesses in the bank’s natural demographic

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SECOND PLACE: The University of Missouri-Kansas City
market. They are a good indicator of liquidity because they tend to be “stickier”. That is, they are less likely to flee a bank suddenly than large time deposits or other borrowed money. Citizens’ core deposits were 69.4% of assets in 2017, a little below the peer group’s ratio of 76.6% (Chart 6). At both Citizens and the peer group, the core deposit ratio is significantly higher than before the financial crisis, implying that funding has become more stable.

Loans are less liquid than other assets such as U.S. Treasury securities, which can be sold quickly and easily in financial markets. Thus, banks with very high ratios of loans to assets may be unable to meet a sudden need for funds. In 2017, Citizens’ ratio of loans to assets was 68.6% (Chart 7). This was up significantly from 2011, when the ratio was only 50.9% due to the financial crisis and recession. However, in 2017, Citizens’ ratio of loans to assets was the same for the peer group and no higher than before the financial crisis. Thus, based on its core deposit ratio and its loan ratio, Citizens can be considered to have good liquidity.

II. The Community & Technology

A. Defining the Business Market

Since Citizens Bank’s official charter moved to Kansas City, Missouri, in 2015, their market is represented by the targeting of their core business lines—retail banking, commercial banking, and wealth management—to their rural and urban customers. This market duality has inherent implications for market definition, primarily because Citizens must service both unique markets with the same technologies. The retail banking, or consumer banking, market is centered around their 20 locations throughout Kansas City, St. Joseph, and smaller municipalities in Northwestern Missouri. In terms of commercial banking, Citizens’ move to the densely populated and commercialized Kansas City area has allowed the bank to take advantage of commercial lending opportunities that were meager in the rural market. Citizens’ rural business, which it relied upon during much of its 129-year history, is dominated by a much richer base of deposits. In fact, these rural deposits, primarily from their customer base in Northwestern Missouri, remain the largest chunk of Citizens’ deposit portfolio.

B. Participation in Market Trends

One trend in Small Business Lending is the arrival of Fintech lenders that provide a quick, online loan application process. This allows small business owners to obtain quicker credit decisions than a more traditional in-person loan application. Citizens Bank has recognized the
advantages of adopting new technology that speeds up the bank’s loan application process. However, Citizens’ Executive Vice President and Director of Retail Banking and Operations, Larry Taft, emphasizes that Citizens has credit underwriting standards that must be met. One avenue the bank is open to exploring is to partner with an online lender that provides the bank with an online application portal and is willing to take on risks that do not meet the bank’s underwriting criteria (Taft).

With respect to lending and deposit services for the agricultural sector, Citizens has found that farmers increasingly appreciate new technology. Long gone are the days when farmers lacked the technical skills to actively participate in online and mobile banking. Larry Taft points out that many of the farmers who bank with them are too busy to come to the bank and love to be able to deposit their checks with their phones. The fact that Citizens has to adopt technology to compete in its urban market grants it an advantage in its rural markets because other solely rural community banks are slower to adopt new technology.

On payments and deposit services, Citizens found that entering the Kansas City market required faster adoption of new technologies, such as mobile banking services for its consumer customers. Examples of such services are online account opening, remote deposit capture of checks, and monitoring of account balances from the phone. Increasingly, urban consumers are giving up their computers, relying on their phones, and avoiding trips to the bank. That makes it imperative for banks like Citizens operating in urban markets to keep up with advances in mobile banking technology.

C. Technology Utilization
Citizens Bank finds itself in a unique position when selecting technologies that meet the needs of their local communities. This is primarily due to the duality of their market, as discussed earlier. Citizens aims to provide customers with the latest innovations in financial technology but is limited in their ability to develop such technologies in-house. Instead, they adopt major technologies by partnering with third party providers, such as Jack Henry and Associates, who provide core processing systems and ancillary technologies to community banks. An in-person interview with Jack Henry and Associates President and Chief Executive Officer, David Foss, revealed that service provider offerings span an entire suite of technology services that arm Citizens Bank with elite back office technologies and help them provide relevant technologies to

With respect to lending and deposit services for the agricultural sector, Citizens has found that farmers increasingly appreciate new technology.
their communities (Foss). The technology service provider market consists of three major core processing systems, like Jack Henry and Associates, and several independent third party technology providers. Besides choosing among providers, Citizens must consider which technologies are worthwhile for their market and customer needs.

Prioritization of technologies is a key element that Citizens relies on to select and implement technologies. The process is based on customer needs and capital expenditure allotments per annum. Citizens must strike a balance between introducing new technologies to customers and limiting the friction that customers derive from their introduction. Management also carefully weighs the cost and staff resources needed to implement the technology and the reliability of the technology. Larry Taft uses the term “fast follower” to describe Citizens’ approach to evaluating and implementing new technologies. Given their limited budget, Citizens needs to be confident that a new technology will work well before adopting it. As a result, they avoid spearheading new technologies. Instead, they allow larger banks to do primary tests and then follow on as fast as they can if the technology appears to work. This approach is well suited to the duality of their market. It creates a prudent lag in technology adoption in their urban market. As noted earlier, however, it gives Citizens an edge in technology adoption in their rural market, because their strictly rural competitors tend to lag much further behind.

Ten to twenty years ago, Citizens’ technology usage, Taft says, was focused on cost reduction and internal operational systems. He points to the use of digital imaging technology in loan documentation and check processing as a major technological advancement that helped to reduce paper usage and made internal operations more efficient, therefore reducing cost. More recently, most changes in the bank’s technology have been focused on customer-facing applications that make banking with Citizens easier. Management believes that the next objective for them is to implement the previously discussed online loan application portal technology that will synchronize with their mobile platform.

D. Marketing and Social Media Usage

Citizen’s Marketing Manager, Kim Gaines, attempts to bridge the technology gap between differing markets through social
media engagement. Using Gremlin Social, a social media marketing and compliance tool for banks, Gaines can manage marketing campaigns and track customer engagement. Gaines has managed to increase engagement with current and potential customers tenfold. Over the last year, monthly engagement has risen from roughly 1,000 views per month to nearly 10,000 views per month (Gaines). This is a building block that Citizens Bank hopes to use in developing a client relationship with younger customers, who are prone to respond to social media contact, and with customers who have moved out of the bank’s primary operating area since opening an account. This continued engagement helps to build rapport between Citizens Bank and its customers.

III. Management & Technology

In the incredibly competitive financial services industry, Citizens’ strategic plan has tactical and measurable goals to attract and retain customers in order to facilitate growth in the short run and the long run.

A. Strategic Planning Process

Formulating the strategic plan involves intensive management discussions and analyses of the industry and the market. According to Citizens’ Director of Enterprise Risk Management, Robert Wright, the annual planning process involves an evaluation of possible technologies. Management considers technologies that have recently emerged and examines technologies that should be enhanced or improved (Wright). The entire process requires management to be deliberate in order to effectively execute their plans. Citizens uses technology to draw evidence-based conclusions about their market and to maintain certain information about their consumers. Citizens’ internal customer information file segments and analyzes customers. It contains details about customer behavior and subjective preferences on various topics such as online banking. This technology enables management to identify changes in consumer demographics and preferences.

The previously discussed social media reporting tool, Gremlin Social, has also become a prominent technology-based information source for Citizens in recent years. The marketing team uses the technology to monitor both the urban and rural market and to gather information and inform strategy decisions (Gaines). Gremlin Social is just one example of a technology used in decision making for strategic maneuvers—there are a host of others that are available to community banks and Citizens.

An additional requirement for meticulous strategic planning is avoiding significant economic losses from untimely or unjustified technology adoption. Adopting technology at whim or without reasonable justification is alarming to regulators. A local bank examiner specializing in information technology (IT) supervision pointed out that banks need to make the right strategic decisions the first time—if they don’t, there may be costly consequences. To illustrate, consider a bank that is forced to retract a contract with a critical technology service provider who provides operational and core processing systems.
This decision will require uprooting their operational systems and possibly changing their strategic direction. A lesser, yet authentic, example involved Citizens enhancing their automatic teller machines with the ability to accept image deposits of checks. Shortly after the launch of the new machines, the industry shifted to mobile image deposit features and unfortunately the expensive ATM technology became obsolete. Citizens’ management revisited their technology decision and concluded that their technology needed to reflect the industry standards and moved to make remote deposit capture readily available to their customers through their mobile application. In the past year, having the appropriate technology has resulted in a 67% increase in mobile deposits and a 33% increase of customers using their mobile app (Wright).

Accordingly, management spends a great deal of time evaluating technologies and how they are going to affect the banks’ competitiveness in the future. When it comes to technology adoption, Citizens has a systematic approach to prioritizing technology necessities in the long and short term horizons. This is particularly due to the lower level of capital expenditure allotments imposed on community banks. According to Wright, this limitation implies that “[Citizens] can do anything, but we can’t do everything” (Wright).

B. Short and Long Term Goals

In the short term, Citizens must ensure that their technology stays relevant and satisfies the needs that it was originally put in place to meet. Management’s current focus is the ease of use and integrability of technology into their existing system (Taft). A technology solution that creates more friction is a scenario that Citizens Bank avoids. Citizens’ primary technology service provider, Jack Henry and Associates, has a virtually seamless platform that is highly integrable with their own products, as well as their competitors’ products, and facilitates Citizens’ short-term competitiveness.

Long range strategic moves involve capitalizing on their customer focus and relationship-based banking. Conclusive evidence from their customer preference profiles and industry research is telling of a demand for immediate services. To avoid becoming another commodity in the market, Citizens is looking to implement online account opening, automated consumer lending, and instant issuance of debit cards to stay relevant in their customers’ literal, and metaphorical, wallets. Larry Taft anticipates that the trend for immediacy and self-service will translate into structural changes in physical branch locations as well. The implication is that smaller office locations will emerge that feature kiosks or self-assisting stations instead of the traditional wall between customer and teller. In anticipation, Citizens Bank has modified their newer branch locations to reflect a relationship-enhancing environment with their new pod design (Taft). It is comprised of a simple structural layout with small stations for completing various tasks such as accessing an online bank account at the branch’s courtesy computer. Citizens has eliminated the pressurized environment by removing
large desks and armored glass windows; they have been replaced by sleek countertops and approachable table settings. The new design suggests that visiting one of Citizens’ branch locations is a consultative experience rather than a transactional one. This is an especially important element of Citizens’ strategic direction as they strive to be the master of personal relationships with their customers.

IV. Third Party Vendors & Technology Service Providers

A. Technology to Solve Problems

If left to meet current technology demands solely with their own internal talent and development capabilities, Citizens would fall short of expectations and be defeated in the highly competitive urban market. Citizens Bank management utilizes technology solutions to fill the gaps in their capabilities and in doing so, they select service providers that attract and retain customers in both their urban and rural markets, while appropriately aligning with their strategic plan.

To illustrate the alignment of technology service providers with strategic problem solving, consider the reality that Citizens faced when expanding to the Kansas City urban market in the mid-2000s, which was briefly mentioned in Section II. Urban commercial businesses expect and demand their bank to have sophisticated treasury services that are compatible with their cash management needs. Given Citizens’ cash management capabilities and treasury technologies before expansion, their internal system became a priority for immediate strategic restructuring. Citizens acquired advanced internal technology for wire transfers and ACH transactions from a technology service provider as they transitioned to the Kansas City metropolitan market.

In this example, Citizens resolved the problem quickly with existing technology from a core service provider, but such quick action is not always possible. Aside from being a fast follower, Citizens’ talent and capital expenditure limitations inhibit internal technology development and suggest yet another way that financial technology service providers are compensatory solutions for problem solving. As stated in the Community Bank Supervision Handbook of the Office of Comptroller of the Currency, “without technology, community banks would be unable to provide the volume, variety, and complexity of products and services offered” (Office of
Due to the generally small number of full time bank employees, vendor management often becomes a challenge due to the sheer size of their vendor portfolio.

the Comptroller of the Currency (2015). This is primarily due to the lack of internal talent to develop such technologies and the inefficiency of using capital to develop them internally. To demonstrate, consider the technologies on the forefront of Citizens’ priorities:

1. Citizens plans to provide instant debit card issuances this year.
2. Citizens plans to incorporate bank account management and setup in their mobile application.
3. Citizens plans to execute automated loan processing to enhance consumer lending.
4. Citizens plans to extend their role in financial management by adding personal financial management system functionality to their mobile application.

These highly technical and calculated maneuvers would be unattainable for a community bank without some degree of outsourced assistance. Therefore, the role of third party vendors becomes highly important to Citizens’ strategic problem solving.

B. Vendor Management

As one might imagine, due to the plethora of third party services available to Citizens Bank, the usage of third party vendors has the potential to swell in numbers and complexity over time. Citizens Bank currently abides by a vendor management process that oversees some 1,300 vendors, ranging from small merchants and tradesmen to its core processor (Taft). Due to the generally small number of full time bank employees, vendor management often becomes a challenge due to the sheer size of their vendor portfolio. Considering the large number of third party vendors, vendor management could easily be a full time job for a bank associate. Unfortunately, this added resource is not a luxury community banks often have at their disposal. Industry experts recommend that a bank expand the responsibility to a committee of internal vendor management specialists, to avoid the risk of losing the knowledge capital of an employee who held sole responsibility and suddenly had to leave the bank.

With each additional vendor, Citizens simultaneously forfeits some degree of control over operations and subjects itself to complicated contractual agreements. Disregarding the portfolio scale issue, the next hurdle in vendor management for Citizens is managing contractual provisions such as automatic renewal periods. Automatic contract renewal periods set an opt-out date that is often months before the end of the current service.
subscription. Again, due to staffing limitations, community banks can easily miss the opt-out date and end up locked in with a service they had planned to discontinue. Automatic renewal cancellations can cost Citizens several hundred thousand dollars if the vendor management program does not carefully monitor contracts (Taft). The remedy for Citizens Bank is a sufficient vendor management program that monitors these contractual relationships, at several levels of criticality, on an initial and ongoing basis.

Citizens Bank determines the criticality of each vendor using an algorithmic scoring system that rates several facets of the vendor, namely data protection, role in financial reporting, and criticality to business operations, on a scale ranging from low risk to high risk (Wright). In general, highly critical vendors are those that have, hold, or transfer personal identification information such as social security numbers, bank account numbers, names, and addresses. This classification particularly describes Citizens’ technology service providers, who are highly critical to bank operations and elevate the risk exposure of the bank. As such, technology service providers are subjected to more intensive oversight and vetting than, say, a non-critical vendor like a window washer. The implication is that the criticality of the vendor has a central role in risk assessments for the bank.

Initial onboarding of a third party vendor involves a disciplined due diligence process that satisfies both industry and regulatory standards. Federal regulators and bank examiners expect banks to have documentation of the due diligence package for their technology service providers that includes some minimum combination of FFIEC Information Technology Exam Standards (Federal Deposit Insurance Corporation 2016). The specialized IT bank examiner with whom we met confirmed that an exceptional initial due diligence package consists of financial analyses and acknowledgments of operational scope, business continuity plans, relevant experience, legal and regulatory compliance, cyber security preparedness, customer reviews, and the overall reputation of the vendor. A meticulous examiner will additionally inquire about technology necessities, technology providers, and departmental responsibility from bank management.

For noncritical vendors, Citizens performs ongoing due diligence on an annual basis that includes, at minimum, checks for financial stability and contract reviews (Wright). For critical vendors, Wright and his team perform extended due diligence which includes reviewing SSAE 16 SOC Reports (Statement on Standards for Attestations Engagement Service Organization Control) that evaluate several elements of the vendor’s operations and risk chain (Wright). The risk chain is the composition of the third party’s affiliates and it can become increasingly complex as vendors themselves rely on third parties for certain functions. Citizens is particularly concerned with the domino effect of risky behavior. An in-depth review of vendors may reveal that a supposedly risk-averse vendor utilizes somewhat risky vendors and, in turn, exposes the bank to indirect
risk. Citizens’ extended due diligence process is performed initially and on an ongoing basis and also includes financial, insurance, and data security analyses.

Despite thorough management and risk assessment processes, Citizens is still confronted by systematic challenges inherent in outsourcing functions for community banks, which are discussed in the following section.

C. Risk Management and Third Party Vendors

Citizens Bank and its regulating bodies acknowledge the threats to operational and information security that are associated with outsourcing to third party vendors. The effects of these threats on the safety and soundness of the bank can be drastic, and as a result, Citizens executes a thorough vendor risk assessment program in conjunction with the bank’s overall risk management program. As discussed earlier, risks are initially and continuously evaluated as part of the vendor management program. Even so, the true scope of the bank’s enterprise risk is the combination of several risk classifications implied by operations and technology service providers.

A standard vendor risk management process includes identifying, measuring, monitoring, and controlling risks (Community Bank Supervision 2015). Wright and his team consider several risk arenas that align with the Office of Comptroller of the Currency’s (OCC) 9 Risk Framework for bank wide risk management. The OCC 9 Risk Assessment System includes credit, compliance, foreign exchange, interest rate, liquidity, price, reputation, transaction, and strategic risk (Office of the Comptroller of the Currency 2015). Of those listed, transaction, strategic, and compliance risk are prevalent and extensively evaluated in relation to technology service providers.

Transactional Risk. The cost effectiveness and operational efficiency of outsourcing transactional functions, such as payment systems, comes at the cost of transactional risk. Any potential interruption to operations imposed by a third party vendor is a transactional risk, and there are several ways technology service providers can introduce community banks to it. Consider the following:

1. If the third party vendor lacks the capacity or sophistication to complete transactions on the bank’s behalf, it may result in delays or incomplete transactions.

2. If the third party vendor’s system lacks a business continuity plan and experiences centralized threats or technology failures, it could prevent the bank from performing operations for an unknown period of time.

3. If third party vendor staff make an error that results in disconnected service, it could cause the bank to temporarily lose functionality.

The possible results of transactional risks are detrimental and draw the attention of Citizens’ Chief Financial Officer, Jon Appleby, because the impact can be significant on the bank’s earnings and liquidity, also termed liquidity risk. The risks increase if Citizens allows inadequate control systems, improper implementation, or
inconsistent due diligence over their providers and services.

**Strategic Risk.** A strategically sound bank will have properly vetted and aligned technologies with their strategic plan. Adopting technology at whim or without reasonable justification would be a red flag to regulators. The local bank examiner specializing in IT supervision expressed that banks need to make the right strategic decisions the first time—if they don’t, there will be costly consequences. According to Dave Foss, CEO of Jack Henry and Associates, it may eventually force the bank to replace an ill-fitting, yet critical, technology service provider and require tragically uprooting their entire system and strategic direction (Foss).

**Compliance Risk.** The heavy regulation of financial services connotes that the entire composition of the value chain needs to be compliant with organizational standards and federal, state, and local laws. Such laws exist to ensure the safety and soundness of key bank operations: lending money and protecting information. Citizens ensures their data is secure and protected in the hands of their service providers by properly vetting the service provider for data system patches, cyber security protection, and legal compliance. If the technology service provider lacks these controls, the bank could be held liable for possible events such as data breaches and lost information. Consequently, the bank is vulnerable to legal risks and formal sanctions.

**Reputational Risk.** Without a doubt, Citizens Bank is threatened by the immense reputational risks they incur by outsourcing operational functions. Reputational risk occurs when the vendor’s quality of service ultimately reflects on the bank in the eyes of the customer. Major mishaps with technology service providers where the trust of the community is severely damaged are harmful to the bank’s public image and may result in a permanently damaged reputation and even legal action.

Overall, Citizens’ risk assessment program consists of 27 Internal audits, 31 compliance reviews, 4 IT audits, and 18 causal based operational risk assessments annually (Wright). The total risk assessment of the bank is compiled and reported to regulators and audit committees who will determine the effectiveness of the bank’s risk management program with respect to their risk appetite.
D. Emerging Trends

The highly competitive financial services industry is under constant pressure to introduce new ideas and technologies. On the horizon, emerging technologies are likely to change the pace and structure of the banking industry. In recent years, Citizens’ primary focal point for new technologies has shifted from advancing internal functions to an absolute customer focus. Satisfying customer demands for speed, accessibility, and simple self-services is the underlying motive of new innovations.

Consumers crave an immediacy and convenience of service in all of their financial transactions. A prominent topic within emerging financial service trends is online lending. The lending front is riddled with independent online lenders that are in fierce competition with banks. Independent online lenders offer quick and easy loan applications and online underwriting that pull customers away from banks. Banks, on the other hand, have a highly scrutinized loan underwriting process that creates a lag in loan and service fulfillment in the banking industry. Luckily, online lending technologies that comply with industry regulations have slowly made their way onto banking platforms in recent years. Jack Henry and Associates tackled the trend with their own solution for community banks to “arm them with competitive strategy” and to help them “remain relevant” (Foss). As a fast follower, Citizens has implementation of online lending on the near horizon.

Banks are also challenged by person-to-person (P2P) transactional technologies such as PayPal, Venmo, and Cash App. These trendy P2P transaction applications enable customers to send and receive funds among each other by moving money from their bank account to a separate account of the provider via the ACH system. Then, transfers are completed through ACH transfers to the recipient’s account a couple days later. This technology satisfies the consumer’s demand for access and simplicity but not for speed. Due to the nature of ACH transactions, it can take days for the funds to actually end up in the target account. Therefore, PayPal, Venmo, and Cash App have significant process lags. Just in time for banks to save face on the technology front, a new application called Zelle is attracting the attention of many banks.

Zelle is a new P2P transactional technology that emerged in 2017; it eliminates the added wait time of the traditional ACH system. It uses a clearing house predominantly composed of the nation’s largest banks, such as JP Morgan and Wells Fargo, and allows money to transfer to banks immediately and directly. Zelle enables real-time transactions from person to person and satisfies the trilogy of consumer demands: speed, access, and simple self-service.

Many banks are interested in this technology, including Citizens. In fact, Zelle is on the forefront of Citizens’ considerations for technology in the coming year. Jack Henry and Associates, known for their integrability as discussed earlier, are rolling out technology that will allow Zelle to seamlessly integrate into the existing platforms of community banks. Ultimately, trends in emerging technology innovations satisfy customer demands for control and power in their financial services. Again, as a fast follower, Citizens intends to take advantage of these technologies in the coming years.
Endnotes

1. During the years 2004-2005 and 2007-2010, total assets for Citizens rose above $1 billion, putting it into Peer Group 2 (assets of $1-3 billion). During these years, the bank is compared to that peer group. Ratios for the two peer groups are similar and thus do not skew the comparison charts.

2. The UBPR line item “Net Income Adjusted Sub S” is used for the peer group ROA. The peer group includes some Subchapter S banks in addition to Subchapter C banks, which are regular corporations. A downward adjustment in the form of estimated income tax must be made to the net income of Subchapter S banks, which do not pay taxes as entities, for valid comparisons (Federal Financial Institutions Examination Council 2008). Citizens is classified as Subchapter C.

3. At the end of 2009, the share of Citizens’ loans that were delinquent (90 days or more past due or nonaccruing) was 6.86%, versus 3.74% for the peer group.

4. The UBPR makes an upward adjustment in interest income to account for the fact that interest on municipal bonds is tax-exempt.

Works Cited


Financial Technology at Gulf Coast Bank & Trust

Introduction

Guy Williams, President and CEO, founded Gulf Coast Bank & Trust (GCB) by leading a group of local investors in the acquisition of American Savings in 1990. GCB initially opened with three branches, thirteen employees, and $30 million in assets. From inception, their vision was to build a bank that blends financial technology (FinTech) with the time-tested values of customer service to create a true community bank.

Today, GCB has grown assets into a $1.6 billion, full-service bank employing 543 people headquartered in New Orleans, Louisiana. They offer personal banking, business banking, wealth management, and trust services from 19 branches across Southeast Louisiana. GCB’s long-term success in a region plagued with wicked weather and a turbulent economy can be attributed to its forward-looking mission that integrates financial technology with customer service.
In attempt to learn more about customers’ opinions regarding FinTech in banking, Team Southeastern developed and delivered a 22-question survey via social media and learned that customers want dual service: technology and proximity. 82% of the 466 respondents said that the presence of FinTech-based services plays a role in their choice of bank. And 88% of respondents said it was at least somewhat important for a bank to have convenient branch locations. Further, 75% of respondents indicated that they would leave their bank if they did not offer online banking, and approximately half of respondents would leave if they were not offered mobile banking, mobile payments, or mobile deposits. The respondents living in 14 U.S. states provide interesting perspectives for community banks struggling with the costly decision to invest in FinTech.

In addition to the survey report, Team Southeastern conducted an in-depth statistical analysis of the detrimental impact that natural disasters have on GCB’s financial performance and the offset that FinTech, specifically a proprietary early-warning system, has on performance. This brief will address some of these statistical findings; however, GCB will receive a full report of the survey results and the model’s methods, data, and output that quantify the impact of FinTech on GCB financials.

1. Financial Analysis

Peer Group Selection: GCB views banks of all sizes and geographical locations across the U.S. as competition in the acquisition of assets: particularly loan portfolio building. However, their primary source of funds (85-90%) come from bank deposits located in Southeast Louisiana. Red River Bank (RRB), Business First Bank (BFB), and First Guaranty Bank (FGB) serve as peers for a panel performance comparison to seek out GCB’s strengths and weaknesses. They each have similar asset size, asset growth, and loan portfolio composition.
Hurricane Katrina (2005) impacted GCB’s earnings because GCB’s primary bank operations and service area were confined to the New Orleans metro area.

Events Impacting Performance Summary: GCB consistently outperforms peers but faces sharp declines in 2005, 2008, 2011, and 2016; each year represents a “watermark” left on bank performance from natural disasters. Hurricane Katrina (2005) impacted GCB’s earnings because GCB’s primary bank operations and service area were confined to the New Orleans metro area. Katrina and her side-kick Rita, disrupted bank operations and caused damage to a degree never seen before in American history. Hurricanes Gustav and Ike (2008) caused further damage to New Orleans. To add insult to injury, the residual impact of the financial crisis negatively affected the economy starting in 2008. In 2016, nearly 100,000 homes and businesses flooded around Baton Rouge (Terrell).

Other considerations that impact GCB’s performance are the acquisition of AmeriFactors Financial Group LLC, an accounts receivable financing firm in Orlando, Florida, in 2016 and two SBA lenders in Dallas, Texas, in 2017: Capital Springs SBLC in February and American Business Lending in December. Since it is common to observe short-term book losses in association with acquisitions, these events may have an impact on GCB’s performance.

Earnings Performance: Since 1992, GCB’s annualized net income grew by 13.18%. 2011 forward, GCB realized 32.56% annual growth in net income outperforming their peer group’s average of just 8.75%. Over the same period, GCB increased interest income by 14.03% annually, while interest expenses grew by only 1.61% annually.

Return on equity (ROE) is the highest-level ratio used to measure earnings performance. To fully understand what component(s) drive GCB’s...
THIRD PLACE: Southeastern Louisiana University

performance, ROE breaks down multiplicatively into Return on Assets (ROA), a measure of profitability, and the Equity Multiplier (EM), a measure of leverage. ROA can be further decomposed into Asset Utilization (AU), which quantifies the efficiency of assets in producing income, and Profit Margin (PM), which measures cost controls.

GCB’s average ROE was 20.00% between 1992 and 2017, while the peer average was only 11.17%. In 2005, GCB’s ROE sharply declined because their New Orleans facilities were literally underwater in Q3 and Q4, along with the majority of homes. Katrina dropped GCB’s ROE from 32.15% in 2004 to 1.12% in 2005. However, with federal government aid flooding the area, GCB hit a new high ROE of 46.29% in 2006. A 98.04% decrease in the provision for loan losses and consequently a 33.84% increase in net income accounts for their recovery. From 2011 until 2017, GCB’s ROE rose while the peer average declined slightly.

Capital Adequacy: Equity Multiplier (EM) magnifies performance with upside and downside potential. GCB’s EM remains in-line with its peers, indicating that components of ROA drive GCB’s performance.

GCB increased capital levels at a rate above 15% annually through 2004, as it was growing deposits in the community. In response to Katrina, the bank faced its first decline in Total Equity (-13%), Tier I (-7%), and Total Regulatory Capital (-3%). By 2006, GCB replenished what it lost by 43%, 38%, and 31% in each of the capital accounts. Throughout the financial crisis, GCB maintained its reserves for each respective account, still allowing for capital increases above 15% in 7 out of 12 reporting periods from 2008 to 2010. Since 2010, Total Capital has increased by 8.76% annually.

Liquidity: Total loans to total deposit ratio is an indicator of liquidity. Best practices indicate to maintain a loan-to-deposit ratio between 80-90% (“Understanding”). GCB only falls below 80% during Katrina. The current ratio for GCB is 0.32 with standard deviation of 3%, less than half that of the peer average. Overall, GCB maintains higher liquidity with less volatility than peers.

Asset Growth: GCB has grown assets by 13.19% annually since 2013. Because of FinTech, banks can increase portfolio assets at a faster rate than physical premises as customers depend less on branch locations to conduct transactions. Fixed asset growth is noticeably stagnant relative to other assets, growing at an annual rate of 5.44% since 2013, while net loans and leases...
grew by 15.39% annually. The financial crisis expanded the growth of the other real estate owned account and GCB’s protective position in securities. GCB had the highest total asset growth compared to peers.

Before the 2016 acquisitions, GCB’s ROA increased on average 36 basis points annually between 2011 and 2015. Since the resolution of the crisis in 2011, GCB has on average grown ROA by 19.3 basis points annually, compared to the peers’ value of one basis point. Even considering the dampening effect of the acquisitions, GCB continues to outperform all peers.

Profit margin represents cost controls as it compares net income to total interest- and noninterest income. GCB’s performance benefits from reduced non-interest expenses and increasing growth in non-interest income. Improving asset quality through mitigating loan losses reduces costs (i.e. PLL) and increases potential gains on the sale of higher-quality loans. GCB’s PM and measures of asset quality steadily improved since 2011, surpassing peers in 2015 despite the 2016 and 2017 acquisitions.

Asset utilization is where GCB certainly outperforms its competition. After Katrina, GCB’s AU grows annually by 1.7% while peers declined by 3.1%. GCB’s noninterest income has increased by 4.1% annually since 1992. They operate with almost twice the level of asset efficiency as their peers. This indicates that AU is the primary driver of GCB’s overall earnings performance.

**Loan Portfolio Composition:** Today, GCB’s $1.33 billion loan portfolio is comprised of 69.3% real estate, 28.5% commercial and industrial loans, and 2.2% loans to individuals. GCB’s loan portfolio has been historically void of any farm loans and they have not held other loans and leases since 2009. GCB’s commitment to real estate loans has been unwavering. Weighted
as high as 90.5% and never falling below 61% of their loan portfolio, real estate is a staple. Since 2008, the portfolio has grown annually by 10.58%, with annual growth of 8.01% in real estate loans, 15.77% in loans to individuals, and 19.36% in Commercial and Industrial loans (C&I).

2. The Community

**Market Area:** Prior to Hurricane Katrina, all of their branches were located on the south shore in New Orleans. After the storm’s devastation, management realized the bank needed to strategically diversify their geographical footprint by expanding to the north shore of Lake Pontchartrain and west into Baton Rouge. While GCB’s 19 branch locations are in southeast Louisiana, GCB is a nationwide lender and wealth manager predominately operating in the southern side of the country. The lending market is 80% Louisiana, 20% outside markets. GCB has credit and production offices from Florida to Texas, with plans to expand into Arizona. GCB has a group of SBA lenders in Dallas and three mortgage offices in Florida: Destin, Orlando, and Naples. GCB specializes in commercial real estate and looks for opportunities to grow in that market.

**Trends:** In response to the new 2018 tax law that imposes a flat 21% corporate tax, banks took advantage of claiming tax-deductible charge-offs in the higher tax bracket of 2017; as a result, fourth quarter earnings fell 14.2% YoY. Based on the performance of all FDIC-insured community banks, SBA lending increased $9.2 billion from the previous quarter, which is more than twice the annual rate of non-community banks (“Community Bank”). The growth in SBA lending can be accredited to a 3.1% increase in non-farm non-residential loans and a 3.2% increase in commercial and industrial loans (C&I).

Loan and lease balances increased 6.3% in 2017 based on the performance of all Commercial State Banks from FDIC Call Report Data. Mortgage lending, represented by 1-to-4 family residential real estate, showed an 18.9% increase. C&I increased 14.2%. Agricultural production loans only increased 1.5%. As a result of raising rates despite a flattening yield curve, the net interest margin increased to 3.66%.

Nearly two-thirds of community banks (63.5%) reported lower or unchanged noncurrent loan rates. Overall, the non-current loan rate declined 13 basis points since the fourth quarter of 2016 to 0.89%. C&I loans showed the most improvement in non-current rates (-37 basis points).
points) but still represented the second-highest subcategory of non-current loan rate (0.96%) despite the improvement. Mortgages, 1-to-4 family residential loans, represented the highest non-current loan rate (1.47%).

**Small Business Lending:** GCB began participating in Small Business Administration (SBA) lending in 2010 by acquiring two SBA lenders in 2016 in Dallas, TX. GCB is now one of the top 10 SBA lenders in the country. Their historical five-year growth rate for SBA lending is 10.75%, with annual growth of 18.70% in 2017. GCB participates in SBA nonfarm, nonresidential loans, farmland loans, and C&I loans. The five-year annual growth rate of each participating sector is 6.24%, 2.42%, and 18.03% respectively. GCB sells the guaranteed portion of each SBA loan (75%) but retains ownership (25%) and loan servicing.

**Commercial Real Estate Lending:** GCB specializes in commercial real estate (CRE) lending. The five-year average weight for CRE to overall real estate (RE) is 23.67% with an average annual growth rate of 24.26%. In 2017, GCB’s weight in CRE shifted to 28.72% due to a 35.50% annual increase in CRE lending. GCB expects to see an increase in C&I asset-based lending as interest rates continue to rise, as the marginal creditworthiness of borrowers enables banks to earn premium interest. Business relationships may also enhance non-interest income through deposit service charges and other non-interest income fee revenues.

**Mortgage Lending:** 1-to-4 Family Residential lending represents approximately 40% of GCB’s total RE portfolio. In the last five years, GCB’s annual growth rate in Mortgage Lending was 9.67%. At the threat of raising rates, consumers scrambled to refinance and lock-in rates causing mortgage lending to increase 18.75% YoY in 2016. In response to the Federal Reserve Bank’s sixth consecutive quarterly interest rate increase since December 2015, demand for funds is diminishing among borrowers, particularly among new requests. GCB’s 1-to-4 family residential RE was down 6.35% annually in 2017.

**Payments:** GCB’s total loans and leases increased 11.29% in 2017, and their non-current loan rate fell 29 basis points to 1.92%, which is slightly higher than the peer group average of 1.16%. Noncurrent C&I loans were up 48 basis points from the previous year, but CRE and mortgage noncurrent loan rates fell 62 and 44 basis points respectively.

GCB implemented a proprietary loan-monitoring system in 2015 that has effectively decreased the value of non-performing loans.
interest rates continue to rise, GCB anticipates seeing an increase in non-current loans. GCB prices loans to mitigate interest rate risk in a rising rate environment by adjusting to interest rates at set intervals: daily, monthly, quarterly, or annually.

**Deposits:** The 2017 total value of Louisiana deposits is $104.7 billion. Only two of Louisiana’s 64 parishes have deposit values above $11.2 billion: East Baton Rouge and Orleans. Only three parishes have deposit values between $5.6 and $11.2 billion: St. Tammany, Jefferson, and Lafayette.

In 2017, GCB increased deposits 14.31% YoY, with increases greater than 20% in St. Tammany and East Baton Rouge parishes. GCB is the only bank in its peer group to grow the value of deposits over the last five years. Within GCB’s primary market area of New Orleans-Metairie, there is a total deposit value of more than $36 billion. GCB holds 3.74% of the area’s deposit market share.

**Technology Meets Local Needs:** Adopting financial technology comes down to value-creation. Financial technologies can be costly, but cost is only an issue if it does not generate a proportional value. GCB sees value in big data and requires that the transactional data be maintained from any third-party vender. A customer’s primary need is accessibility. The greatest advantage of financial technology is the ability to offer faster and more consistent service to customers, especially in the crisis of weather disruptions. In the event of hurricanes and floods, people are evacuated and in the worst-case scenario, cities are uninhabitable for long periods of time.

After Katrina, GCB was inoperative for roughly a week before servers could be loaded on trucks and driven to Houston to be reinstalled. GCB was the first New-Orleans based bank to reopen in Baton Rouge on September 9, 2005, eleven days after Katrina made landfall. In the severe case of Katrina, neither depositors nor businesses were able to move back to New Orleans.
Orleans for many months and some for years. In some cases, they relocated permanently. GCB uses technology to provide 24/7 access to customers in the hustle and bustle of everyday life and in the devastating disruption of disasters. Today, FinTech enables GCB to retain depositors even if they make the decision to relocate permanently.

Katrina exposed vulnerabilities, not only at GCB but in the financial system as a whole. It served as a turning point for GCB and a learning opportunity for banks in the Gulf Coast region. GCB’s first major step toward recovery was to establish a safe back-up location for data redundancies. The primary server stays at a well-protected data center in Baton Rouge while Dallas serves as their secondary location for the extensive tech support and less frequent weather disturbances. Today, all business operations can run seamlessly from either Baton Rouge or Dallas. Though over 400 miles apart, they communicate as if they were in the same room. When a transaction is recorded in one database server, it is duplicated in the other database. In contrast, the standard back-up process during Katrina was two-weeks of tape backups.

Using Virtual Private Network (VPN), bank employees are not geographically dependent; employees can operate remotely. In January 2017, much of south Louisiana experienced a snow and ice storm, halting travel on roads. However, employees could log into the VPN and process work just as they were in the office. Additionally, retail customers can complete almost any transaction remotely through digital banking services: check balances, view statements, view and order checks, transfer funds, receive e-statements, customize account alerts, automate payments with Bill Pay, mobile deposit and People Pay, a secure Person-to-Person (P2P) payment system that allows customers to electronically send and receive money. Meanwhile, Digital Business Banking allows business customers the ability to approve wire transfers, ACH payments, and positive pay exceptions. GCB also offers merchant services, corporate credit cards, and payroll cards. Financial tools such as desktop tellers, sweep accounts, and account analysis help business customers optimize time and cash flow.

GCB uses technology to provide 24/7 access to customers in the hustle and bustle of everyday life and in the devastating disruption of disasters.
GCB offers online account opening and loan applications through uOpen, provided by third-party vendor D+H. uOpen streamlines processes to generate revenues by providing real-time decision and account access. This Fintech adoption allows customers to apply for personal, business, deposit, loan, credit card and escrow accounts, plus services such as debit/ATM cards, online banking, e-Statements or overdraft protection. If a disruptive disaster happened today, GCB may lose physical assets, but business would continue uninterrupted for all consumers.

**Relationships:** The adoption of technology has caused an evolution in the relationships with customers. Years ago, customers received a statement in the mail once a month. In contrast, many customers today want to have easy access to banking at their convenience. Team Southeastern’s survey found, while 88% said it was important to have convenient banking locations, just 60% of respondents visit a bank lobby at least once a month and only 12% know the names or faces of 2 or more bank employees. Millennials appear the least connected to banks; 50% said they know zero bank employees. Interestingly, approximately 66% of all respondents indicated that the relationship with their banker was somewhat important to not important.

Despite some preferring a relationship, the majority of respondents of the survey indicated that technologies were important or very important to consider when choosing a bank. Survey results showed that a large proportion of bank customers use financial technologies that remove the social aspect of banking: ATMs and automatic deposits (>70%), mobile deposits (62%), bill pay services (49%), and person to person payments (41%). Many Millennials (43%) indicate they never use a physical branch. GCB makes strategic adoptions of FinTech (i.e. online account opening and loan applications) to passively generate revenues and service the growing population of socially-averse customers.

Customers deemed online banking, mobile banking, mobile payment, bill payment, and mobile deposit features as the most important technologies, in that order. Interestingly, 60% of Millennials and Baby Boomers said they never use mobile payments for daily purchase, yet it was ranked third-most important. However, 60% of customers over 65 said they would be more inclined to use financial technologies if they had a phone number to ask questions. Surprisingly, the aging Baby Boomers have adapted to online banking, like bill payment, but are slower to accept mobile banking and deposit features. In fact, almost 90% of customers over 65 said they would leave their bank if they were not offered bill pay. The social
aspect of banking is still important to the Baby Boomers and those customers placed the highest value on banker relationships, however, the majority of this demographic (60%) indicated it was moderately important or not important.

**New Demographics:** Younger demographics, like Millennials, have always been early adopters, so technology is crucial in earning their business. Younger demographics are more fluent with technology and smartphones in general, so it’s not surprising that mobile features are the most important to customers under 35. More than 65% of Millennials are likely to switch to another bank with more convenient FinTech services, compared to approximately 45% of Generation X customers and 35% of Baby Boomer customers.

Alarmingly, 85% of Baby Boomers said they would be likely or very likely to move their deposits to a new bank if they moved out-of-area while 61% of Millennials and Generation X customers said they would leave. Younger customers are significantly less likely to move deposits due to the accessibility from mobile and online banking services.

The survey reports that 69% of Millennials bank with large commercial banks, while 60% of Baby Boomers bank with community banks. Most Millennials (60%) have a deposit balance of $2,000 or less, in contrast to half of Baby Boomers who have $10,000 or more deposited. It is important for banks to serve the needs of multiple demographics; Millennials are the customers of tomorrow, but Baby Boomers have the cash today. Hopefully, community banks that partner with third-parties to offer up-to-date products and services have a better chance at retaining transient customers.

Team Southeastern contemplated why some customers visit the bank. Accordingly, 73% of customers who visit the bank more than twelve times a month are using an ATM. Customers value the proximity of physical branches but opt to conduct banking via technology. Relationships are a key attribute of community banking, but the majority of customers are placing more importance on technology services. A startling 85% of Millennials said FinTech makes a difference in their choice of bank; surprisingly, 60% of Baby Boomers and 76% of Generation X agreed. Examples like P2P payments are growing in favor as 69% of respondents said they were likely to use electronic P2P payment services within the next year. Approximately half of those surveyed indicate they never write checks.

GCB has seen a tenfold increase of business banking customers in recent years by offering card, deposit, and online solutions to meet the needs of business customers. Many of these services are entirely technology-based. Surveyed business owners generally agreed on the most important services as consumers but placed more importance on mobile payment

<table>
<thead>
<tr>
<th>Would you move your deposits?</th>
<th>Age</th>
<th>15-35</th>
<th>35-55</th>
<th>55+</th>
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<tr>
<td>Likely</td>
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<td>0.61</td>
<td>0.61</td>
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<td>Neither</td>
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<tr>
<td>Unlikely</td>
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and deposit features. Most business customers surveyed, 57%, said they would switch to another bank with more FinTech services. However, 60% of business customers indicated relationships were significantly to moderately important. When applying for business loans, one-third ranked ‘relationship’ as an important consideration, second only to competitive interest rates offered. GCB recognizes that relationships established through the lending department act as the source for business banking customers. Relationships are vital in commercial lending decisions, but business customers expect the same technology and services that big banks offer to earn their full business.

3. Management

Strategic Planning: GCB is unique from many community banks because it has strongly embraced technology since its inception in the early 1990s. This presents a dual strategy for GCB: 1) offer the services big banks have to remain competitive, and 2) maintain the personal relationships that differentiate a community bank from the big banks. But technology isn’t free, so management must consider the strategic allocation of resources. It is important to bring returns back to the bank in the form of new business lines that generate revenue and/or streamline internal processes that reduce expenses.

GCB faced the task of growing its loan portfolio without the capacity to expand their human capital. Out of necessity, GCB developed and implemented a proprietary early-warning system that monitors their loan portfolio on a daily basis in June 2015. GCB’s early warning system checks a series of 30 triggers and notifies management if a party could be signaling a pending default. The model monitors changes to internal data (i.e. overdrawn accounts, account closings, transactional data) and supplements it with external data like quarterly credit reports. Adverse behaviors fire a trigger warning. Once triggered, the lending officer on record reaches out to the customer to mitigate adverse outcomes.

The goal of the system is to enhance asset-quality and to reduce expenses associated with monitoring loans and charge-offs. Since Q1:2016, the peer average increased Charge-Offs to Total Loans 13.39%, while GCB only increased by 11.45%. Asset quality measured by Nonaccrual Assets to Total Loans improved from 2.61% in Q1:2016 to 1.31% in Q4:2017. Assets Past Due 30-89 Days to Total Loans improved 9.8 basis points.
points with an uptick in August 2016, when Southeast Louisiana endured another historic flood. This system enhances the relationship between lenders and customers by initiating valuable conversations.

After conversations with GCB executives, Team Southeastern was challenged to quantify their methods with the hypothesis that FinTech positively impacts financial performance and offsets the impact from weather disruptions. Six Ordinary Least Squares regression models using 52 data points from quarterly Call Reports dating Q1:2005 through Q4:2017 follow the ROE decomposition framework as a roadmap. The models explain the relationship between GCB’s financial earnings performance (ROE, ROA, PM, NI, Noninterest Income) using four explanatory variables.

First, as a control for economic activity, quarterly Louisiana GDP since 2005 explains the macroeconomic factors impacting GCB’s performance and acts as a time trend. Although, it is not statistically significant, when removed, other explanatory variables become less statistically significant. Each performance model includes a single lag term for each of the dependent performance measures. There are clear signs of serial correlation and a remedy to eliminate the visible pattern of the model errors is to add an autoregressive, AR(-1), term to each model.

Team Southeastern developed a discrete variable based on conversations with bank executives about the implementation of their proprietary early warning system, mobile business solution, and Smart ATMs in Q2: 2015 and the continual improvement in their technology. Starting in Q2: 2015 to Q4: 2017, the FinTech variable, DFT, takes on a 1; otherwise it is zero.

Finally, Team Southeastern develops a discrete variable, DH, representing natural disasters that interrupt operations on at least a city-wide level in GCB’s areas of operation. The dummy takes on a 1 in the quarter(s) that the disruptions occurs; otherwise, it is zero. The disruption dummy includes four major disruptions: Hurricanes Katrina & Rita, Hurricanes Gustav & Ike, Great Floods, and Hurricanes Harvey & Nate.
& Ike, the Great Floods, and Hurricanes Harvey & Nate.

Team Southeastern finds evidence that weather disrupts earnings because evacuations, business closures, and damaged property in GCB’s primary market areas increases costs and impede their ability to generate income. In extraordinary cases like Katrina, GCB had to relocate operations to Baton Rouge and spend weeks backing up data tapes.

Conversely, the models find evidence that the financial technology offsets the negative impact of disruptions by increasing cost efficiencies and generating revenues, particularly impacting non-interest income. Since 2015, noninterest income is driven by other noninterest income (5.1% quarterly growth), deposit service charges (3.9% quarterly growth), fiduciary activities (3.8% quarterly growth), and gain/loss on loans and leases (1.9% quarterly growth). FinTech-based services like ATMs, data processing, and business solutions contribute fees to Non-Interest Income and reduce the physical premises necessary to serve the growing customer base. The early warning system’s objective is to enhance the quality of loans which impacts cost controls by reducing the need to increase human capital as the loan portfolio grows and by reducing the expenses from write-offs.

In each of the models (ROE, ROA, PM, Net Income, and Non-Interest Income), both weather disruptions and the FinTech variables are statistically significant. As expected, disruptions negatively impact earnings performance, but most importantly, the models provide evidence that the FinTech offsets the negative impact of business disruptions.

Marginal analysis of the parameters shows the short-term effect of disruptions versus the persistent impact of the FinTech. The following table summarizes the marginal and total impact of the weather disruptions and the counteracting impact of FinTech for each financial performance measure over time. For every performance measure, FinTech had a positive but diminishing impact that offset the negative and diminishing impact of the...
weather disruptions. In each case, the impact of the early-warning system technology nearly or entirely neutralized the negative impact of disruptions.

GCB employs FinTech to increase revenue while lowering costs, which results in higher earnings metrics. The proprietary lending model combined with the FinTech-based services enables them to generate more revenue with less human and physical capital. This relationship is most significant for noninterest income (99% confidence level). The percentage of assets charged off is significantly offset by the early-warning system indicating that the system does improve asset quality.

Of all the sub-components, charge-offs to total loans showed strongest significance with the model, indicating the effectiveness of the early-warning system to significantly reduce chargeoffs. Further Provision for Loan Loss, Non-Interest Expense, Net Gain/Loss on Loans and Leases showed some relationship with the model. The following subcomponents of Noninterest Income also showed a relationship which supports the effectiveness of FinTech-based services to generate revenues: Other Non-Interest Income, Deposit Service Charges, Fiduciary Activities.

The models indicate significant offsetting relationships on performance metrics values up the ROE decomposition chain from the subcomponents of non-interest income to NI, PM, ROA, to the highest performance indicator, ROE. The models do not detect evidence that financial technology directly impacts AU, however, non-interest income is a component of AU.

**Goals:** GCB looks for the opportunity to adopt value-creating technology, primarily by streamlining internal processes or expanding service lines. While the human element and value cannot entirely be replaced with machines, technology provides efficiencies that humans cannot. GCB’s vision is to automate any manual process or redundant task. This would offer many benefits; specifically, it would allow GCB to handle a higher quantity of business
without leveraging up employees, which is cost efficient. Technology can remove the risk of human error that occurs in any repetitive task. Streamlining through technology creates cost efficiencies because technology never gets sick or goes on vacation.

GCB’s short-term goals are to identify and incrementally convert steps in internal operations that can be automated. For example, GCB is initiating electronic signatures on all compliant documents through Docu-sign. The goal is to simplify paper communications. Another short-term goal in the lending department is to implement an optical character recognition (OCR) on tax returns. With this piece of technology, financial statements will be scanned and automatically read and computed for underwriters. In the short term, GCB plans to implement targeted marketing campaigns within mobile and online banking operations. Targeted marketing combines a customers’ demographics, transactional data, and outside information like quarterly credit reports to predict the next product or service needed and minimize the amount of marketing ads.

The use of big data and block-chain technology is another avenue GCB hopes to implement in long-term operations. Block chain technology is the digital process of transferring an asset. GCB views this as the technology of the future and believes it has potential to be integrated into financial institutions in the near term. GCB is studying how the cryptocurrency and block chain technology work.

4. Third Party

Problem Solving: Third-party vending allows banks to leverage the technology and knowledge of other financial service providers to offer services and to streamline internal operations that could not otherwise have been completed internally. Large banks have the capacity to hire teams of programmers to develop proprietary technology. But for most community banks, the only option to stay competitive with the technology is to leverage the relatively costly third-party venders.

Third-party venders like Q2 and nCino have been successful in developing competitive, flexible software packages for segments of bank operations that integrate with the core processing system. The online banking platform offered through Q2 increases the services offered to customers that can be completed via the online banking website and provides a

GCB’s short-term goals are to identify and incrementally convert steps in internal operations that can be automated.
clean, modern interface with customers. GCB’s online-mobile platform offers all the features and services of a large, commercial bank.

The loan origination and processing platform offered through nCino streamlines the internal workflow. All inside the same software, nCino can take referral information from the loan officer, which is then sent to the Senior Credit Analyst for approval, and finally sent to the underwriting department for a full, “old-school” vetting process. All the information that any party in this chain would need is entered and stored in this central database which creates efficiencies and higher productivity.

**Risk Assessment:** Risk assessment of physical assets can be more-easily controlled with vaults, locks, and keys; however, the protection of intangible data presents a new question for banks. Cybersecurity poses an incredible threat, specifically in the case of third-party vendors, who are not regulated to the same degree as financial intuitions. GCB has a thorough vetting process of all third-party vendors. FDIC and other regulatory bodies have outlined standards for banks’ compliance with third-party vendors. GCB takes these guidelines a step further by requiring a financial analysis and annual SOC 2 examinations. Additionally, management firmly believes in cultivating a strong working relationship with the technology’s programmer.

Before partnering with vendors, both the IT and cybersecurity committees assess a vendors’ risks and potential of damage. GCB has one full-time cybersecurity expert along with a cybersecurity committee that meets bi-weekly to assess a variety of security metrics: domain accounts added, failed login attempts, system downtime, available storage on servers, system audits, and password checks. The committee goes further to examine data usage and trends of employees and perform regular intrusion and phishing attempts. Further, all systems are designed to comply with the segregation of duties and allow few domain admins. GCB has never had a security breach.16

The liability of cybersecurity eventually falls on the bank to ensure they are doing due diligence in assessing third-party vendors and that terms are clearly understood and outlined in their contract. Third-party vending requires banks to trust and depend on the third-party.

Team Southeastern’s survey also found that the large majority (88%) of Millennials view financial technology as safe, accompanied by 78% of Generation X and 75% of Baby Boomers. Account accessibility and customizable alerts allow customers to easily monitor their personal banking. Card Valet is a mobile app that customers can download for an additional layer of protection from card fraud; customers can define areas where their card can be used, limit purchase by the type of merchant, and set limits on transaction dollar amounts.

**Challenges:** Gulf Coast has worked with a variety of third-party vendors for many years, which have resulted in both good and bad experiences. Some of the greatest challenges are rooted in communication. GCB explained a trend of avoidance from the third-party after an undisclosed revenue recognition window had
closed. Once the third-party had capitalized its gains, it would dodge, transfer, and finally stop returning phone calls.

GCB cited the difference between customizable and configurable as a hard-learned lesson with third-parties. One might assume these could be interchangeable to mean the product is flexible and can adapt to the bank’s request. However, this definition only applies to the term configurable, while customizable means it can be done but at a very high price that was undisclosed prior to the technology’s adoption. Understanding a technology’s true capabilities and limitations is key in vendor selection.

GCB has identified these obstacles and developed a strategy of thoroughly vetting all vendors. Identifying a knowledgeable spokesperson as a point of communication makes the vetting process easier on management. Another challenge they cited is the response often given from general support: “You need to change your process.” That answer doesn’t work for GCB. They want products and services that are flexible enough to adapt to their processes.

Once GCB identifies third party vendors who can provide the services and features they desire, they create a strategic partnership and work to help the third-party vendors improve, which inherently helps GCB. When working in these strategic relationships, GCB asks questions and challenges the flexibility of the software or technology. They also volunteer frequently to participate in beta testing of developmental technology for their strategic third-party vendors. This helps the third-party by giving them the test group they need and also allows GCB to have access to the most cutting-edge technology before it is released to the public. Because of the value GCB brings to third-party providers, vendors appreciate GCB’s partnership and offer further discounts to the financial technologies they choose to implement.

**Trends:** Core processing is the most crucial and centralized software in the internal operation of a bank. GCB sees the value in technology provided by third-parties because it can offer more services and flexibility more carefully suited to their preferences. A highly anticipated opportunity for third-party vendors would be the rewrite of core processing software for banks. This software is responsible for many
The successful development and integration of a core provider software by a third-party provider would cause a dramatic disruption in the market. One theoretical application of block chain could potentially be the adaption of its technology into a secure, restricted block chain. Hypothetically, this application could serve a double purpose of renovating the core provider industry and enhancing cybersecurity of internal data.

**Conclusion**

GCB’s strategy of customer service and FinTech presents two objectives: offer the technology of big banks and maintain the relationship of community banks. GCB better serves customers by offering more services and lowering internal costs through innovating proprietary technology and leveraging third-parties. Considering the opinions of new Millennial customers and faithful Baby Boomers, GCB finds the perfect balance of new technology and physical tangency.
Endnotes

1. Return on Equity (ROE) = \( \frac{\text{Net Income}}{\text{Average Equity}} \)
2. Return on Assets (ROA) = \( \frac{\text{Net Income}}{\text{Average Assets}} \)
3. Equity Multiplier (EM) = \( \frac{\text{Average Assets}}{\text{Average Equity}} \)
4. Asset Utilization (AU) = \( \frac{\text{Total Income}}{\text{Average Assets}} \)
5. Profit Margin (PM) = \( \frac{\text{Net Income}}{\text{Total Income}} \)
6. Current Ratio = \( \frac{\text{Current Assets}}{\text{Current Liabilities}} \)
7. GCB sells 100% of qualified mortgages to Federal Housing Finance Agency (FHFA), where they are packaged and securitized. GCB repurchases securitized mortgages packages.
8. Non-current loan rate data are pulled from FDIC Call Report. All state-chartered commercial banks are used as a standard peer group to form market trends.
9. Dallas is one of the highest concentration of SBA loans areas in the U.S.
10. Information provided by Jack Finn, Senior Credit Officer at Gulf Coast Bank and Trust (Falkenstein et al., 2018).
11. GCB sells 100% of the qualified mortgages, but they hold non-qualified mortgages and repurchase securitized packages.
12. Loans and leases 90 days or more past due plus loans in nonaccrual status, as a percent of gross loans and leases.
13. \[ \begin{align*}
ROE_t &= 0.79^* + 0.20\text{ROE}_{t-1} + 0.15\text{D}^\text{FT} - 0.20\text{D}^\text{D} + 0.262\text{E} - 06\text{GDP}^\text{LA} + \varepsilon_t \\
ROA_t &= 0.026 + 0.31\text{ROA}_{t-1} + 0.009\text{D}^\text{FT} - 0.012\text{D}^\text{D} - 7.13\text{E} - 08\text{GDP}^\text{LA} + \varepsilon_t \\
PM_t &= 0.156 + 0.65\text{PM}_{t-1} + 0.034\text{D}^\text{FT} - 0.044\text{D}^\text{D} + 4.52\text{E} - 07\text{GDP}^\text{LA} + \varepsilon_t \\
\text{NI}_t &= 170.47 + 0.358\text{NI}_{t-1} + 3106.76\text{D}^\text{FT} - 2206.87\text{D}^\text{D} + 0.008\text{GDP}^\text{LA} + \varepsilon_t \\
\text{NonInterestIncome}_t &= -9445.54^{**} + 0.50\text{NI}_{t-1}^{***} + 1618.25\text{D}^\text{FT} - 738.35\text{D}^\text{D} + 0.051\text{GDP}^\text{LA}^{***} + \varepsilon_t \\
(\text{ChargeOffs})_t &= 0.0016 \cdot 0.053(\text{ChargeOffs})_{t-1} + 0.001\text{D}^\text{FT} + 0.001\text{D}^\text{D}^{**} + 1.22\text{E} - 09\text{GDP}^\text{LA} + \varepsilon_t \\
\text{TotalAssets}_t &= 85% \text{ significance} = \text{t-stat} > 1.462 \\
\text{**} &= 90% \text{ significance} = \text{t-stat} > 1.676 \\
\text{***} &= 95% \text{ significance} = \text{t-stat} > 2.009 \\
\text{****} &= 99% \text{ significance} = \text{t-stat} > 2.678
\end{align*} \]
14. Using the Case-Schiller Housing Index (in place of LA GDP) produced similar results in the case of Net Income and Non-Interest Income.
15. Long Term Impact of Disaster = \( \frac{b_1}{1-a} \); Long Term Impact of FinTech = \( \frac{b_2}{1-a} \)
   Long Term Impact of Disaster = \( B_1 \cdot a^t \); Marginal Impact of FinTech = \( B_2 \cdot a^t 
   \)
   Time (t) is measured by quarters. Alpha and betas are parameter estimates.
16. Report developed by the AICPA to assess security, availability, and processing integrity of the systems the service organization uses to process users’ data and the confidentiality and privacy of the information processed by these systems.
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