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Loan Processing at Capital One

It was in late July 2004 and Rick Weis, operations manager of the loan processing center at Capital One, was looking over the marketing forecast for the upcoming quarter. Following several months during which Capital One had funded significantly fewer loans than targeted, Capital One's marketing team was now planning for a significant direct marketing effort. This marketing effort, which was planned to take the form of a major mail drop, was designed to increase the volume of funded loans in about six weeks when potential customers start returning these applications.

It was clear to everyone at Capital One that the operations of loan processing would play a major role in determining if the upcoming mail drop would be a success. "With 14 funded loans processed per associate every month and a total of 25 associates on the team, the department does not have the capacity to handle the application volume leading to our target of 700 funded loans per month that we set following our increased marketing effort", observed one of the managers working for Rick, "What we need is a significant increase in staff. We also need to heavily invest in information technology to further increase the productivity of the existing staff".

While it was clear that the forecasted increase in loan applications would provide a serious challenge for the underwriters, there was no consensus on what actions should be taken. As was observed by one of the executives in charge of consumer loans: "When I benchmark the productivity of our underwriting team with other companies in the industry, 14 funded loans per associate per month is not a number we can be proud of. It takes about 3 hours of actual work to fund a loan, and that includes everything from the initial interview to underwriting, quality inspection, and closing. We have 25 associates, that each works about 150 hours per month. So each associate should be able to process 50 applications per month, which gives us 1250 applications per month for the team. Even if we fund only every other loan that we underwrite, we would just need a little bit of over time to get 700 units funded."

Several others at Capital One agreed. As it was put by one of the associates in charge of direct marketing: "Frankly, if you asked me, there seems to be a lot of potential for improving productivity in our processes. I am optimistic that our upcoming mail-drop will lift productivity and utilization scores in the underwriting process since there will be a lot more work coming in."

As the person in charge for operations management, Rick had mixed feelings about these comments. On the one hand, it was true that his department's productivity metrics had not been stellar in the past. But his associates worked very hard and were very capable.

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Rick was relatively new to this role, though he was a highly accomplished operations manager with a history of taking on tough challenges and producing strong results by redirecting his teams towards better prioritization, teamwork and focus on strategically important activities. As he looked over the marketing forecast and the target of 700 funded loans for the next month, Rick wondered what the upcoming mail drop would do to his department? And, more importantly, what could he do to help Capital One grow its consumer loan business in the most optimal way?

Capital One: Background Information

After graduating first in class from the Stanford business school in 1981, Richard Fairbank joined Strategic Planning Associates (SPA), a strategy-consulting firm. In 1986, Fairbank met Nigel Morris, a young associate at SPA. While analyzing the operations of a major money center bank, the two reviewed the firm's credit card operations. Both of them were struck by the enormous profitability relative to the rest of the bank. The young consultants concluded, "Credit cards are not banking – they are all about collecting information on 200 Million people that you'd never meet, and, on the basis of that information, making a series of decisions about lending money to them and then hoping they would pay you back."

Fairbank and Morris recognized the potential of customizing credit card products based on characteristics and behavior of their customers and taking advantage of the technological advances in computers that offered companies the ability to record, organize and analyze large amounts of customer data. They realized that few products in the credit card industry were being direct marketed and that even fewer firms were fully exploiting the power of statistical analysis. Fairbank and Morris were able to convince the bank to run a test using this strategy. The test worked remarkably well, however, the bank was unwilling to adopt this new strategy.

Convinced that they were onto something really big, the two pitched their idea to more than 20 national retail banks before Virginia-based Signet Bank invited them to launch its Bank Card division. Over the next several years, Fairbank and Morris ran thousands of statistical tests and eventually introduced the first balance transfer product in 1991 that revolutionized the credit card industry and saved a struggling Signet Bank. Four years later, in 1995, Signet spun off its credit card division to create the publicly held Capital One.

Recognized for its innovation, customer service, information technology, and financial management, Capital One now is one of the largest issuers of Master Card and Visa credit cards in the world. Today, the company's global customer base is close to 49 Million with managed loans totaling over $83 Billion. From its IPO in 1994 to 2005, Capital One's stock price had increased more than 1400%.

In recent years domestic diversification has become a primary component of Capital One's strategy. After going public, the company progressed on geographic and

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product line expansion through organic growth in credit cards and a series of acquisitions in non credit card businesses. In 1998, the company acquired Summit Acceptance Corporation, an auto loan provider. In 2001, it acquired the nation's largest online provider of direct auto loans – People First, and a leading provider of financing solutions – Amerifee. The acquisition of Onyx Acceptance Corporation® made Capital One Auto Finance the second-largest independent auto lender in the United States. The company also acquired Kansas City-based eSmartloan, an online originator of home equity loans and mortgages; Hfs Group, a home equity loan broker in the United Kingdom; and InsLogic, an insurance brokerage based in Tennessee. A number of these diversified businesses along with some organically grown businesses reside in the Global Financial Services (GFS) organization of Capital One. The Loan processing center is one such business that supported a variety of loan products such as small business loans, Line of credits and Jumbo loans.

The Loan Approval Process

In the division in charge of consumer and small business loans, the marketing department solicits potential customers through direct mail and/or email campaigns, that highlight the loan product features and specials of various products that are offered by Capital One. These campaigns, which are typically carried out at a nationwide level, have an information card that can be returned by the customer. The customer uses this card to provide information concerning their name, the type of loan they are interested in and the phone number/time range that is best to reach them.

Customers who respond by sending this information back enter the process and are referred to as an "App". Each App flows through a process that consists of five steps: Interview, Workflow Coordination, Underwriting, Quality Assurance (QA) and Closing. Exhibit 1 shows the process flow with a brief description of the activities and the number of associates in each role.

Interview

The interview step consists of seven associates who call the telephone number specified on the information card. On a typical day between 200 and 500 potential customers are called depending on the incoming volume of customer requests. Federal privacy regulations require that financial institutions can speak about the loan only to the person who actually requested the loan. Hence, if this person is not home at the time of the call, the call has to be repeated at a later point.

During the call, the associate interviews the applicant about her loan needs. Based on the customer needs, the associate offers a range of products to the customer and the loan terms such as the maximum loan amount and the interest rate associated with each product (usually a range of interest rates is provided).

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If the customer is interested in one of the products, she will start an application process with the associate. The associate follows a scripted questionnaire and enters the information being provided by the customer into a computer system. The interview associate sets the expectation with the customer on the next steps: if additional information is necessary to complete processing and approving the application, an underwriter will get in touch with the customer in 2-5 business days to get the necessary information. If all the information is complete and accurate, the applicant will receive a phone call from an Underwriter in approximately 5-10 business days outlining the next steps in the closing process.

Exhibit 2 summarizes some sample data that was collected over the course of a week. The Exhibit shows it takes on average 22 to 24 minutes for an associate to process one extra app. This includes the time the associate spends talking with the applicant. It also includes the time it takes the associate to reach the applicant.

The average call duration was 3.1 minutes per call in those cases in which the person who requested the loan could not be reached ("no right party connect") and 14.4 minutes per call in those cases in which the person who requested the loan could be reached.

On average, 7.1 cases per day involve customers (all right party connect) that the interviewing associate expects to not pass the interviewing step. However, since the interviewing associates lack the training and experience that is typical for an underwriter, these cases are forwarded to the underwriter along with the 12.3 cases per day that look more promising with respect to the underwriting decision.

Workflow Management

At the start of the following workday, the Workflow Coordinator distributes the Apps from the successful interviews of the previous day. The general rule used by the Workflow Coordinator is to distribute the work such that each Underwriter has roughly the same number of applications at the beginning of the workday. As was described by the workflow manager: "My role is to keep the workloads of the eight underwriters as balanced as possible. To do this, I look at the current inventory of apps for each underwriter and assign new apps such that the total number of apps at the beginning of a workday is as level as possible." As it turns out, the most productive underwriters usually have the lowest work in progress inventory (WIP) and are usually assigned the most number of new apps each day. Since they process more apps compared to the other underwriters, they are given more work and are compensated accordingly (mainly through higher performance bonuses).

The Workflow Coordinator also takes into consideration potential absences and vacations to ensure that work is not assigned to associates that will not report to work that day. New Apps are usually handled on a FIFO (first in first out) basis by each Underwriter.

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Underwriting

Underwriting is the most complex job function in the loan approval process and underwriters are consequently the highest paid associates on the team. Currently, there are eight associates working as underwriters.

Exhibit 3 includes information about the activity times of the underwriters. Underwriting consists of six steps that can vary in length reflecting differing levels complexity of the application and different skill levels of the underwriters. The complexity of underwriting comes from the fact that underwriters perform a variety of activities for each app depending on what stage the app is in. Each activity requires a different set of skills and part of the challenge is balancing these activities across all the apps that they each have in inventory.

First, the underwriter ensures that all the information on the application is complete and that the applicant passes some basic corporate guidelines for being approved for a loan. After this evaluation, the applicant's identity is verified. The choice and complexity of the verification process is dependent on a number of factors such as the type of application (individual, business, etc) and the State the applicant is from.

Second, the Underwriter evaluates whether or not the applicant is creditworthy, by extracting data from one of the Credit Bureaus. Appropriate data from the Bureau is entered into a computer system which evaluates the amount of loan that the applicant is approved for and the terms of the actual loan offer based on a proprietary algorithm that evaluates credit risk.

Third, the Apps that pass all the criteria described above are then packaged by the Underwriter into a folder and the underwriter passes the loan to quality assurance. In comparison to the other activities done by the underwriter, the packaging activity is relatively low skilled and involves data entry, photocopying and preparing the file.

Not every loan application is underwritten. The two main categories for why an application is not underwritten are declines and withdrawals. The reasons for declines include poor credit history and the criteria that lead to tentative declines, i.e. applications that were flagged at the interview step. Withdrawals refer to the apps that actually pass underwriting step but are withdrawn by the customer. The most common reason for withdrawals is that the customer has obtained a loan from a competing financial institution and is no longer interested in waiting for a loan from Capital One. A complete analysis of attrition losses (due to the underwriter declining the app and due to the customer withdrawing the app) is provided in Exhibit 6.

At any given time an Underwriter could have an inventory of between 20-50 applications that he/she is working on. The vast majority of them are awaiting additional information from the customer (see Exhibit 8 for inventory information). In the words of

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one of the Underwriters: "If the customer provides all the information to us accurately and everything checks out, we can complete the underwriting for that app in less than 30 minutes. However, in many cases, we end up spending a lot of time trying to reach customers to get us the information that is necessary to complete the internet searches and credit evaluation. Since federal regulations prevent us from leaving a message on an answering machine with specifics of why we are calling, we can not let the customer know what information is needed unless we actually verify his/her identity, and talk to them personally on the phone." The time that underwriters spend on follow-up calls varies across the eight underwriter and ranges from 58.8 minutes per day to 133.9 minutes per day.

Quality Assurance (Q&A)

Two QA associates review all the documents prepared by the Underwriter for accuracy and ensure that all the information entered in the system corresponds to the information on the physical documents. The Apps are also checked for accuracy by applying a set of business rules concerning the loan type, the State, etc. About 10% of the apps require some additional work, which is typically done by resending the apps to the corresponding underwriter. As is shown in Exhibit 4, QA takes, on average, 23 to 26 minutes per apps. A Q&A associate is able to handle between 13.6 and 14.1 apps per day. To stress quality and accuracy, a certain minimum quality score is required from the underwriters for receiving any incentive payout.

Once the QA review is complete, the App folder is assigned to a Closer (again based on inventory level and availability of the Closers). This assigning of work is done by the workflow coordinator.

Closing

At closing, six associates review all information in the App folder for accuracy and then print all the documents in need of a signature from the customer. The closer then prepares the overnight mailing with all the corresponding paper work. Next, the Closer calls the customer and congratulates him/her of the loan approval. Just as in the underwriting step, in some cases, the customer withdraws the application at this stage. The primary reason for these withdrawals is that the customer has obtained a loan from a competing financial institution and is no longer interested in waiting for a loan from Capital One. These are usually the apps that flow through the underwriting step with out a need for a customer callback, and hence the closer is the first person since the interview step to make contact with the customer. The customer is alerted that the documents will arrive the next day and that these forms are to be signed and be returned with the enclosed overnight return envelope. When the signed documents are received back from the customer, the Closer updates the system, makes a copy of the entire file for record keeping purposes and files the documents in the file room. Exhibit 5 provides information about how the six associates performing the closing activities spend their time during their work hours as well as information about throughput.

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Finally, the system then forwards the app to a manager, who reviews and approves it for funding. Upon approval, the system sends the necessary information to the treasury department where a check is cut (automatically) and mailed to the appropriate address/destination that the system specifies.

Performance Measurement

Each associate's performance is measured by tracking the hours the associate worked (logged hours) and the number of apps processed by the associate. The ratio of logged hours to total paid hours (called productive to paid or PTP) is roughly 65%. This metric is tracked at an associate level and at the department level and the goal is to meet or exceed 65%. The other 35% of non productive hours involve vacation, sick time, break time, team meetings and fun outings (Capital One sponsors a fun event as a team building measure for all associates once a quarter for one full day). The associates work 8 hour shifts (excluding 1 hr for lunch) each day with 3 major start times. A few associates start at 6 AM to process previous day's work. Most associates start at 8 AM while a handful of associates have a 10 AM start time. This late shift is necessary to accommodate customers on the west coast. For capacity planning purposes, the department uses 21 working days per month (excluding weekends and holidays).

An aggregate productivity measure of Processed Apps/month is calculated each month and it is used in determining the quarterly incentive payout. The processed apps do not include apps that were declined or withdrawn by the customer. The workflow coordinator keeps track of these numbers for each associate in an Excel spreadsheet and manually calculates the productivity each month. An associate working in a specific process step is compared to a benchmark measure for that particular process step. The incentive payout is based on performance related to the benchmark.

In addition to productivity, the accuracy (as measured by QA) also impacts the incentive payout. To stress quality and accuracy, a certain minimum quality score is required for receiving any incentive payout. The QA agents review every one of the Apps that flows through the process and make corrections to any errors they found. Associate's QA score are measured as the ratio of error free Apps to the total Apps processed in a given month.

In addition to the associate level metrics noted above, the department also keeps track of the volume of Apps entering the process (incoming), the number of Apps passing through each step and the inventory levels for each step on a daily basis. In addition, applications being rejected at each step, declines and withdrawals are also tracked. The managers are held accountable for the aggregate department productivity (target = 15 Apps/month/associate), quality (Target = 90%), average turn around time (Target = 15 days) to book applications and the overall conversion (Target = 25%).

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Applications Waiting

While making their journey through the loan approval process, Apps occasionally have to wait. Waiting Apps at CapitalOne are referred to as WIP, short for work in process inventory. The most significant accumulation of WIP is at the underwriting step, the second most significant is at closing.

At the aggregate level, Exhibit 8 shows the WIP levels at each process step for the past 6 months. As noted earlier, there is significant variation in the volume coming into the process. Consequently, inventory builds up in the process when there is high incoming volume. When inventory builds up, managers request overtime from associates, particularly from underwriters and phone associates to keep the Apps flowing through the process.

Build-ups of Apps inventory increases customer wait time, which in turn negatively impacts conversion. By sampling a sizable number of apps categorized by the wait time (after interview step), Rick estimated that 95% of the customers who get their approval decision within two days will be booked as customers. In contrast, only 83% of the customers waiting 11-12 days get converted, while the other 17% withdraw their application. Almost all of these apps were approved by the underwriters (passed the underwriting criteria). In fact, as one of the underwriters commented: "It is the best customers that withdraw first". Exhibit 7 provides data showing the impact of wait times on application withdrawals.

Rick's Challenge

As Rick reviewed the performance for the past few months, he wondered if he was measuring the right metrics to manage his associates and if he could improve his team's performance by redesigning the process and/or the roles. He also wondered if he had enough associates working in each process step, especially in Underwriting. But, again, he thought, if your productivity scores tank, the last thing we can afford to do is hire more people.

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Process Step	Activities	# of Associates
Interview	Outbound Calls Product Review/Sale Customer Data Entry	7
Work Flow	Assign Apps to Underwriters Inventory Management Metric Tracking	1
Underwriting	Evaluate Tentative Declines Internet Searches Credit Evaluation Customer Followup Data Entry File Prep	8
QA	QA every App for Errors	2
Closing	Prepare Closing Docs Mail Closing Docs Copying/record keeping	6
Manager Review & Funding Approval	Final Review and approval	1

Exhibit 1: Overview of the loan processing operation

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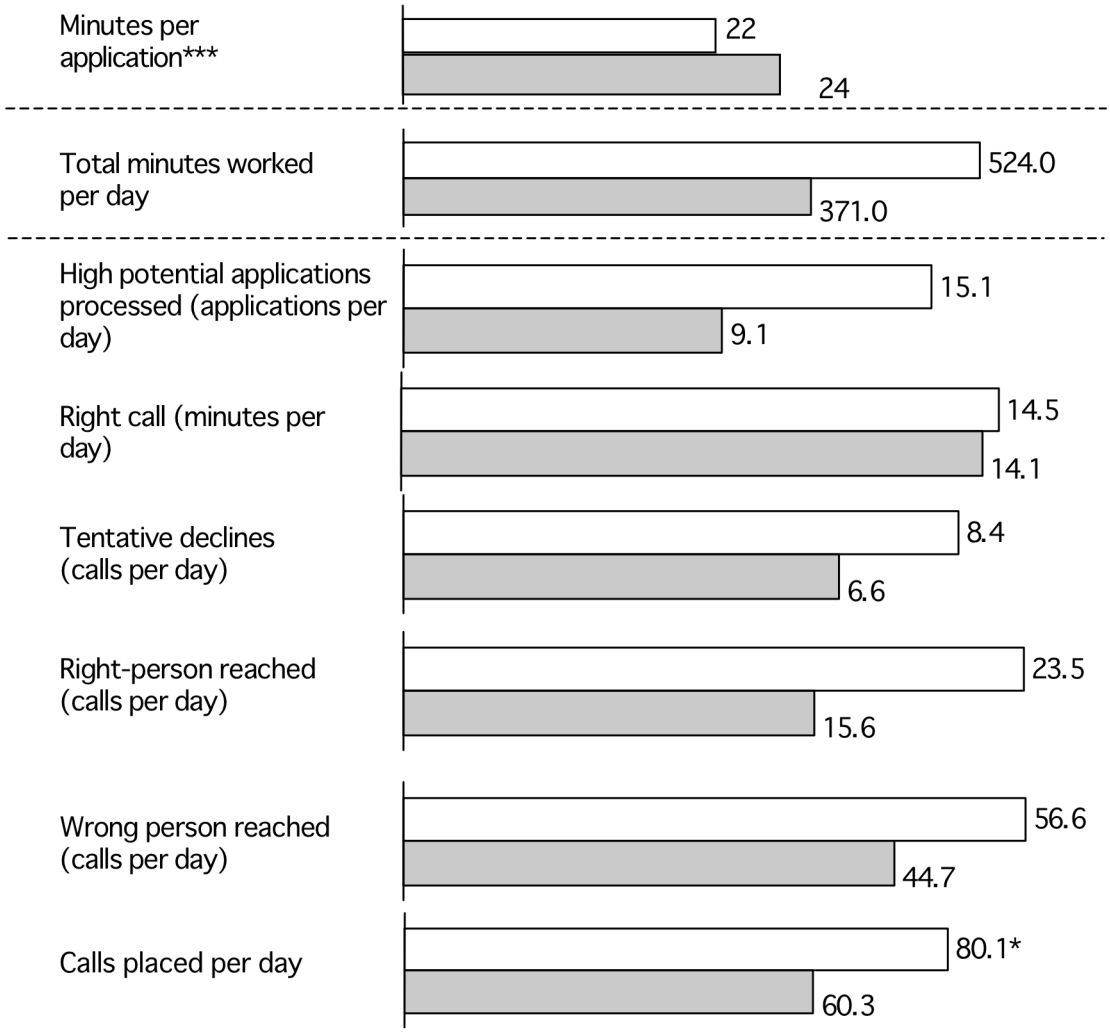

Exhibit 2: Detailed analysis of the interviewing activity. The white bars correspond to the performance of the top quartile performance interviewers (person 2 and 3 on the team). The shaded bars correspond to the performance of the bottom performance interviewers (persons 4 and 6 on the team). Total activity time for one additional right party connect is 22 (24) minutes for the top (bottom) quartile interviewer.

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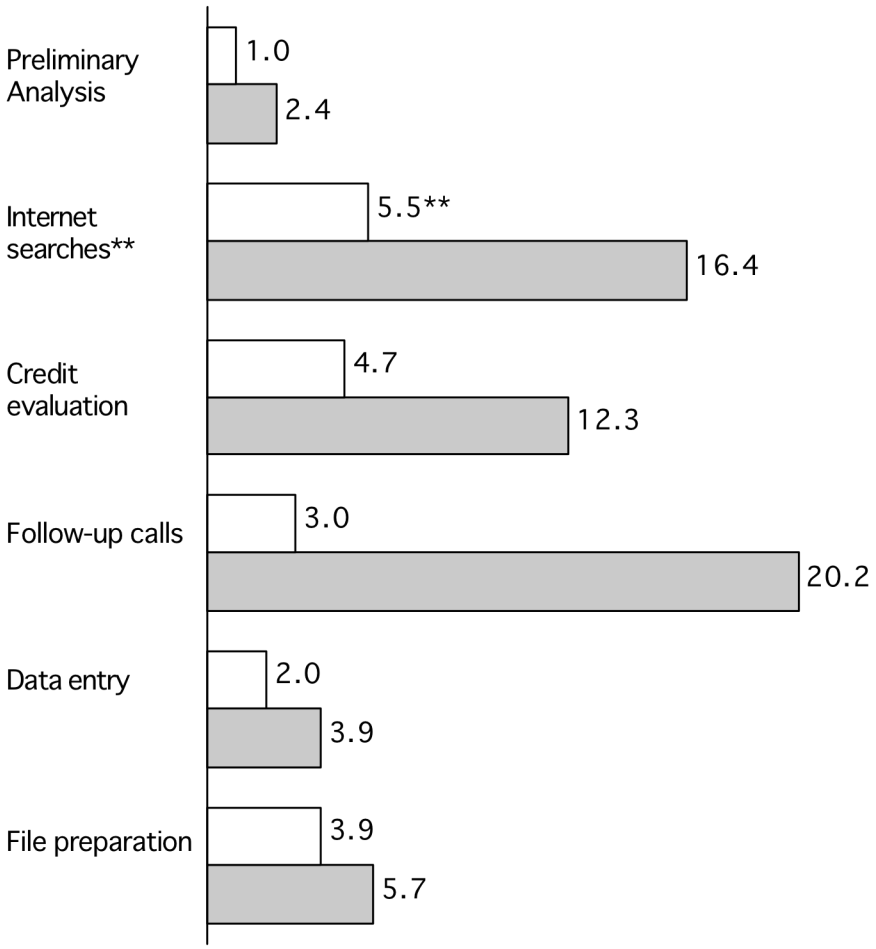

Exhibit 3: Minutes per application spent at the underwriting step. The white bars correspond to the performance of the top quartile performance interviewers (person 1 and 5 on the team). The shaded bars correspond to the performance of the bottom performance interviewers (persons 2 and 3 on the team). The total activity time per application results from adding up the activity times from the six steps.

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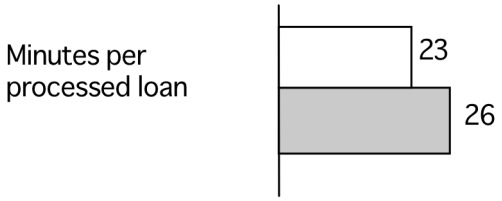

Exhibit 4: Minutes per application spent at the QA step.

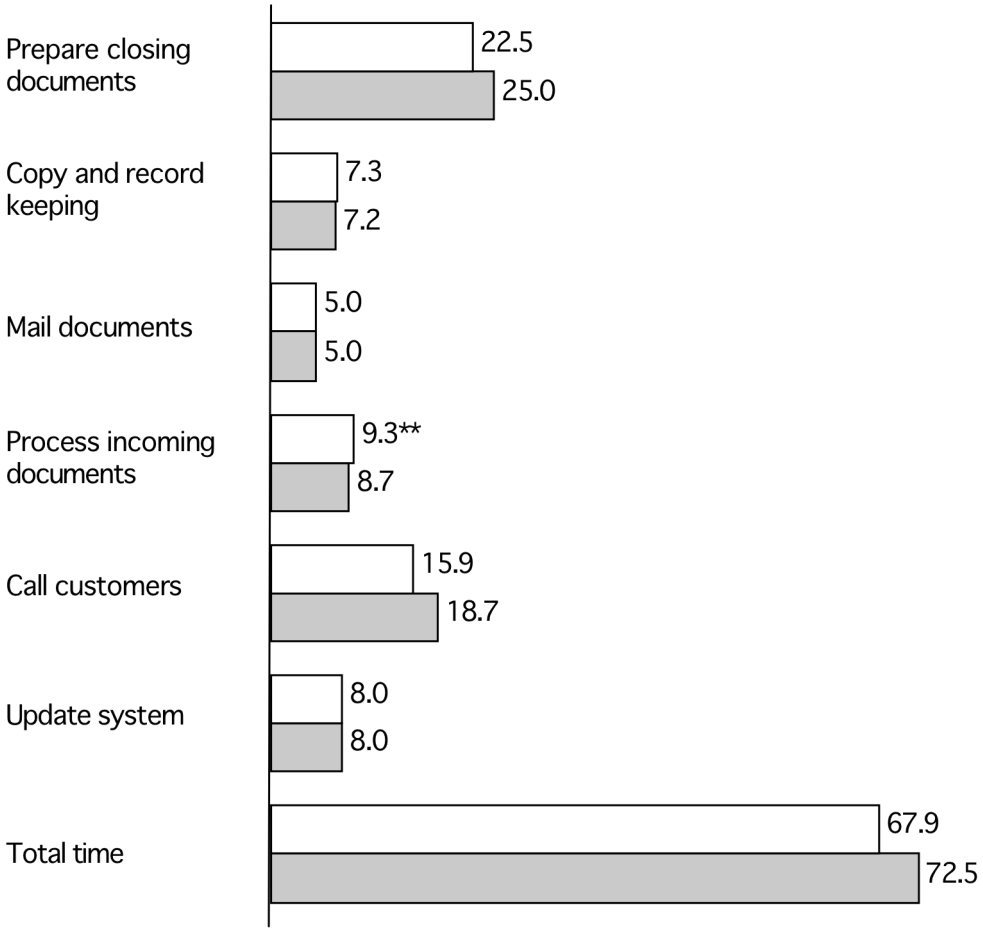

Exhibit 5: Minutes per application spent at the closing step.

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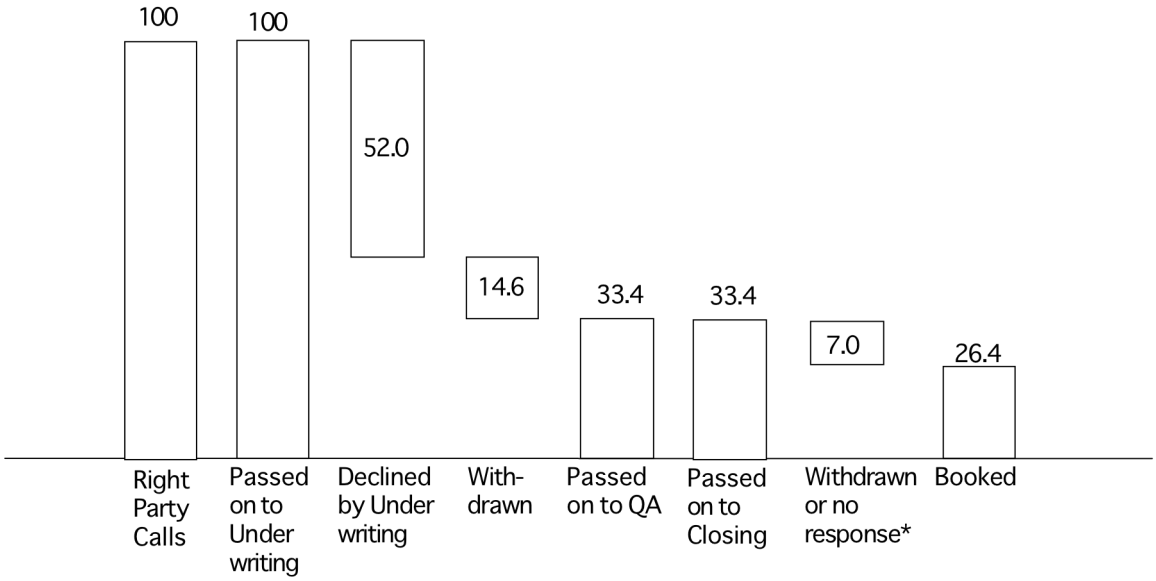

Exhibit 6: Attrition losses starting with 100 applications. Data assumes the current handling policies and the current wait times

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Wait time after interview	# of Apps	# Withdrawn
0-2 Days	250	13
3-4 Days	354	23
5-6 Days	328	32
7-8 Days	459	58
9-10 Days	387	59
11-12 Days	258	44

Exhibit 7: Impact on wait times on conversion

Process Step	Jan, 2004	Feb, 2004	Mar, 2004	Apr, 2004	May, 2004	Jun, 2004
Pre-RPC	300	480	225	200	320	510
Interview (RPC)	58	84	44	40	63	93
Workflow	0	0	0	0	0	0
Underwriting	480	650	400	250	645	934
QA	30	48	25	22	28	32
Closing	10	22	15	12	15	17

Exhibit 8: Inventory levels across process steps over the course of the last six months

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