

System Development and Data Modeling for Mark's Doggy Daycare and Boutique

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Abstract

The case provides a realistic scenario with individual assignments that could be selectively used in a systems analysis and design, accounting information systems or graduate level management information systems course. The case examines the revenue and expense cycle processes of a high-end canine retreat providing students with the opportunity to map the business process data flows. Multiple assignment options are provided allowing instructors to select an assignment based upon course material coverage. Suggested assignments include the development of data flow diagrams, swimlane diagrams, a request for proposal and a response to the request for proposal and a database.

Keywords: Teaching Case, Process Design, Request for Proposal, Database Development

1. INTRODUCTION

Mark poured the last bowl of chicken-flavored organic kibble for Buddy, their late arrival. It wasn't his favorite snack, but somehow Buddy's RSVP had slipped through the cracks and they had run out of his preferred treat. Who knew that their "Parents Weekend Out" promotion for their upscale doggy daycare would be so popular. Their clientele was rather discriminating, so a slip-up like this one was disconcerting. Something needed to be done to keep better track of the operations before it affected their business

2. BACKGROUND

Mark Robertson, a college junior and part time accounting clerk at Wilson and Associates Accounting firm, was known to be both an avid

runner and 'dog lover.' One day the firm's owner, Jason Wilson, asked Mark to take his new misbehaving rescue greyhound, Flash, on a run with him, in hopes of getting rid of some of Flash's extra energy that was creating destructive consequences around Jason's house.

The transformation in Flash's behavior was so dramatic that Jason could not keep from talking to all his friends about Mark and his expert dog handling skills. Mark quickly started receiving a steady stream of calls from wealthy pet owners wanting their pets to receive his personalized attention. Requests were as small as regular daily walks, baths and pet food shopping, to house and pet sitting for extended periods of time. Mark never said "no" to a client's request and he was rewarded handsomely financially, with repeat service, and with referrals to friends and family. The response was so overwhelming

that Mark had to give up his part-time job at the accounting firm to focus on his burgeoning pet care business.

3. TWO YEARS LATER

Upon getting started, Mark operated on a shoe string budget. However, Mark's startup financial problems were no longer at the top of his concerns. Keeping up with his out-of-control business was. Mark had renovated a building in a neighborhood in close proximity to a majority of his customers. He had also hired five full time and four part time employees to help with operations.

Mark had developed a reputation for providing customized services for each client and their owners. The list of services he offered his clients grew from previous customer requests. He also tried to provide a very personalized touch to his pet services making it a point to remember his clients' favorite food, treat, toy and daycare friends. This also carried over to the clients' parents as Mark remembered special occasions, friendships and favorite pet shampoos.

The number of things to remember was beginning to get out of control... so were the number of specialized requests. Mark prided himself on providing exemplary service. However, it was getting increasingly difficult to keep everything straight. His file folder for each client was getting full and unwieldy considering the data he was collecting on both the pets and their parents.

He had misplaced some RSVPs for a special birthday party that they had hosted for Winston, a pampered Yorkie. They had also forgotten to purchase a special gluten free organic mixture for Heidi, a highly doted on Dachshund whose parents were some of the wealthiest, and pickiest, people in town. Thank goodness Heidi's parents had an unexpected change in plans or he might have felt the sting of that gaffe for several weeks. The Parents' Weekend Out event was the third close call. It was time to do something before a serious problem occurred.

4. FINDING A SOLUTION

Mark wasn't sure where to start. He knew that there were probably off-the-shelf systems on the market that he could purchase, but he wasn't sure if one system could do all that he wanted and where, exactly, he should start. Mark called one of his old college roommates to see if he could offer him some guidance. Scott had started his own information system design and development

business right after college. Mark briefly explained his problem over the phone to Scott who agreed to stop by the next day to talk to him and Becky, his Operations Manager, the next day.

"Hi, Mark and Becky! This is quite the place you have here," Scott exclaimed as his eyes scanned the lobby. "It is not at all what I expected for a doggy daycare. This is better than some of the hotels that I have stayed in!"

"We do try to make a great first impression," Becky said with a smile, "... but it also sets the tone for what our customers should expect, and that is high-end care with personalized attention to detail. We need a system that will help us do that."

"Let's sit down on one of those swanky couches you have in the lobby and you can explain your business to me," Scott added as he moved towards a couch. "I need you to start from the absolute beginning of the process, for instance, getting a new client, to the absolute end of the process when a customer leaves or passes away, and, of course, everything in-between."

"We've been pretty lucky so far," Mark noted. "All of our customers have come from word-of-mouth referrals and we haven't had to do any actual advertising yet. We do advertise special events that we plan for our customers, like the Parents' Weekend Out promotion that we just did, but we handled that through flyers and emails."

"You probably ought to start thinking about a digital marketing plan for your business before your customer base stagnates," Scott suggested. "I know that's not what I came to talk with you about, but I think you need to keep it in the back of your mind so that you can continue to grow. If you would like for me to develop a plan for you, let me know."

"Actually," Mark added, "with the potential growth we're expecting, I may be looking into that plan sooner than you would expect. We've been kicking around the idea of opening a second location across town. However, our immediate need is a reservation system."

5. AN EYE TOWARD THE FUTURE

"We provide a variety of services for our high-end clientele. We have developed a partnership with a local veterinarian who will come to the spa to give wellness check-ups, shots, and house call visits. Those are the main medical services that we offer. We just set-up the reservations. The

billing is handled for those services is handled through the veterinarian's office.

We have an in-house grooming service in which we provide services such as baths, haircuts, ear cleaning, teeth cleaning, nail trimming and flea treatments. These can be purchased as needed or set up as standing appointments. If a regular client comes in for daycare, he is checked in at the front desk by Becky and assigned to his standard kennel that will contain his fresh baby blanket and favorite sanitized toys. During the day, he will go on walks, have supervised play time with the other dogs, take potty breaks, be given two meals and two snacks, and be provided with a KONG puzzle containing his favorite treat. Although we usually know what the regulars like, we post a "Favorites" list for each client near his kennel. Andy is our Activities Director who oversees daily operations associated with the immediate care of the dogs. Andy has two activities coordinators who are dedicated to taking care of our clients' daily needs, Kathy and Tom.

During the day, Kathy and Tom take notes on each client's activities to provide an end-of-the-day report to each client's parents. We also use this information to update our file on each client, such as which dogs like each other and which do not, favorite foods and odd behaviors. We also have overnight and extended boarding which is very similar to our daycare except we have one additional meal, an additional snack, another walk and bedtime.

Our activities coordinators have recently started hosting special events such as birthday parties and sleepovers. The events have done surprisingly well. The birthday parties have a special cake and snacks for the attendees, each party-goer gets a special toy, one of our activity coordinators takes pictures during the party. The parties usually last for about two to four hours depending upon the package that the client's parents purchase. The sleepover is essentially the same as boarding except the clients have additional supervised group playtime and snacks, receive a toy and an activities coordinator takes pictures to give to the parents after the event. The clients are usually picked up by noon the next day.

We also offer dog walking and "personal training" services for both daycare and stay-at-home clients. Tyler manages these operations and he reports to Andy. Tyler has four part-time college students who assist him in providing the personalized services. Personal training is a more

intense workout for our more active customers in which the staff member jogs, bikes or skates alongside the running client. I almost forgot," Becky added, "we also offer classes in obedience training and behavior modification. Those classes are provided about twice each year based on demand; however, a client's parents may elect to have one-on-one training such as a Personal Lifestyle Coach. Tyler provides those services as well."

"Our boutique stocks dog food and treats, vitamins and healthcare products, dog toys, leashes, shampoos and fashion accessories. We mostly stock dog food and treats based upon the individual needs of our clients. Rather than having to go to the store to restock, our clients' parents just purchase it here and we'll take it to their car when they come to pick up their pet at the end of the day," Becky noted. "Now that we are offering special occasion parties, the toys are becoming our next most popular item as parents pick up last minute gifts for party-goers. We've been stocking the shelves based upon what we are running low on; but it would be nice to have a regular inventory restocking process in place to prevent lost sales. We are hoping that this new database will help us be able to generate reports to help with sales projections."

6. BUSINESS PROCESSES

"In regard to processes, when a client's parent wants to reserve a slot for daycare or boarding, they just call our front desk and Becky writes down the dog's name, parent, approximate arrival time and contact phone number in the appropriate reservation notebook. We have the "Daycare Book" for daycare, the "Boarding Book" for boarders and the "Special Events Book" for special events. Each page represents a day, or an event. When that day or event arrives, Becky makes a copy of the page on our copier and checks off attendees as they arrive. She also records the actual time that they arrive, the time that they leave, who brought them, who is supposed to pick them up and what they brought with them. If the client brings several toys, which is discouraged, she'll take a picture of the client along with the toys so that she will be able to remember to whom the toys belong at the end of the visit.

If a client's parents want to purchase some of our additional services, such as teeth cleaning or baths, she writes those down in a notebook as well. She indicates what the service is, when it is to occur, any special requests, when it is to be billed, who is supposed to perform the service,

the price of the service and if it is a standing request. All of our full-time staff are trained to provide these services.

For boutique purchases, the parents can pay Becky immediately for items at our cash register or have the items added to the customers' account in the accounts' receivable boutique book. When an item is added to this book, we record the customer's name, the date purchased, the item purchased, the price of the item, the quantity purchased, the total cost of the purchase and update the customer's running total for the amount due. For standing requests such as dog food, dog treats or vitamins, costs are usually added to the parents' account and paid at the end of the month. We take checks, cash and debit/credit card payments using Square. Parents receive a bill at the end of each month for services rendered and items on account. Several parents have set up automatic bill pay to our online QuickBooks account while others bring their payments to Becky at the front desk the next time they bring in their pet. Payments are indicated on the customers' account page as they are received and the total amount due is updated.

When we lose a client due to death, we send a note of condolence to the family and move the client's file to the "Former Customers" filing cabinet to the drawer marked "Friends We've Lost." If the client leaves due to parents' dissatisfaction, we try to rectify the situation. We also write a report outlining the problem, what happened, the steps taken to remedy the situation and the final outcome. A short section is included at the end of the report in which we note what we should have done to prevent the situation from occurring. This report is added to the client's folder which is then placed in a tickler folder until our next weekly meeting. Once we have discussed the situation in our meeting, the client's folder is then moved to the "Former Customers" filing cabinet and placed in the "Dissatisfied" drawer.

Becky usually handles all of these functions including the phone at the front desk as well as checking client's in and out, taking reservations, selling items in the boutique and taking cash or adjusting customer accounts as products and services are purchased."

7. FUTURE DIRECTION

"So I have a pretty good understanding of what you are currently doing. Let me ask you two last questions. What technology do you currently

have and, if you could have your dream system, what would it be?" Scott asked.

"The first one is easy. All we have is a cash register, a copier, our phone, a QuickBooks Online account and a Square reader." Mark thought for a minute, "I would love for us to be able to create a dog tag that could be placed on each dog's collar and connected to the database so that when a person brought his dog in, we could scan the tag to check the dog in and out as well as to immediately know the client's and parent's preferences. We could probably use QR codes and find an app to use with our phones to do the scanning, but I don't know. I would also like to be able to use iPads for filling out forms, both new customer forms as well as the client daily reports. We would probably need about three of those. The daily reports are completed for each client and get sent home with each dog's parent explaining how their day went at daycare. It would be nice if this could be automatically emailed to each parent at the end of the day."

8. REPORTS

"Those are great ideas. Let's focus on the reports for a minute. Tell me more about the kind of reports you would like to run," Scott urged.

Mark thought for a moment, "Well, of course besides the daily reports, we would like to be able to create and send out weekly invoices. We would also need regular status reports regarding accounts receivable, payable and inventory levels. We'll need to keep track of employee hours and pay them. We will also need to know how our different products, services and promotions are doing so that we can recognize trends and offer the most popular products and services to our clients. It also wouldn't hurt to know who our most profitable customers are so that we can be sure to cater to their special needs. We want to be sure to keep them happy. Speaking of keeping people happy, it would be nice to be able to send out a monthly survey to get feedback from our customers' parents to find out how we are doing and about services they would like for us to add. It would also be great to be able to run reports on supplies each day to get an idea of what should be on our shopping list. I'm sure once we start using the system and seeing its capabilities, we'll come up with more reports that we can't do without; but for now, I think that's a pretty good list." (Examples of some of the proposed reports are found in the Appendices.)

9. THE NEXT STEP

"That's a great list, Mark. It looks like you have invested a lot of thought into your business' needs. There's no way we can get everything done for you by the time you need it. However, there are a lot of off-the-shelf generic systems on the market that you can use until we get your system built, if you decide to go with a customized solution. We could also go ahead and buy all of the hardware and networking technologies that you will need and get that in place for when your system is ready to implement. Let me put together an RFP that you can send out to get the best deal on hardware, networking technology, and a cloud-based retail management solution. I'll put together a few diagrams with narratives to make sure we are both on the same page as to what your processes look like and the flow of data through your system. I'll also create some diagrams of what I think your database should look like so that we can make sure we are collecting all of the data elements you will need. Let me get back to you in a couple of days," Scott said as he stood to leave.

"You can't believe what a relief it is to finally be doing something about this system," Mark noted as he walked Scott to the door. "I look forward to seeing your RFP and diagrams of our processes. It will be interesting to see if our interpretations match. Thanks again for working with us on such short notice. I'll be talking to you soon."

10. ASSIGNMENTS

Students should assume the role of Scott or a systems analyst consultant. The systems analysts' roles and responsibilities will vary depending upon the course and assignment. Examples of possible assignments are provided.

Request for Proposal

Courses: Systems Analysis and Design, Process Modeling, graduate level MIS course

Assume Scott draws up an RFP with an eye toward the future to move from the paper-based system to a computerized system. The RFP will be used to solicit vendor bids to purchase the technical infrastructure to support the new system.

1. From Mark's Doggy Daycare and Boutique's perspective, develop the functional and technical requirements

that would be included in a request for proposal (RFP).

2. From a potential vendor's perspective, develop the vendor's response to the RFP for the technical requirements. Essentially, you are proposing the hardware, software, networking, installation, documentation and training that will be required to implement the infrastructure.

Process Modeling

Courses: Systems Analysis and Design, Process Modeling, accounting information systems, graduate level MIS course

Scott would like to draw the business processes out on paper to verify that he understands them correctly.

1. Create swimlane diagrams modeling each of the processes. Write short narratives to accompany your diagrams to verify and support your interpretation of the processes.
2. Create data flow diagrams (DFD) to model each of the processes. Write short narratives to accompany your diagrams to verify and support your interpretation of the processes.
3. As the diagrams are developed, record any assumptions you make, regarding the processes, in a separate document.

Systems Analysis Design and Database Development

Courses: Systems Analysis and Design, Database Development, graduate level MIS course

Assume that Scott would like to develop a prototype of the system to be developed. He wants to develop the:

1. Scope of the project
2. Functional and technical requirements for the system
3. Data flow diagrams
4. System development diagrams
5. Data dictionary
6. A set of relational tables
7. Database forms for data entry
8. Database navigation switchboard
9. Database queries to generate inventory reports customer invoices, reservation sheets, client's daily activity reports, monthly customer statements, account receivable reports, and profitability reports.

10. Database reports including inventory reports, customer invoices, reservation sheets, client's daily activity reports, monthly customer statements, account receivable reports, and profitability reports.
11. As the database is developed, record any assumptions that you make in a short report.

Digital Marketing Plan

Courses: Digital Marketing course

Assume that Mark is interested in using social media to better market Mark's Doggy Daycare &

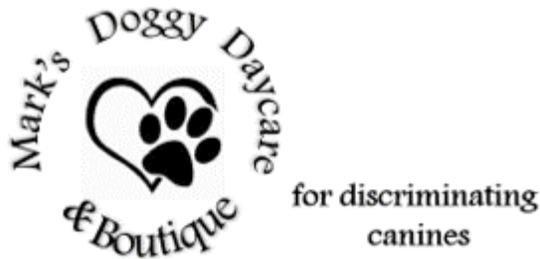
Boutique. Develop a social media plan containing:

1. A mission for social media's role at the daycare.
2. Three strategies to move the company forward.
3. Operational plans for each of the three strategies outlining:
 - a) the message to be communicated
 - b) what is to be accomplished,
 - c) how it will be accomplished,
 - d) how the response will be measured; and
 - e) a timeline for action.

Editor Notes: Teaching Notes are available for this case, please contact the authors for more information.

APPENDICES

Mark's Doggy Daycare & Boutique Reservation Example Document



Reservation

06/02/2018
at 10am

Canine Client Name	Account Number
Trixie	234567

Owner's Name	Phone Numbers
Tyler Wildman	314-555-3333/314-555-2222

Requested Services

Item	Description	Provider
S2000	Dog Obedience Class – 1 hour	Betsy
S1050	Hair cut	Frank
S1030	Grooming	
S1100	Clip nails	Pam

Notes:

Keep Trixie away from Boogie Boy, Boogie Boy makes Trixie anxious.

Mark's Doggy Daycare & Boutique Invoice Example Document



for discriminating
 canines

Invoice 5768
06/01/2018

Sold to:
 Jason Busman
 1234 Apple Street
 St. Louis, MO, 63101
 (314)555-4444

Canine Client Name	Account Number
Scooter	123456

Item	Description	Quantity	Service Provider	Unit Price	Line Total
S1000	Individual Run	1	Mark	20.00	20.00
S0020	Bath	1	Jane	25.00	25.00
S3010	Shots	3	Vet	10.00	30.00
I2500	Green Buffalo Special Food – 25 pound bag	2		30.00	60.00
Subtotal					135.00
Sales Taxes					5.10
Total					140.10

Thank you for your business!

Mark's Doggy Daycare & Boutique
 45 Abbey Lane, St. Louis, MO, 63101
 Phone: (314) 555-5555 Email: mark@bestdogcare.com

Mark's Doggy Daycare & Boutique Daily Report Example Document



Daily Report

06/03/2018

Canine Client Name	Account Number
Boogie Boy	345671

Dear Mr. Busman,

Boogie Boy had a wonderful day at Mark's Doggy Daycare & Boutique. In the morning, he played ball with Mark and two other dogs, Max and Dominion, in the outside yard. The afternoon was hot so he stayed inside, played hide-and-seek with Mark, ate, and took a nap. Boogie Boy seems real interested in playing with hide-and-seek with a ball that Mark would hide and Boogie Boy would find and bring back to Mark. Boogie Boy ate two meals and two snacks today during his day with us.

Thank you

Requested Services

Item	Description	Provider
S2000	Dog Obedience Class – 1 hour	Betsy
S1050	Hair cut	Frank
S1030	Grooming	
S1100	Clip nails	Pam

Notes:

Keep Trixie away from Boogie Boy, Boogie Boy makes Trixie anxious.