



Udo, Marian, & Uduak Corporation (UMUC) Case Study

Introduction

This case study will be used for a series of staged individual student projects and the Group Presentation Project. It should be thoroughly read and understood prior to working on any of these assignments.

Setting

UMUC is a small private business that has retained you to assist in the development of new billing and payment system and processes.

Background

UMUC is a small, private specialized electronics company in Kansas. For the past 20 years, it provided a wide range of precision electronic components and replacement parts for medical equipment used in hospitals, doctor's office, and pharmacies. Recently, the company began building and delivering custom low voltage motors that reduced electricity costs and made older medical equipment more green friendly. Last year UMUC added a new line of more efficient low voltage motors that can be used in precision equipment outside the healthcare industry.

UMUC is experiencing significant increases in orders for the motors and the associated installation services. Increased orders coupled with expanded manufacturing and increased demand for the related services is stretching the existing business processes and support systems to the breaking point. The Business Administration Department has stepped up and is meeting the challenge, but the CEO, CFO, COO, and CIO knows that they are only treading water. UMUC is ready to address these challenges as it prepares to begin offering online ordering and decrease its dependence on third party distributors.

You are an independent Business and IT Systems Analyst, specializing in developing IT solutions for small business needs. You have been contacted by UMUC to speak to the CEO, CFO, COO, CIO, SVP, Engineering & Manufacturing Operations, and VP, Business Administration (IT Steering Committee) about the possibility of replacing the information systems associated with operations, business administration, and finance. The IT Steering Committee wants to start by replacing the current customer billing and payment system and processes with an assurance the new system and processes can be interfaced with other new IT systems and business processes as needed. While there is currently no money in the budget to replace or upgrade these systems, the executives are committed to moving the company forward and improving UMUC's business support profile.

IFSM 461: Systems Analysis and Design
Udo, Marian, & Uduak Corporation (UMUC) Case Study

IT Steering Committee

- Carolyn West is the CEO. She has been at the company for 11 years. Carolyn has a background working for and managing electronics companies. Like all CEOs, Carolyn is focused on the strategic and long-term business health of UMUC. She chairs the IT Steering Committee. Carolyn and the committee members jointly make decisions about IT systems and major organizational business process changes.
- Karl Manley is the CFO. He has been with the company for 9 years. Karl has a background in accounting and finance and is a certified CPA. He tends to focus on the company's financial health to the exclusion of all other business concerns. While Karl is technology fluent, he resists new IT purchases unless there is a clear and direct connection made between the technology and improving the company's financial profile. The Directors, Accounts Receivable (Mary Winston) and Accounts Payable (Amy Dole) reports to the CFO.
- Tim Uduak, Jr. is the COO and the son of founding partner Tim Uduak, Sr. Tim has been around the company since the beginning in one capacity or other except for four years of college and a 3-year break to startup his own company. Once the startup failed, Tim came back to UMUC as the SVP, Engineering & Manufacturing Operations. Last year, he was promoted to COO. While Tim has a strategic focus and is not technology adverse, he prefers to solve business challenges with processes rather than information technology.
- Susan Black is the SVP, Engineering & Manufacturing Operations and is Tim's replacement. Susan has worked for the company for 13 years. She started as a Senior Engineer, but was prompted to Director, Engineering after six years where she spearheaded the successful research and development of the low voltage motors. Susan is a champion of information technology as long as it is clearly focused on the core business.
- Jason Udo is the VP, Business Administration and the grandson of the company founder Riley Udo. All other non-engineering, manufacturing and IT departments report up to him. This includes key support functions such as Sales, Marketing, Ordering & Shipping, Inventory, Invoicing, and HR.

**IFSM 461: Systems Analysis and Design
Udo, Marian, & Uduak Corporation (UMUC) Case Study**

Invoice, Billing & Payment

- Customer billing is handled by the Invoicing Department, which reports to the VP, Business Administration.
- Customer payments are handled by the Accounts Receivable Department, which reports to the CFO.
- Customer billing and payments are managed and recorded in an in-house developed Microsoft Access based solution. The solution was developed by the IT Department and is housed on a server controlled and managed by the IT Department. The solution is updated as required by the Invoicing and Accounts Receivable Departments.
- The Sales Department works with Invoicing to establish new customer accounts and update and close existing accounts as needed.
- The Ordering & Shipping Department sends a monthly report to Invoicing where the products ordered and shipped and their codes are entered into the invoicing module. Pricing is computed based on the product codes and quantities entered.
- Invoicing is responsible for adding, updating, and maintaining the product codes and pricing used by the invoicing database on the 15th of each calendar month. The monthly report containing the updates is provided by the Marketing Department.
- Invoicing generates and mails customer bills on the last business day of each calendar month.
- Customer payments (lump sum) are due by the 10th of each calendar. Customers send the payments to Accounts Receivable. Accounts Receivable is responsible for updating customer account records when the payments are received.
- Invoicing is responsible for identifying accounts that are 30 days, 60 days or more overdue. These reports are sent to Accounts Receivable and Sales. Accounts Receivable handles all collections.
- There is a 2% fee added to all invoices that are 30 days or more overdue.
- Accounts Receivable notifies the Sales Department who is employed to assist with customers who are 60 days or more delinquent. Ordering & Shipping is also notified so that no further shipments are made until the outstanding invoice is paid in full. These situations are rare.
- Installation services are offered as a fixed price fee for small businesses (doctor's offices, individually owned pharmacies, etc.). Larger installations (hospitals, chain pharmacies, pharmaceutical manufacturers, etc.) are billed on a pre-defined hourly rate.



**IFSM 461: Systems Analysis and Design
Udo, Marian, & Uduak Corporation (UMUC) Case Study**

- Volume discounts are not currently offered, but Marketing is planning to offer this discount within the next six (6) months because the low voltage motors are increasing being ordered in quantities of five (5) or more. The following volume discounts will be offered:
 - 5 or more: 2%
 - 10 or more: 5%
 - 25 or more: 10%
- Electronic invoicing via email is not currently offered, but Marketing and Invoicing plan to offer this feature within the next six (6) months.
- Electronic payment to a lockbox account is not currently offered, but Marketing and Accounts Receiving plan to offer this feature within the next six (6) months.
- The customer account data points currently include:
 - Customer Organization Name
 - Customer Street Address
 - Customer City
 - Customer State
 - Customer Zip Code + 4
 - Primary Contact First Name
 - Primary Contact Last Name
 - Primary Contact Phone Number
 - Primary Contact Email Address
 - Secondary Contact First Name
 - Secondary Contact Last Name
 - Secondary Contact Phone Number
 - Secondary Contact Email Address
 - Products Ordered
 - Product Ordered Date
 - Products Shipped
 - Product Ship Date
 - Quantity
 - Product Pricing
 - Calculated Price (Calculated Field)
 - Amount Due (Calculated Field)
 - Amount Paid
 - Date Paid
 - Amount 30 Days Overdue (Calculated Field)
 - Amount 60 Days Overdue (Calculated Field)
 - Amount Greater Than 60 Days Overdue (Calculated Field)
 - 2% Overdue Amount (Calculated Field)



**IFSM 461: Systems Analysis and Design
Udo, Marian, & Uduak Corporation (UMUC) Case Study**

- The customer account data points required for near-term plans include:
 - Quantity Discount (Calculated Field)
 - Electronic Invoicing (Check Box)
 - Electronic Payment (Check Box)
- Paper invoices currently contain the following data points:
 - Unique Serialized Invoice Number (System Generated)
 - Customer Organization Name
 - Customer Street Address
 - Customer City
 - Customer State
 - Customer Zip Code + 4
 - Products Ordered
 - Product Ordered Date
 - Products Shipped
 - Product Ship Date
 - Quantity
 - Product Pricing
 - Calculated Price (Calculated Field)
 - Amount Due (Calculated Field)
 - Amount 30 Days Overdue (Calculated Field)
 - Amount 60 Days Overdue (Calculated Field)
 - Amount Greater Than 60 Days Overdue (Calculated Field)
 - 2% Overdue Amount (Calculated Field)
- Paper invoice data points required for near-term plans include:
 - Volume Discount (Calculated Field)
 - Electronic Invoicing (Yes or No)
 - Electronic Payment (Yes or No)
- When electronic invoices are offered, the same current and near-term data points as shown above will be included.

IFSM 461: Systems Analysis and Design
Udo, Marian, & Uduak Corporation (UMUC) Case Study

Other Considerations

- All customer, invoicing, and payment data must be secured, but accessible to those departments and personnel who have a need to know.
- UMUC requires the ability to generate a receipt automatically at the time payments are recorded. The receipt will be sent electronically to the organization's primary contact email address. The receipt must contain:
 - Unique Serialized Invoice Number
 - Customer Organization Name
 - Customer Street Address
 - Customer City
 - Customer State
 - Customer Zip Code + 4
 - Amount Paid
 - Date Paid
 - Amount Outstanding
- The following company entities need to be able to generate their own reports as needed:
 - CFO
 - COO
 - Director, Accounts Receivable
 - Director, Business Administration
 - Accounts Receivable Managers & Staff
 - Invoicing Managers & Staff
 - Sales Managers & Staff
 - Marketing Managers & Staff
 - Ordering & Shipping Managers & Staff