

**EMGT 835 FIELD PROJECT:**  
***Business Plan- RM MedComm's Opportunity for Business in  
Healthcare Design Services***

**By**

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Thirdly, I would like to thank my past and current employers, who have motivated me to continue my education and have assisted financially in my goals.

Finally, I would like to acknowledge my family and friends who have encouraged me to continue with my career path and complete a master's degree.

Some names of individuals or companies have been deleted and are denoted as XXXX for confidential purposes.

## **Abstract**

Construction in the healthcare industry in Houston is growing due to steady population increases and technology changes. Houston area engineering and architectural firms generally hire subcontractors to design medical communication designs to include hospital related fire alarm systems, nurse call systems, code blue systems, and medical gas controls. This practice is often inefficient because the work from the subcontractors do not always coordinate with engineering resulting in construction change orders and added costs. A limited number of local engineers in Houston successfully design medical communications with their plans. Thus, this project proposes an engineering firm that specializes in these services.

## Literature Review

AIA (2005) – The American Institute of Architects is a recognized association of registered architects used to located Houston based firms.

Eby (2004) – The article in *Electrical Construction & Maintenance* discusses hospital growth in Houston due to population and technological changes.

Gupta (2005) – “Technology Transfusion” describes various means for engineers to design mechanical, electrical, plumbing, and communications systems so that infrastructure is flexible and adaptable in new facilities. State-of-the-art technology is the focus.

Texas A&M (2004) – The website obtains market data for several industries. The site is used to determine size of Houston healthcare engineering market.

Texas (2005) - The Texas Hospital Association is a state organization used to locate hospital facilities in the Houston area.

U.S. Economic (1997 and 2002) – Census data from annual reports is used to create total industry and market profiles.

U.S. Federal (2005) – Federal Statistics website is used to calculate the healthcare engineering market in the Houston area in terms of the listed population.

Wright (2005) – The article discusses the need for hospitals designs to include high-end features such as wireless communications, medical telemetry devices, and high-tech building digital controls.

## **Procedure and Methodology**

This field project originated as a business plan in EMGT 804 and is intended to be an investigative measure of a possible business venture in the near future. All market information and data was obtained from public access databases found on the internet and from recent publications. Work colleagues and personal contacts in the architectural and engineering fields in the Houston area contributed to this business plan with respect to local markets needs. The following procedure outlines the development of this business plan for RM MedComm.

**Company background/strategic review.** This section of the business plan defines the proposed company's vision as it will be introduced into the market. The goals of RM MedComm were designed to meet a void in the Houston healthcare market. The company's strengths weaknesses were mainly derived from personal experience in the healthcare engineering market. The overall strategic plan establishes RM MedComm as a local engineering firm that specializes in medical communication services design.

**Market analysis.** The market analysis defines the Houston healthcare market as defined by the National American Industry Classification System (NAICS). Trends in the local population growth and some interpolation of the size of the engineering market size quoted in the Economic Census (2002) aid in calculating the Houston market segment. This section illustrates the growing market and opportunity for RM MedComm to successfully enter this market. The data reflects a growing trend in the healthcare engineering market, so the Houston market is calculated based upon this information (see Exhibit 3).

**Product/service offering.** RM MedComm's strategies and objectives promote the business as a specialized firm that focuses on Houston area healthcare clients. The service will provide clients

with coordinated design documents and will educate clients in latest technologies. RM MedComm will also provide services that will meet client's budget requirements and schedules.

**Marketing plan.** The marketing plan defines how RM MedComm creates its business forecast and defines the customer evaluative criteria. The customer database is obtained utilizing data from a Texas A&M (2004) University marketing website, the 2005 Texas Hospital Association (THA) Membership directory, and the American Institute of Architects website. The U.S. Federal Statistics website provided information regarding population trends. This information is used to determine Houston market size in dollars. Competition information is obtained from potential client interviews and internet research. The marketing plan also defines the means for marketing communications and the business promotional strategy.

**Financial plan.** The financial analysis provides a 5 year forecast for RM MedComm utilizing the sales forecast in the marketing plan. The plan includes an income statement, statement of retained earnings, balance sheet, and an estimated statement of cash flows. Some descriptions are defined in the financial plan for the type of expenses or asset included.

**Survey.** A survey was also sent to several potential architectural and hospital clients to obtain a better understanding of the clients needs in the healthcare market.

## Executive Summary

RM MedComm is a proposed sole proprietorship consulting firm that specializes in the design services of medical communications and data systems for healthcare facilities. These systems include nurse call, code blue, network, data storage, and fire alarm systems. RM MedComm is comprised of a small group of registered engineers based in Houston, TX and primarily provides services for architects, engineering firms, and medical clients in the Houston area. The owner of the company is Mr. Raymond Mason, P.E. who is contributing his own capital and experience has a wealth of knowledge in healthcare services and currently has a good reputation. The staff has over 20 years experience in designing medical communications systems and has established relationships with Houston area customers to give RM MedComm a competitive advantage. In addition to Mr. Mason's capital, RM MedComm will need \$10,000 for start-up capital. The business will operate in Houston, TX.

RM MedComm will provide design services for all areas of medical communications systems to include, nurse call, code blue, public address, and fire alarm communications systems. The company will strive to be a profitable and recognized designer of choice in the field of healthcare communications during the next 10 years in the Houston metropolitan area.

RM MedComm's service is vital to its customers because of a lack of specialized services in this design area. Many engineering firms do not provide these services because of the demanding construction schedules at the Texas Medical Center and other Houston-based healthcare facilities. These services are usually contracted out to communications installers and are often redesigned

later to coordinate with other engineering drawings and customer needs. RM MedComm has a qualified staff that can communicate with engineers, architects, and customers to efficiently simplify design. Unlike installers, the company will deliver (PE) sealed and coordinated documents for all services.

Key competitors in the Houston healthcare market are XXXX, BDMI, Inc., EDI operating out of Atlanta, and CHPA Consulting Engineers. RM MedComm will obtain a market share due to:

- Established contacts and experience with potential clients in Houston.
- Ability to negotiate competitive engineering fees.
- Experience with local code officials
- Integrated engineering approach and the ability to seal documents for medical communications and other electrical systems.

### **Type of Business**

RM MedComm is an engineering firm offering service in medical communications systems for healthcare facilities in the Houston area.

### **Company/Business Summary**

This is a start-up business that will be organized as a sole proprietorship; a business to be owned and operated by Raymond Mason, P.E. The company will provide engineering services directly to Houston area hospital facilities and to architectural firms serving this market. The company will focus on projects that emphasize medical communications.

## Financial Objectives

The financial plan and analysis section of this business plan details the projected operating results, financial position, and cash budgets. Exhibit 1 summarizes the financial objectives for the five year planning period beginning in 2006.

Year	2006	2007	2008	2009	2010
Sales	\$204.8	\$215.0	\$225.8	\$237.1	\$248.9
Profit	\$24.6	\$28.0	\$31.6	\$37.9	\$44.8
Profit Margin	12%	13%	14%	16%	18%

Exhibit 1 – Sales Forecast (\$1000's).

## Management Overview

Raymond Mason is a graduate of the University of Texas at Austin's Electrical Engineering program. He has worked in several areas of engineering to include electronics engineering in the semiconductor industry, research and development at Johnson Space Center, and engineering consulting. Mr. Mason has spent the last 6 years as an engineering consultant and managed various projects in commercial, industrial, and healthcare markets. Mr. XXXX, P.E. will work with Mr. Mason and has over 15 years experience in healthcare engineering.

## Product/Service and Competition

Electrical engineering services in the Houston healthcare market will be the primary service with a concentration on medical communications systems.

## **Funds Requested**

Mr. Mason plans to borrow \$10,000 in a loan to finance start-up to supplement his own investment. Mr. Mason plans to use land property as collateral. The use of the loan will be used for software, advertising, and miscellaneous office equipment. The loan will be repaid evenly over five years.

## Section 2

### Company Background/Strategic Review

#### Statement of General Business Purpose

RM MedComm is a proposed engineering consulting firm that specializes in electrical design services of medical communications and data systems for healthcare facilities. RM MedComm is comprised of a small group of registered engineers based in Houston, TX and primarily provides services for architects, engineering firms, and medical clients in the Houston area. The staff has over 20 years experience in designing medical communications systems and has established relationships with Houston area customers. These systems include nurse call, code blue, network, data storage, and fire alarm systems.

*Mission: To provide design services for medical communications and systems that meet or exceed all regulatory requirements for healthcare facilities.*

RM MedComm's service is vital to its customers because of a lack of specialized services in this design area. Many engineering firms do not provide these services because of the demanding construction schedules at the Texas Medical Center and other Houston-based healthcare facilities. These services are usually contracted out to communications installers and are often redesigned later to coordinate with other engineering drawings and customer needs. RM MedComm has a qualified staff that can communicate with engineers, architects, and customers to efficiently simplify design. The company will seal and deliver coordinated documents for all electrical services to streamline the design process.

RM MedComm will provide specialized design services for all areas of medical communications systems to include, nurse call, code blue, public address/paging/intercom, fire alarm systems, telephone, LAN/WAN networks, audio-visual, patient/equipment/staff tracking, dictation, television, and security monitoring. The company will strive to be a recognized designer in the field of healthcare communications during the next 10 years in the Houston metropolitan area.

*Vision: RM MedComm will strive to be a locally recognized leader in the healthcare facilities industry and will introduce innovative communication technologies to its customers.*

### **Company Strategic Review**

**Strengths.** The company's primary strength is the experience of the staff. The staff has extensive design experience in health care facilities and has established relationships with several architectural firms and other engineering firms in the Houston area. The company's consultants are registered engineers and have the ability to seal drawings and specifications. The staff also has an established network of contacts with large healthcare clients in the Houston area to aid in marketing efforts.

**Weaknesses.** Weaknesses include the company's ability to perform engineering designs that must include other engineering disciplines as part of a single engineering project. Although, there is a lack of specialized services in the medical communications field, the company is new to the industry where a dominant group of design professionals are already established.

**Opportunities.** Several large hospitals in the Houston area have planning in place to build additional facilities due to the increasing need for hospital bed space. The Methodist Hospital and St. Luke's Hospital are two potential customers who will be building new high-rise towers in the

next several years. Numerous healthcare renovation projects arise in Houston because it has some of the nation's largest research facilities. Also, several potential customers also have plans to build new research facilities and laboratories over the next ten years. Changes in technology call for facilities to have communications systems that can be converted for future technology changes (Gupta 2005, 30-32). According to Gupta (2005), providing high-end IT infrastructure now can save huge funds in future renovations.

**Threats.** XXXX, another engineering firm, is considering the formation of a team to perform primarily medical communications services. XXXX is a well known firm in the healthcare industry and could be a major threat for business opportunity. Also, a couple of other smaller firms have shown some interest in forming a similar specialized team.

**Strategic goals.** RM MedComm's overall strategic position is to maintain a steady amount of contracts to meet an estimated profit goal for the year. This goal will be met by three primary objectives: (1) establish relationships to promote loyal customers, (2) provide quality design services to meet all codes, and (3) educate customers on the latest medical communication technologies.

## **Brand Equity Review**

RM MedComm's brand personality follows the concept that all medical communications designs are coordinated with all engineering disciplines and customers requirements. This will facilitate the construction process and reduce design costs associated with rework and change orders. The company's service is based on reliable communication similar to the communications equipment that is specified.

*Brand Statement: RM MedComm's consulting services – reliable communications engineering and planning for healthcare needs.*

The brand statement will be expressed in the company's literature to include portfolios, brochures, and website. The company believes that its initial completed projects will demonstrate the brand personality. This will serve as a competitive advantage when soliciting future projects with repeat and new customers.

## Section **3**

### **Owner/Management Background**

#### **Owner**

Mr. Raymond Mason has 13 years of electrical engineering experience to include 6 years in healthcare facilities projects. He is a registered PE in Texas, Kansas, and Nevada. His involvement in healthcare projects encompasses all electrical systems – fire alarm, power, lightings, emergency power systems, grounding, nurse call and code blue systems, public address, security, low voltage systems. His experience also includes working closely with hospital staff, architects, and other engineering disciplines to design and complete various healthcare projects in the Houston area. Mr. Mason's recent projects in healthcare facilities include:

- Baylor College of Medicine (Houston, TX) – Emergency power flood mitigation study.
- Methodist Hospital (Houston, TX) – Respiratory therapy renovation.
- St. Luke's Episcopal Hospital (Houston, TX) – Radiology renovations.
- St. Luke's Episcopal Hospital – New hybrid operating room suite.
- St. Luke's Episcopal Hospital – 23<sup>rd</sup> Floor patient tower renovations.
- St. Luke's Episcopal Hospital – Labor and delivery suite renovations.
- St. Luke's Episcopal Hospital – Network development equipment replacement.
- St. Luke's Episcopal Hospital – Day Surgery center renovation.

- St. Luke's Episcopal Hospital – New liver clinic.
- St. Luke's Episcopal Hospital – Catheter labs renovations.
- St. Luke's Episcopal Hospital – Operating room renovations.

### **Other Staff**

Mr. XXXX, P.E. is an electrical engineer with over 30 years experience to include 15 years in healthcare related projects. He is a registered PE in Texas, Louisiana, Arkansas, Florida, California, and Mississippi. Mr. XXXX's project history includes:

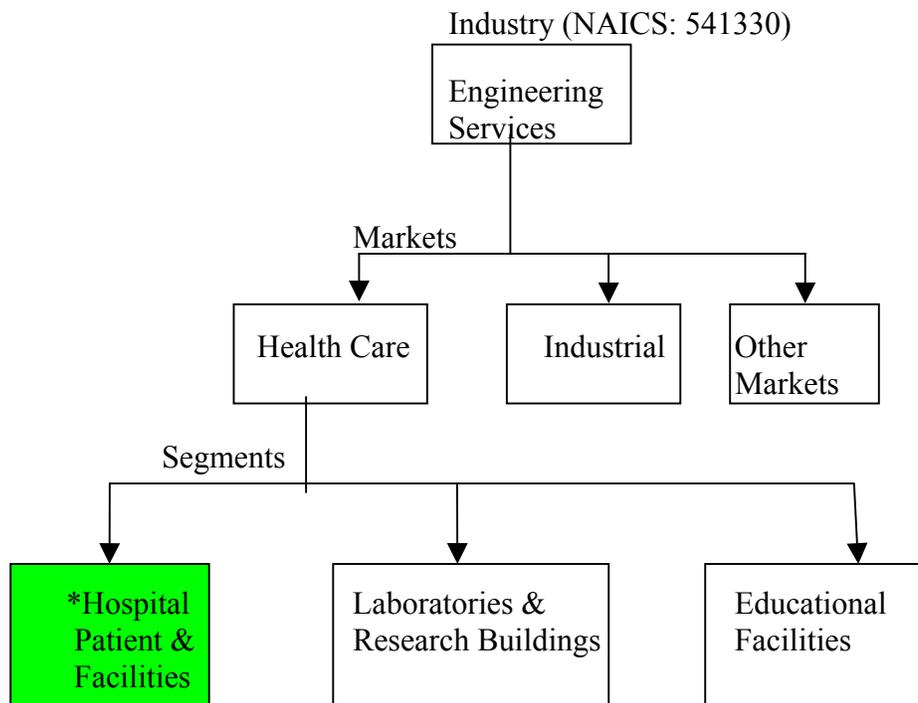
- Valley Baptist Medical Center (Harlingen, TX) – New 224,000 sq. foot hospital.
- Memorial Hermann Healthcare System (Houston, TX) – New 350,000 sq. foot hospital.
- Texas Children's Hospital (Houston, TX) – Patient room renovations.
- Tomball Regional Medical Center (Tomball, TX) – New 327,000 sq. foot hospital.
- Knapp Medical Center (Weslaco, TX) – New 15,000 sq. foot emergency center.
- Texas Medical Center (Houston, TX) – FEMA study for redesign of electrical distribution system for flood mitigation.
- Christus Spohn Health System (Corpus Christi, TX) – New 150,000 sq. foot surgery, imaging, and heart center.

Section  
**4**

## Market Review

### Market Analysis

Exhibit 2 shows the market hierarchy according to the NAICS codes where the shaded area represents RM MedComm’s proposed niche.



\*Target Segment (Houston Metro area)

Exhibit 2 – NAICS Hierarchy for Engineering Services.

Professional services in the health care market will be the target sector of engineering with a specific geographic focus on the Houston-Galveston Metro area. This will be a niche firm that will specialize in the communications aspect of design services of hospital facilities.

Year	Engineering	Healthcare	Houston Healthcare
1997	\$9,077,810	\$1,361,671	Unknown
2002	\$14,672,107	\$2,171,360	\$700,000
Percent Increase	62%	59%	

Exhibit 3 – Health Care –Market Size (\$1000’s).

The market size was determined by using the Economic Census (1997) and the estimated Economic Census (2002). The total architectural receipts for hospital related building segment was approximately 15 percent of the sector, so the engineering receipts were calculated at 15 percent of the engineering receipts for similar buildings (see Exhibit 3).

**Market life cycle and trends.** The market is currently in a growth state due to numerous hospital expansions and new construction in the Houston area. Exhibit 3 shows over 50 percent increase in engineering services for US health care buildings over a 5 year period. This growth is both fueled by both changing technology and an increasing need for hospital bed space. According to U.S. Federal Statistics (2005), the estimated population in Harris County (Houston, TX.) is 3,596,086 which shows a 5.7% increase from the year 2000 to 2003. The population of persons over 65 is 252,895 which has a 7.4% increase from 2000 to 2003. This marketing plan makes the assumption that hospital growth is positively influenced by the population growth in the Houston area.

Continuous changing technology is also a major factor in health care renovation for many patient care facilities in Houston (Eby, 2004, 5). For instance, St. Luke's Episcopal Hospital in Houston's Texas Medical Center is renovating all radiology related facilities to accommodate the latest x-ray and scanning equipment. This is a 2-3 year plan in renovation work.

**Growth potential.** The health care market has a lot of opportunity for growth in the Houston area. There is a lack of specialized design firms in this area and large local pool of potential customers. The Texas Medical Center is one of the nation's largest research and educational centers and has an equally large hospital base. The health care market is a more profitable segment because of a higher average hourly rate for professional services. For senior level engineers, the average billed hour of other engineering markets is \$125 while the average billed hour for health care services is \$155.

### **Company Analysis**

RM MedComm is proposed to be a new firm and does not have history in this market. The firm's staff has over 20 year's experience in the Houston area health care market and already has firm contacts for future marketing. With the increasing construction in the Houston market segment, RM MedComm is well-positioned to accomplish its goals to secure loyal customers and establish its name in communications design.

# Section 5

## **Product/Service Offering**

### **Product Summary**

RM MedComm will provide complete design services for medical communications systems in hospital and patient facilities in the Houston area. Design for related power systems to support medical communications systems will also be offered. As a full-service engineering company, RM MedComm will participate in pre-design sessions with users and follow design the process to a complete set of plans that will be released for a permit. Additionally, the design product will be supported throughout the construction process.

RM MedComm will strive to suggest new technologies where feasible and educate clients in latest design standards. Specifically, RM MedComm will assist hospitals to implement digital and wireless systems into facilities. This will reduce the need for older paper tracking systems for patients, staff, and equipment (Wright, 2005). The company will use the latest software for document preparation and will ensure compatibility with other design team members. Technology plan will be further discussed in a later section.

### **Value Equity Objectives**

The following objectives are keys to RM MedComm's competitive advantage and will add value to the customer. Competitive advantages will be further detailed in a later section.

### Value Objectives

1. Establish strong relationships and maintain repeat clients.
2. Reduce response time to 24 hours when answering construction questions.
3. Produce construction documents that are coordinated with less than one average coordination error per drawing.
4. Produce construction documents that meet 99% of the hospital clients' needs and comply with all local code requirements.

### Knowledge Objectives

1. To provide potential clients with options in utilizing new technology for 80% of design projects.

### **Value Strategies**

**Strong client relationships.** RM MedComm's staff will be dedicated to obtaining repeat clients through continuous face-to-face meeting with clients. RM MedComm will also be involved in all phases of design and construction to increase these relationships. The staff will track the customer base and strive for increased repeat clients. The professional and technical expertise of RM MedComm's staff will be influential fostering long term relationships.

**Responsiveness.** RM MedComm proposes to track all RFI's and documentation in a database to ensure response time during construction.

**Coordination of documents.** Coordination will also be tracked using a database to minimize errors. This will decrease the number of RFI's and change orders per project. RM MedComm's well-defined design process will be include all phases of design from conceptual to project completion. This hands-on process will minimize costly design omissions and errors.

**Compliance with design criteria and codes.** Again the expertise of the staff will be a key factor in 100% compliance. The staff will continuously review current codes and communicate with hospital staff clients to meet all specifications and code requirements.

**Transferring knowledge.** In addition to tracking repeat clients, the firm proposes to track current design technology trends and introduce to options to clients on all projects where applicable.

### **Value Proposition**

RM MedComm's price for services will be highly competitive compared to industry average. The staff has over 20 years of experience in healthcare communications and is already familiar with the Texas Department of Health requirements and Houston building codes. The pricing structure will be a bundled type to include all services. This pricing will average approximately \$160 per hour of professional service, which falls within the fee structure for specialized healthcare services in the Houston area. This pricing will also yield a higher average profit than electrical engineering services in markets other than healthcare.

The expertise and capability of the staff represents the higher value of RM MedComm's service. The staff has the ability and experience to design medical communications systems and power systems. Also, as registered engineers, the firm's staff has extended capabilities to complete projects that are strictly electrical in scope without the need to bring another engineering firm onto the project team.

*Value Proposition Statement: RM MedComm will provide a high quality and complete engineering service to meet clients' fee requirements.*

## Section 6

# Marketing Plan

### Customer Review

RM MedComm's initial target markets include health care facilities in the Houston-Galveston Metropolitan area and architectural firms that design for these facilities. Long term customers will include health care facilities in other Texas cities and nearby southwestern states. This marketing plan will only focus on the Houston area market segment and will target potential customers as follows:

**Ultimate customers.** The total potential customer base would include all health care patient facilities in the Houston-Galveston area and architectural firms that provide service to these facilities. These customers are either related to new building design or renovation projects.

**Intermediate customers.** Intermediate customers have shown consistent or growing renovation and new project designs over the past three years. These are usually the larger hospitals in the Texas Medical Center, but do include some small ones in the Houston area.

**Feasible customers.** Feasible customers will include hospitals and architects that RM MedComm has already established contacted. The staff has past experience with multiple potential customers in the Houston area and expects to obtain work within a year from these previously established contacts.

RM MedComm will monitor projects using various websites and local construction bulletins to determine which ultimate customers may become immediate customers. After some marketing efforts and increasing the contact list, intermediate customers can become feasible customers. Architectural contacts will be instrumental in obtaining work with newer customers in the future.

**Evaluative criteria.** Feasible customers will consider design services based upon the following criteria with highest priority first.

1. Houston-Galveston area location
2. Positive recommendation.
3. Communications designer can coordinate with power design to reduce rework time.
4. Experience working with Houston area architects, hospitals, and local code authority.
5. The provider of engineering services is responsive to questions during construction.
6. The provider is knowledgeable in new technologies and alternatives.

The criteria were designed to first select a firm in the area with good references. The next important concerns would be experience, then the firm's capabilities to provide well coordinated design documents. Finally, the engineering firm needs to be able respond quickly and suggest alternatives when appropriate.

## **Customer Demand**

Exhibit 4 identifies the number of establishments in the Houston-Galveston area that work in the health care segment. These establishments are categorized by customer type and whether they are a health care facility or architect.

	Ultimate	Intermediate	Feasible
Health Care Facilities	49	15	9
Architectural Firms	28	20	12

Exhibit 4 – Customer Demand.

RM MedComm is proposed to be a new firm such that all of the feasible customers are prospective customers. The health care facilities include outpatient centers, surgical centers, professional buildings that have communications tied to adjacent hospital, and other patient facilities. The number of architectural firms that work in the health care segment is estimated from preliminary online research and a database of prospective customers compiled by RM MedComm’s staff.

### **Customer Database**

Initially, the customer database (ultimate) is organized using the 2005 Texas Hospital Association (THA) membership directory which lists all hospital facilities by area. This directory also lists architects that specifically work in the health care market. Architectural customers were also researched using the American Institute of Architects website (AIA, 2005).

Intermediate and feasible (hospital) customers will be determined by reviewing online lists of Houston Building permits to determine hospital growth trends. Permit information was located using a Texas A & M website for Houston area market reports in 2004 (Texas A&M, 2004).

The database will track customers address, phone number, facility size, contact names, and recent growth trends in terms of construction costs. Architectural contacts will be updated by referrals from hospital customers.

## Assumptions and Risks

This plan assumes the following assumptions regarding the health care market and customers described in previous sections:

1. The market will grow by 10 percent within the first year and 5.5 percent in the next 10 years. The 10 percent in year one is due to a current high amount of booked work for new hospital facilities.
2. RM MedComm will obtain enough work to meet its growth goal of 5% per year.
3. Customers will have a need for RM MedComm's specialized service due to increased renovations and short project cycles.
4. The market for health care construction in Houston will be \$700 million.
5. Average construction cost is \$165,700.
6. The average electrical design fee is 8 percent of the construction cost (\$12.8K).
7. Assume RM MedComm will spend 15 percent of the time marketing, decreasing to 10 percent in 5 years.

Risks associated with this niche market to provide engineering services for health care communications include:

1. RM MedComm is an unknown entity in the health care industry in Houston. Hospital clients and architects tend to be hesitant regarding new design staff and contractors.
2. Project delays and budgets could reduce profits.

3. XXXX has group that is skilled in medical communications design. XXXX is also a major player in health care engineering design. A major marketing effort by XXXX could hinder success.
4. Hospital clients may start to design low voltage systems and eliminate need for this specialized design.
5. Construction administration can be time consuming and can limit the amount of work that RM MedComm could accept.

### **Competitor Analysis**

The key competitors in the Houston healthcare market are XXXX, Wiley Engineers, EDI, Inc. (based in Atlanta), CHPA Consulting Engineers, BDMI, Inc., IC Thomason (based in Nashville), and Nash Lipsey Burch Consultants (based in Nashville). All of these firms provide specialized services in Healthcare communications systems. However, only XXXX, EDI, BDMI, and Nash Lipsey Burch provide sealed medical communications documents for all systems. The other key competitors and several not listed rely on vendor documents to design medical communications systems. This method is often uncoordinated and does not comply with all code regulations.

### **Competitive Advantage**

RM MedComm's has several key advantages in the Houston healthcare market. First, the 20 plus years of experience of RM MedComm's staff is a strong factor in gaining prospective customers' trust. Secondly, the staff has prior established relationships with Houston area customers. Finally, RM MedComm will have the ability to coordinate communications systems and power

requirements for an integrated approach. RM MedComm also has the expertise to empower their clients with knowledge of new technologies and alternatives for future growth.

RM MedComm's competitive advantage in this industry directly supports the customer's evaluative criteria with regards to being able to provide coordinated power and communications design documents. A disadvantage for RM MedComm is its small staff. This limits the amount of work that accepted. Thus, RM MedComm will seek and accept projects with high profit potential.

The market seems to be large enough in Houston that the number of competitors should not limit opportunities in the market. However, competitor responsiveness to clients' questions is the key performance factor that could distinguish market share. To meet the customer's demands, RM MedComm will increase the staff size as required.

### **Forecast and Objectives**

The following forecast is based upon the prior listed assumptions in this section. At \$165.7K per project and a \$700M market, the number of health care projects available in Houston is approximately 4,224 projects per year. RM MedComm proposes to bid on 40 (1 percent) of the total Houston healthcare projects. Assuming a success rate of 40% increasing to 50% in five years, RM MedComm will design 18-24 projects a year.

Considering the number of feasible customers, RM MedComm proposes to complete 18 projects per year from the same or repeat customers. This also assumes that the 2 person staff works on each project for approximately 40 hours (80 hours for two people) per project. This will allow for an initial 15 percent time for marketing effort. The sale forecast below is calculated as follows:

Sales per project = 80 hours x \$160/hr = \$12,800

Initial Total Sales Fees = 16 Projects x \$12,800 = \$204,800

Year	2006	2007	2008	2009	2010
Sales	\$204.8	\$215.0	\$225.8	\$237.1	\$248.9
Profit	\$24.6	\$28.0	\$31.6	\$37.9	\$44.8

Exhibit 5 – Sales Forecast (\$1000's).

The forecast in Exhibit 5 assumes a 5 percent sales increase per year with a 15-18 percent profit margin.

**Overall Objectives:**

- RM MedComm will obtain enough work to meet its growth goal of 5% per year.
- Obtain a profit of 12% initially and increase to 18 percent within 5 years.
- Establish relationships to maintain repeat clients.
- Create 1-2 percent new feasible customers per year.
- Track construction change orders and reduce response time to 24 hours with first two years.
- Produce construction documents that are coordinated with less than one average coordination error per drawing.

- Produce construction documents that meet 100% of the hospital clients' needs and comply with all local code requirements.

**Alternatives.** If RM MedComm cannot meet its forecast and objectives, staffing may be increased. If the forecast cannot be met due to too few projects, the firm will offer additional services such as more power design or look toward other market segments.

## **Relationship Equity**

**Current and future state.** Currently, RM MedComm is in the start up stage, so there are only potential clients. RM MedComm's staff has prior experience with multiple hospitals in the Houston area and with multiple Houston area architectural firms. The staff has over 20 years experience working with senior hospital management and facilities staff in the Texas Medical Center in Houston and maintains these relationships through follow up phone calls and attending various hospital functions. RM MedComm plans to obtain strong customers and promote a long term relationship through multiple projects over several years. The staff's experience has concluded that many of the hospital project management teams continue to work with professional service firms that they are familiar with and hold close relationships. This type of relationship will be a two-way type in which RM MedComm will provide services and will encourage the clients to call upon the firm to transfer technical expertise and consultation.

**Buying stage.** RM MedComm will introduce feasible customers to the RM MedComm brand through direct marketing efforts. The staff will utilize the "rainmaker" or seller technique and initiate conversation with the potential clients. The seller will make calls and setup presentations to introduce potential clients to RM MedComm's services.

**RM MedComm brand.** Initially, potential customers will associate the brand with the seller who already has a positive reputation with various Houston area feasible clients. RM MedComm will maintain these relationships and expects that the quality of service will be supported by advocates as new clients are approached.

**Relationship sales model.** Exhibit 6 represents the initial relationship sales model for RM MedComm. This model is appropriate because the marketing approach is direct marketing with the feasible clients being hospital staff and architectural firms in Houston. This model will be modified as additional marketing communications are implemented within the firm. The model shows that either the architectural firm or RM MedComm will sell services to the hospital client. RM MedComm may also be the seller of services to architectural firms as a subcontractor.

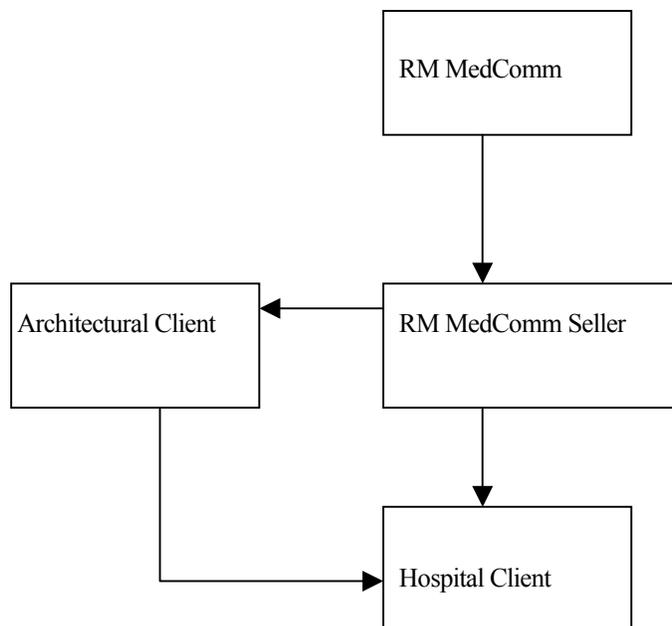


Exhibit 6 – Relationship Sales Model.

## Promotional Strategy

**Marketing proposals.** The method for selecting RFP's will place emphasis on projects that require medical communications systems in hospitals that do not have a single communications designer. RFP's must also meet expected fee requirements to maintain desired profit margins. The RFP's will be submitted according to the requesters' recommendations.

The RM MedComm brand messages will accompany submittals in the form of company literature and staff resumes.

The seller will track submitted proposals via direct calling and a company marketing database. Submittals that are not selected will generate a questionnaire to the requester to evaluate submittal and future expectations.

**Marketing communications.** RM MedComm will submit a corporate information kit after contacting feasible customers. The kit will include company history, staff resumes, and value proposition. The information will highlight the staff's experience since this is a start-up company. After projects are completed, the kit will be revised with documentation to illustrate project history of the firm. A briefer document will be sent to the intermediate customer base and will provide contact information.

A company website will be indicated in the documentation for contact information and general information. The website will be updated with project history and will feature project status as the firm completes projects. Again, the value proposition will be highlighted on the website.

The staff will attend up to three trade shows in the Houston area to promote the company services in the initial years and will attend up two events in the subsequent years. RM MedComm hopes to initiate a client relationship with at least one potential client per year by attending healthcare

related tradeshows for engineering. RM MedComm will plan to provide informal service briefings for potential architectural clients and hospitals. The staff will also commit to joining two local healthcare related organizations to increase exposure.

**Relationship Budget**

RM MedComm proposes that 15 percent of sales will be utilized for marketing communications activities. Exhibit 7 shows the sales forecast and related marketing budget assuming an initial marketing effort of 15 percent decreasing to 10 percent in five years.

Year	2006	2007	2008	2009	2010
Sales	\$204.8	\$215.0	\$225.8	\$237.1	\$248.9
Marketing	\$30.7	\$32.2	\$27.1	\$28.5	\$24.9
Percent Marketing	15%	15%	12%	12%	10%

Exhibit 7 – Marketing Forecast (\$1000’s).

**Sales Plan**

Exhibit 8 outlines the sales plan for RM MedComm over the next 5 years. This plan assumes that RM MedComm will operate with a staff of two during this time period and each staff member will utilize 15 percent of effort towards marketing tasks. RM MedComm is proposed company and assumes that the potential number of customers will be the number of feasible customers defined in this plan.

**Controls and monitors.** The potential customers and customer bonding stage will be tracked and monitored via a database that will be maintained by the RM MedComm staff. Clients will be contacted quarterly during the first year and yearly thereafter to obtain feedback regarding RM

MedComm's services. The results of these client surveys will be used to improve the quality of service and meet the changing market needs and technological changes.

**Technology plan.** RM MedComm will purchase and utilize current Microsoft Windows based software to track customer accounts and for all office correspondence. The staff will utilize AutoCad2005 for engineering documents and latest CSI standards or specifications. Software packages SKM and Lithonia's Visual 2.2 will aid in engineering calculations.

MARKETS & CUSTOMERS				COMMUNICATIONS			SALE PLAN		GOAL			LONG RANGE		
		No. Present Clients	No. Potential Clients	Message	Buying/Bonding Stage	Promotional Tools	Assigned to:	Assign Effort (hours)	Assigned Direct Expense	% of Total Effort	% of Total Budget	Goal Number of Clients	% of present Workload	Priority
MARKET	Hospitals/ Architects	77	21	Specialize Cost Coordination	New	Direct Marketing	Staff of 2	12 hr/wk	\$1638/wk	12.8 %	12.8 %	\$248. 9K	100%	1

\* Average 12.8 marketing percentage for five years.

Exhibit 8 – Sales Planning Chart.

# Section 7

## Financial Plan and Analysis

### Income Statement

For the Years 2006 through 2010 (all number in \$1000's)

<b>Revenues</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Net Sales	\$204.8	\$215.0	\$225.8	\$237.1	\$248.9
<b>Costs and Expenses</b>					
Salaries and Wages	\$125.5	\$130.2	\$141.8	\$144.3	\$151.2
Advertising	2	2	2	2	2
Marketing	30.7	32.2	27.1	28.5	24.9
General Administrative	6	6	6	6	6
Reproduction Costs	2.5	2.5	2.5	2.5	2.5
Insurance	3	3	3	3	3
Travel	6	6	6	6	6
Capital Startup Interest	0.2	0.2	0.2	0.2	0.2
Total Costs and Expenses	\$175.9	\$182.1	\$188.6	\$192.5	\$195.8
<b>Income Before Income Taxes</b>	\$28.9	\$32.9	\$37.2	\$44.6	\$53.1
Income Taxes	4.3	4.9	5.6	6.7	8.3
<b>Net Income (Loss)</b>	\$24.6	\$28.0	\$31.6	\$37.9	\$44.8

Exhibit 9 – Income Statement for RM MedComm.

**Statement of Retained Earnings**

For the Years 2006 through 2010 (all number in \$1000's)

<b>Retained Earnings</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>(December 31, 20xx)</b>	\$0	\$12.3	\$20.2	\$25.9	\$31.9
Net Income	24.6	28.0	31.6	37.9	44.8
<b>Subtotal</b>	<b>\$24.6</b>	<b>\$40.3</b>	<b>\$51.8</b>	<b>\$63.8</b>	<b>\$76.7</b>
Dividends (profit sharing)	12.3	20.1	25.9	31.9	38.3
<b>Retained Earnings</b>	<b>\$12.3</b>	<b>\$20.2</b>	<b>\$25.9</b>	<b>\$31.9</b>	<b>\$38.4</b>
<b>(December 31, 20xx)</b>					

Exhibit 10 – Statement of Retained Earnings for RM MedComm.

## **Balance Sheet**

Dec. 31, 20xx - For the Years 2006 through 2010 (all number in \$1000's)

<b>Assets</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Cash	\$10	\$3.6	\$13.0	\$19.2	\$24.2
Fee Receivables	208.8	215.0	225.8	237.1	248.9
Supplies	0.2	0.2	0.2	0.2	0.2
Prepaid Insurance	3	3	3	3	3
Computers/Equipment	5	4.5	4.0	5	4.5
Less Depreciation	0.5	0.5	0.5	0.5	0.5
<b>Total Assets</b>	<b>\$223.5</b>	<b>\$225.8</b>	<b>\$245.5</b>	<b>\$264.0</b>	<b>\$280.3</b>
<b>Liabilities</b>					
Accounts Payable (loan)	\$1.6	\$1.6	\$1.6	\$1.6	\$1.6
Wages Payable	125.5	130.2	141.8	144.3	151.2
Income Taxes Payable	4.3	4.9	5.6	6.7	8.3
Marketing/Admin.	36.7	38.2	33.1	34.5	30.9
General Expenses/Dividends	38.1	30.7	37.5	45.0	49.9
Start-up Costs	5.0	-	-	-	-
<b>Total Liabilities</b>	<b>\$211.2</b>	<b>\$205.6</b>	<b>\$219.6</b>	<b>\$232.1</b>	<b>\$241.9</b>
<b>Stockholder's Equity</b>					
Retained Earnings	\$12.3	\$20.2	\$25.9	\$31.9	\$38.4
<b>Total Liabilities &amp; Equity</b>	<b>\$223.5</b>	<b>\$225.8</b>	<b>\$245.5</b>	<b>\$264.0</b>	<b>\$280.3</b>

Exhibit 11 – Balance Sheet for RM MedComm.

Cash amount in 2006 is due to a start-up loan deposit. Cash in the following years is assumed to be 20 percent of the previous year's retained earnings. Computer equipment is estimated to have a depreciation of \$500 each year and will be replaced every three years.

## Statement of Cash Flows

For the Years 2006 through 2010 (all number in \$1000's)

	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Beginning cash balance	\$0	\$3.6	\$13.0	\$19.2	\$24.2
Cash from services	204.8	215.0	225.8	237.1	248.9
Total Available Cash	<u>\$204.8</u>	<u>\$218.6</u>	<u>\$238.8</u>	<u>\$256.3</u>	<u>\$273.1</u>
Less:					
Operating expenses	\$168.1	\$170.0	\$176.5	\$180.4	\$183.7
Income Taxes	4.3	4.9	5.6	6.7	8.3
Dividends payout	12.3	20.1	25.9	31.9	38.3
General Expenses	25.8	10.6	11.6	13.1	11.6
Start-up Costs	5.0	-	-	-	-
Total Disbursements	<u>\$211.2</u>	<u>\$205.6</u>	<u>\$219.6</u>	<u>\$232.1</u>	<u>\$241.9</u>
Cash Surplus (Deficit)	<u>(\$6.4)</u>	<u>\$13.0</u>	<u>\$19.2</u>	<u>\$24.2</u>	<u>\$31.2</u>
Add:					
Long-term loan	\$10	\$0	\$0	\$0	\$0
Total Additions	<u>\$10</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<b>Ending Cash Balance</b>	<u><u>\$3.6</u></u>	<u><u>\$13.0</u></u>	<u><u>\$19.2</u></u>	<u><u>\$24.2</u></u>	<u><u>\$31.2</u></u>

Exhibit 12 – Statement of Cash Flows for RM MedComm.

## **Findings/Summary**

The outlook for growth in the healthcare segment of engineering in the Houston area is positive. All indicators in the market research show that the increasing population and technological needs in patient care facilities will produce more projects and healthcare construction for new and existing facilities. The number of projects proposed by owners to install new medical communications systems seems to create a demand for specialized. This feedback comes from a survey sent to potential architectural customers. The results of the survey also suggest that some clients will demand prefer that all engineering services including medical communications systems be performed by the same group. RM MedComm's service will be competitive because of its integrated approach in providing medical communications systems and related power as a total coordinated product.

The financial analysis shows that RM MedComm will be profitable with profit margins growing from 12 percent to 18 percent of the initial five year period. The financial analysis also shows that the firm will be able to commit to a 10-15% marketing effort to create business and distribute dividends in the initial five years.

However, several larger firms in the Houston area have groups that either provide the same specialized service or outsource it. This creates the challenge of persuading potential customers to award RM MedComm future opportunities.

## **Conclusions**

This field project concludes that the RM MedComm firm can be profitable, but does not conclude that the ability to obtain the number of projects in the forecast is feasible. While the business plan covers a clear marketing strategy and the work appears to be growing in demand, the larger firms

that provide similar services are already well known in the Houston area. RM MedComm will need to obtain and complete a few projects to get established within the market. As the firm completes projects, marketing should become easier since many of the hospital clients tend to reuse past consultants. Tapping into the market will be the challenge and may require more research.

### **Suggestions for Future Work**

Future work for this business plan includes calculating a more accurate Houston healthcare market in terms of dollars. This would help fine tune the financial plan. Additionally, the financial plan can be revised with current expenses such as insurance costs and taxes expenses. The information used in this project reflects individual insurance costs and taxes from the IRS corporate rate form. Utilizing an accountant for the financial plan could also produce more realistic values. The marketing communications research would need to better outline how bids for work will be evaluated and how RM MedComm will prepare proposals. Finally, a more convincing argument needs to be developed to suggest that RM MedComm can successfully, enter the market as described within this project.

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## Appendices

### Appendix A – Marketing Survey

This survey was sent to the below listed architectural firms in Houston to gather information regarding the potential clients' needs in the Houston healthcare market. This information was utilized to development RM MedComm's business objectives and strategy.

1. Page Southerland Page, LLC
  2. HOK Architects
  3. P&W Architects, LLC
  4. Morris Healthcare Design
  5. HGR
  6. HKS, Inc.
  7. MKS Design Associates
  8. Watkins Hamilton Ross Architects
  9. Kyu Sung Woo Architects, Inc.
- 

#### Engineering Marketing Survey

The following survey is for a personal master's thesis project in engineering management. This project is related to marketing of engineering services in the Houston healthcare market. Please take a few minutes to list your valuable input and return responses to me via email at [rymason@swbell.net](mailto:rymason@swbell.net).

Thanks,

Raymond Mason

## Questionnaire

1. What characteristics are attractive to you in selecting a new engineering firm for healthcare related projects?
2. Do you work (employed by) with a firm that provides architectural services in the healthcare market? Please skip questions 3-5 if your response is no.
3. Have you or your firm worked with an engineering firm that specializes in medical communications systems (i.e., nurse call systems, telephone/data, code blue, paging, fire alarm systems)?
4. Would you consider working with a firm that specializes in medical communications systems?
5. Is it important to you that MEP services and medical communications systems are performed by the same group?