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## **MDCM, Inc. (A): IT Strategy Synchronization**

### **Introduction**

MDCM, Inc., one of the world's largest contract manufacturers for medical devices, had just announced its fifth consecutive quarterly loss. The firm posted revenues of \$1.12 billion with net losses of \$33 million for the second quarter of 2002. For Max McMullen, this was yet another agonizing episode since he took over as CEO two years earlier. Despite major company reorganizations, his promises to the shareholders for operational and cost improvements had not been realized. Given the company's lackluster record, the next twelve months were critical in proving that these promises could indeed be kept.

Concerned, McMullen called a meeting of MDCM's senior executives to discuss the situation. "Our jobs depend on what happens the next few quarters. I know we have a good strategy, but we need to get our implementation right," he explained.

CFO Sharon Leis responded, "Well, our margins have been shrinking for eight consecutive quarters. We've got too much in working capital, not to mention one of the least efficient cost structures in the industry. I can't fix any of these things, though, because by the time I get any information, it's often more than forty-five days old! In my mind, we need to continue to cut costs."

Pat Perry, the vice president of marketing and sales, argued, "Our marketing and sales staff is actually really productive, maybe the best in the industry. But we spend a lot of time on tasks that could be done by customers using some type of self-service technology. I'm talking about online ordering and account management. It also kills me that the pilot customer relationship management system in France hasn't done much for me. My people can be twice as productive if they're getting information when they need it, not a week later."

COO Michael Shed jumped in. "Our forecasts are terrible. We're spending almost three times as much as we need on materials because we're always expediting orders from our suppliers. When we do have the supplies, I can't schedule my production properly because I'm rushing orders through to get customers what they want in time. I really don't see how we can deal with an enterprise resource planning implementation this year in conjunction with the mess that I'm trying to fix. And don't even get me started on our logistics outsourcer."

At this point, everyone was looking at Shawn Atkins, the newly hired CIO. Atkins, a graduate of the Kellogg School of Management, realized the importance of including the top executives in the information technology (IT) strategy and planning. With a mildly exasperated tone, he responded, “Guys, I am just starting to put together the plan to get IT turned around. I really need your help and patience on this. If we don’t do our due diligence we will never get this right. This is not the time to just blindly cut IT spending. I need us to work together as a team for the benefit of MDCM. We clearly need to align our IT initiatives with our corporate strategy. I need your help to understand the primary strategic business goals and how IT should support these goals. I think we should do a daylong session and really hammer out the details.”

## MDCM, Inc.

*Medical device contract manufacturing is our business. That’s why we named the firm MDCM.*

—MDCM, Inc. chairman and CEO Max McMullen, 2001 Annual Report

For more than thirty years, MDCM, Inc. had specialized in medical device contract manufacturing and assembly, clean room medical injection molding, and the design and fabrication of specialty assembly equipment for medical device manufacturers. Although the firm’s corporate domicile was in the United States, it had nineteen foreign subsidiaries with locations in thirty-five cities. Its U.S. arm, MDCM Corp., was the oldest and largest subsidiary and was an FDA-registered firm. It had facilities in eight states, including New Jersey, Ohio, Colorado, and California.

Founded in 1972, the company had a staff with decades of experience in the design and manufacture of medical products. The company’s focus was to provide an end-to-end package of medical device contract manufacturing services. As a pure contractor in the business, it did neither research and design nor marketing for the products themselves. MDCM offered clean room assembly as well as controlled environment and non-clean room assembly and testing. The firm’s machine shops were staffed with highly skilled prototype machinists and had won many industry awards for product quality. The company also assisted customers with parts design for manufacturability. Through a joint venture it offered complete printed circuit board assembly, including through-hole and surface-mount, employing state-of-the-art equipment. In addition, the company performed product sterilization through gamma and electron beam irradiation as well as ethylene oxide gas processes.

As an adjunct to its medical device contract manufacturing services, the firm designed and fabricated specialized equipment used in the assembly of medical devices. MDCM was renowned for its ability to produce highly customized versions of this equipment for unique applications.

## Company Position

MDCM was one of the largest companies in the contract manufacturing and packaging services sector of the medical devices industry. MDCM recognized early that success as a medical contract manufacturer depended on customers’ success with the devices that the company manufactured for them. The firm practically pioneered close partnership arrangements

with its customers and shared risk and reward. This practice was now commonly used by MDCM's competitors.

MDCM deliberately selected opportunities that allowed it to work closely with customers. By working together with customers, MDCM optimized designs for manufacturability, thus reducing the manufacturing costs to their lowest level. The company's motto of "absolute commitment to delivering quality parts and assemblies on time" had produced tremendous customer satisfaction.

MDCM's early track record of winning over customers led to tremendous growth. By 1974 it had the largest market share in the United States at 42 percent. MDCM's market share continued to grow and was a dominating 54 percent by 1985. Coupled with the annualized sector growth of 12 percent in the 1970s and early 1980s, MDCM's sales rose to \$1.15 billion in 1985. Although it made several small acquisitions, the company grew primarily by expanding its geographical reach in the United States by opening new offices and manufacturing facilities close to its largest customers. In 1985, with the medical device industry consolidating rapidly, MDCM derived almost 40 percent of its revenues from eight of its largest accounts.

Despite its dominant market position in the mid-1980s, MDCM's profit margins began to erode because of its consolidated customer base, which gave MDCM little pricing power. Moreover, several foreign competitors were entering the U.S. market with global capabilities that MDCM could not match. Faced with the new competitive landscape, MDCM shifted its growth strategy.

MDCM made its first major acquisition, of Sentrex in the UK, in 1987. By the mid-1990s MDCM had made more than twenty major acquisitions. The acquisition targets were all non-U.S.-based companies that had competencies in contract manufacturing similar to MDCM's. These companies all became wholly owned subsidiaries of MDCM, Inc. MDCM's management maintained that the acquisitions allowed the company to spread its operational excellence while keeping the foreign companies autonomous enough to be able to better serve their local customers. This strategy also enabled MDCM to further its relationships with its largest customers, who were also becoming more globally focused.

By the late 1990s it was clear that synergy gains from the acquisitions could not be realized without major changes in organization and operations. Even though MDCM was the largest company in the industry, it had the worst operating and profit margins. An audit of the company's suppliers found that it was buying similar parts and materials from many sources all over the globe. Manufacturing was so poorly coordinated that many facilities sat idle for months while others were running overtime. The sales departments across the subsidiaries were in such disarray that sales managers would sometimes find that they were bidding against each other for the same account. Such practices clearly did not make use of the company's scale.

Despite a major organization overhaul in 2000, the company was only able to slow its decline in market share and profit losses. MDCM lost four of its ten largest customers between 1998 and 1999. Although it continued to excel in customer satisfaction, high internal costs did not allow MDCM to price competitively against smaller, more efficient rivals. In 2000 the company reported its first fiscal year loss in more than twenty years. (See **Exhibit 1**: Five-Year Selected Financial Data.)

## Horizon 2000

In 2000 Max McMullen was promoted to CEO. McMullen, a twenty-year industry veteran, was the president of MDCM Corp. Americas and had long been anointed to be the successor to head the company. Because he was known for his marketing skills and sales tenacity, industry insiders wondered whether he could fix MDCM's problems.

Upon his ascension to the presidency, McMullen and his new management team embarked on a huge company transformation dubbed "Horizon 2000." The company was reorganized to share a single brand across all subsidiaries (e.g., MDCM France, MDCM UK, MDCM Canada) and make each subsidiary responsible for the customers located in its region. In addition, the marketing and sales functions became centered on the new regional subsidiaries. Each customer was assigned a sales manager who would supervise and coordinate all the customer's accounts. Typically, the sales manager was located in the same region as the customer's headquarters. (See **Exhibit 2: MDCM Corporate Family.**)

McMullen pushed through initiatives to aggregate materials purchasing and reduce the number of suppliers from thousands to hundreds. Another major operational change was outsourcing all of MDCM's inbound and outbound logistics. To ease this transition, McMullen ensured that the outsourcer hired many of the ex-MDCM employees who had been part of the logistics group.

By far the most aggressive move in Horizon 2000 was the reorganization of the production facilities. McMullen chose to close older, more costly facilities while expanding the capacity of newer, more efficient ones. This change required MDCM to move away from its tradition of locating manufacturing and design facilities close to its customers. Because production was consolidated, MDCM also needed to ensure that all of the new facilities were certified and approved according to the highest standards to comply with regulations for many different countries.

The changes in Horizon 2000 took advantage of MDCM's scale and global presence. McMullen saw it as a way to align the company's organizational structure to its strategy and deliver quality end-to-end contract manufacturing services anywhere in the globe.

It took more than two years to implement Horizon 2000 fully. The company's headcount was reduced by more than 30 percent, and the process caused many managers to worry about morale and potential turnover. McMullen's response was to boost the average pay for all remaining employees by 10 percent and double performance bonuses and stock options.

Following Horizon 2000, information flow at the reorganized MDCM became much more crucial. Gone were the days when local managers performed sales forecasting, budgeting, and production scheduling. Sales projections from a customer in Detroit could now affect the material purchases in Taiwan and manufacturing schedules in France. McMullen did not recognize until 2002 that such tight coordination required a much more sophisticated IT capability. In 2002 McMullen hired Shawn Atkins to be the CIO of MDCM. He was tasked with solving the IT problems introduced by Horizon 2000 and the acquisition binge of the 1990s.

## Information Technology at MDCM

When Atkins arrived at MDCM, he could not believe what he was seeing. Corporate IT had been responsible for the overall IT budget but had not overseen projects, investment decisions, or long-term planning. Atkins saw bloated costs from seriously flawed practices. Hundreds of platforms and standards were used across the company with many highly customized systems from different IT shops at the subsidiaries. He found many projects that sometimes overlapped and sometimes contradicted each other. An alarming 80 percent of the IT budget went to maintenance. There had been no successful implementation of any major systems since a new accounting system in 1995.

The IT chaos caused huge lags in information flow among departments, suppliers, and logistics. This led to inaccurate forecasts, scheduling headaches, and bloated inventory everywhere in the supply chain. Often overtime and costly expedited orders for materials were necessary to meet customers' demands because information was slow to move through the organization and between the company's partners and suppliers.

Following is a high-level snapshot of the number of disparate systems and platforms at MDCM:

- *Financials.* Many different legacy systems handled all financial reporting and accounting, including accounts payable, accounts receivable, payroll, and billing.
- *Human resources and benefits administration.* HQ Lawson in the United States and several legacy systems worldwide.
- *Sales forecast, pricing, invoicing.* Fifteen different custom legacy systems.
- *Materials requirement planning.* Many different systems. MDCM U.S. had been using systems from Glovia and Manhattan Associates.
- *Logistics and transportation.* Five different legacy systems.
- *Duty and custom inspections.* Eight different custom systems.
- *E-mail.* No standard infrastructure. Multiple platforms, including POP mail, Lotus Notes, and Microsoft Exchange.
- *Networking.* No capabilities to access across the subsidiaries because of incompatible protocols.
- *Operating systems.* DOS and Windows (3.x, NT, 2000) for employee desktops. MVS, AIX, HP/UX, and Sun Solaris for enterprise systems.
- *Databases.* Oracle, Sybase, Informix, and DB2.

In addition to its large number of systems, MDCM was also challenged by the numerous locations where the systems were housed. (See **Exhibit 3: IT Overview and Locations.**)

Despite the system and infrastructure disarray, Atkins was able to identify twenty-three key managers whom he regarded as capable IT leaders. He hoped that with this core group of managers he could lead an overhaul of IT at MDCM. To fix the problems, Atkins was faced with nothing short of a complete overhaul of both the infrastructure and systems. For MDCM to

become one global company, he argued that it was necessary to have one global IT infrastructure. As a first step, Atkins needed to work with the executive management team and match an IT strategy to the overall corporate strategy.

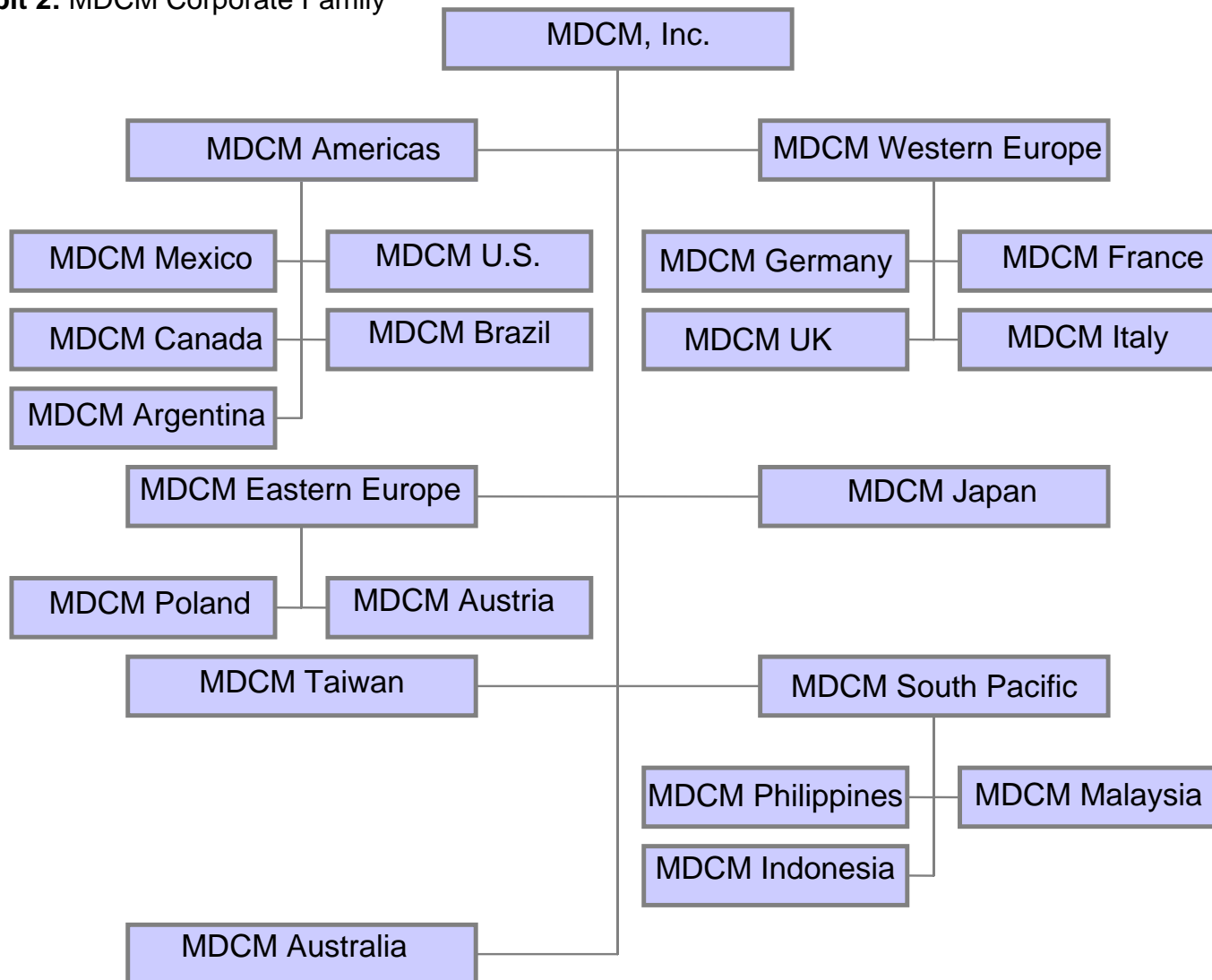
Atkins successfully convinced the senior executive team that a daylong meeting was necessary to figure out the overall strategy and direction of IT. For Atkins the session was as much about being able to clearly articulate the strategy and business priorities for MDCM as it was about developing the right IT plans. As he was preparing for the meeting, Atkins thought, “What is the strategy and what are the key business objectives for the company?” He recognized that only with a clear understanding of the business goals could the correct decisions be made regarding IT. “What are the right IT objectives to support the company’s business goals?” Atkins understood that the board would carefully scrutinize any IT recommendations he would make, so he needed to develop a solid proposal.



**Exhibit 1: Five-Year Selected Financial Data (\$ in thousands)**

Operating Results	Fiscal Year				
	2001	2000	1999	1998	1997
Net sales	4,329,446	4,203,346	3,965,421	3,671,686	3,307,825
Cost of goods sold and occupancy expenses, excluding depreciation and amortization	1,768,374	1,637,384	1,475,120	1,317,072	1,175,957
Gross margin	2,561,072	2,565,962	2,490,300	2,354,614	2,131,868
Depreciation and amortization	340,216	315,015	294,406	272,598	245,584
Operating expenses	2,243,472	2,039,520	1,942,400	1,798,519	1,635,017
Net interest expense (income)	1,210	1,256	1,333	(75)	(2,975)
Earnings before income taxes	(23,826)	210,171	252,161	283,572	854,242
Income taxes	(8,101)	71,458	84,474	94,997	284,463
Net earnings (before restructuring expenses)	(15,725)	138,713	167,687	188,575	533,901
Restructuring expenses	82,223	152,223	—	—	—
Net earnings (after restructuring expenses)	(97,948)	(13,510)	167,687	188,575	533,901
Cash dividends paid	—	—	79,503	79,503	79,503
Per share data					
Net earnings—basic	(0.11)	(0.02)	0.19	0.21	0.60
Net earnings—diluted	(0.11)	(0.01)	0.18	0.20	0.58
Cash dividends paid	—	—	0.09	0.09	0.09

Exhibit 2: MDCM Corporate Family



**Exhibit 3: IT Overview and Locations**

*MDCM Location Map*



**Locations**

- U.S. = 8
- Canada = 3
- Mexico = 2
- United Kingdom = 3
- France = 2
- Germany = 2
- Poland = 1
- Austria = 1
- Italy = 1
- Japan = 2
- Taiwan = 3
- Brazil = 1
- Argentina = 1
- Philippines = 1
- Malaysia = 1
- Indonesia = 2
- Australia = 1

***Highlights of the History of IT at MDCM***

- MDCM’s recent growth had been through acquisitions. Historically, the company had no focus on IT integration before or after acquisition. Each location remained essentially as it was before it became a part of MDCM.
- Phone, fax, and limited e-mail were the primary communication media.
- Regular financial updates were manually exchanged between the subsidiaries and headquarters.
- There was no integrated MDCM network worldwide and there was only limited networking within regions/countries.
- Across MDCM there was a wide variety of packaged, customized, and self-developed software applications.
- There was limited use of the Internet as a means of networking and communications for suppliers and customers.
- There was no single centralized view of MDCM’s overall IT assets or capabilities.