Teaching Case

Vanilla with a Swirl: ERP Implementation at BCC

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Abstract

Vanilla with a Swirl: ERP Implementation at Big Chemical Company (BCC) focuses on the challenges of executing a standardized implementation for customized business processes when implementing a new enterprise resource planning system. With a new CEO (chief executive officer) and cost competitive culture, the company had decided to implement an enterprise resource planning (ERP) that conformed to the vendor's standard configuration. The company decided to choose this route because ERP standard configurations were appropriate for the rest of the industry, and was thought to represent "best practices". The "plain vanilla" option also would help BCC's margins become best-in-class. Once the new ERP system was rolled out in 2003, it was not delivering the intended results and the project teams were starting to hear complaints from their customers. BCC operates in over 70 countries and is one of the world's leading science corporations, offering a range of products and services in a number of diverse markets; therefore, it had a hard time conforming to the vendor's standard configuration.

Keywords: teaching case, implementation, enterprise resource planning (ERP)

1. INTRODUCTION

"I could not have imagined this level of poor performance from a key supplier in my entire life. Believe it or not, we count on you as a partner, and we need our materials. If this is not resolved soon, expect a drastic reduction in our business moving forward. I need my products now!"

Kim McCarthy, senior sales representative had a problem. She just got off the phone with an irate top 10 customer whose own production process was shut down as a result of Big Chemical Company's (BCC) inability to supply product. All Kim could do was put in another Help Desk ticket and escalate to the manager of Customer Service. Customers were upset. Product lead times normally between two and three weeks after receipt of an order were suddenly being pushed to ten to twelve weeks. Customer service agents and sales representatives were upset at the incoming barrage of customer complaints. Warehouse operations were upset about the increased backlog of orders and materials management was upset due to inaccurate raw material inventory levels.

In short, BCC's new enterprise resource planning (ERP) system was not functioning properly as it rolled out in 2003. The vendor was not delivering and the project team was barraged with complaints. BCC's processes in this business were unique and had a hard time conforming to the vendor's standard configuration. It seemed nothing was working right. How should the implementation team solve the immediate problem? Could the business processes be adapted or should they go back to the drawing board and customize the software for this business unit?

BCC Company Background

BCC started as a manufacturer of gunpowder and explosives in 1806 in Columbus, OH. Within ten years, the company grew into one of the largest gunpowder manufacturers in the United States. When the company incorporated in 1905, it had greater than 40% market share of the U.S. gunpowder market. Throughout the next 40 years BCC diversified into areas outside of the gunpowder and explosives markets. During WWII the company became heavily involved in weapons and chemical research and became one of the largest U.S. producers of plutonium; BCC profited immensely during WWII.

The company continued to diversify after WWII and became a major player in the textile/fiber industry. In the 1970's the textile/fiber market collapsed and BCC was in significant economic trouble. BCC was also hit very hard by the recession of the 1980s. During the 1980s BCC began to move into the production of biomedical products and agricultural chemicals through acquisitions and joint ventures, becoming one of the largest seed producers in the world as well. The company began to concentrate their business around healthcare, electronics and specialty chemicals.

During the 1990s BCC focused on streamlining operations, selling off unprofitable business units and setting up joint manufacturing ventures in China, India, Brazil and Mexico. By the year 2000, BCC employed approximately 80,000 people (65% in the U.S.), had over 100 different lines of business, operations in over 70 countries and approximately $25 billion in annual sales.

2001 was a very challenging year for all U.S. businesses including BCC. One of the greatest strengths of BCC had traditionally been research and development which lead to many patents. Many of these patents were now expiring and the company was facing tough competition from overseas low cost manufactures. The company decided to restructure and consolidate its multiple business units to five business units to gain efficiency and cut costs. The company also decided to completely separate its textile business unit from the rest of the company. The five new business units were: Agricultural & Nutrition, Coatings, Electronic and Communication Technologies, Performance Materials, and Safety & Protection services. (See Appendix 2 for a description of BCC's business units).

All of these moves were made in response to BCC's changing markets. Competition was increasing and BCC was finding that it now had to compete as much on price as innovation. The patent protection they had enjoyed for years was dwindling and more of their products were being commoditized. If BCC was going to be able to compete on price, then they needed to reduce their own cost. BCC would need to increase their operational efficiency across all segments of its business.

Culture at BCC

The culture of cost competitiveness at BCC had been escalating in recent years, ever since the introduction of CEO Graham Ducharme three years ago. Ducharme's appointment to the top job at BCC came on the heels of six straight quarters of declining margins, quarters that had been incurred under the leadership of previous CEO Gerry Ladle. Ducharme wasted no time addressing the shift in focus that was to transform under his leadership, making the following statement at BCC's annual shareholder meeting three months into his tenure:

"Our cost competitiveness needs to improve significantly, and our margins need to become best-in-class. This will be a key part of our ongoing strategy, and will be clearly communicated to all associates in the company. We will drive waste from all business processes, and will learn to do more with less...our costs need to become best-in-class in order to be effective in our increasingly competitive landscape**.** We have the best employees in the world, and a relentless focus on providing high quality products at the lowest cost will allow us to carve out a defensible market position."

Ducharme wasted little time making good on his statements. He added several financial leadership roles to the organizational structure, and leaned heavily on these individuals to deliver on aggressive cost cutting targets. As a result, budget reviews with business and financial managers increased in frequency, as often as once per week when a business unit was not meeting targeted objectives.

Business unit and operational leaders were quick to learn that power was shifting to the financial managers of the organization. Early in Ducharme's tenure, there were many heated debates between operational and financial managers in meetings, especially when finance was pushing "yet another" cost reduction target.

However, these targets were being driven from the CEO's strategic plan on cost reduction, and it was becoming clear that these financial managers had the full backing of the company's CEO. This shift was most acutely evidenced by some early casualties among non-financial managers who maintained a strategic direction that could not meet the targeted cost structure. These employees were quickly released and replaced with managers who had a proven track record of financial results.

One manifestation of BCC's cost focus in practice involved CAPEX (Capital Expenditures). Often times, departments would be forced to successfully execute CAPEX projects with only 80% of the requested funds. BCC's financial managers believed that this approach would drive more effective financial discipline around perceived "discretionary" aspects of project funds, as only 75%-80% of the project expenditures were believed to be truly core to achieving the desired benefit.

While the message of cost reduction may have been consistent, some employees were concerned with what appeared to be a unilateral focus on this singular aspect of the business. Jill King, plant manager at a 750,000 sq. foot coatings facility in Lexington, Kentucky shares her opinion on the cost culture at BCC:

"It can certainly be challenging. We drive down costs everywhere, and it sometimes feels like we are cutting corners to achieve a better cost metric at the end of the month – which is also now the biggest component of our annual bonus. When we look for CAPEX to invest in key pieces of machinery, we never get the money we've asked for and have to decide which aspects of the project can be cut out. More often than not, we can't get the full benefits of the project because we can't spend the money we need to."

Despite ongoing tension, Ducharme was seeing an immediate impact on the bottom line through improved margins (sequentially increasing during each of his first 11 quarters as CEO). Employees were adapting and felt that the strategic direction was clear, with targets that were transparent. Indeed, operational and business unit managers were starting to align themselves, delivering on Ducharme's promise to do more with less.

2. THE NEED FOR ERP

Enterprise Resource Planning, ERP, is business management software that facilitates the flow of information among the different functions within an enterprise. It allows organizations to automate and integrate the business processes, share common data and practices across the enterprise, and produce and access information in a real time environment. ERP also lays the foundation for intelligence, integration, and extended enterprises, and forms the basis for business growth and expansion (see Appendix 3).

In an ever-changing world, BCC was facing fierce global competition in many of its markets due to joint ventures, IPOs (initial public offerings), acquisitions and divestures. In addition to competition, BCC was changing its business model from a chemical and energy company into a science company. To focus more clearly on both its core business activities as well as its strategy for significant change, BCC was actively seeking an IT (information technology) provider to deliver cost reductions for operations and applications maintenance, as well as improving productivity, the speed of delivery, and the values of its IT investments.

With BCC offering a wide range of products and services in a number of diverse markets including agriculture, electronics, transportation and apparel, this software would help all the departments by using the same integrated application through one point of entry.

Information would only have to be entered or updated once, reducing errors, time and labor for reports, analysis and planning and program management. The ultimate goal to implementation would be that employee's time and resources would be shifted to innovative problem solving, rather than inputting and processing, which would lead to greater efficiency and saving potential.

Micah Stevenson, one of Ducharme's new appointees and VP of Finance, had officially taken the lead in driving this initiative. Stevenson's industry background was automotive, and he immediately recognized the cost reduction opportunities that come from synergies in information flows through ERP.

Additionally, this type of project fit perfectly with Ducharme's vision of "eliminating waste from all processes", and represented a tremendous opportunity for Stevenson to stand out among the financial executives with a high profile project.

True to process, Stevenson and his team conducted a benchmark against relevant peer groups that compared overall transactional and finance/accounting spend. As expected, this analysis concluded that BCC was spending approximately 4% more than peer groups, making the project highly justifiable.

Additionally, Stevenson communicated to Ducharme that an ERP implementation could be completed for approximately $5M, which was 10% less than the implementation he oversaw at his previous company (of approximately the same size). Stevenson felt that the expenditures he observed in his prior career was excessive due to unnecessary customization, and other project management costs that he expected to avoid within his new role.

For a company of BCC's size, it was the appropriate time to consolidate into one ERP solution – consistent with the focus on cost reduction within the entire corporation. As a result, this new ERP program would enhance the cost competitiveness of the company's manufacturing, marketing, distribution and customer service transaction based expenditures.

3. THE DECISION PROCESS

The team implementing the ERP system shared Ducharme's beliefs about doing more with less within BCC – or at least the leaders of the project team did. In fact, two of Ducharme's appointees were selected to spearhead the project. Micah Stevenson, VP of Finance, was the executive sponsor. Emma Harrellson, a finance manager within the personal protective equipment division, was made the team lead for the ERP implementation.

Also on the team were two operations managers from the same division (brought into the team because of their business process knowledge), as well as a customer service manager, one from the sales division, and a "development team" consisting of five personnel from the IT department who had previous experience working with ERP rollouts. Paul Wilson was the senior member of the development team; his experience as a business analyst allowed him to communicate with the managers and translate their business rules back to his team as functional requirements.

At the first meeting of the new project team, Emma Harrellson hung back and listened as Wilson interviewed the operational managers to assess what they would need out of an ERP system to be successful. As the meeting drew to a close, Wilson took the floor:

"It looks like we have enough here to send an RFQ (request for quotation) to some of our preferred vendors. I would like to point out that based on your feedback; we need to stay mindful of the amount of customization that can be done with each system. I don't think all these

business processes are closely paralleled by ERP."

The rest of the team agreed, and the meeting adjourned. Harrellson felt that it went well, and left with the sense that the team had a definite idea as to where the project was headed in terms of scope and schedule. That night, Harrellson caught Micah Stevenson in the elevator as they left the building.

"We missed you at the ERP team meeting today, sir."

"Sorry about that, you know how it goes," replied Stevenson.

"Sure. Anyway, it seems like we made good progress. I like our team and feel that we have a good handle on the project parameters. Would there be a good time for you to discuss our RFQs?"

"I'll have to get back to you on that, Emma," said Stevenson. "In the meantime keep a close eye on the quoted prices. I trust you'll keep the cost down on this one."

Harrellson had heard the VP loud and clear on where the focus should be for the project. As the selection process continued, Harrellson increasingly deferred to Paul Wilson to facilitate the meetings. Wilson continued to probe the managers for information, and it became clearer that the team's needs were complex and the new system would have to be customizable. This requirement alone eliminated a few potential vendors. Harrellson remained optimistic about the project team, and she was confident the project would settle into a reasonable budget. By the time they reached the proposal stage, three competing ERP vendors had emerged as likely candidates for BCC.

4. PLAIN VANILLA V. CUSTOMIZATION

Standardizing processes using the ERP software fit well with BCC's strategy to drive out cost at every turn. The prevailing thought within finance was BCC's processes would benefit from the "best-in-class" processes needed to accommodate their new ERP. Changing business processes would not only save the company money on the ERP itself, it would enable BCC to realize further savings through process standardization across its global footprint.

As a result, the decision to select SAP as BCC's ERP system was largely based on the needs of finance. This was further driven by Micah Stevenson's desire to see an enterprise view and real time financial reporting across all of BCC's global business units. High customization made this desire hard to achieve. Customization requests were met with considerable scrutiny by Finance as a result.

Customization authorizations were approved by the team after finance had weighed in. Votes typically went in finance's direction. Criteria for determining whether a process required customization included whether the function was a cost or revenue center, if the process was deemed business critical (such as production scheduling), and safety considerations.

This scrutiny did not sit well with the project team. Paul Wilson had to keep returning to the business stakeholders, including operations, to inform them their requests were denied unless they could definitively state a clear benefit for keeping the current process (and customizing the software). In a team meeting, Joel Sedgwick, manager of customer service, stated:

"How can we be expected to perform to the same level? These processes exist for a reason. A lot of years were spent and tough lessons learned developing them. We are going to sacrifice a hard earned competitive advantage to save a couple of dollars. This is bound to cause issues as the recommended processes don't begin to cover our process output requirements. We cannot maintain our current service levels using these approaches because they don't account for all the expected inputs in the right sequence. This needs to be more than a financial decision. We need to think about our customers."

The reaction from Emma Harrellson was swift and to the point. "We are thinking about our customers. What good does it do them if we struggle financially? Other Fortune 100 companies have used this model and are operating much more efficiently."

The tension between finance and business needs played itself out in many subsequent conversations. Eventually, most business units accepted the standardized approach with much reservation. In the end, ironically, finance ended up with the most customizations. Most processes were standardized across BCC's expansive footprint and different operating requirements.

5. IMPLEMENTATION

Challenges presented themselves immediately upon ERP implementation. Despite a comprehensive training roll-out where all departments had been instructed on how they needed to "fit" their old processes into the new software solution, the complexity of BCC's operations were creating unforeseen exceptions every day. These exceptions resulted in nearly 140 new help tickets every day and this after only three weeks into implementation.

To compensate, nearly every department was booking inordinate amounts of overtime to keep the ship afloat, which did not bode well within tighter budgets. Stevenson wrote a scathing email to Harrellson and Wilson after receiving his latest departmental cost forecasts:

"What do you mean costs are up sequentially over last period? This implementation required us to forecast a 4% reduction in costs! How is this happening, we need to get this fixed immediately!"

Problems did not end with the extra costs to keep the operation afloat. Customers were increasingly aware of BCC's problems in servicing their orders. Past Due Backlog had risen to its highest level in four years and materials management did not have a good idea of their inventory levels in order to schedule a recovery plan.

Rising costs and lost revenue were apparent immediately and Ducharme called Stevenson into his office:
"Micah, we are in the middle of a very important quarter and this project is your baby. This is an extremely embarrassing story to bring to Wall Street and I am very displeased with your performance. I need you to hunker down and get this fixed immediately. I expect a daily update each evening until our backlog is in check and our costs have returned to forecasted levels."

Stevenson's marching orders were clear, but he needed some recovery options and a plan. He wondered what he was going to do.

- How could he recover from this devastating situation?
- How could the implementation team solve the problem?
- Could the business processes be adapted or should they go back to the drawing board and customize the ERP system for selected business units?

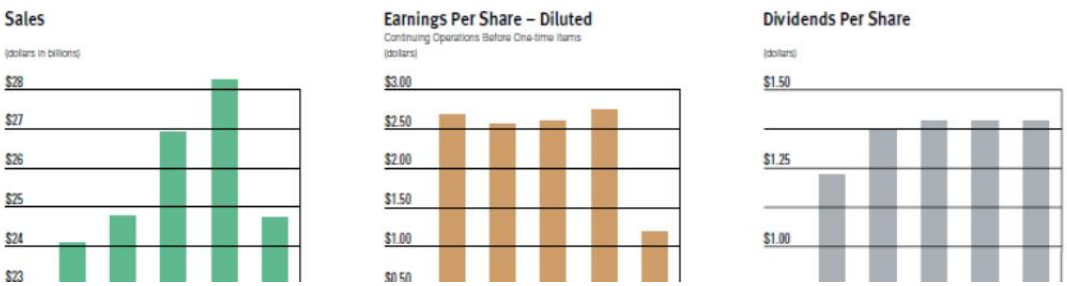
APPENDICES

Appendix 1: BCC Financial Highlights

Corporate Highlights

(Dollars in millions, except per share)

Operating Results	2001	2000
Sales	$24,726	$28,268
Income from Continuing Operations before One-time Items	$ 1,251	$ 2,878
Net Income	$ 4,339	$ 2,314
Depreciation and Amortization	$ 1,754	$ 1,860
Capital Expenditures	$ 1,634	$ 2,022
Research and Development Expense	$ 1,588	$ 1,776
Financial Position, Year End		
Total Assets	$40,319	$39,426
Total Debt	$ 6,814	$ 9,905
Stockholders' Equity	$14,452	$13,299
Data Per Common Share		
Earnings before One-time Items – Diluted	$ 1.19	$ 2.73
Earnings – Diluted	$ 4.16	$ 2.19
Dividends	$ 1.40	$ 1.40
Market Price Range	$49.88 – 32.64	$74.00 – 38.19
Other Totals, Year End		
Shares of Common Stock Outstanding (millions)	1,002	1,039
Common Stockholders of Record (thousands)	127	132
Employees (thousands)	79	93



Appendix 2: Business Units

Business Unit	Core Markets	Products	Competitors	Annual Sales
Agricultural and Nutrition	Production Agriculture Food Processing	Hybrid seeds Insecticides Specialty food ingredients Soy proteins	Monsanto American Vanguard Scotts Miracle Gro Syngenta AG CF Industries	$4.5 billion
Coatings	Automotive Manufacturers Automotive Collision Repair Construction Digital Printing Paper Plastics	Clear coat finishes Automotive refinish paints Industrial Coatings Digital Inks Pigments	Dow Chemical Cytec Industries KMG Chemicals	$5.0 billion
Electronic and Communication Technologies	Automotive Power Electrical Medical	Semiconductors Printed circuit boards and components Communications Displays and imaging	Lockheed Martin Flextronics International Tata Motors	$2.5 billion
Performance Materials	Automotive Electrical Electronics Packaging Construction	High performance polymers Flexible resins Packaging resins and films Safety glass	Huntsman Dow EMD	$4.9 billion
Safety and Protection	Constructions Personal Protective-industrial and first responders Medical Process Industries Safety and Operation Services	PPE-Chemical protective suits Cut resistant gloves Body armor Fire/heat protective apparel Clean room apparel	3M Radians Honeywell	$3.5 billion

Appendix 3: Enterprise Resource Planning