

The Re-Engineering of IBM

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IBM Income Statement
1990 (Full Year) to 1993 (1st Quarter)
 \$(Billions)

Exhibit 1

	1990	1991	1992	1993 1st Qtr.	1993 B/(W) 1990
Revenue	69.0	64.8	64.5	13.1	
Cost of Goods and Services	30.7	32.5	35.0	7.9	
Gross Profit	38.3	32.3	29.5	5.2	
Percent	56%	50%	46%	40%	-16%
Expenses (A)	28.1	28.4	26.9	5.6	
Earnings Before Taxes	10.2	3.9	2.6	(0.4)	
Percent	15%	6%	4%	-3%	-18%
Restructuring Charges Excl. Above:		(3.7)	(11.6)		

(A) SG&A, R&D, and Interest Expense.

Commentary

- A. 1990 was the second best year in IBM's history in terms of profits.
- B. Gross profit margins collapse from 56% to 40%, driven heavily by IBM's loss of ability to charge premium prices, particularly for its hardware.
- C. Expenses essentially flat (\$28B to \$27B). I.e., no meaningful reduction despite huge restructuring charges and "on roll" personnel reductions.
- D. Result--Earnings before taxes collapse from \$10B to a loss in a three year period.

IBM Cash Flow Statement
1990 (Full Year) to 1993 (1st Quarter)
 \$(Billions)

Exhibit 2

	1990	1991	1992	1993 1st Qtr.	Total 1990 to 1993
Cash From Operations					
Business Operations	9.3	7.2	7.4	1.5	
Working Capital	(1.8)	(0.5)	1.4	0.1	
Foreign Exchange	0.1	(0.2)	(0.5)	(0.2)	
Restructuring Outlays	0.0	0.0	(2.5)	(0.4)	
Cash From Operations	7.6	6.5	5.8	1.0	20.9
Cash Invested in Business					
Capital Expenditures	(6.5)	(6.5)	(4.8)	(0.4)	
Sale of Equipment	0.8	0.6	0.6	0.1	
Software Expense Capitalized	(1.9)	(2.0)	(1.8)	(0.3)	
Cash Invested in Business	(7.6)	(7.9)	(6.0)	(0.6)	(22.1)
Free Cash Flow	0.0	(1.4)	(0.2)	0.4	(1.2)
Cash Return to Shareholders					
Dividends Paid	(2.8)	(2.8)	(2.8)	(0.3)	
Share Repurchases	(0.4)	(0.2)	0.0	(0.1)	
Cash Return to Shareholders	(3.2)	(3.0)	(2.8)	(0.4)	(9.4)
C/F Before Incr. In Debt	(3.2)	(4.4)	(3.0)	0.0	(10.6)
Cash From Increase in Debt	3.4	4.5	3.5	0.6	12.0
Net Cash Flow	0.2	0.1	0.5	0.6	1.4

Commentary

A. Despite the collapse of IBM's results over the 1990 to 1993 period, there is little evidence of corrective action until 1992, when working capital performance was improved and capital spending was trimmed a bit.

B. Over the period there was no free cash flow (actually a negative \$1.2B).

C. Despite this, the dividend was maintained at high levels until early 1993, when it was reduced (total dividend payout and share repurchases were \$9.4B for the period).

D. The combination of no free cash flow and continued payment of a high dividend necessitated a huge increase in borrowings over the period, totalling some \$12B. (Total debt increased from \$17B at year end 1989 to \$29B at year end 1992.)

IBM Financial Data
1992 Competitive Benchmark Data
 \$(Billions)

Exhibit 3

<u>Expense Structure Study</u>	IBM 1992 Actual	Competitive Benchmark (A)	IBM Objective	IBM Expense Reduction Required	Expense Reduction Objective Announced July, 1993 (B)
Revenue	64.5				
Expenses (SG&A and R&D)	26.8		20.0	6.8	7.0
Expenses Percent Revenue	42%	31%	31%		

(A) Based on comparing IBM's expense structure to competitive companies by segment:

- IBM Services compared to EDS and others.
- IBM PC Company compared to Dell, Gateway, Compaq, etc.
- IBM Storage Division compared to EMC and others.
- IBM Microelectronics compared to other chip producers.
- Etc.

Note: In excess of forty competitors were used in the benchmark study.

(B) Objective announced was to achieve the \$7B reduction by the summer of 1996, or in a three year period.

Note: Similar benchmark studies were subsequently completed for various pieces of the business, including:

- Total cost of information technology.
- Total cost of finance.
- Inventory turnover.
- Accounts receivables days sales outstanding.
- Square feet of facilities space per employee.
- Human resources/compensation practices (salary levels, work force mix, etc.)

The \$7 billion expense reduction objective was established in July, 1993.

The plan was to achieve this objective in two phases:

	<u>Time Frame</u>	<u>Approach</u>
Phase 1	Balance of 1993 and 1994 budget objectives.	Each unit to develop its own initiatives to meet their budget objectives.
Phase 2	Mid-1994 and beyond.	Establish re-engineering teams for all key business processes on a world-wide basis.

Phase 1 was very successful for most business units. They were encouraged to review R&D priorities, search for redundancies, etc. Much of the proverbial "low hanging fruit" was harvested, and IBM's net income rebounded to \$3.0 billion for 1994.

Phase 2 consisted of formal re-engineering, with the teams put in place during 1994. These activities consisted of eleven key initiatives entailing 38 re-engineering projects:

<u>Core Initiatives</u>	<u>No. of Projects</u>
Production	4
Hardware Development	1
Software Development	5
Services	4
Solution Design and Delivery	3
Customer Relationship Mgmt.	2
<u>Enabling Initiatives</u>	
Information Technology	3
Human Resources	6
Facilities and Site Services	3
Procurement	4
Finance	3

Sponsorship

Each initiative was headed by a member (or members) of the Corporate Executive Committee, acting as "sponsor." Each project was headed by a senior executive below the CEC level, and staffed with the necessary members on a world-wide basis, a core group of which was full time.

Information Technology

IT was almost totally decentralized within IBM, with the CIO being little more than a figurehead. The CIO was impowered, and the mechanisms put in place to initiate the re-engineering.

IBM had over 150 data centers on a world wide basis. These were consolidated to about 30 over a two year period.

There was little commonality of applications among the hardware and software divisions, and the geographic sales and services units. A massive amount of commonizing was done, greatly reducing applications support resources.

Procurement

IBM's total annual purchases of goods and services was in excess of \$20 billion, with the purchases being made by over thirty separate organizations spread around the world. As a consequence, the company's purchasing power was not being leveraged to maximum economic advantage.

We conducted a search, and hired Gene Richter from Hewlett-Packard. Gene had started his career at Ford Motor Company, but importantly, had consolidated the purchasing activities first at Black and Decker, and then subsequently at HP--the result being huge savings for both companies.

Gene did it a third time at IBM. He mobilized the various procurement groups to fully coordinate their purchases, so that for the key "commodities," the supply base would be approached with IBM's total buy rather than on a piecemeal basis.

Facilities

Facilities was another area which represented a major opportunity. IBM had a history of utilizing "gold plated" facilities. The objective was to aid in recruiting and impress customers.

We had the facilities staffs benchmark the number of square feet per employee for administrative, sales and technical organizations. Targets were then established, and a facilities consolidation plan developed for each geographic area.

The combination of the square footage targets and massive workforce reductions resulted in the conclusion that IBM had excess facilities of some forty million square feet on a worldwide basis. The facilities consolidation plan took into account the relative marketability of facilities.

This initiative was driven by Lee Dayton, a long-service IBM executive.

Problems

Spending 2% of revenue on finance; Hackett Group benchmarking indicated this had to drop to 1% to get to 25th percentile level (first objective).

Difficult and time consuming to perform special studies and variance analysis.

Six weeks to close the books following end of period.

Key Initiatives

Accounting

Common chart of accounts.

Implement data warehouse.

Heavy, heavy centralization.

Financial Systems

Common systems across all financial functions.

Upgrade technology--Hyperion with OLAP technology (on line analytical processing).

Financial Processes

Simplify intercompany transfer pricing system--eliminate "wooden nickel negotiations."

Adopt top down target driven approaches to minimize iterations.

Standardize reporting format (hardware, software, services, etc.).

Five quarter rolling forecast instead of annual budget (partially achieved).

Organization

Project office of four full time executives--lead executive, and one each for the three initiatives.

Monthly status reviews with the CFO and all senior finance executives.

Variable compensation and promotion potential tied to success.

Prior Intercompany Pricing System



Intercompany prices "negotiated," and subject to politics.

Very difficult to get to total company profitability of anything (note that divisions like Micro Electronics and Storage sell to other divisions).

Unit A can win while unit B loses.

Re-Engineered Intercompany Pricing System

Divisions	Sales and Services Units				
	NA	LA	EMEA	AP	Total
Micro Electronics					
Personal Computer					
AS/400					
RS/6000 (Unix)					
System 390					
Storage					
Printers					
Software					
Total					

Two separate looks of total company profitability:

- Division look.
- Sales and Services unit look.

Remaining intercompany charges established by benchmarking outside purchase prices:

- Micro Electronics and Storage prices.
- Warranty and maintenance cost chargebacks.

IBM Financial Data
1993 to 1995 Improvements
 \$(Billions)

Exhibit 8

<u>Profitability</u>	1992	1993	1994	1995 1st Half	Total 1993-95
SG&A and R&D Improvement	26.8	24.0	20.5	NMF	
	Base		6.3		
Gross Profit Margin Improvement	46%	40%	41%	43%	
		Base		3%	
Pretax Profit Margin Improvement	4%	0%	7%	16%	
		Base		16%	
 <u>Cash Flow</u>					
Operating Activities	8.3	8.8	11.7	5.3	
Restructuring Outlays	(2.5)	(3.8)	(2.8)	(1.4)	
Sale of Defense Business			1.5		
Cash Invested in Business	(6.0)	(4.2)	(3.5)	(1.9)	
Free Cash Flow	(0.2)	0.8	6.9	2.0	9.7
 <u>Balance Sheet</u>					
Debt Outstanding Improvement	29.0			23.0	
	Base			6.0	
Working Capital					
Inventories		8.3		6.2	
Receivables		10.2		9.2	
Total		18.5		15.4	
Improvement		Base		3.1	

IBM had a reputation for having an extremely strong finance organization. And that's what I found when I joined the company--extremely bright, capable individuals. However, some were part of the solution and some were part of the problem despite their financial capabilities.

What do I mean by this? Well, some were just too caught up in preserving the status quo for their individual units--that is, they didn't have a total corporate point of view. Data submitted to me would be presented in the best possible light, with problems buried in the "wooden nickels" intercompany pricing system, hardware losses masked by combining hardware and software results, etc. Certain individuals just didn't seem to want to get to the bottom line and fix problems, at least in their units.

But there were notable exceptions. Fundamentally, all of the information was there to fix IBM. When I asked that a benchmark study of IBM's cost and expense ratios versus competition be done, Mark Loughridge, a second level member of the corporate finance staff (and now CFO of IBM), already had a lot of it done.

Similarly, when I asked for a study of how IBM's IT spending compared to competition, Jerry Prothro (IBM's CIO) already had it done.

These are just two examples of key people who knew what had to be done, but didn't have the power to get it done.

* * * * *

In a situation like that of IBM in 1993/1994, the CFO can only make breakthrough progress to the extent he has the backing of the CEO. Lou Gerstner gave me strong backing, so that was the enabler for my ability to get the job done. Without Lou's strong backing, there would have just been endless debate--probably what went on before Lou Gerstner.

When I arrived at IBM, the finance organization was highly decentralized. That is, every hardware/software division and every geographic sales and service unit had its own finance organization. I got a lot of advice early on to have all of these finance units report directly to me. I didn't see the need for this as long as all of the unit finance heads recognized they worked for the shareholders rather than their individual business units. So my challenge simply became that of making sure that the unit finance heads had such a shareholder mindset. It took about a year to get there--more time than I would have liked, but better in my judgment than "centralizing" finance, which probably would have created a different set of problems.

But with this decentralization, it was necessary to eliminate redundancy. Here another second level finance person was key--Harry Beeth. I placed Harry in charge of finance re-engineering. He and the members of his team systematically defined and then eliminated the redundancies within IBM's world-wide finance organization.